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ICTEMR-2021

27th – 28th March 2021 | Thailand

1ST INTERNATIONAL CONFERENCE ON

Technology Innovative Educational and Multidisciplinary Skills in the 21st Century Research



Organized By

Institute Innovation Technology Educational and Research for Eastern Institute of Technology Suvarnabhumi (EITS), Thailand

in Association with

Institute For Engineering Research and Publication (IFERP)

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In Association with:

Institute For Engineering Research and Publication



RudraBhanuSatpathy.,
Chief Executive Officer,
Institute For Engineering Research and Publication.

On behalf of ***Institute For Engineering Research and Publications (IFERP)*** in association with ***Institute Innovation Technology Educational and Research for Eastern Institute of Technology Suvarnabhumi (EITS),*** Thailand. I am delighted to welcome all the delegates and participants around the globe for the ***"1st International Conference on Technology Innovative Educational and Multidisciplinary skills in the 21st century Research"*** Which will take place from ***27th– 28thMarch 2021***

Transforming the importance of Education and Technology on 21st century, the theme of this conference is ***"1st International Conference on Technology Innovative Educational and Multidisciplinary skills in the 21st century Research – (ICTEMR – 2021)"***

It will be a great pleasure to join virtually with Engineers, Research Scholars, academicians and students all around the globe. You are invited to be stimulated and enriched by the latest in engineering research and development while delving into presentations surrounding transformative advances provided by a variety of disciplines.

I congratulate the reviewing committee, coordinator **(IFERP & EITS)** and all the people involved for their efforts in organizing the event and successfully conducting the International Conference virtually and wish all the delegates and participants a very pleasant stay at ***Thailand.*** I wish that the next conference will be held in person in the university campus.

Sincerely,

RudraBhanuSatpathy

Director Message



Asst.Prof.Dr.Phumphakhawat Phumphongkhochasorn
Director, Institute Innovation Technology Educational and Research for Eastern Institute of Technology Suvarnabhumi (EITS), Thailand.

On behalf of The 1st International Conference on Technology Innovative Educational and Multidisciplinary skills in the 21st century research"(ICTEMR_2021) organizing team, I am honored and delighted to welcome you to The 1st International Conference on Technology Innovative Educational and Multidisciplinary skills in the 21stcentury research "(ICTEMR_2021) to be held on 27-28 March 2021 at Institute Innovation Technology Educational and Research for Eastern Institute of Technology Suvarnabhumi (EITS) with Institute For Engineering Research and Publication (IFERP), Chennai.

Any conference is intended for discussing lively and emerging issues of a particular educational domain and disseminating the awareness among other researchers and scholars. We have been witnessing the dramatic improvements in the field of Education and Multidisciplinary Technologies and applications. I hope 1st International Conference on Technology Innovative Educational and Multidisciplinary skills in the 21st century research"(ICTEMR_2021) will become surely the most important International event and bring out latest trends in Multidisciplinary and Educational Innovation.

In order to provide an outstanding research level for the presentations at the conference, we have invited distinguished experts to participate in the program. We will have, plenary sessions by keynote speakers during 2 days of conference including the awards presentation during the closing session on the last day of the conference.

I hope the 21st century research"1st International Conference on Technology Innovative Educational and Multidisciplinary skills in the 21st century research" (ICTEMR_2021) will make you to reflect yourself with state-of-the art and provide opportunity to discuss various educational issues and challenges including other sciences with multidisciplinary aspects.

ICTEMR -21

1st International Conference on Technology Innovative Educational and Multidisciplinary skills in the 21st century Research

Keynote Speakers



Dr.Thanarak Santhuenkaew

Advisor,

Director of Center for Industrial Curriculum Design Innovation,

Eastern Institute of Technology Suvarnabhumi (EITS), Thailand

Biography:

Dr.Thanarak Santhuenkaew was graduated in B.Sc. Computer Science, Uttaradit Rajabhat University. - URU Thailand. Grad. Dip. Teaching Profession. Ramkhamhaeng university- RU Thailand. M.S.Tech.Ed. Computer Technology (Computer Education) King Mongkut's University of Technology North Bangkok – KMUTNB Thailand. M.Ed. Educational technology and communication. Ramkhamhaeng university- RU Thailand. Ph.D. Education Technology. King Mongkut's Institute of Technology Ladkrabang 2019– KMITL Thailand. He also received Journal Publication : The Synthesis of the concepts of teaching the practical skills of Davies, Harrow and Simpson (DRLE 2017 KMITL.). The Synthesis of Computer practice Skills Instruction Using Flipped Classroom techniques. (ICER 2017 KKU.). Improving Thai student's digital media skills: An exploratory learning model (Revista ESPACIOS Venezuela.). The implementation of innovative models in teaching (JTI : Journal of Technology and Innovation in Tertiary Education. Siam Technology College.). and Education management under the Postmodernism concept.(JTI : Journal of Technology and Innovation in Tertiary Education. Siam Technology College.)



Dr. Shauli Mukherjee

Director – School of Education &
Dean – Students' Affairs
Adamas University
Former Founder Principal
STEM World School & Adamas World School

I would like to convey my sincere and best wishes to the Eastern Institute of Technology Suvarnabhumi for organizing the First International Conference on Technology Innovative Educational and Multidisciplinary Skills in the 21st Century Research. I am extremely delighted to be a part of this conference especially because I see it as a significant confluence of brilliant and innovative ideas and thoughts, sharing and exchanging of meaningful insights and knowledge pertaining to the multidisciplinary field of studies and research.

I am hopeful that the significant platform of International Conference will be extremely beneficial to experts, academicians and scholars in terms of showcasing and exhibiting their scholarly work, exchanging ideas and insights, getting productive feedbacks, establishing collaborations and other relevant initiatives and endeavours. Once again, I wish today's International Conference a huge success in terms of critical and creative ideation through an enriching knowledge sharing experience.

Shauli Mukherjee

Dr. Shauli Mukherjee



Prof.Dr.Abbas Al-Bakry

Chancellor

University of Information Technology and Communications

Iraq

I highly appreciate the efforts of the Eastern Institute of Technology Suvarnabhumi for organizing the First International Conference on Technology Innovative Educational and Multidisciplinary Skills in the 21st Century Research. It is my pleasure to be a part of this conference especially because I see it as a significant confluence of brilliant and innovative ideas and thoughts, sharing and exchanging of meaningful insights and knowledge pertaining to the multidisciplinary field of studies and research.

with very best wishes

Abbas Al-Bakry



Prof. Dr. Rashid Mehmood

Professor of Big Data Systems & Director for Research,
Training and Consultancy,
King Abdulaziz University, Saudi Arabia

I am delighted as I write this message conveying my sincere and best wishes to the Institute of Innovation Technology Educational and Research for Eastern Institute of Technology Suvarnabhumi (EITS), Thailand, and the Institute For Engineering Research and Publication (IFERP) for organising the 1st International Conference on Technology Innovative Educational and Multidisciplinary skills in the 21st-century research (ICTEMR_2021), scheduled to take place 27th - 28th of March, 2021, in Thailand.

Certainly, the topics of the conferences are among the most critical research areas needing attention from international experts. This conference will help raise the awareness and I believe will make significant contributions to the research and practice locally in Thailand as well as internationally.

I am excited to give a keynote on "Big data, HPC, AI, IoT, Clouds and Fogs: The Core Ingredients for bringing Innovation to Smart Cities and Infrastructure". Infrastructure could refer to the fundamental systems and facilities that an organization, city, or country needs to function. It needs to be understood in the context of the evolution of our societies, recent trends in urbanization, and the broader life. We define smart infrastructure as, "knowledge-based, collaborative, converged, ubiquitous, self-aware, adaptive, resilient, digitally-enabled, and self-governing foundational structure; comprising hard, soft, virtual, and digital facilities and systems, and intellectual and social capital; enabling social, environmental and economic sustainability; enabling innovation and competitiveness; facilitating personalization in all aspects of modern-day and future living, the aspects including transportation, healthcare, entertainment, work, businesses, social interactions, and governance; to meet societal, economic and other demands of organizations, cities or countries". Smart infrastructure would include Internet of Things (IoT) to monitor and actuate. High performance computing (HPC), big data, artificial intelligence, cloud, fog, and edge computing will be needed to provide the necessary intelligence, storage, compute, and communication resources for the smart infrastructure.

I would review some of our research at King Abdulaziz University (KAU) on bringing innovation to smart cities and infrastructure with a focus on converging IoT, big data, HPC, AI, fog, edge and cloud computing.

I look forward to engaging with the ICTEMR_2021 community

Sincerely,

Prof. Rashid Mehmood



Dr. Kamlesh Misra

Vice Chancellor, Rishihood University
Sonipat, Haryana, India

The 1st International Conference on Technology Innovative Educational and Multidisciplinary skills in the 21st century research"(ICTEMR-2021) aims to bring together leading academicians, researchers, research scholars and industrialists to exchange and share their experiences and research results on aspects of 21st Century. It also aims to provide a premier interdisciplinary platform for researchers, practitioners and educators to present and discuss the most recent innovations, trends and concerns as well as the practical challenges encountered and the solutions adopted thereof. This conference will provide opportunities for the delegates to exchange new ideas and their experiences to establish research relations for future collaborations.

On behalf ICTEMR 2021 Conference, I welcome you all for this conference and hope to promote exchange of ideas, knowledge and research.



Professor Peter McCaffery

Consultant in Higher Education, London,
Interim Deputy Vice Chancellor,
Royal Agricultural University, Cirencester

Professor Peter McCaffery has over thirty-five years leadership, management, teaching and research experience - including 17 years reporting at Board level - across a range of institutions from Further Education Colleges to USA Ivy League University, involving successive business turn-arounds.

Professor Peter McCaffery is a former UK Vice Chancellor and Winston Churchill Fellow with extensive experience across a variety of institutions from further education college to USA Ivy League university. A broadcaster on the Trump Presidency, a UK national leadership fellow in higher education and pioneer of on-line university management development, he also provides consultancy services to higher education institutions within the UK and beyond. He is also a Trustee and Governor of Holland Park School Academy in west London - a state secondary trailblazer that regularly outperforms its fee-paying independent school neighbours. Awarded a National Leadership Fellowship by the Leadership Foundation for Higher Education, he pioneered a Wider Management Mentoring Programme at London South Bank University for the university's black and minority ethnic (BME) managers in partnership with the public and private sector, and led the equality and diversity team whose work was showcased by the Higher Education Funding Council (HEFCE) in their Sustaining Excellence in review.

ICTEMR – 2021

1st International Conference on Technology Innovative Educational and Multidisciplinary skills in the 21st century Research

Thailand

27th – 28th March, 2021

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Fine Arts Education in Rural Thailand: A Case Study of the Department of Art and Design, University of Phayao

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Abstract— Contemporary art is a global subculture typically associated with urban contexts. Infrastructure such as galleries, networks of brokers and collectors, auction houses, and museums, as well as an informed and engaged audience, are conventional hallmarks of a flourishing art scene. Educational institutions are also a crucial part of this infrastructure, not only in shaping the next generation of artists, but in presenting and promoting young artists' work while simultaneously cultivating audiences.

Thailand, with the exception of the Bangkok Greater Metropolitan Area, is devoid of any major urban centers. Numerous institutions of higher education have been established throughout the country, yet perhaps unsurprisingly, few of these institutions offer degrees in fine arts. However, as in the case of the University of Phayao (founded in 1996, and offering a BA in art and design beginning in 2012), more institutions are beginning to acknowledge the benefits of arts education regardless of an existing "arts infrastructure" to support them. Such benefits may include developing critical thinking, cultural awareness, and creative development.

This research paper surveys the curriculum of the Department of Art and Design at the University of Phayao. Through interviews and site visits, the author examines the aims and objectives of these universities, their strategic plans for development, their impact on local communities, and how they envision the growth and development of their program.

Index Terms—***community arts, fine arts education, rural arts, socially engaged art***

I. INTRODUCTION

Since at least the Industrial Revolution, art has been understood as belonging within the socio-cultural makeup of urban centers (Molina 2018). Elements typical of urban infrastructure, including galleries, auction houses, networks of brokers and collectors, educational institutions, and museums, as well as an informed and engaged audience, are conventional hallmarks of a flourishing art scene. In the current era, the arts, cities, and socio-political actors interact together within a dynamic coproduction of culture (Terrin 2012). Art is not only made in urban centers, but with urban centers, as the participatory and democratizing trends in recent art have seen various stakeholders collaborate with artists in the establishment of new modes of relation (Volvey 2007).

What, then, of the relationships between art and non-urban locales? Within the context of Thailand, a country that began industrialization as recently as the 1980s (Falkus 1995), the Greater Bangkok Metropolitan Area (GBMA), including Bangkok, Thonburi, and the contiguous cities of Nonthaburi and Samut Prakan, remains the sole major urban center in the country. While the GBMA accounts for nearly 16 million individuals (Thailand: Administrative Division 2015), the majority of Thailand's population of 70 million remains rurally based (Thailand: Rural Population n.d.). Despite major social and economic progress over the past few decades (The World Bank in Thailand 2020), the majority of rural Thais are dependent upon agriculture and subsistence farming for their livelihood (Thailand: A Labour Market Profile 2013). While unemployment is officially reported as less than 1% throughout the nation, more than half of all Thais are in "vulnerable employment (defined as the sum of own-account work and unpaid family work) and more than 60 percent are informally employed, with no access to any social security mechanisms (Thailand: A Labour Market Profile 2013)." Thus, Professor Attachak Sattayanurak of Chiang Mai University perceives any conversation regarding the issues facing "rural Thai society" as a categorical misnomer—rather, these issues are embedded within the core of Thai society itself (Sattayanurak 2010).

Developments over the past few decades have given rise to an evaluation of contemporary cultural production which is no longer dependent upon aesthetic merits, but upon an artwork's ability to address real world problems. This utilitarian notion of art is articulated by George Yudice as "culture as a resource," in which the value of an artwork is directly tied to its instrumentalization as a socio-political tool (Yudice 2003). Art is being used to stimulate economies, to construct shared identities, to raise awareness of political

issues—in short, art now must *do* something. Trending concurrently with socially engaged art practices is an increased desire to amplify voices within marginalized communities. Affirming the agency of historically oppressed voices, primarily through the lens of postmodern and postcolonial critique, has become mainstream within international arts discourse. Across Europe and North America, socially engaged artists are increasingly active in engaging rural spaces and addressing the problems their underrepresented constituents may encounter. Have these conceptions of socially engaged art praxis resonated with arts practitioners in rural Thailand? If so, how does one envision such concepts functioning within this relatively uncharted terrain?

The University of Phayao (UP), located in Phayao Province in Northern Thailand, is one of few rurally based universities in Thailand with a School of Architecture and Fine Art (SAFA). Located 20 kilometers outside of Phayao City (*muang Phayao*), the student body of UP (18,089) rivals the district it resides within (*tambon Maeka*) in population (19,325)(Phayao Census 2010). The university, originally a campus of Naresuan University in Phitsanulok, was formally inaugurated in 1996, while the School of Architecture and Fine Art (SAFA) was established later in 2012. SAFA includes departments of architecture, art and design, performing arts, and music. The Department of Art and Design at UP is positioned to establish a precedent for developing best practices in regards to context-specific, socially engaged arts pedagogy in rural Thailand.

The central inquiry of this study departs from the understanding that developing contemporary arts pedagogy in rural contexts presents unique challenges to educators. The Department of Art and Design at the University of Phayao occupies a unique position within the scope of fine arts programs in the Thai university system, yet there has not been an analysis of its curriculum in relation to its aims and objectives within a rural context. Ultimately, this research hopes to contribute towards a methodology and framework that researchers and educators may reference to the benefit of their rurally based constituents.

II. Research Objectives

The objective of this research article is 1) to assess how members of the Department of Art and Design at the University of Phayao consider their position as fine arts educators within rural Thailand, and 2) to determine the aims and objectives of the department within this context.

III. Methodology

This paper presents qualitative research compiled through the use of open-ended, in-depth interviews with three high-ranking administrators in the School of Architecture and Fine Art, University of Phayao. The interview participants were selected via purposive sampling based upon the selection criteria outlined below:

1. Does this individual currently work in the School of Architecture and Fine Art in the University of Phayao?
2. Does this individual occupy an administrative position with influence over the vision of the program, the direction of the program's growth, and the curriculum of the program?
3. Is this individual willing to participate in an in-depth interview assessing the nature of their programs within the Department of Art and Design?

Three individuals met these criteria: the Dean of the School of Architecture and Fine Art, the Department Head of Art and Design, and the Vice Dean of Research and Academic Affairs. In situ interviews were conducted with all three participants regarding their background and education, motivations, teaching philosophies, methods, and visions for the progression of the program.

As an additional note, the researcher is currently employed within the Department of Architecture and Fine Art as a visiting lecturer and has several years of firsthand experience with the department and its curriculum. In addition to their administrative duties, two of the three interviewees continue to operate as active professors and offer their insights as both designers and practitioners of the curriculum.

IV. Results

The findings of the interviews have been subdivided into three areas of focus: 1) the advantages and disadvantages of a rurally based arts program, 2) the goals and objectives of the program, and 3) the curriculum design.

A. The Advantages and Disadvantages of a Rurally Based Arts Program

The interviewees saw both advantages and disadvantages to being a rurally based art program. However, while the advantages stated were generally vague and amorphous, the disadvantages were concretely outlined in detail, reflecting a higher degree of consideration towards the latter. They are summarized as follows:

Advantages:

1. Rural communities have been able to preserve "authentic" local knowledge more effectively than their urban counterparts. The local culture is a valuable resource.
2. As we occupy a privileged position as the sole university in a rural province, we have access to resources and networks that would be more difficult to access in competitive urban environments.
3. Our department has a degree of autonomy not enjoyed by many more competitive, urban universities who have been under the *de facto* influence of established art programs, for example, the Silpakorn University model. There is less pressure to adhere to trends, as we are geographically and ideologically independent.
4. Our students have been shielded from the pretensions of an urban art scene. They do not have "big egos" and are humble, which makes them good team members towards future endeavors.
5. Our students don't have access to many art supplies here, so this forces them to be more creative when selecting media and materials for making artwork.

Disadvantages:

1. Our rural location presents challenges in attracting qualified educators as well as high-quality students. For many Thais, moving from the countryside to the city represents an idealized notion of climbing the socioeconomic ladder, so working or studying in a rural environment is not perceived as desirable. Ambitious individuals tend to flock towards urban centers.
2. Rural institutions receive less funding than our urban counterparts. Thus, we have little to invest in improving our facilities and equipment. This is particularly damning in regards to digital technology, as our students are at risk of being left behind in the face of rapid technological change and development.
3. There is virtually no infrastructure locally to support a fine art scene. While this is cited as an advantage in some respects, the disadvantages include a lack of "cultural atmosphere"; a lack of sites of educational, historical, or cultural significance (such as museums, artist studios, galleries) to incorporate into our curriculum; and a lack of working arts professionals to network with and learn from (for instance, through internships or assistantship positions). This culminates in a general lack of opportunities for our students to glean real world professional experience.
4. The lack of a competitive atmosphere breeds complacency. Professors feel less pressure to be proactive and progressive. Students often lack ambition or interest as they receive little indication that their efforts can or will impact their external surroundings. There is a general lack of energy and professionalism in the program.
5. The authorities within rural areas have less understanding of the values of art and design than their urban counterparts. STEM disciplines are privileged at the expense of the humanities. Thus, there is a perceived lack of support in comparison to our urban counterparts.
6. Sites are very geographically dispersed here, so transportation is a problem. There are no cabs and little public transport to travel between areas, so students often must procure transport on their own. This makes coordinating events difficult.

B. The Goals and Objectives of the Program

The aims and objectives of the Department of Art and Design can be summarized as follows:

1. To provide knowledge to our students that will allow them to be competitive in the job market
2. To develop strong analytical and creative thinking skills within our students which are transferable to a multitude of disciplines or endeavors
3. To provide morally uplifting and edifying pedagogy through the arts
4. To engage the local community and work to preserve traditional culture

All interviewees responded that the ability of alumni to secure work within the arts was of primary importance. Within the Department of Art and Design, there are four officially stated career paths the department is preparing students for:

1) designer *(นักออกแบบ ได้แก่ การออกแบบ ผลิตภัณฑ์ บรรจุภัณฑ์/ กราฟิก / เครื่องประดับ/ สิ่งทอ / เครื่องปั้นดินเผา/สื่อ)*
2) entrepreneur *(ผู้ประกอบการในสายศิลปะและการออกแบบ)*
3) in-house designer for government offices and private corporations(พนักงานหน่วยงานราชการตามกรอบคุณวุฒิการศึกษา)
4) educational personnel (บุคลากรทางการศึกษา)

One interviewee stated, "We want our students to be able to pursue what they want to do in the arts. In fact, we want them to have a creative base from which they can pursue anything, because creativity is transferable to all fields."

Another interviewee quoted a book, stating that "good art is like religion or philosophy—art must teach people good things." This respondent believed that our focus should be on developing creativity and originality in our students. They believed art education was lacking in Thailand, as "Thais think design is easy because we can copy it from other places,

but to truly innovate is difficult, and we need to be developing these skills. We have lost a certain respect for one another, but I think learning to conceptualize and design for ourselves is a way to build our self-respect up."

Outside of the university's primary responsibility to the students, there was a consensus that "engaging the community" was important. One respondent said, "Our philosophy now for the thesis exhibition is to bring art to the people and to make art accessible to normal citizens." All interviewees considered the vernacular culture a valuable resource which should be preserved.

C. Curriculum Design

The original curriculum was designed in 2012 with the start of the Department of Art and Design. Every five years, the curriculum is updated. The results show that the initial curriculum of the University of Phayao was influenced by educators and curricula originating from Chiang Mai University (CMU). This may be due to the fact that the original drafters of the curriculum had all been trained and educated at CMU and consulted with active CMU professors while developing the curriculum. Individual professors from UP have taken strides to contextualize their curriculum within the rural environment; for example, incorporating local site visits into their classes, organizing workshops with traditional craftsmen, etc. However, as a cohesive, overarching unit, the curriculum is not tailored to the context of a rural environment.

Of greater consideration than the rural setting were the characteristics of students matriculating to the Department of Fine Arts. Qualities such as students' background skill sets and degree of potential were cited as considerations in developing the curriculum. For example, one interviewee stated that, due to the students lack of formal training in the arts and their perceived lack of experience, a multitude of wide-ranging electives were included so as to allow students the ability to experiment and sample diverse disciplines. Thus, the original curriculum featured roughly 23 electives in addition to core curricula. Another interviewee cited this as a failing of the original curriculum, as there were only seven full-time professors employed within the department at the time and many elective courses had to be outsourced to visiting lecturers. One interviewee stated that many of the electives were superfluous or irrelevant to the context of rural Thailand (such as lighting design and exhibition design) and cited having to teach an elective class with only one enrolled student. In the 2017 curriculum update, the 23 electives were whittled down to seven.

One interviewee felt that the standards set forth by the Thailand Quality Framework (TQF) as dictated by the Ministry of Education imposed limitations on the department's ability to develop curriculum. However, this was contradicted in another interview as not having a significant impact on internal decision making. There were also contradictions amongst the interviewees as to the notion that decisions regarding the curriculum are made through a process of consensus—in general, individuals who occupy higher positions of power within the department seem to be less aware of their subordinates' specific dissatisfactions.

Doubts were expressed as to the efficacy of the curriculum design. One interviewee felt that the stated objectives of the program were not reflected in the curriculum design, particularly regarding job placement. The interviewee stated, "I'm not sure there is a plan. If you ask me what our students can do once they graduate, I can reply to you, 'They can do everything!' but in reality, this means we don't have a strong point of focus—the students we produce have general skills. Sure, they can do graphic design, but honestly, I'm not sure if they're that good or not. But I think a positive thing about our curriculum is that students have a lot of opportunities to try many disciplines."

V. DISCUSSIONS

All of the interviewees expressed their opinion that as a rurally based arts program, we cannot compete with urban institutions on the same playing field. It seems our only recourse then is to establish an alternative mode of operation, unique and contextually specific, in order to empower students and community as desired. Per the interviewees, the main challenges facing the program can be summarized as follows:

1) Lack of funding, including:
    a) Lack of facilities, equipment, and training
    b) Lack of qualified educators
2) Lack of pre-existing arts infrastructure, including:
    a) Lack of on-site art spaces, such as studios and workshops
    b) Lack of off-site art spaces, such as galleries and museums
    c) Lack of engaged audience

3) Bureaucratic limitations, such as:

   a) Lack of general understanding and support for the humanities

   b) Regulatory bodies which inhibit the agency of the department

4) Cultural/Environmental limitations:

   a) Lack of healthy competitive pressure

   b) Lack of professionalism

   c) Hierarchical structure with lack of horizontal decision making

Roughly 70% of the 152 students currently enrolled in the Department of Art and Design at the University of Phayao hail from rural places in Thailand. Inequalities in educational achievement between rural and urban students in Thailand is well documented (Ariyaarpakamol 2019), so the observation that our students are of "lower quality" is not completely unwarranted—the majority of our students are beginning their foray into higher education at a disadvantage. Similarly, infrastructural challenges such as lack of galleries and museums or an informed and engaged art audience can be directly tied with rurality.

The primary objective of the Department of Art and Design is for graduates of the program to be able to secure employment in the arts or related fields. Yet, the results are inconclusive as to whether the departments' methods are effective towards this objective. This is largely due to the ambiguity of the stated objective and the department's self-determined metric of success—for example, a former student turned street hawker who paints a handcrafted sign for their food stall could be classified under "creative entrepreneur," while a government clerk who occasionally does formatting for an internal newsletter could be classified as "in-house graphic designer." This is neatly paralleled in the curriculum in which, as previously stated, some interviewees expressed a lack of confidence due to its ambiguous focus and objectives. This lack of specific focus is particularly problematic considering the hyperspecialization of labor that occurs within professional design and art. Designing an interdisciplinary liberal arts education which builds familiarity with diverse subjects and contributes to a broad base of knowledge is a commendable goal, but this breadth must also be accompanied with depth and intention. While many skills associated with an arts curriculum are demonstrably transferable, here too one must take a targeted approach in cultivating specific skills.

Nevertheless, in the context of rural Thailand, the question remains if careers as professional designers and artists (i.e. urban professionals) is in fact what we need to be preparing our students for. In which case, what are the relevant objectives or career paths we should be building their skills towards?

Here we might consider the social turn in contemporary art as a reflection point in regards to our purpose as an educational institution and our responsibility to students and local community alike. All three interviewees stressed the importance of community engagement as a core value of the department. Socially engaged arts programs can shift the focus of arts education from the production of aesthetic objects for exhibition or market, to a research-based practice towards the empowerment of regional communities. There exists much literature specifically regarding the implementation of socially engaged art within rural contexts which may prove of use. Deciding whether or not moving the curriculum towards socially engaged art practices is relevant or beneficial is up to the administration and faculty to determine.

It is the opinion of the author that the Department of Art and Design at UP should undergo a strategic planning process—involving stakeholders at every relevant level—to address their perceived shortcomings as well as the overall trajectory of the program. If, at the close of this process the primary objective is to produce employable graduates in the arts, then we must examine the data and engage in honest self-critique: What do we mean by "working in the arts"? Do students have the required knowledge and skills to succeed? How can we better cater to their needs? For example, if the data tells us that most of our graduates working in the arts work as graphic designers or teachers, the curriculum should be updated with such concrete goals in mind. This might include incorporating an elective for "Arts Education" specifically to train future educators, incorporating an elective dedicated specifically towards developing technical fluency in graphic design–relevant software, or developing partnerships with working professionals to foster internship and apprenticeship opportunities, etc. Ultimately, the art and design program at UP should leverage their unique position as rurally based arts educators towards constructing a context-specific identity with clear intentions and focus. A strategic consideration of such obstacles is likely to resonate with other rurally based arts programs in Thailand as well.

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Leadership style for Thailand 4.0 of school administrators affecting the implementation of the educational quality assurance system of schools at the secondary education level within the jurisdiction of Bangkok under a new educational quality assurance framework

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Abstract— This research aimed to 1) study and compare the leadership styles for Thailand 4.0 among school administrators classified by school status and size within the jurisdiction of Bangkok 2) study and compare operations in the educational quality assurance system of secondary schools within the jurisdiction of Bangkok under the new educational quality assurance framework classified by school status and size and 3) study the predictive power of the leadership style for Thailand 4.0 of school administrators impacting the implementation of the education quality assurance system under the new education quality assurance framework, classified by school status and size within the jurisdiction of Bangkok affecting the implementation of the educational quality assurance system of schools within the jurisdiction of Bangkok. The sample was 201 school administrators and teachers. The research instruments were questionnaires. The research found that the leadership style for Thailand 4.0 within the jurisdiction of Bangkok of school administrators was at high level. The comparative results classified by overall status showed that there was a statistically significant difference in style at .01 levels. When compared from the overall school size classification within the jurisdiction of Bangkok, there was a statistically significant difference in style at the .05 level (2). The implementation of the educational quality assurance system at secondary schools within the jurisdiction of Bangkok under the new educational quality assurance framework was at high level. The comparative results classified by overall status showed that there was a statistically significant difference in style at .01 levels. When compared by size of schools within the jurisdiction of Bangkok, there was a statistically significant difference at .05 levels (3). The results of a predictive power analysis of leadership style for Thailand 4.0 among school administrators found that there were five components capable of forecasting operations in the education quality assurance system under the new framework for quality assurance for secondary schools within the jurisdiction of Bangkok under the new educational quality assurance framework, at 89% considered.

Index Terms— ***leadership style for Thailand 4.0, educational quality assurance system of secondary schools, jurisdiction of Bangkok***

I. INTRODUCTION

The world today is a globalization with advances in information technology and its rapid change. It is imperative that each country learns to adapt to the ever-changing change and prepare to face the challenges of the global trend. The key factor to face such changes and challenges is the quality of the people. Education management to develop people to have quality is essential to obtain a quality education. This will help develop the full potential of the person, along with the ability of Thai children to think critically, problem-solving and organize ideas into words. Such abilities are indispensable for life in today's world. Education in Thailand consists of creativity, self-learning, the ability to adapt to the rapid change, ethics and morality, self-reliance and ability to live happily, although in the past years, efforts have been made to improve the quality of Thai education. It is for this reason that it is imperative to improve the quality of education in Thailand by establishing educational quality assurance to provide a mechanism for monitoring and encouraging educational agencies to continuously control educational quality at all times. The establishment of a national education law created a major reform of education focused on the quality of education, that is, the establishment of an educational quality assurance system to develop educational quality and standards at all

levels, Office of the National Education Commission (2000, page 1).

Educational quality assurance is the management and implementation of activities according to the normal mission of educational institutions to continuously improve the quality of learners. This is to build the confidence of the education service recipients and also prevent the provision of poor quality education and create education as a powerful mechanism for the development of the population to be of higher quality. It is also the process of reviewing and evaluating the implementation of the education in the sense that how they can meet the educational quality standards. The National Education Act of 1999 requires the affiliation and educational institutions to establish a quality assurance system within educational establishments and to regard internal quality assurance as part of the ongoing education administration process and an external quality assessment of all educational establishments is carried out at least once every five years. In this regard, the Office for National Education Standards and Quality Assessment is the operator under the National Education Act (1999, page 23).

School administrators are therefore the people who play a key role and are the key to success in developing effective education management that can address the challenges and changes that arise in Education 4.0. In the age of technology, especially in the learning society, executives must play their full roles and employ strategies and senior management techniques to lead the organization to success. Therefore, school administrators in Education 4.0 must be people with vision, creativity and use of innovation and technology (Panotnon Teanprapakun, 2018). In the current situation, most educational institutions are incompatible and differ in budget, quality, staff, and even learner factors including other contributing factors such as the cooperation of the educational institution committee, community support, agencies or organizations nearby the educational institution and follow-up assistance closely from the educational service area office or an agency. All of these affect the quality of education provision. In addition, educational institutions should be independent in self-management and develop the educational institution curriculum according to their own context and needs. Therefore, the quality of the learner and the quality of the administration are different (Bureau of Educational Testing, 2018).

School administrators are therefore important mechanisms that will lead to success and enhance learning quality within the organization, building quality within the school creates confidence and assurance in the client, parents, community and society (Jinnawat Pakotang, 2018). Leadership is therefore very important and essential for corporate executives. In particular, the leadership of the executive who leads the organization towards the goals that are set together (Asanee Sukitjai, 2017) is consistent with the development and to build confidence for all concerned parties to understand the educational management of the educational institution that it is the quality education management in accordance with the educational standards and achieve the goals of the agency or the governing institution (Office of the Private Education Commission, 2019) along with establishing a system and mechanism for development, monitoring, auditing and evaluating school operations in accordance with the policy, goals and quality levels as educational standards (Sumalee Sriputtarin, 2019).

Based on the aforementioned conditions, the researcher is interested in studying the leadership style for Thailand 4.0 of the school administrators affecting the implementation of the educational quality assurance system of secondary schools within the jurisdiction of Bangkok under a new educational quality assurance framework. The results of the aforementioned study will be of benefit to the administrators of educational institutions, schools and educational organizations for the use of such information for further improvement and development of the quality assurance system operation of the educational institutions.

II. RESEARCH OBJECTIVES

1) 1) To study and compare leadership style for Thailand 4.0 of school administrators classified by school status and size within the jurisdiction of Bangkok.

2) To study and compare the implementation of the educational quality assurance system of secondary schools within the jurisdiction of Bangkok under the new framework for educational quality assurance classified by school status and size.

3) To study the predictive power of leadership style for Thailand 4.0 of school administrators impacting the implementation of the education quality assurance system under the new framework for educational quality assurance classified by school status and size within the jurisdiction of Bangkok

III. RESEARCH SCOPE

This research focused on studying and comparing leadership style for Thailand 4.0 of school administrators affecting the implementation of the educational quality assurance system of secondary schools within the jurisdiction of Bangkok under a new educational quality assurance framework.

1) Leadership style for Thailand 4.0 for school administrators - The researcher uses a conceptual framework derived from the synthesis of concepts and theories which have 6 components: (1) vision (2) team work and participation (3) creativity (4) digital technology skills (5) motivation and (6) being a learning organization.

2) The implementation of educational quality assurance of educational institutions - Under the new framework for

educational quality assurance, it follows the guidelines of the Bureau of Educational Testing (2018) as follows: (1) setting educational standards of educational institutions (2) preparation of an educational management development plan of an educational institution (3) implementation of the educational management development plan of the educational institution (4) evaluation and examination of educational quality within educational institutions (5) Follow-up on the implementation of the implementation to ensure quality according to educational standards (6) preparing an institution's self-assessment report and (7) developing educational institutions to have a continuous quality

Population and sample

The research population was 1,578 of school administrators and secondary school teachers within the jurisdiction of Bangkok, academic year 2020 classified as 78 school administrators and 1,500 teachers. The sample group was 400 of school administrators and secondary school teachers within the jurisdiction of Bangkok, academic year 2020 classified as 50 school administrators and 350 teachers. The researcher determined the sample size using percentage criteria (Boonchom Srisa-ard, 2010) by Multi-Stage Sampling.

Literature review

Yadav (1980, p.186), cited in Manit Methanuphab (2008, p. 9), said that public participation means the cooperation of the people voluntarily and without coercion. The public cooperation process must have a feeling of participation in decisions, making decisions to participate in the implementation of development plans and projects, participating in the monitoring of development programs and programs and participating in receiving development benefits.

Ervin (1976, p. 69), quoted in Somkid Muangkorn (2012, pages 29-30), said that participation is the process by which the population is involved in operations, development, collaboration, decision-making, self-problem solving focusing on participation, creativity and people's expertise, collaborating in problem solving, using appropriate technology, advocating and monitoring the performance of the organization and related staff.

Rousseau (1988, p. 38) Cited in Chamlong. Ratanakoset (2009, pp. 20-26) wrote a participatory theory that participation must be based on freedom of decision-making to participate in the process, nobody is the master of one's life, an equality, self-reliance that raises awareness and understands the importance of self-involvement, changes in attitudes and behaviors can occur by creating effective group participation situations.

In short, participation is the involvement of an individual or a group of people in decision-making, problem discovery, planning, problem solving, monitoring and evaluation as well as supporting the exploitation of various matters or activities based on freedom of decision-making. All members are to participate voluntarily, free from coercion as a process of implementation, development, working together in thinking and making decisions, using their own creativity and problem-solving expertise in order to achieve objectives with intent.

Concepts and theories of administration

Gulick (1973, p.17-18), quoted in Pinyo Krittiyakorn Tanpa (2009, pages 6-10), stated that he seven administrative processes named POSDCoRB consist of planning, organizing, personnel placement, directing, coordination, reporting and budgeting across all operational processes, this is to achieve organizational goals through important administrative functions, namely organization, planning, monitoring and control.

Concepts of educational quality assurance

Kritiyakon Tanpa (2009) said that quality assurance means giving the client and other relevant agencies the confidence that the school will have a clear guideline for the organization and development of the quality of education and consistent with the principles, policies and focus of the state education program and the school has followed these guidelines in a concrete way for the good quality of education for each and every learner.

Manit Rotrattanavanich (2008, page 4-5) said that "quality of people" is the main factor for the success of the country's development. Education is an important factor in the development of quality people. Providing quality education is essential. The National Education Act 1999 has established a "educational quality assurance system" to develop the quality and standards of education at all levels. “Teacher” is a key factor for the success of quality education management and educational quality assurance. Therefore, teachers must have a thorough knowledge of the meaning and importance of quality assurance, along with the ability to analyze systems and processes in educational quality assurance, establishment of educational quality standards and indicators, the ability to implement educational quality enhancement in accordance with the role of teachers in the internal quality assurance system and the external quality assurance system as well as continuous development

IV. RESEARCH METHODOLOGY

Instruments used in this research - The information obtained was the opinions of the school administrators and teachers, a questionnaire about the leadership style for Thailand 4.0 of the school administrators affecting the implementation of the educational quality assurance system of secondary schools within the jurisdiction of Bangkok under a new educational quality assurance framework

The tools used for this data collection were divided into 3 parts:

Part 1: General information of respondents is a check list.

Part 2: Leadership style questionnaire for Thailand 4.0 of school administrators affecting the implementation of the educational quality assurance system of secondary schools within the jurisdiction of Bangkok under a new educational quality assurance framework is a 5-level rating scale (Rating scale) with a consistency index between .75-1.00, classified power by item between .27 - .76 and all confidence values are .98.

Part 3: Implementation Questionnaire for Leadership Style for Thailand 4.0 of school administrators affecting the implementation of the educational quality assurance system of secondary schools within the jurisdiction of Bangkok under a new educational quality assurance framework is a 5-level rating scale (Rating scale) with a consistency index between .75-1.00, classified power by item between .25 - .79 and all confidence values are .98.

Statistical analysis - The tools include 1) the determination of content validity using Index of Item Congruence (IC) 2) The determination of the discriminant power of the questionnaire by item - total correlation method using Pearson's Product - Moment Coefficient of Correlation 3) Estimation of the confidence of questionnaires using Cronbach's alpha coefficient. The basic statistics are: 1) Percentage 2) Mean (X) 3) Standard deviation (S.D.). The statistics used in the hypothesis testing were 1) Independent Samples t Test.

2) F-test in one way ANOVA type, in case the difference is found, the differences will be compared individually by using Scheffe 'Analysis.

3) Stepwise Multiple Regression Analysis

Research results

From the research on the leadership style for Thailand 4.0 of the school administrators affecting the implementation of the educational quality assurance system of secondary schools within the jurisdiction of Bangkok under a new educational quality assurance framework inder the new framework for educational quality assurance, the researcher summarized the research results as follows:

1) The result of the digital leadership study of the school administrators according to the opinions of the school administrators and teachers was at a high level. When considered on each side, it was found that it was at a high level in all aspects. The aspect with the highest average was creativity. The comparative results of digital technology skills and motivation based on opinions of school administrators and teachers could be classified by status were statistically significantly different at the .01 level. In each aspect, vision, teamwork and participation, creativity, digital technology skills and motivation were statistically significantly different at the .01 level. Being a learning organization had the same characteristics. The results of the comparison of leadership styles for Thailand 4.0 among school administrators affecting the implementation of the educational quality assurance system of secondary schools within the jurisdiction of Bangkok under a new educational quality assurance framework, according to the opinions of the school administrators and teachers classified by school size, the overall characteristics differed at the statistical significance level of .05. When considered individually, it was found that the learning organization was statistically significant at the .01 level. The aspects of teamwork and participation and motivation were statistically significant at the .05 level. The result of the study of the educational quality assurance operation of the schools according to the opinions of the school administrators and teachers was at a high level. When considering each aspect, it was found that It is at a very high level in every way. The aspect with the highest average was the preparation of the institution's self-assessment report. Results of an operational comparison of the educational quality assurance system of secondary schools within the jurisdiction of Bangkok under the new educational quality assurance framework of educational institutions according to the opinions of school administrators and teachers classified by status, which were statistically significantly different at .01

When considering each aspect, it was found that the development plan, educational management of the educational institutions and the monitoring of the implementation were of the quality according to the educational standards that were statistically significant at the .01 level. The assessment and examination of the quality of the education within the educational institution and the preparation of the self-assessment report of the educational institutions were statistically significantly different at the .05 level. The comparison results of the educational quality assurance system of secondary schools within the jurisdiction of Bangkok under the new educational quality assurance framework for educational institutions according to the opinions of the school administrators and teachers classified by school size, the overall characteristics were statistically significant at. 05. When considering each aspect, it was found that the development plan, educational management of educational institutions, setting educational standards of educational institutions and the evaluation and quality inspection within educational institutions were statistically significantly different at the .01 level. The results of the predictive power of the leadership style for Thailand 4.0 of the school administrators affecting the implementation of the educational quality assurance system under the new framework for educational quality assurance classified by school status and size within the jurisdiction of

Bangkok found that style Leadership for Thailand 4.0 of school administrators affecting the implementation of the educational quality assurance system of secondary schools within the jurisdiction of Bangkok under a new framework for educational quality assurance by school administrators that affect the implementation of the educational quality assurance system of the school consists of 5 components: Motivation (X5), Vision (X1), Being Creative (X3), Digital Technology Skills (X4) and being a learning organization (X6) affected the implementation of the educational quality assurance system of educational institutions in the Secondary Educational Service Area Office22 with a value of 78%, which was statistically significant at level .01 in all aspects. There is a multiple correlation coefficient (R) between .78 - .88. From the above analysis of the digital leadership component of the school administrators, the equation can be written as follows:

Forecasting equations in raw scores

$$Y' = 0.39 + .34\,X_5 + .26\,X_1 + .24\,X_3 + .13\,X_4 + .09\,X_6$$

Forecasting equations in standard scores

$$Z'y = .35\,X_5 + .27\,X_1 + .27\,X_3 + .14\,X_4 + .09\,X_6$$

V. Discussions

From the research on the leadership style for Thailand 4.0 of the school administrators affecting the implementation of the educational quality assurance system of secondary schools within the jurisdiction of Bangkok Under the new framework for educational quality assurance, the researchers discussed the results as follows:

1. Leadership style for Thailand 4.0 of school administrators affecting the implementation of the educational quality assurance system of secondary schools within the jurisdiction of Bangkok was at high level. This may be due to educational institution administrators affecting the implementation of the educational quality assurance system of secondary schools within the jurisdiction of Bangkok Under the new educational quality assurance framework in the digital age, there is a need for leadership that can demonstrate vision, opportunity generation, participatory teamwork, creativity, digital technology skills, motivation and develop the organization into a learning organization. In accordance with Wichian Chantawiset (2007, pages 72 - 100), the study of the condition and problem of educational quality assurance within the school at the basic level of education under the Sa Kaeo Educational Service Area Office was found. The implementation of the overall educational quality development plan and each item was at a high level. The top-three ranking of the average score consists of clearly stating that all personnel were responsible for project work in the annual action plan, preparation of an annual action plan covering the tasks / projects set out in the educational quality development plan and the implementation of projects / activities as specified in the annual action plan on time. The last one was the systematic and continuous supervision, monitoring and evaluation of programs / projects. In line with Kritiyakon Tanpa's study (2009, pp. 55 - 62), the study of participation in educational quality assurance among personnel in the College of Arts, Media and Technology, Chiang Mai University was found. In the implementation of the education management development plan, personnel participated in the performance of educational quality assurance at a high level such as participation in determining educational quality assurance procedures, participation as an educational quality assurance working group, participation in educational quality assurance activities, participation in the preparation of information for the implementation of the quality assurance of education and participation in the preparation of the self-assessment report participation in the creation of quality assurance innovations for use in the personnel department was at a low level. Overall, however, the personnel had a high level of participation in the performance of educational quality assurance.

The results of the comparison of leadership styles for Thailand 4.0 among school administrators affecting the implementation of the educational quality assurance system of secondary schools within the jurisdiction of Bangkok under the New Educational Quality Assurance Framework, the overall difference was statistically significant at .01. This may be because administrators recognize their role in the leadership base for Thailand 4.0 and fostering an innovative culture for teachers and students. Dempster (2013) gave administrators and teachers different opinions about digital age leadership. In line with Jirapa Petchsongkram's study (2011, pages 146-149), teachers' participation in the development of quality assurance operations within schools within the jurisdiction of Bangkok, Bang Khun Thian District, it was found that in the field of education quality audit and review, teachers were involved in the development of the quality assurance operation at a high level. This may be because teachers were aware and recognize the importance of examinations and reviews of educational quality. Ongoing performance evaluation found that the overall difference was statistically significant at the .05 level.

2. Results of the implementation of the educational quality assurance system at the secondary school level within the jurisdiction of Bangkok under the new overall educational quality assurance framework was at a high level. When considering each aspect, it was found that they were at a high level in all aspects. This was because educational institutions had a mechanism to control and monitor the educational quality management system, where educational institutions had been organized in order to developed and built confidence among stakeholders and the public in the sense that educational institutions was able to provide

quality education in accordance with educational standards and achieved the goals of the agency or governing body (Royal Thai Government Gazette, 2018). In accordance with the study of Wichian Chantawiset (2007, pages 72-100), the study of the condition and problems of educational quality assurance within the school at the basic level of education under the Sa Kaeo Province Educational Service Area Office was found. The implementation of the overall educational quality development plan and each item was at a high level. The top-three ranking of the average score consists of clearly stating that all personnel are responsible for project work in the annual action plan, preparation of an annual action plan covering the tasks / projects set out in the educational quality development plan and the implementation of projects / activities as specified in the annual action plan on time. The last one was the systematic and continuous supervision, monitoring and evaluation of programs / projects.

3. The results of an analysis of the predictive power in the leadership style for Thailand 4.0 of the school administrators affecting the implementation of the educational quality assurance system of secondary schools, Office of the Sa Kaeo Educational Service Area under the new framework for educational quality assurance, which were analyzed in 6 aspects, were found. Elements of the leadership style for Thailand 4.0 of educational institution administrators affecting the implementation of the educational quality assurance system of five secondary schools in the educational quality assurance system of secondary schools, Office of the Sa Kaeo Educational Service Area under the new educational quality assurance framework was 78% and the standard error of forecast (S.E.) was 0.20 and all aspects were statistically significant at the .01 level, sorting from descending predictable variables: digital technology skills, creativity, motivation, vision, and learning organization. This may be because the leadership style for Thailand 4.0 of the school administrators has contributed to the success of the educational quality assurance operation of schools. In line with the concept of (Tinnakorn Bauchoo & Thippaporn Bauchoo, 2019), it is stated that school administrators must be knowledgeable about the change, utilization of technology for school administration in accordance with the changing context to provide students with knowledge, be able to build on knowledge with creativity, create vision and goals in accordance with the policy and national strategy of education. In line with Kritiyakorn Tanpa's study (2009, pp. 55 - 62), they studied participation in educational quality assurance among personnel, the College of Arts, Media and Technology, Chiang Mai University found that, in the implementation of the education management development plan, personnel are involved in the performance of educational quality assurance at a high level. It consisted of participation in considerations about how to operate in education quality assurance, participation as an educational quality assurance working group, participation in educational quality assurance activities, participation in preparing information for the implementation of educational quality assurance, and participation in the preparation of self-assessment reports. The participation in quality assurance innovation for use in the personnel department was at a low level. Overall, however, the personnel had a high level of participation in the performance of educational quality assurance. The effectiveness of the educational institutions as a whole had a very high positive correlation, statistically significant at the .05 level.

VI. SUMMARY

1.Style of leadership for Thailand 4.0 of school administrators affecting the implementation of the educational quality assurance system of secondary schools, Office of the Sa Kaeo Educational Service Area under the new educational quality assurance framework according to the opinions of the school administrators and teachers was at a very good level. When compared by classification by overall status, it was found that there was a statistically significant difference at the .01 level. When compared by classification by overall school size, the difference was statistically significant at the .05 level.

2. The implementation of the educational quality assurance system at the Office of the Sa Kaeo Educational Service Area under the new education quality assurance framework was at a high level. When compared by classification by overall status, it was found that the difference was statistically significant at the .01 level. When compared by classification by overall school size, the difference was statistically significant at the .05 level.

3. The analysis of the leadership style elements for Thailand 4.0 of the school administrators affecting the implementation of the educational quality assurance system of the secondary schools in 5 aspects affecting the educational quality assurance system of secondary schools, Office of the Sa Kaeo Educational Service Area under the new educational quality assurance framework was 78%. The most influential elements were digital technology skills, creativity, motivation, vision and learning organization.

Suggestion

Suggestions for application

1. Schools should encourage educational personnel to take part in the administration, problem analysis, formulation of strengths, weaknesses, opportunities and obstacles both inside and outside the school for the implementation of the educational quality assurance system of secondary schools, Office of the Sa Kaeo Educational Service Area under the new educational quality assurance framework to be in line with the same guidelines.

2. Schools should support personnel to be involved in the administration of the formulation of educational quality development plans for 3-5 years and formulate an annual action plan of the implementation of the educational quality assurance system of secondary schools, Office of the Sa Kaeo Educational Service Area under a new framework for educational quality assurance to achieve a common purpose.

Organization of administrative and information systems

1. Schools should encourage educational personnel to take part in the management of systematically appointing school operational committees in the implementation of the educational quality assurance system of secondary schools, Office of the Sa Kaeo Educational Service Area under the new educational quality assurance framework.

2. Schools should involve education personnel in the management, improvement, development of school information and information systems to be consistent with the implementation of the educational quality assurance system of secondary schools, Office of the Sa Kaeo Educational Service Area under the new educational quality assurance framework.

New knowledge

From this research, we know the level of leadership for Thailand 4.0 among school administrators affecting the implementation of the educational quality assurance system of secondary schools within the jurisdiction of Bangkok under a new educational quality assurance framework and the level of operation of the educational quality assurance system of schools and the elements of the leadership style for Thailand 4.0 of the school administrators affecting the implementation of the educational quality assurance system of secondary schools within the jurisdiction of Bangkok under a new educational quality assurance framework. The results of this research will be a body of knowledge to the school administrators, teachers and relevant persons to guide the direction in the school administration to increase the efficiency of the higher schools. In addition, the results of this research can also be used as basic information for executives or related departments to be able to use the research results in planning, promoting and developing educational institutions for greater potential.

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People's Participation in Knowledge Management of Laokhrang Cultural Community, Ban Kut Chok, Kud Chok Subdistrict, Nong Mamong District Chainat Province

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Abstract*— *This research was a qualitative research with the objectives as follows: 1) to study the participation of people in the knowledge management of Laokhrang cultural community, Ban Kut Chok, Kud Chok sub-district, Nong Mamong district, Chainat Province at present, and 2) to study the supporting factors and factors that impede public participation in knowledge management of Laokhrang Ban Kut Chok cultural community, Kud Chok sub-district, Nong Mamong district, Chainat Province. The population used in this research was academics, local administrators, community developers, assistant district chief officer, sheriffs, community leaders, folk scholars in the amount of 30 people and conducted a specific interview.

1. Participation of people in knowledge management of the Laokhrang Ban Kut Chok cultural community, Kud Chok sub-district. Nong Mamong district , Chainat province at present was at a moderate level.

2. Factors influencing the participation of people in knowledge management of the Laokhrang Ban Kut Chok cultural community, Kud Chok sub-district , Nong Mamong district, Chainat Province were as follows :

2.1 The supporting factors affecting the participation of people, government agencies and the private sectors had played a role in promoting the participation of people in many areas, such as study visits, budgets, etc. with the goal to restore culture , good traditions of the community as well as Laokhrang culture in Ban Kut Chok , Nong Mamong district, Chainat province in order to maintain and have representatives to carry on the tradition.

2.2 The problem with public participation was that the majority of people was focused on high-income and stable careers, abandoning their agricultural careers and their homelands. The rest of the people in the community was mostly the elderly. If in the future, the condition of Laokhrang culture in Ban Kut Chok, Nong Mamong district, Chainat Province continues to be this way, the good traditions of the community will be lost over time.

Index Terms*— *People's Participation, Knowledge management

I. INTRODUCTION

Local culture is the foundation of the national culture since it represents the way of life, idea, belief, value, custom, ritual, and wisdom of the people in the community, reflecting the simple way of life as a society that develops communities to advance to a high-quality society by creating morality and ethics as well as maintaining ethnicity; however, nowadays local cultures or local wisdoms have been swallowed up and faded because they have not received care and nurturing of the owner of the culture. This can be caused by a number of factors ; for instance, changes in popularity by the times, transnational cultural dissemination and the advancement of technology that can receive news from every corner of the world via social media that are popular among teenagers Including televisions ,Individual magazines and other entertainment media as well as presentations of information without selection and scrutiny. Even though many organizations are trying to publish the campaign that encourages Thai people to value and recognize the importance of local culture and national culture ,yet it is not possible for Thais, especially teenagers to focus on their culture as much as they should. This is reflected in the popularity of foreign

culture, especially the culture of South Korean nation, which is popular with Thais of all ages who want to learn about the Korean culture that lurks in the nature of tourism, food, costume, language, film, music, symbolic gestures, imitations. Impersonating celebrities, singers that have become a trend in adolescents, also known as K-POP (Korean Popular Culture). These cultural styles have influenced them to change their ways of lives. This makes some teenagers embarrassed to express their local art and culture. In addition, they do not dare to express the traditions that have been adhered to and fear that they are perceived by a group of friends as not being modern and not being accepted. This is an important issue because it is an identity crisis in which individuals, organizations and organizations must work together to solve problems in the same way as the loss of local cultural identity may lead to the collapse of the family institution, community and the nation (Ngamnij Kulkan, 2013).

The history of Ban Kut Jok in the late Thonburi period to the early Rattanakosin period showed that Thai people of Lao tribes had migrated to Siam for various reasons ; some of which were evacuated to flee war from both inside and outside the kingdom, fleeing natural disasters, diseases, and other disasters. The most famine migration was when the Kingdom of Lan Chang Kingdom collapsed. As a result, many Lao tribes were forcibly brought into the central part of Thailand, and the minority were separated by their sub-cultures. One of them was Lao Khrang, a Lao man from Luang Prabang in 1884. Lao Khrang's group leaders migrated from Ban Kaokrajew, Kanchanaburi Province (currently, U Thong District, Suphan Buri Province) to Ban Kut Chok, which was originally a forest, and settled on the edge of a swamp with a lot of flowers. According to the ethnic language of this group, the word "swamp" was called "Kut", therefore, the village was named "Ban Kut Chok". The old temple of Ban Kut Chok is the center of the villagers, "Wat Sri Samosorn". In the past, the villagers discovered a crumbling old church in the swamp area. Only the wall and the laterite Buddha image ,expected to be a principal Buddha image. After that, it was called by many people as "Luang Pho Derm" and later the temple area was restored. As the head of the principal Buddha image was already incomplete at first sight, there was no additional restoration due to its lack of clear source of art. On the second waning day of the fourth month of every year, the temple will hold a gold gilding event on the principal Buddha image "Luang Phor Derm". Currently, there are approximately 200 Thai people of Lao Khrang descent who have the main occupations related to agriculture, farming, gardening and rituals that reflects the need for a way of life, such as water and fertility that is essential for farming. Therefore, the Lao Khrang community still has a tradition of opening a barn. Each month, the villagers also make merit at the temple. According to the belief in Buddhism that needs protection from the divine gods and the faith towards Buddhism as well. The traditional Lao Khrang culture has been preserved firmly. There is an outstanding wisdom which is weaving of Teen Chok fabric production with a unique pattern from any other. The weaving here uses a red dyed from shellac, the distinctive natural red color of the costumes, which is the origin of the name "Lao Khrang" by the best weaver in the community, who has an outstanding performance in the culture of Chainat Province. It is difficult to find anyone equivalent, and he is a master who has passed on the weaving knowledge of the community. The Lao Khrang Cultural Community at Ban Kut Chok has a distinctive identity in firmly conserving its own culture and traditions, such as Baisi Sukwan tradition - welcoming visitors , spoken language, local music ,local food, wisdom about making traditional rice vermicelli, folk wisdom in the field of herbal healing with traditional massage, rice farming and seasonal rice cultivation, hand-made rice production , dress with local woven fabrics. Weaving unique patterns are Khit, Jok and Mudmee as well as woven both cotton and silk including woven fabrics used in religious ceremonies ; for instance, woven fabrics used for a scarf for a candidate for the Buddhist priesthood and wrapped- woven fabrics for scripture including woven fabrics for using in daily life such as Sin cloth , Khaoma cloth, little pillows, foot pillows, bags, and local traditions that have been held for a long time, especially the Songkran festival " Welcome to Sangkran , Thai New Year Round "which can be regarded as an important festival of Chainat Province. Furthermore, there is a demonstration center for community, including weaving, rice milling, traditional rice flaking to make brown rice and bamboo weaving. The Lao Khrang community, Ban Kut Chok, is similar to the tribes of Southeast Asia who believe in sacred and supernatural things, which have a great influence on their way of lives in order to boost morale and confidence in their livelihoods and lifestyles. Most of the villagers of

Kudchok have some careers related to the agriculture such as farming, gardening, farming, animal husbandry, and various rituals that have been passed down reflect the need for a way of life for water and fertility which is essential for agricultural society; for instance, opening a barn calling ritual of rice spirit. In addition, during each month, villagers also make merit at temples according to their Buddhist beliefs to reflect the need for protection from gods, sacred things, and their faith in Buddhism for peace in the lives of themselves and their own families ; for instance, the merit making ceremony in the middle of the house, Songkran Day ceremony , Buddhist Lent Days ceremony etc.

From the aforementioned rationale, the researcher was interested in studying the participation of the people in the knowledge management of Lao Khrang Cultural Community, Ban Kut Chok, Kut Chok Sub-district, Nong Mamong District Chainat Province in which the researcher interviewed Mr. Thammanoon Pinitkarn (2020), Chainat Community Developers in selecting research study areas. The researcher selected Lao Khrang Cultural Community, Ban Kut Chok, Kud Chok Sub-district, Nong Mamong District Chainat Province as it was a community with an interesting cultural heritage that had to be preserved for future generations to study. In addition, the researcher was able to apply the knowledge from this research to the lecture in local society course for Bachelor's degree program of Public Administration (Local Government) in which the researcher was responsible. Also, the research results were used to create a knowledge management guideline of Lao Khrang Cultural Community, Ban Kut Chok, Kut Chok Sub-district, Nong Mamong District Chainat Province to be successful and sustainable.**II. RESEARCH OBJECTIVE**

How is the people's participation in Knowledge Management of Lao Khrang Cultural Community, Ban Kut Chok, Kut Chok Sub-district, Nong Mamong District Chainat Province at present ?

1.To study the participation of the people in the management of knowledge of Lao Khrang Cultural Community, Ban Kut Chok, Kud Chok Sub-district, Nong Mamong District Chainat Province

2.To study the factors influencing the participation of the people in the knowledge management of Lao Khrang Cultural Community, Ban Kut Chok, Kut Chok Sub-district, Nong Mamong District Chainat Province

III. The concept Theory and related research

2.1 Cultural Knowledge Management Concept

The study of cultural knowledge management approach is a conceptual and theoretical study, a method of managing knowledge in various aspects related to cultural work to apply to community participation in the management of knowledge of arts and culture.

Meaning of "Knowledge Management"

Many scholars have defined the concept. "Knowledge management" interestingly and in line with the following educational guidelines as follows:

Boondee Boonyakit et al., (2006, page 23) has provided the meaning of knowledge management that knowledge management is a process of bringing knowledge to utilize for the organization through processes such as building, gathering, exchanging and using knowledge, etc.

Michele Polanyi and Ikujiro Nonaka (Michael Polanyi & Ikujiro Nonaka, referred to in Merit Boonyakit et al., 2006, page 16) has defined the knowledge by classifying knowledge into 2 types as follows:

1) Tacit Knowledge is a knowledge derived from learning experience , an individual's ability or instinct to understand things which is a knowledge that cannot be easily conveyed in words or written. This kind of knowledge can be developed and shared. It is a competitive advantage.

2) Explicit knowledge is a knowledge that can be gathered, transmitted through various methods such as written recordings, theories, manuals, and reports that make it easy to access from the above concepts. It can be concluded that knowledge management is a process created to systematically gather and store knowledge within the community to be used or transmitted to each other. Such knowledge, if stored systematically, can be used to maximize benefits for both successors and communities.

Essential Elements of Cultural Knowledge Management

Knowledge management process

The Office of the Public Sector Development Commission (OCSC) has discussed Knowledge Management Process as a process to help organizations understand the steps that lead to the knowledge management process or the development of knowledge that will occur within the organization , consisting of 7 steps as follows :

1) Identifying knowledge, such as determining what vision, mission, goals are, and to achieve it. What kind of knowledge do we have in?

2) Creating and seeking knowledge, such as creating new knowledge, seeking outside knowledge. Maintaining old knowledge as well as getting rid of the knowledge that's no longer available.

3) Systematically structuring knowledge to prepare for systematic collection of knowledge in the future.

4) Processing and scrutinizing knowledge, such as updating document formats to standards ,using the same language to complete the content.

5) Access to knowledge ; this allows users to access the knowledge they need easily and conveniently, such as information technology systems (IT), web boards, public relations boards, etc.

6) Knowledge sharing is done in a number of ways, in the case of knowledge embedded in people as knowledge derived from experience, talent or individual instincts, such as work skills, craftsmanship, or analytical thinking. Clear knowledge is knowledge that can be transmitted through various methods such as recording, documented Knowledge and technology-knowledge base

7) Making learning as a part of the work, such as the learning system of cognitive creation. The knowledge is used until new learning and experience continue to circulate.

Cultural knowledge management consists of

1) The source of knowledge herein includes the person who owns the culture, community, way of life and art and culture. The process of analysis and removal of knowledge brings value that is used to benefit people and society today. Participation in the management of learning resources is another way of transferring knowledge.

2) The process of participation is managed to connect, coordinate people, including knowledge and resources together. The process represents the participation of the knowledge owner to share the knowledge of the arts and culture, which does not have a fixed method and timing based on the above concepts and perspectives. It points out the key elements of the artistic and cultural knowledge management that are involved between people, knowledge, resources, and participation processes that must be linked, integrated and driven simultaneously to achieve knowledge transfer and contribute to conservation. The role of knowledge of arts and culture within the community is the responsibility of the owner of the cultural resources.

2.2 Concept and theory of cultural resource management

Concept and theory of cultural resource management is a research framework that shows methods and principles of cultural resource management. This is the fundamental concept and theory to apply to the concept and theory of knowledge management in the arts and culture of the community.

Definition of cultural resources

The study of learning resources for arts and culture in the community is necessary to understand the meaning of cultural resources and the type of culture that exists in the community to realize the value of art and culture , learning process and community participation in managing their own cultural resources.

Meaning of Cultural Resource , Sawang Lertrit mentiones different names such as cultural property, cultural heritage. It describes the meaning of cultural resources that emerged in the United States in the 1970s and summarizes what it means to be "the product of culture in both past and present that are valuable or representative or can convey different cultures, so cultural resources include human-made remains, archaeological sites, religious places, clothing and garments, historical documents, inscriptions, languages, religions, traditions, rituals, beliefs, various local wisdom, etc. "(Chanan Wongwipak et al , 2004 , page 2-3)"

In conclusion, humans create cultures and use them to control the environment in both the natural environment and the social environment to bring good results to life and human-made culture that comes from ideas and creativity arising from experience and wisdom. In the social sciences, culture has a very broad meaning : culture is the way of life of man in society and the way of life of all human beings, including all works created by man as well as ideas, beliefs, values and knowledge, etc. (Kanokwan Chuchan, 2009, page 36).

Types of cultural resources

The main cultural resources which are both inherited cultural resource and a new creative and developed contemporary cultural resource There are three groups that can be seen and studied at present (Sayan Phraichanchit, 2547, page 3-6), including

1) Archaeological resources

2) Homegrown Knowledge or Indigenous Wisdom

3) Expressive Cultural Resources such as art, literature, writing, music, play & entertainment, performances, myths, tales, customs, traditions, belief and rites etc.

Cultural heritage is a unique and valuable culture as an expression of the foundation and background of the nation, which deserves to be maintained as a national heritage. Therefore, the value of cultural heritage is not only physical ,but it is also relevant to the knowledge of cultural heritage, especially the relationship with the community in terms of mind and spirituality, which may sum up the important characteristics of what deserves to be regarded as cultural heritage as follows:

1. To provide historical, academic or artistic value.
2. To demonstrate the change and development of the way of life of the people and society that have been inherited.
3. The original model can be traced to the origin of the past.
4. It is a characteristic of community or locality.
5. If there is no conservation, it will eventually be lost.

Type of cultural heritage , protection of the cultural heritage has been divided by UNESCO into two categories:

1. Tangible Cultural Heritage is a physical manifestation ,including the cultural heritage as a moving object and immovable objects such as archaeological sites, relics, monuments, costumes, paintings, sculptures and architecture, etc.

2. Intangible Cultural Heritage , UNESCO describes the meaning of intangible cultural heritage as a means of knowledge, customs, traditions or any form of practice which might be both international and local. They are created and transmitted from generation to generation, either verbally or by any other means, over a period of time. It can be developed and changed through knowledge acquisition and application processes. In addition, the convention on the protection of Intangible Cultural Heritage also defines the protection of abstraction, such as portraits, expressions, language, performing arts, social practices, rituals, festivals, knowledge and practices of nature and the universe, craftsmanship, traditions, intangible cultural heritage is also something that is passed down from generation to generation and being constantly rebuilt by the community in response to the natural environment and history so as to help communities to maintain identity and continuity which is an important aspect of intangible cultural heritage.

Cultural Resource is defined by many experts and categorized as follows:

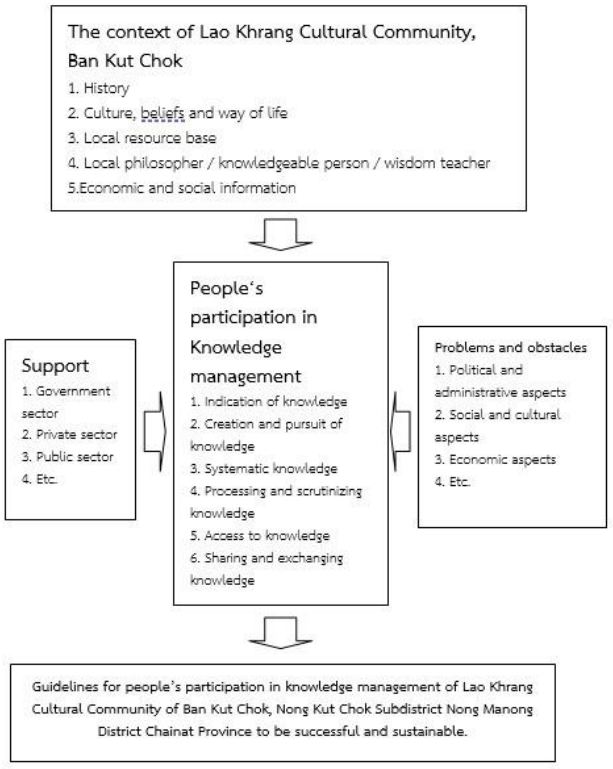
King (King, 2000), an American cultural resource law specialist indicated that cultural resources included the following things:

1. Historic properties.
2. Artifacts.
3. Documents / archives.
4. Physical environment with meaning related ,including places with beautiful landscapes and a symbol of the past (Aesthetic and Associative Places) and the built environment (Built Environment)
5. Values
6. Intangible Resources consisted of the following
   1) Ways of life
   2) Standard of Practices
   3) Norms
   4) Values
   5) Beliefs
   6) Religious
   7) Pattern of Social Interaction
   8) Institution / Organization Model

According to experts, it can be concluded that the meaning and types of cultural resources is the productivity generated by humans from the past and the present. The meaning covers tangible cultural resources such as works of art, sculpture, etc. Intangible Cultural Resources such as wisdom, traditions, traditions, etc.

These cultural resources are essential to an education of the value of things that exist and can be developed to benefit people, communities, society, countries through the participation process of the owners of cultural heritage, and the use of cultural resources appropriately , also known as cultural resource management.

Research conceptual framework



7. Scope of research project

7.1 Demographic and Sample Scope

The population and samples were those who played an

important role in promoting and supporting the participation of the people in managing the knowledge of Lao Khrang Cultural Community Kut Chok Subdistrict Nong Manong District Chainat Province , created by purposive sampling method and the representatives from external agencies involved in promoting and supporting the knowledge management of Lao Khrang Cultural Community, Ban Kut Chok in various areas from both public and private sectors such as academics, local executives, community developers , district permanent secretary, sheriffs, community leaders, villagers, etc. in a group of 30 people. This method was suitable for field research (Chumpol, 2007, page 234).

7.2 Scope of content

The researcher studied the participation of the people in the knowledge management of Lao Khrang Cultural Community of Ban Kut Chok, Nong Kut Chok Subdistrict Nong Manong District Chainat Province and studied the factors influencing people's participation in knowledge management of Lao Khrang Cultural Community of Ban Kut Chok, Nong Kut Chok Subdistrict Nong Manong District Chainat Province as well as developing a guideline for public participation in knowledge management of Lao Khrang Cultural Community of Ban Kut Chok, Nong Kut Chok Subdistrict Nong Manong District Chainat Province to achieve success and sustainability.

7.3 scope of research area.

The researcher interviewed Mr. Thammanoon Pinitkarn(2020), a community developer, Chainat Province in selecting Lao Khrang Cultural Community of Ban Kut Chok, Nong Kut Chok Subdistrict Nong Manong District Chainat Province as the area for this research.

7.4 Scope of timing

The researcher had planned to conduct this research for a total of 12 months.

8. Research tools

The tools that the researcher used for this research were structured interviews. It built on the study of related literature, conceptual frameworks, theories and literature by dividing the question points into an open-ended question for interviewees to express their opinions. The questions were divided into 7 issues: 1. Identification of knowledge 2. Building and seeking knowledge 3. Organizing knowledge into a system 4. Knowledge processing and filtering 5. Knowledge access 6. Sharing and exchanging of knowledge and 7. Learning

9. Creation of research tools

In this research , the researcher used the interview form as a tool for data collection by performing the following steps:

9.1 Studied the conceptual framework, theories, literature and related research documents to be synthesized as a guideline for creating an interview. The interview was then drafted in accordance with the research objectives as set out.

9.2 Took the generated interview questionnaire for the experts to check for accuracy, consistency, and suitability in the content part , including format and language used to be revised. The results were analyzed for the reliability of the questionnaire and further improvements

IV. Data analysis

Based on the above methods, the researcher analyzed the data by learning to collect the data according to the qualitative research principles by collecting the data ,following the above steps ,including document research and field data collection. This research was used to bring together theoretical concepts from literary reviews and related research to be used to describe events and phenomena used to manage the knowledge that appeared or expressed from the information in the document to the conceptual framework for the study ,including information obtained from the observers to proposals or rulings from group discussions and in-depth interviews on issues related to public participation in the knowledge management of Lao Khrang Cultural Community of Ban Kut Chok, Nong Kut Chok Sub-district , Nong Manong District Chainat Province.

Summary of study results

Part 1: The results of the analysis of personal data of respondents include gender, age, education level, occupation, income, and period of residence in the area.

The general information of the respondents found that the majority of males accounted for 79.7 percent , aged 51 and over 55.4% of the bachelor's degree, 52.5% income average 5,000 - 10,000 baht, the majority of the general employment occupation was 50% and the period of living in the area was 11-20 years, or 49%.

Part 2: The analysis of people's participation data in the knowledge management of Lao Khrang Cultural Community of Ban Kut Chok, Nong Kut Chok Sub-district , Nong Manong District Chainat Province at present showed the moderate level in all aspects as follows: 1. Identifying knowledge 2. The creation and pursuit of knowledge 3. Organizing knowledge into a system 4. Knowledge processing and filtering 5. Access to Knowledge 6. Knowledge management Sharing and exchanging knowledge

and 7. Learning.

Part 3: Factors Influencing The Public Participation in The Management of Knowledge of Lao Khrang Cultural Community of Ban Kut Chok, Nong Kut Chok Sub-district , Nong Manong District Chainat Province as follows:

2.1 Supporting factors affecting public participation, government and private sectors had played a role in supporting the promotion of public participation in many areas, such as study visits, budget, guest speakers etc. with the goal of restoring the culture and the good traditions of Lao Khrang Cultural Community of Ban Kut Chok, Nong Kut Chok Sub-district , Nong Manong District Chainat Province in order to persist and have a representative to carry on the tradition.

2.2 The barriers affecting public participation are the major problems ; for example, the majority of people are focused on high-income and stable careers. Most of them go to work in abandoned cities, farmers and hometowns. Most of the people left inside the community were the elderly. If in the future, the condition of Lao Khrang Cultural Community of Ban Kut Chok, Nong Kut Chok Sub-district , Nong Manong District Chainat Province is still in this way, the good tradition of the community will be lost over time.

V. Discussion

The research objective, item 1 was to study the participation of people in knowledge management of Lao Khrang Cultural Community of Ban Kut Chok, Nong Kut Chok Sub-district , Nong Mamong District Chainat Province at present. The reason for the people to participate in the knowledge management of Lao Khrang Cultural Community of Ban Kut Chok, Nong Kut Chok Sub-district , Nong Mamong District Chainat Province was at a moderate level as the people rarely see the importance of conserving Lao Khrang Cultural Community of Ban Kut Chok, Nong Kut Chok Sub-district. Most of them participated only during the traditional event. When they finished their work, they dispersed to pursue their own occupations. There was no plan to convey the history of Lao Khrang Cultural Community of Ban Kut Chok, Nong Kut Chok Sub-district.. Various knowledge lacked promotion of community participation even if government agencies support budgets for organizing activities through unsustainable ways. The people in the area also lacked knowledge and understanding for the importance.

The research objective, item 2 was to study the factors influencing people's participation in knowledge management of Lao Khrang Cultural Community of Ban Kut Chok, Nong Kut Chok Sub-district , Nong Manong District Chainat Province found that

1. Government agencies and the private sector had played a role in promoting public participation in knowledge management of Lao Khrang Cultural Community of Ban Kut Chok, Nong Kut Chok Sub-district , Nong Manong District Chainat Province in many areas, such as taking study visits to other cultural communities to develop Lao Khrang Cultural Community of Ban Kut Chok, supporting the budget for revitalizing Lao Khrang Cultural Community of Ban Kut Chok, Nong Kut Chok Sub-district as well as bringing speakers from outside the community to transfer experiences and knowledge to Lao Khrang Cultural Community of Ban Kut Chok etc. The good traditions of Lao Khrang Cultural Community of Ban Kut Chok are to make people in the community become more alert and turn to join hands in the preservation and restoration of good traditions to last for generations.

2. Problems and obstacles affecting the participation of the people that are important problems are the living problem. Most people did not pay much attention to the knowledge management of Lao Khrang Cultural Community of Ban Kut Chok, Nong Kut Chok Sub-district, Nong Mamong District Chainat Province. They focused only on making careers with high income and stability. Most of them went to work in the cities, abandoning their careers and their homeland. Most of the people left in the community were the elderly. If in the future, the condition of Lao Khrang Cultural Community of Ban Kut Chok, Nong Kut Chok Sub-district , Nong Mamong District Chainat Province continues like this, the good traditions of the community will disappear over time. Also, the young people to make a replacement are still hard to find. In the near future, provided that the situation continues like this, the precious traditions will be lost over time.

VI. Suggestions

1. People's participation in knowledge management of Lao Khrang Cultural Community of Ban Kut Chok, Nong Kut Chok Sub-district, Nong Mamong District Chainat Province will become successful, the leaders of community, committee members and community organizations must have volunteer spirit, sacrifice , patience, understand the situation of the community, and encourage people in the community to join in solving various problems as well as having assistance and cooperation within the community strongly.

2. There should be a lesson and knowledge of the operation and use of local knowledge to build on the knowledge management of Lao Khrang Cultural Community of Ban Kut Chok, Nong Kut Chok Sub-district, Nong Manong

District Chainat Province continuously.

3. Build a new generation community leader team to learn along with the old leaders for diversity in order to jointly develop the participation of the people in knowledge management of Lao Khrang Cultural Community of Ban Kut Chok, Nong Kut Chok Sub-district, Nong Manong District Chainat Province and establish external networks with other communities systematically for sustainable development.

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A Study of natural material used of Tai-Lue house in Chang Kham, Phayao, Thailand and Baan Nayangtai, Mueang Nambak, Luang Phabang, Laos

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Abstract*— This research aimed 1) to study natural material used in Tai Lue house in Chang Kham, Phayao, Thailand, 2) to study natural material used in Tai Lue house in Baan Nayangtai, Mueang Nambak, Luang Phabang, Laos, and 3) to analyze and summarise a natural material used of Tai-Lue houses in Chang Kham, Phayao,Thailand and Baan Nayangtai, Mueang Nambak, Luang Phabang, Laos. There are 5 steps of research: 1) study documents, previous picture of Tai-Lue house and related research and site survey (interview and record) in the areas and focus on natural material used of Thi-Lue houses and type, the technique of the materials of Tai Lue house in Ban Yuan including Moo No. 1 (Ban Sop Wan), Moo No. 2 (Ban Sop Wan), Moo No. 3 (Ban Yuan) and Moo No. 4 (Ban Mang), in Chiang Kham, Phayao, Thailand and Tai Lue houses in Ban Na Yang Tai, Nam Bak, Luang Prabang, Lao People's Democratic Republic; 2) Classify a data of natural material used by sustainable materials methodology of Chris Dancey; 3) Analyzed natural material used and style and technique of Thi-Lue houses; 4) present an analyzed data by exhibition and exchange an idea of natural material used with a local people in ChangKham, Phayao; 5) summarise and recommend natural material used in Tai Lue houses in Chang Kham, Phayao, Thailand and Baan Nayangtai, Mueang Nambak, Luang Phabang, Laos in order to suggest be a guideline on natural material used in the Tai Lue house of Chiang Kham, Phayao in the future. Research findings showed that the study of natural material used in Tai Lue house in Chang Kham, Phayao, and Baan Nayangtai, Mueang Nambak, Luang Phabang, Laos found that it has 5 materials of natural material used; wood (teak), Bamboo, Cogon grass, Dipterocarpaceae leaves (local leave) and water reed in ChangKham, Phayao, Thailand and found that it has a significant material and fibrous organic material; Bamboo as a roof of the house and straw mixed with a clay known as cob in Baan Nayangtai, Mueang Nambak, Luang Phabang, Laos. Technical details and style of natural material used in order to be a guideline for Tai-Lue house and local people in Chang Kham, Phayao.

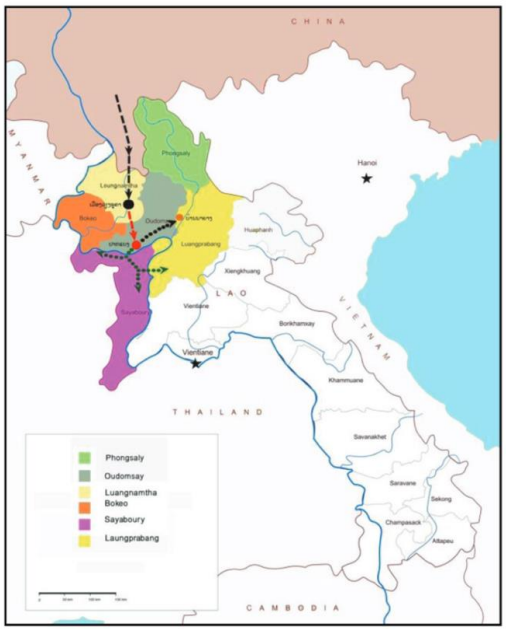
Index Terms— *Natural materials, Tai-Lue house, Chang Kham, Phayao, Baan Nayangtai, Laos.*

I. INTRODUCTION

Tai-Lue is one of the Tai groups that live in Xishuangbanna (South of Yuannan) in China. The outstanding identity of Tai-Lue is their own language, traditional dress, local house, cultural and traditional events. Tai-Lue in Chang Kham, Phayao, Thailand and Baan Nayangtai, Mueang Nambak, Luang Phabang, Laos originally shifted from Xishuangbanna, China due to a civil war. One part of Tai-Lue moved to the north of Luang Phabang in Laos. One part of Tai-Lue in Xishuangbanna shifted to Chiang Kham, Phayao in the north of Thailand over a hundred year. [1]

Tai-Lue in Nayangtai, Lueng Prabang emigrated due to the threat of the war. Anoluc V [1] described that the group of Tai-Lue has the original location in China, close Tibet and then moved to the southeast of China due to empowerment of a king of China. The settlement of Tai-Lue located in JomJang district and Veiang Phu Ka in Lueang Nam Ta and move to Pak Bang in Udon Chai and shifted to other place to find a suitable place and rich resource for secure living. Tai-Lue in Ban Na Yang has outstanding residential buildings classified into 2 types: 1) houses are buildings that are used for permanent residence of people. It related to the traditions, beliefs, and daily life in general 2) Hut is a temporary building. It is in a farm and garden areas. The building has basic elements and simple schematic. There are no complex elements of the building. It is a normal hut for sitting and eating. There also has other building, but it could not live such as a tobacco kiln, henhouse, and pig stall, etc.

Especially, the type of the houses was built in different characteristics and had many meanings that reflect beliefs, traditions, culture, and construction method. [1]



Figue 1 the emigration map of Tai-Lue from Xishuangbanna to other parts [1]



Figue 2 A Town Plan of Baan Na Yang Tai, Nam Bak, Luang Prabang Province Lao People's Democratic Republic. [1]

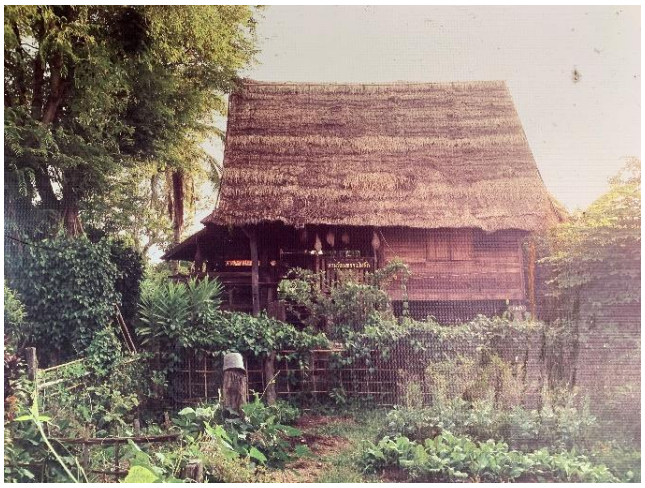


Figue 3 Tai-Lue house in Baan Na Yang Tai, Nam Bak, Luang Prabang Province Lao People's Democratic Republic



Figue 4 A tobacco kiln in Baan Na Yang Tai, Nam Bak, Luang Prabang Province Lao People's Democratic Republic.

Tai-Lue in Chiang Kham is an ethnic group who fled from war and emigrated from Mueang Phong, Muang Mang, Muang Yuan, Muang Man, and Muang Ou from Xishuangbanna in China, and then came to Tha Wang Pha, Nan Province, Thailand and moved to Chiang Muan Phayao Province, Thailand. Finally, Tai-Lue people migrated to Chiang Kham, Phayao, Thailand for setting up a village. There has significant arts, culture, traditions, and beliefs including art and craft works and wisdom, lifestyle, dress, and language that reflect the ethnicity of Tai-Lue people that have been passed down for centuries.[2] Characteristics house of the Tai people who live in southern of Yunnan in China, Eastern Burma, Laos, Northern of Vietnam, and Northern of Thailand, They are all the same group that has many cultures including setting up villages and building houses with some similar parts. Sookkree [2] described the style of the Tai-Lue house in Meaung Ou, Lao People's Democratic Republic, and vernacular architecture case studies of Tai-Lue house that have native or natural materials used to building and living in different contexts. It shows that various natural materials are used in Tai-Lue house. The study of natural materials of Tai-Lue house in Chang Kham, Phayao, Thailand and Baan Nayangtai, Mueang Nambak, Luang Phabang, Laos aims to study the natural materials used in the Tai-Lue house in order to conserve and lead to future development and application of natural materials used for the Tai-Lue community in Chiang Kham, Phayao, Thailand.



Figue 5 Tai-Lue house in Chiang Kham, Phayao,Thailand

OBJECTIVE

1. To study natural materials used in Tai-Lue house in Chiang Kham, Phayao, Thailand.
2. To study natural materials used in Tai-Lue house in Ban Na Yang Tai, Nam Bak, Luang Prabang, Lao People's Democracy.
3. To summarize natural materials used in Tai-Lue house, in Chiang Kham, Phayao and Tai-Lue house in Ban Na Yang Tai, Nam Bak, Luang Prabang Province, Lao People's Democratic Republic.

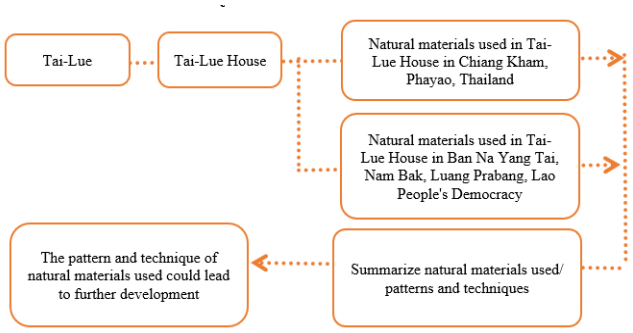
HYPHOTHESIS AND CONCEPTUAL FRAMEWORK

This research is qualitative research to study and collect natural materials used as well as the wisdom of the use of natural materials and techniques in both areas and summarize natural materials used of Tai-Lue house. The conceptual framework of the research includes the theory of natural, local materials used at present. The pattern and technique of natural materials used could lead to further development.

This research study two main points:

1. Natural materials used in Tai-Lue house in Chiang Kham District, Phayao Province and Tai-Lue house in Ban Na Yang Tai, Nam Bak, Luang Prabang Province Lao People's Democratic Republic, It focusses on material characteristics and current local application of materials.
2. Using natural materials of Tai-Lue house in both areas to find patterns and techniques that could be further applied.

Table 1 The conceptual framework of the research



LITERATURE REVIEW

Natural materials are materials of natural origin, can be used unchanged and there may be some changes in value and usage. The paper mulberry is one of the local materials in the northern of Thailand to make a paper. In the Central of Thailand, the water hyacinth is woven into a product of decorations, and reeds are made into products such as mats, handbags. A local material of The Northeast of Thailand, silk is woven into a piece to make garments and utensils. A local material of the Southern, Shells are often used to make utensils and jewelry and Lepironia articulata uses to weave a bag, a box, a mat for sitting.

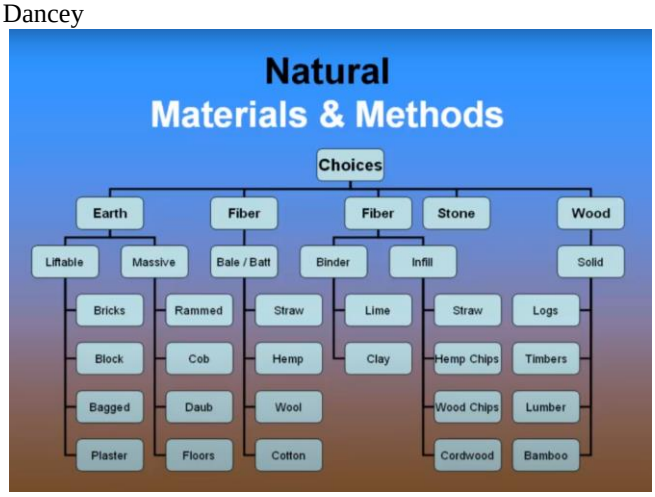
Moreover, the use of natural materials could be used in diverse areas as construction, biofuels, clothing, healthcare, and packaging.[3] Earth and bamboo are still commonly used for construction in many parts of the world such as cob house in the Southwest of England and The Fujian tulou in China as UNESCO World Heritage Site and [4] and it also close to sustainable design.

"Sustainable natural building materials and methods include adobe bricks; compressed earth blocks; earthbags; natural plasters: rammed earth; cob; wattle and daub; earthen floors; straw bale; prefab straw bale panels; fiber batts; clay and lime binders; light clay straw; hempcrete; hemp with lime or clay binder. cordwood masonry; stone with and without mortar; log and timber frame wood or bamboo construction; earthships; thatch; living roofs; and living walls. Sweat equity and local natural materials can help you build debt-free. Small, creative, carefully constructed buildings can also be better for the environment than conventional construction." [5]

"The common materials of natural building many types, there is clay sand when it mixed with water and straw known as cob or adobe. Other materials used in natural building are earth, wood (Cordwood or timber wood frame/post-and-beam), straw, bamboo, and rock" [6] and Chris Dancey's Natural Materials Concept Theory (2012)

classified materials into five main categories as 1) Earth include minerals, rocks, soil, and water. these are the naturally occurring materials found on Earth. It could be liftable as bricks, block, bagged and plaster and massive as rammed, cob, daub and floors 2) Fiber as bale/batt as straw, hemp, wool, and cotton 3) Fiber consists binder as lime, clay and Infill as straw, hemp chips, wood chips and cordwood. 4) Stone 5) Wood as logs, timber, lumber, and bamboo. [7]

Table 2 Chart of Natural Materials and Methods by Chris Dancey



METHOD

A. Data collection

The data was collected by historical and current information from first and middle-class documents, including relevant information and collect old photos of Tai-Lue house in Chang Kham, Phayao, Thailand, and Baan Nayangtai, Mueang Nambak, Luang Phabang, Laos. The data was collected by interviews and field surveys of the communities.

B. Survey study

The data was collected from the residents or owners of Tai-Lue house by using a semi-structured questionnaire and a visual survey and searching for the use of natural materials in a traditional Tai-Lue house, Chiang Kham, Phayao. It was explored with pictures and find the use of natural materials in the house, explore only the Tai-Lue house to find out about natural materials used to categorize the materials. The main question points were as follows;

1. Using natural materials of five main categories of Chris Dancey's Natural Materials Concept Theory
2. Pattern, techniques of natural materials

C. Data organization and synthesis

It was compiled from information on the history of the use of natural materials of Tai-Lue house and was sort data on the physical aspects of the technique of using natural materials to classify the materials in Tai-Lue house.

D. Data analysis

It was analyzed by the data from the synthesized data and conducted by interviewers and the surveyed site. There is physical data on the technique of using natural materials in Tai-Lue house to classify the natural materials used.

F. exhibition

It was exhibiting and showing information on the use of natural materials in Tai-Lue house. It is present in the exhibition of natural materials used in the house by presenting information with images, diagrams, or photos for easy understanding. It will be an exhibit and exchanging attitudes at the Tai-Lue community in Chiang Kham, Phayao, and it also will present to experts and researchers.

G. Conclusion

Summary of the study results based on all information that showed the history and background of the material used. It was a descriptive tool and style, details, and technique of using natural materials including summarizing the results and suggestion of natural materials used in the community in Chang Kham, Phayao, Thailand.

Research Results

The research focused on 2 areas in Thailand and Laos. It consists 4 sub-district such as Tai-Lue houses in Baan Yuan including Moo No. 1 (Ban Sop Wan), Moo No. 2 (Ban Sop Wan), Moo No. 3 (Ban Yuan), and Moo No. 4 (Ban Mang), Chiang Kham, Phayao and Baan Nayangtai, Mueang Nambak, Luang Phabang, Laos. The data source scope was an old picture, books, the internet, interviews, and surveys from the communities. The content scope focused on using of natural materials in Tai-Lue house and the pattern or techniques of natural materials in Tai-Lue house. The time scope was one year for the research. By surveying method and eye screening are used for searching natural materials of Tai-Lue house. It was exploring only the traditional Tai-Lue house to find the use of natural materials. Classification of the materials of Chris Dancey has used to categorization the natural materials used. A survey of 100 houses in Baan Yuan and 5 Tai-Lue houses in Baan Nayangtai were classified by using the method and the chart of natural materials of Chris Dancey. It was found that there have 2 traditional Tai-Lue houses and 2 temporary huts in Chiang Kham, Phayao and found over 80 Tai-Lue houses that using of natural materials in Baan Nayangtai, Mueang Nambak, Luang Phabang, Laos. But it was collected only 5 houses due to no entry permitted.



Figue 6 field survey of Tai-Lue house in Baan Nayangtai, Mueang Nambak, Luang Phabang, Laos



Figue 7 using of natural materials in Tai-Lue house in Baan Nayangtai, Mueang Nambak, Luang Phabang, Laos.



Figue 8 Using natural materials of Tai-Lue house in Chiang Kham, Phayao

Using natural materials of Tai-Lue house in Chiang Kham District, Phayao

The Surveyed site in Ban Yuan consists of Moo No. 1 (Ban Sop Wan), Moo No. 2 (Ban Sop Wan), Moo No. 3 (Ban Yuan), and Moo No. 4 (Ban Mang), in Chiang Kham, Phayao, Thailand. It found that there have two traditional Tai-Lue houses and two temporary huts in Chiang Kham, Phayao. There are using natural materials for houses and buildings. It was found that natural materials used in Ban Yuan that are varied in use of the house including textile dyeing hut and temporary agricultural hut and rice fields, temporary residences, and temporary buildings for various activities such as events and traditional events.

House No.1 (Building No.1) found that the majority of the material is wood for timber frames, timber plank, and timber tile for roofing. House No. 2 (Building No.2), found that natural materials used to use the Cogon grass roof and shifted to a concrete tile roof. Moreover, it also found a temporary hut for natural indigo dyeing of textile fabric in house No. 2 that it uses the grass roof and bamboo for the structure of the hut. It also found that there uses a dry grass combine with the house wall for textile retail shop. Moreover, it found that the significant material is dry Phluang leaf for roofing known as a leaf of Dipterocarpus tuberculatus tree in the temporary building No. 3 (Building No.3). Dry Phluang leaf for roofing is usually built for festival events of Tai-Lue. Other parts of the building (Building No.4) uses a bamboo mat for a ceiling, wall, and door decoration and found interesting material for a mat that was made by water reed.

Table 3 Using natural materials in Tai-Lue house in Chiang Kham District, Phayao.

No.	Type of building	Natural Materials				
		Earth	Fiber	Fiber	Stone	Wood
1	The House No.1	-	-	-	-	Timber, Timber plank Timber tile
2	The House No.2	-	Grass	-	-	Timber, bamboo
3	The temporary building No.3	-	Dry Pluang leave (Dipterocarpus tuberculatus)	-	-	bamboo
4	Other parts of the building	-	Grass,water reed	-	-	-

Natural materials used of Tai-Lue house in Chiang Kham, Phayao, it was found that 2 types of material: 1) Wood and 2) Fiber.

The first type consists of wood as teak for a wall and building structures of Tai-Lue house and wood roof tile as roofing materials and bamboo is used for temporary building structures as the main wall of Tai-Lue house and mat for decorative elements such as wall cladding or other decorative elements. The second type consists of grass, leaf, and water reed. It has a variety of natural materials used and

found that bamboo is the most material used in Tai-Lue house, compared to the above materials.

Table 4 Classification of natural materials used in Tai-Lue house in Chiang Kham District, Phayao

Natural Materials	Type of building used	Characteristic and pattern of use
Wood	Wall	The wooden wall size is 15-20 centimeters, and it overlaps about 1-3 centimeters. The wooden walls are placed horizontally and vertically.
	tile roof	The wooden roof has a size of 30-45 centimeters and overlaps about 20 centimeters, alternating between the layers
Bamboo	Structure	They are White bamboo with a diameter of 5-10 cm and the length depends on the building.
	Wall	A strip of bamboo for weaving as twill weave patterns (over two strands of warp and under two). Using White bamboo weave together until a sheet as size 1 x 3 meter or as required. It can be used to close various parts
	Decoration (Mat)	
Grass	Roofing	It is grass roof, size 0.7-1 m. x 2 m. and overlapping 20-30 cm. and was attached roof structure by a strip of bamboo for tying or wire.
	Wall	
Dry leaves	Roofing	The size of the leaf is about 30-40 centimeters. Attach the leaves to the bamboo with a strip of bamboo for tying. The Size is 0.7-1 m. X 2 m. and overlap 20-30 centimeters by attaching to the building structure and wall by a strip of bamboo for tying or wire.
	Wall	
Water reed	Floor	weave together until a sheet as twill weave patterns (over two strands of warp and under two) it Can be placed in various parts.
	Ceiling	

Using natural materials of Tai-Lue House in Baan Na Yang Tai, Nam Bak, Luang Prabang Province Lao People's Democratic Republic.

By Field surveyed of Tai-Lue houses found a significant material and technique of material used. The majority of natural materials in the Tai-Lue House are wood, bamboo, rattan, grass, and clay. All most of the Tai-Lue houses in Baan Na Yang Tai has covered by a bamboo roof that places on a bamboo structure roof and attached the bamboo roof with the house structure by a rattan (palm). A technical roof of the house is using strips of split bamboo and an attached roof by thin bamboo-stripes. Moreover, the ceiling of the Tai-Lue houses has placed by a strip of split bamboo. Especially, it found that grass and straw mixed with mud and clay on bamboo structure on the wall of a tobacco kiln.

Table 5 Using natural materials Tai-Lue house in Baan Na Yang Tai, Nam Bak, Luang Prabang Province Lao People's Democratic Republic.

No.	Type of building	Natural Materials				
		Earth	Fiber	Fiber	Stone	Wood
1	The House No.1		Rattan (Palm)			Wood, bamboo
2	The House No.2		Rattan (Palm)			Wood, bamboo
3	The House No.3		Rattan (Palm)			Wood, bamboo
4	The House No.4		Rattan (Palm)			Wood, bamboo
5	Agriculture Building No.5	Clay and Mud	Grass and Straw			bamboo

All the surveyed Tai-Lue house found that the main material is wood and bamboo for the roof and floor of the house and uses a rattan attached to the roof structure.

Natural materials used of Tai-Lue house in Baan Na Yang Tai, Nam Bak, Luang Prabang Province Lao People's Democratic Republic, it was found that three types of materials:

1) wood, 2) fiber, and 3) Earth

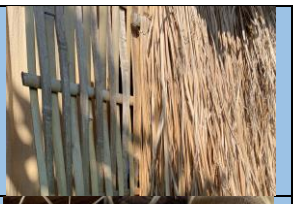
The first type is wood as teak. It consists of wood for building structures such as a wood pillar, wall, plank, stair, and bamboo for temporary flooring and roof covering. The second type is natural fiber as grass, straw, and rattan (palm). Almost, it uses for the wall of the building. Moreover, the last type of natural material used is earth as clay and mud that were mixed by grass and straw. It is the natural building material is made from subsoil, water, fibrous organic material (typically straw). It is known as Cob or Cobb. It found that a part of the wall of the tobacco kiln to keep the heat of the kiln steadily. Furthermore, it has a variety of natural materials used as wood, fiber, and earth and it found that the bamboo is the most material used in Tai-Lue house in Baan Na Yang Tai.

Table 6 Classification of natural materials used in Tai-Lue house in in Baan Na Yang Tai, Nam Bak, Luang Prabang Province Lao People's Democratic Republic.

Natural Materials	Type of building used	Characteristic and pattern of use
Wood	Wall	The wooden wall size is 15-20 centimeters, and it overlaps about 1-3 centimeters. The wooden walls are placed vertically.
	Structure	Teak is the majority of the structure of the house for main structure as a pillar, roof structure, floor.
Bamboo	Structure	They are White bamboo with a diameter of 5-10 cm and the length depends on the building.

	Tile roof	White bamboo was soaked in river. It uses only the section of White bamboo that the head of the tile for attaching the structure and that strips of split bamboo with a diameter of 10-12 cm.
	Wall	A strip of bamboo for weaving as twill weave patterns (over two strands of warp and under two). Using White bamboo weave together until a sheet for the wall.
Rattan	Structure	for attaching the roof structure
Earth (Mud)	Wall	It is mixed with clay or mud and put on grass and straw and attach to the wall structure of the tobacco kiln. The thickness of the wall mixed with clay has 20 centimeters.
Grass and straw	Wall	

Table7 Summarizing natural materials used in Tai-Lue House

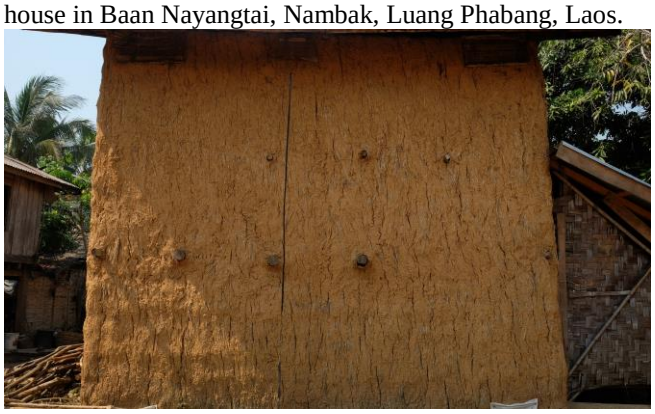
Materials	Area	Structure	Photography reference
Wood	Chiang Kham	Wall	
		Structure	
		tile roof	
	Baan Na Yang Tai	Wood	
		Structure	
Bamboo	Chiang Kham	Structure	
	Baan Na Yang Tai	Wall	
		Decoration (Mat)	
		Structure	
		tile roof	
		Wall	
Grass	Chiang Kham	Roofing	
		Wall	
	Baan Na Yang Tai	Wall	

Dry leaves	Chiang Kham	Roofing /Wall	
Water reed	Chiang Kham	Floor	
		Ceiling	
Earth (Mud)	Baan Na Yang Tai	Wall	

The table shows that it has a total of 6 materials of natural materials used. In Chiang Kham, Phayao found five materials used as wood (teak), bamboo, Cogon grass, Dipterocarpaceae leaves (local leave), and water reed. Furthermore, in Baan Nayangtai, it has two materials used as bamboo for the roof structure, roof tile, and wall. Interestingly, the bamboo roof structure was made with a strip of split bamboo and attached bamboo roof by thin bamboo-stripes. Moreover, it found Cob building for tobacco drying. It was made by organic materials as water, subsoil or clay, and straw and grass. It will be a significant material and fibrous organic material for sustainable materials in the future due to available materials in both areas.



Figue 10 Bamboo is the significant material as a roof of the house in Baan Nayangtai, Nambak, Luang Phabang, Laos.



Figue 11 a straw and grass mixed with clay for the wall of tobacco kiln

Discussion

In conclusion, it showed that the study of natural material used in Tai Lue house in Chang Kham, Phayao, and Baan Nayangtai, Mueang Nambak, Luang Phabang, Laos found that it has three types of materials: 1) wood 2) fiber 3) Earth by Chris Dancey's Natural Materials Concept Theory [7]. It has five natural materials: wood (teak), Bamboo, Cogon grass, Dipterocarpaceae leaves (local leave), and water reed in Chiang Kham, Phayao, Thailand. In Baan Nayangtai, Mueang Nambak, Luang Phabang, Laos, found that it has two natural materials used. It has a significant material and fibrous organic material; Bamboo as a roof of the house and straw mixed with a clay known as a cob in Baan Nayangtai, Mueang Nambak, Luang Phabang, Laos. The natural material used in Tai Lue house depends on a material, a location, geography, and local wisdom. Moreover, the details and the pattern of the material could be applied for a guideline of the architectural design of the Tai-Lue house in Chang Kham, Phayao .



Figue 12 presented by the exhibition of natural materials



Figue 13 the exhibition of research in Chiang Kham, Phayao

Furthermore, it could be developed natural materials used for natural materials adaptation of Tai-Lue house in Chiang Kham, Phayao. Natural materials used in Tai-Lue house of local wisdom could be improved and developed the architecture program of the University of Phayao and practice the materials used, technique and style for a lifelong learner. It found important issues that could be further researched in natural materials and material development a guideline the design of natural materials in the Tai-Lue community in Phayao. It could be developed to new research of material and material innovation. There are four suggestions for the future as follows as

Plan 1: Bamboo materials in architecture that could be developed in the creation of new natural materials of architectural design for the local community.

Plan 2: Developing a research topic of bamboo, Earth, and leaves. It could further develop in materials such as bamboo fabrication for roofing and earth innovation for architectural design and interior decoration.

Plan 3: Upgrading bamboo processing for commercial.

Plan 4: Developing Tai-Lue learning center by natural materials used such as bamboo, grass, and bamboo base on local wisdom and the community-made in order to be a learning center of natural materials in Chiang Kham, Phayao.

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Development of Personal Income Tax Achievement Using Skill Exercises within the Classroom in the Subject of Tax Law of Students in the Bachelor of Laws Program, School of Law and Politics, Suan Dusit University

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Abstract— Objective of this research is as follows: 1) To study the effectiveness of the personal income tax skill exercise 2) to develop personal income tax achievement. Tax Law Course Of students in the Bachelor of Laws Program School of Law and Politics Suan Dusit University 3) To compare the learning achievement between the pre- and post-study programs of the Bachelor of Laws students who were taught using an in-class skill training exercise. The sample group is the 4th year students of the Bachelor of Laws in studying A1 34 people enrolled in the tax law course Semester 1, academic year 2019, which tools used in this research It is a skill practice exercise within the classroom. The researcher will use statistics, percentage (Percentage), Mean (Mean), Standard Deviation and T-test. 1. The efficiency of the personal income tax skill training form (E1)/(E2) was 56.32 / 86.76 2. The effectiveness of the personal income tax calculation was 0.69, indicating that the students' knowledge increased by 69% from the States this gives students the skills to calculate personal income tax for better efficiency. 3. Academic achievement before and after study of students who study with the skill training form on the calculation of personal income tax There was a statistically significant difference at the 0.05 level of skill training, thus helping students develop their personal income tax education. It can be used as a guideline for the teaching development of the Bachelor of Laws program. School of Law and Politics Suan Dusit University to be more efficient.

Index Terms— ***Personal income tax, Achievement, Using skill exercises***

I. INTRODUCTION

National Education Act 1999, Section 22 states that the provision of education must be based on the principle that all learners have the ability to learn and develop themselves, and that learners are of the utmost importance in academic learning. On the legal side they must have good knowledge, skills and attitudes in the legal profession. At present, the business industry has expanded more. Taxation is more important. Coupled with the economic situation and the trade of the country has evolved rapidly. The importance of taxation information relies on accuracy, certainty and reliability.

According to the Constitution of the Kingdom of Thailand In addition to determining the rights that people should have already also determines the duty of the people to pay taxes as provided by law The Revenue Code is a law used as a requirement for tax collection. Where tax is what the government collects from the people To be used to manage and develop the country to prosper in terms of economy, education, public health, transport, public welfare Defending the country and maintaining peace within the country Build utilities Including the salaries of the military service, the police who serve the people. The tax money collected from the people. Has existed since before the Sukhothai period from the evidence of King Ramkhamhaeng's stone inscription Tax collection from citizens It is an important fiscal tool in the administration of the country. And to enable the government to carry out its duties to the people in taking care of the well-being of the people and maintain the peace of the country.

Personal income tax is tax levied on individuals. Or from a special taxation unit as required by law and generate income according to the specified criteria usually stored annually Income generated in any year income earners are obliged to list themselves on the required tax return by January to March of the following year. For some income

earners, the law also requires the filing of the form. Tax payable at half year on actual income in the first half of the year. In order to relieve the tax burden that must be paid and in some cases the law requires that the payer acts withholding tax on part of the income paid. So that there is a gradual tax payment while there is income arising as well.

Personal income tax According to the Revenue Code, it is one of the most important types of direct taxes because of the government's major source of income. And it is an important tool for the government to distribute income. Personal income tax This is the tax collected from the general public or the tax on all types of individual income as required by law and the income arising in the tax year If there are no exceptions to the law, there is a duty to list themselves on the tax return. The personal income tax has a wide tax base covering the entire country.

Bachelor of Laws Program School of Law and Politics Suan Dusit University realizes the importance and necessity of the subject of tax law. Which is a subject that focuses on the importance of learners. To increase one's potential efficiency and effectiveness by studying different types of taxation, learning and developing tax computation skills for understanding. Which will enable learners to apply their knowledge and ability to apply in daily life and professional practice and to develop the potential of teachers of the Bachelor of Laws program School of Law and Politics Suan Dusit University goes international.

However, Pornpen Tripong and faculty (2019) research on the learning achievement of English vocabulary about criminal law and criminal procedure from playing Kahoot game of the students of Bachelor of Laws program. The research results 1. Playing the game Kahoot is useful in exams until it makes learning achievement much better. Because it helps to memorize words more easily and for a longer time and helps improve vocabulary learning in the meaning of vocabulary more easily. 2. The attitude of the students in the Bachelor of Laws program saw that playing Kahoot game stimulated interest and opinions were at the highest level.

From observing teaching and learning In the subject tax law on personal income tax Of students in the Bachelor of Laws, Year 4 School of Law and Politics Suan Dusit University Found that students could not classify the type of tax As a result, the personal income tax calculation was wrong. The main item relating to the calculation of personal income tax must be able to classify the individual income and deduct the deductible correctly.

From the teaching results of the students in the Bachelor of Laws School of Law and Politics Suan Dusit University said Found that students studying tax law only 20 percent of which can calculate personal income tax correctly, the other 80 percent do not understand the principles of personal income tax calculation. Relying solely on memorization and do not understand about calculating personal income tax. When analyzing the main causes of teaching and learning, it was found that the students' failure to prepare the exercises by themselves. Caused by the students do not understand Students will not seek help with classmates in matters they do not yet understand. Fear of friends to insult and one more important thing is that once each day of study is done, students will hurry home It may cause students to incorrectly calculate personal income tax, which is a reason for confusion. If still going on or has not been resolved will cause an impact on academic achievement will lead to a bad attitude towards continuing to study tax law

Therefore, the researcher decided to solve the problem for students to have the skills to calculate the personal income tax correctly. By using the personal income tax calculation skill form To develop students to know the process of calculating personal income tax on personal income tax.

II. Research Objectives

The objectives of this research article was

1. To study the effectiveness of the personal income tax skill training form
2. For the development of personal income tax achievement Tax Law Course Of students in the Bachelor of Laws Program School of Law and Politics Suan Dusit University
3. To compare the learning achievement before and after studying of the Bachelor of Laws students who were taught using the in-class skill training exercise.

III. Research Methods

A. Research Design

This research is a study on the development of personal income tax achievement. Using skill exercises within the classroom in the subject tax law of students in the Bachelor of Laws Program School of Law and Politics Suan Dusit University Has set the scope of the content by focusing on the subject education tax law Of the Bachelor of Laws School of Law and Politics Suan Dusit University.

By conducting a survey from the 4th year students studying A1 of the Bachelor of Laws program. School of Law and Politics Suan Dusit University Who enrolled in tax law courses in the first semester of academic year 2019.

With the number of students enrolled in the number of classes, a total of 38 students. The sample used in this research was the fourth year students studying A1 of the Bachelor of Laws program. School of Law and Politics Suan Dusit University that provides tax law course A1, a total of 38 students and 34 samples obtained by using Purposive sampling method to collect data by using questionnaires from students.

B. Research Process

By studying the content about

In this research, the tools used for data collection were:

1) Pre-test by using a test to measure academic achievement on the calculation of personal income tax in weeks 2-4.

2) Experiment teaching with skill exercises focusing on analytical thinking and numeracy skills. Subject to the calculation of personal income tax by proceeding as follows:

2.1 The instructor explains and explains how to learn by using the skill training exercises for students to understand.

2.2 Teachers distribute skills training exercises assigned to each student 1 set.

2.3 Have students study the lessons and follow the skill training form from the assigned worksheet and complete the assigned skill-training exercise.

3) Compare the academic achievement of students before and after studying.

IV. RESULTS

Results from documented research 1. Analysis of the efficiency of the process (E_1) found that the students who studied with a skill training on the calculation of personal income tax The mean score was 11.26 out of 20 points, the standard deviation was 3.405 and the process efficiency (E_1)was 56.32%.

The student	Skill Set points (20 points).	The student	Skill Set points (20 points).
1	13	18	12
2	11	19	14
3	11	20	13
4	11	21	7
5	14	22	8
6	16	23	10
7	5	24	12
8	4	25	11
9	15	26	15
10	6	27	14
11	9	28	13
12	12	29	3
13	13	30	11
14	13	31	13
15	14	32	15
16	6	33	11
17	15	34	13

Score Total	383
$\overline{X}$	11.26
S.D	3.405
E_1	56.32

Table 1: Analyze process efficiency (E_1)

The results analysis (E_2) found that the students had a test score to measure the achievement they learned with the skill training on the calculation of personal income tax. The average score was 17.35 points out of 20, the standard deviation was 2.102 and the effective result (E_2) was 86.76.

The student	Achievement test score after study (20 points)	The student	Achievement test score after study (20 points)
1	17	18	19
2	14	19	18
3	18	20	19
4	16	21	16
5	17	22	18
6	20	23	13
7	16	24	19
8	15	25	17
9	20	26	20
10	16	27	20
11	13	28	17
12	19	29	15
13	17	30	20
14	20	31	18
15	17	32	19
16	17	33	14
17	20	34	16
Score Total		590	
$\overline{X}$		17.35	
S.D		2.102	
E_2		86.76	

Table 2: Analyze the effectiveness of the results (E_2)

The efficiency of the skill training form on the calculation of personal income tax The students had a score for completing the skills exercises learned using the skill-based exercise

score of 11.26, the efficiency of the process (E_1) was 56.32%, and the students had a score to measure the academic achievement of the post-study test. Equal to 17.35 points, the efficiency of the result (E_2) is 86.76. Therefore, teaching and learning activities using the personal income tax calculation its efficiency is 56.32 / 86.76.

score	Total score	*x*	*S.D*	Performance
The average score of students who completed the skill exercises.	20	11.26	3.405	56.32
The average score of students who took the achievement test (after study).	20	17.35	2.102	86.76
The efficiency of the finished lesson		56.32/86.76		

Table 3: The efficiency of the skill training form on the calculation of personal income tax.

2. Determination of the Effectiveness Index of the Skill Training Course on the Calculation of Personal Income Tax It was found that the students who studied with the skill training on the calculation of personal income tax The average academic achievement score before studying was 11.26 out of 20, equivalent to 56.32% of the full score. The standard deviation was 3.405, and the students had a post-study mean score of 17.35 from a full score of 20, representing 86.76% of the full score, the standard deviation of 2.102 was able to find the effectiveness index of 0.69, indicating that the students had additional knowledge. Up 69 percent

The student	Test score full score of 20	
	Before study	After study
1	13	17
2	11	14
3	11	18
4	11	16
5	14	17
6	16	20
7	5	16
8	4	15
9	15	20
10	6	16
11	9	13
12	12	19
13	13	17
14	13	20
15	14	17
16	6	17
17	15	20
18	12	19
19	14	18
20	13	19
21	7	16
22	8	18
23	10	13
24	12	19
25	11	17
26	15	20
27	14	20
28	13	17
29	3	15
30	11	20
31	13	18
32	15	19
33	11	14
34	13	16
Total	383	590
$\overline{X}$	11.26	17.35
S.D	3.405	2.102
Percentage	56.32	86.76

Table 4: Determination of the Effectiveness Index of the Skill Training Course on the Calculation of Personal Income Tax

3. Comparison of academic achievement before and after study of students who studied with the skill training form on the calculation of personal income tax. It was found that the pre- and post-school achievement of the students who studied with the skill training form on the calculation of personal income tax. There was a statistically significant difference at the 0.05 level.

Academic achievement	*N*	*X*	*S.D*	*t*	*P*
Before study	34	11.26	3.405	15.863	.00
After Study	34	17.35	2.102	42.595	.00

* Has statistical significance at .05

Table 5: Comparisons of academic achievement before and after students studied with the skill training form on the calculation of personal income tax.

V. DISCUSSIONS

From the efficiency analysis of the skill training form on the calculation of personal income tax Students who study with a skill training form on the calculation of personal income tax. The mean score was 11.26 points out of 20 points, the standard deviation was 3.405, process efficiency () was 56.32%. In which students had the achievement test scores learned with the skill training on the calculation of personal income tax. The mean value was 17.35 out of 20 points, the standard deviation was 2.102 and the effective result () was 86.76. Therefore, teaching and learning activities by using the skill training form on the calculation of personal income tax Its efficiency is 56.32 / 86.76, which corresponds to the characteristics of Kusaya Saengdej (2002) 's good practice that has been proposed in relation to the text. Must also suit the grade level Or the age of the students With a short statement to understand Should be used at the right time. It is also consistent with the benefits of Ratchanee Sripaiwan (1974) skills practice, mentioning the benefits that make students better understand the lessons. Also makes the teachers know the understanding of the students towards their studies It also allows teachers to improve the teaching content and activities in each lesson. To help students to study well according to the ability of the students including to train students to have confidence and be able to assess their own performance. And train students to work in sequence with the responsibility of assigned work In line with the benefits of Yapa Yimphong's skill practice (2522) mentioned as an additional or supplement to a textbook in skill training. Also enhances the use of skills As well as helping with individual differences And help to strengthen their lasting skills By practicing immediately after learning the subject, repeat many times. The practice should focus on the subject that was practiced.

Development of personal income tax achievement by finding the effectiveness index of the skill training form on the calculation of personal income tax. It was found that the students who studied with the skill training on personal income tax The average academic achievement score was 11.26 out of 20, equivalent to 56.32 percent of the full score, the standard deviation was 3.405, and the students had a mean post-study score of 17.35 from a full score of 20, representing a percentage point. 86.76 of full score. The standard deviation of 2.102 was able to find the effectiveness index of 0.69, indicating that the students' knowledge increased by 69 percent. This gives students the skills in calculating personal income tax for better efficiency. And can be used as a guideline for teaching and learning development of the Bachelor of Laws program School of Law and Politics Suan Dusit University to be more efficient. Show that students are interested And have a better understanding of personal income tax calculation after studying with a skill training exercise Which resulted in the development of personal income tax achievement as well Which corresponds to the meaning of academic achievement (Achievement) of Aree Wachirawarakarn (1999) said that achievement refers to the results achieved from teaching, training or experience at school, at home and in other environments. But most people understand that achievement comes from teaching and learning in schools. And look only in the brain's knowledge In fact, a feeling of ethical values is the result of training and training. This is also considered the learning achievement. The measure of learning achievement is a method for measuring behavioral changes related to the brain and intellectual performance of students. After having studied using a test. Including the meaning of the learning achievement of Somporn Chuaphan (2004) concluded that the mathematics learning achievement Means talent The achievements and competencies of learners gained from learning as a result of teaching and learning Individual practice or experience, which can be measured by testing methods and in accordance with Pairoj Khachen (2013), defines academic achievement as a trait. Including the knowledge and abilities of the person resulting from teaching and learning Or all experience that a person has gained from teaching and learning Causing individuals to change behavior in different areas of brain function. It is intended to examine the level of a person's brain ability to learn. As well as the consequences of learning, training or experiences in school, at home, and in other environments, as well as feelings, values and ethics are the result of practice.

Comparing the academic achievement of the students before and after studying with the skill training on the calculation of personal income tax, it was found that the pre- and post-school achievement of the students who studied with the skill training on the calculation of personal income tax. There were statistically significant differences at 0.05 level, consistent with Chunpiman Bunmee (2011) research. Using the skill training On account recording according to the dual accounting system In the financial accounting course For students in the Accounting Division, Vocational Certificate 1, Lanna Polytechnic College of Technology, Chiang Mai, found that students had higher academic achievement. In accordance with the research of Sai Phin Sida (2551) to do research on Using a Skill Pack to Solve the Problem of Student Lacking Skills in General Ledger Listing Of 12 students in vocational certificate 1/7, Rayong Commercial School, semester 1, academic year 2007. It was

found that the students had higher academic achievement and passed the assessment criteria for everyone. Which is consistent with Yupa research Phinarinthachot (2007) conducting research on Creation and development of a practice for enhancing cost accounting skills 1 for vocational students level 1 in accounting At Roi Et Vocational College of 38 people, it was found that 30 students from a total of 38 students, representing 81.08 percent, received more than 50 percent of their examinations and the results of absenteeism after studying passing the test of 35 people, representing 91.89 percent. Passed the test criteria of 3 people, equivalent to 8.11 percent. And in line with the research of Suthida Chaichana (2011) to research the development of academic achievement in introductory accounting for 2 subjects, recording transactions in general journal of Vocational students 1/4 level using the skill training form, Srithana Commercial College of Technology, Chiang Mai, 20 people found. That students have higher academic achievement And pass all criteria.

VI. RECOMMENDATIONS

A. Recommendations for Practices

1. The results of the study indicated that Teaching and learning with a skill training before and after class. Make students learn more knowledge and understanding but defining skills training requires a variety of designs should take into account the knowledge and ability of the student learners to continue using the skill training exercises suitable for the classroom.

2. The results of the study indicated that the results of this research should be presented to other teachers who teach the said subject to study and understand so that it will be useful in teaching and learning in the said subject in the next time.

3. Universities, faculties and courses including those involved in education management should focus on supporting And encourage teachers to organize learning activities using learning plans With an emphasis on skills training from skill exercises Used in the organization of learning activities for courses in order to organize learning and teaching activities that focus on students.

4. Teaching and learning using skill exercises with emphasis on students' participation in learning. If it will be more effective Instructors should pay attention And supervise the student learners closely in order for the students to follow the instructions correctly *B. Recommendations for Further Research*

1. There should be a research study of students studying tax law in other aspects for further reasons.

2. There should be a research study for students in the Bachelor of Laws program. School of Law and Politics Where studying law other than what you have previously studied

3. There should be a research study for students studying tax law in this subject at other universities than they have previously studied.

4. There should be a research study to measure the learning achievement of students by using other quizzes. Other than the ones that have been studied

5. There should be studies at other universities that are networked and model tax law. This will lead to a good subject model for application to other universities.

6. Other tax calculation practice skills should be created to compare academic achievement before and after the practice skill exercise.

7. An experiment should be conducted to compare the learning achievement of two groups of students, one group studying in a normal teaching method. And another group studied by remedial teaching.

CONCLUSION

In conclusion, Educational management to be effective and achieve goals according to vision Mission of each place By establishing strategies for developing the process for selecting learners with potential The teaching and learning management according to the National Education Act 1999 has focused on the learners most important. All learners have the ability to learn and develop themselves. In the management of education, it is necessary to promote learners to be able to develop themselves to their full potential. Therefore, in the management of teaching, there must be a variety of forms to meet the needs of individual learners. The instructor must give the learner the greatest care. By studying the teaching methods and learning methods of learners in new ways to be used in problem solving or to develop learners, with the focus on allowing teachers to integrate or integrate research processes. In the development of learning.

Therefore, using the Pre-Learning Skill Set, Pre-School, and Post-class skills training will help you see the development of your students because of this training set, students will learn about the content and practice doing a skill practice along with it. Each other allows students to better understand the content and be able to practice the skills properly. The skills training appropriate for each age student contributes to the success of the teaching and learning process to the success of the course.

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The Effect of Integration in a Dance Instruction Model for Undergraduate Students in General Education at Rajamangala University of Technology

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Abstract— ***This research aimed to study the effect of Integration in a Dance Instruction Model for undergraduate students in General Education at Rajamangala University of Technology. The research methodology was the Quasi Experimental Research and Evaluation Research with Mixed Research Method. Conduct teaching and learning according to the Integration in a Dance Instruction Model. The sample group in the research was undergraduate students of Rajamangala University of Technology Thanyaburi Who are enrolled in dance In general education courses, semester 1, academic year 2019, 2 groups, which were obtained by selecting a specific A total of 60 people, divided into 30 people each. The data were analyzed by content analysis, analytic induction, basic statistics, One-Way Sample t-test and a One-Way ANCOVA. Research findings. The study was found that the dance skills of students were higher than before the study at a statistically significant level of .05. The students who studied with the Integration in Dance Instruction Model had better dance skills than the other dance students at a statistically significant level of .05. The students studied with the Integration in Dance Instruction Model with different instructors, and the results were found to be similar. The students who studied with the Integration in Dance Instruction Model had higher satisfaction levels at the most level and higher than the other participants.***

Index Terms— *Instruction Model, Model Integration, Dance Instruction ,Integration in a Dance Instruction Model.*

I. INTRODUCTION

Key to the development and growth to any nation in an increasingly competitive and uncertain global economy is education and training for its work force. In addition, education enables and develops people on a personal level. Education not only provides people with a process of acquiring knowledge but also aids people in developing themselves, society as a whole, the economy, and the nation in order to be internationally competitive among other countries in the world [1]. Furthermore, education strengthens people's minds, characteristics and behaviors which to become professional and have expertise for a successful future [2]. Physical Education is a field of education which is essential for students in terms of physical, mental, emotional, social and intellectual development through physical activities or sports. Students of P.E self-develop in many aspects [3]. Physical Education also allows students to build physical fitness, skills, knowledge, morals and a positive attitude at the same time. It also offers students five objectives: physical competency, knowledge and understanding of how to play or the rules, skills, moral and attitudes. It is essential to focus on organizing the activities for students so that they can put into practice and develop themselves in all aspects. Finally they can achieve the highest potential of themselves [3]. Dance is one of the physical education activities which is very popular currently, improving physical fitness by strengthening muscles, building muscle tone (especially in the arms and legs) and increasing flexibility, as well as improving blood circulation and the respiratory system [4]. Therefore, both men and women of all ages are encouraged to undertake some form of physical activity . Also, sport is a global commodity and is celebrated by people all around the world [5]. Dance is an important part of physical education. Many higher education institutions in

Thailand include dance subjects into their curriculums up to bachelor degree level [6]. Rajamangala University has organized a dance course for undergraduate students in General Education. The course will give students overall satisfaction in order for them to react and learn through participation. The educator should well design the course in order to reach student's satisfaction which results in effective learning outcomes and learning objectives [7]. According to the National Education Act B.E. 1999 and Amendments (Second National Education Act B.E. 2002 and (Third National Education Act B.E. 2010 [8], to organize a learning and teaching process which its contents and activities related to students' attention and aptitude, it is important to consider the difference of each individual. The effective learning and teaching process will provide students with skills of thinking and management. Students can apply those and solve problems. For students to be able to practice and learn how to be proactive and feel eager to learn continuously, it is necessary that the educators use various methods of teaching and learning. From above information, the researcher has developed a dance instruction model by inventing a 123CPM model which is adapted from Bloom's taxonomy [9] and Maslow's hierarchy [10] (1943) by emphasizing cooperative learning alongside with activities for small groups of students. Team Assisted of Individualization,TAI [11] and Tripp & B. Bichelmeyer model [12] are as well applied. The outcomes of this research offer not only the integrated dance instruction model for undergraduate students in general education at Rajamangala University of Technology but also better academic performance and the greatest levels of satisfaction.

II. RESEARCH OBJECTIVES

The objectives of this research were 1) to experiment on undergraduate students in general education at Rajamangala University of Technology, and 2) to assess the effectiveness of the integrated dance instruction model.

III. RESEARCH METHOD

This research was a quasi-experimental and evaluation research using mixed research method and applying the multiple group pre test-post test design.

Samples used in the research

The sample was selected from undergraduate students of Rajamangala University of Technology, Thanyaburi who enrolled in dance lesson in general education during first semester of the academic year 2019. Sixty students were divided into two groups of thirty.

Research instruments

1.The integrated dance instruction model for undergraduate students in the General Education of Rajamangala University of Technology consisted of a manual, which has the median (Md) of 4-5 and interquartile range (IQR) of 0-1, and 16 lesson plans, which has the median (Md) of 4-5 and interquartile range (IQR) of 0-1. Therefore, the integrated dance instruction model met the criteria and was appropriate.

2. Comparison to another dance instruction model.

3. Dance skill assessment form which marked the criteria; validity (IOC) of 0.86-1.00 greater than 0.50, objectivity of 0.83-1.00, discrimination of 0.31-0.42 greater than 0.20 and reliability of 0.83 greater than 0.70.

4. Students' satisfaction assessment form, which has the validity (IOC) of 0.71-1.00 greater than 0.50.

The data collection involved three steps:

Step 1: The integrated dance instruction model was used and tested by undergraduate students in General Education at Rajamangala University of Technology. The study of this dance instruction model was a quasi-experimental research, using a multiple group pretest and post test design for a duration of eight weeks. The researcher divided students as follows:

1. The purposive sampling was used to divide students into two groups of thirty, experimental group and control group. The first educator, also a researcher, taught with the integrated dance instruction model with beguine rhythm while the second educator illustrated beguine rhythm using a alternative dance instruction model.

2. Both groups of students' completed pre-test of their beguine dance performance by using a dance skill assessment form designed for undergraduate students in General Education at Rajamangala University of Technology and the scores were recorded.

3. The educators provided the course for a duration of four weeks.

4. Both groups of students' completed post-test for their beguine dance performance by using a dance skill assessment form for undergraduate students in General Education at Rajamangala University of Technology and the scores were recorded.

5. Both groups of students evaluated their satisfaction of the course using a satisfaction assessment form prepared by the researcher.

Step 2: After four weeks, the Test-retest method was applied for both groups with the integrated dance instruction model using a cha cha cha rhythm. The details are described as follows:

1. Both groups of students were taught cha cha cha rhythm with the integrated dance instruction model by two different educators.

2. Both groups of students' carried out pre-test for their cha cha cha dance performance by evaluating with a dance skill assessment form for undergraduate students in General Education at Rajamangala University of Technology and the scores were recorded.

3. The educators provided the course for a duration of four weeks.

4. Both groups of students' carried out post-test for their cha cha cha dance performance by using a dance skill assessment form for undergraduate students in General Education at Rajamangala University of Technology and the scores were recorded.

5. Both groups of students assessed their satisfaction towards the course using satisfaction form prepared by the researcher.

Step 3 : A dance assessment form was utilized for undergraduate students' performance in General Education at Rajamangala University of Technology. The researcher conducted the assessment as belows:

1. Assessment of the use of the instruction model was analyzed in terms of duration of the class:

1.1 Beguine rhythm (First four weeks)

1) After attending to beguine rhythm class with the integrated instruction model, students had a higher dance skill. T-test Dependent showed the result of a statistically significant of .05 level.

2) Students studying beguine rhythm with the integrated dance instruction models represented higher skills than those receiving another dance instruction model. The analysis of variance (One Way ANCOVA) indicated the outcomes of a statistically significant of .05 level.

3) The students' satisfaction when studying beguine rhythm with the integrated dance instruction model was high: mean calculated greater than 3.50. One sample T-Test revealed the result of a statistically significant of .05 level.

1.2 Cha cha cha rhythm (Final four weeks)

1) After attending to cha cha cha rhythm class with the integrated instruction model, students had higher dance skill. T-test samples dependent showed the result of a statistically significant of .05 level.

2) Both groups of students who studied the integrated dance instruction model show similar results. The analysis of variance (One Way ANCOVA) indicated the outcomes of a statistically significant of .05 level.

3) Both groups who studied the integrated dance instruction model teaching style of dancing, stated their satisfaction was high: mean calculated greater than 3.50. One sample T-Test revealed the result of a statistically significant of .05 level.

1.3 Thirty students' satisfaction of the dance instruction models was observed. The students studying the integrated dance instruction model showed a higher level of satisfaction compared to ones with another dance instruction model. T-test samples dependent showed the result of a statistically significant of .05 level.

IV. RESULTS

This research revealed the following results by specific purposes:

1. The findings of dance skill assessment of undergraduate students in General Education at Rajamangala University of Technology.

2. The results of students' satisfaction of undergraduate students in the General Education at Rajamangala University of Technology towards integrated dance instruction model

The details were described as follows :

The sample groups were two groups of thirty students enrolling dance class in General Education during first semester, 2019 at Rajamangala University of Technology. The first group consisted of thirty students: six male students representing 10% and twenty-four females, 40%. The second group involved thirty students: five male students calculated 8.33% and twenty females, 41.67%

The researcher assessed the use of dance instruction model by following details.

1. Model assessment by a duration of the class.

1.1 Beguine rhythm (First four weeks)

1) After attending to beguine rhythm class with the integrated instruction model and another dance instruction model, students had higher dance skill compared to pre-class. T-test samples dependent on table 1 showed the result of a statistically significant of .05 level.

Table 1 : The results of the comparison between pre and post dance skill of students with beguine rhythm (n = 60)

Dance Styles	Teaching	n	Before $\bar{X}$	Before SD	After $\bar{X}$	After SD	$\bar{d}$	S_d	t	Sig.
Integrated		30	4.07	0.87	15.40	81.0	11.11	1.06	58.49*	<.01
Others		30	4.07	0.69	14.10	89.0	10.03	1.10	50.05*	<.01

* statistically significant of .05 level

From table 1, the students studying with the integrated dance teaching model developed a higher level of skill than those who studied with other dance teaching models at a statistically significant at the .05 level.

2) Students studying beguine rhythm with the integrated dance instruction model had higher skills than the students studying with another model. The analysis of variance (One-Way ANCOVA) indicated the outcomes of a statistically significant of .05 level. The results of the analysis can be found in Table 2.

Table 2 : Results of analysis of variance (One-Way ANCOVA) of students' performance with beguine rhythm, classified by dance instruction model.

Source of Variation	Sum of Squares	Degree of Freedom	Mean Square	F	Sig.
Before Study (Pretest)	0.70	1	0.70	0.97	.33
Teaching Style	25.35	1	25.35	35.07*	< .01
Error	41.20	57	0.72		
Tota	13121.00	60			

* statistically significant of .05 level

From table 2, the analysis of variance (One-Way ANCOVA) of dance performance with beguine rhythm, classified by dance instruction model showed a statistically significant at the .05 level. Both groups of students displayed a similar dance skill during pre-class (F=0.97 and Sig. = .33) However, after applying the integrated dance instruction model to one group, this group of students had a superior skill level.

3) The students' satisfaction of the integrated dance instruction model with beguine rhythm was high (mean scores greater than 3.50) at a statically significance at the .05 level evaluated by One sample T-Test shown in Table 3.

Table 3 Results of students' satisfaction survey comparing the integrated dance instruction model with beguine rhythm to the another model using the specific marking criteria (X = 3.50) (n = 60)

	Teaching Styles	Integrated dance instruction model		t	Sig.	another model		t	Sig.
		$\bar{X}$	S.D.			$\bar{X}$	S.D.		
1	Learning Objectives	4.48	0.43	12.67*	<.01	4.39	0.47	10.45*	<.01
2	Instructor	4.57	0.35	16.74*	<.01	4.37	0.47	10.20*	<.01
3	Course Content	4.37	0.47	10.10*	<.01	4.31	0.48	9.27*	<.01
4	Organizing Teaching and Learning	4.33	0.38	11.87*	<.01	4.26	0.34	12.40*	<.01
5	Assessment	4.37	0.47	10.23*	<.01	4.39	0.46	10.58*	<.01
6	Media, equipment, location and facilities	4.47	0.53	10.06*	<.01	4.17	0.43	8.53*	<.01
	Overview	4.42	0.34	14.91*	<.01	4.32	0.36	12.40*	<.01

* statistically significant of .05 level

From Table 3, it was found that the students' satisfaction towards beguine rhythm with integrated dance instruction model was high (t=14.91*, Sig.<.01, t=12.40*, Sig.<.01).

1.2 Cha cha cha rhythm (Final four weeks)

1) The students had a higher performance in cha cha cha rhythm after studying with the integrated dance instruction model. T-test samples dependent showed the result of a statiscally significant at the .05 level.

Table 4 : The comparison of pre and post dance class of students studying cha cha cha rhythm (n = 60) with the integrated dance instruction model using educators.

Instructor	n	Before $\bar{X}$	Before SD	After $\bar{X}$	After SD	$\bar{d}$	S_d	t	Sig.
Researcher	30	5.60	0.86	16.80	0.85	11.11	1.19	51.72*	<.01
Other Instructor	30	5.53	0.82	16.60	0.86	10.53	1.01	57.24*	<.01

* statistically significant of .05 level

From Table 4, the results of data analysis comparing students' dance skill during pre and post class of students cha cha cha rhythm with the integrated dance instruction model. As the researcher was the educator, it was found that the students developed a higher skill.

2) Both groups of students studying the integrated dance instruction had no difference in terms of dance skill. The analysis of variance (One-Way ANCOVA) indicated in table 5 that the outcomes of a statistically significant of .05 level.

Table 5 : Results of students' performance in cha cha cha rhythm with the integrated dance instruction model classified by educator using the analysis of variance (One-Way ANCOVA)

Source of Variation (Source)	Sum of Squares	Degree of Freedom	Mean Square	F	Sig.
Pretest Score	0.62	1	0.62	0.85	.36
Instructor	0.55	1	0.55	0.76	.39
Error	41.39	57	0.73		
Total	16776.00	60			

* statistically significant of .05 level

Table 5 showed the results of the One - way ANCOVA analysis of students' dance skill for cha cha cha rhythm with the integrated dance instruction model classified by educator at a statistically significant of .50 level. It was found that, during pre and post class, both groups of students had no differences in their dance performances (F = 0.85 and Sig . = .36) and (t = 0.91 and Sig . =. 37).

Table 6 : Comparison of students' dance performance with cha cha cha rhythm after studying with the integrated dance instruction model (n = 60)

Insructor	n	After Study $\bar{X}$	After Study SD	t	Sig.
Researcher	30	16.80	0.85	0.91	.37
Other Instructor	30	16.60	0.86		

* statistically significant of .05 level

3) The satisfaction of both groups towards the integrated dance instruction model was high (mean scores

greater than 3.50) and at statistically significant of .05 level analyzed by One sample T-Test.

Table 7 Results of students' satisfaction after studying cha cha cha rhythm with the integrated dance instruction model by two educators using the specific marking criteria (X = 3.50) (n = 30)

	Teaching Styles	1st Instructor $\bar{X}$	1st Instructor S.D.	1st t	1st Sig.	2nd Instructor $\bar{X}$	2nd Instructor S.D.	2nd t	2nd Sig.
1	Learning Objectives	4.33	0.59	7.71*	<.01	4.58	0.56	10.55*	<.01
2	Instructor	4.39	0.55	8.82*	<.01	4.49	0.49	10.93*	<.01
3	Course Content	4.37	0.51	9.27*	<.01	4.41	0.46	10.74*	<.01
4	Organizing Teaching and Learning	4.67	1.23	5.21*	<.01	4.67	1.23	5.21*	<.01
5	Assessment	4.44	0.44	11.58*	<.01	4.63	0.40	11.32*	<.01
6	Media, equipment, location and facilities	4.49	0.56	9.67*	<.01	4.51	0.52	10.62*	<.01
	Overview	4.39	0.45	10.86*	<.01	4.56	0.50	11.55*	<.01

* statistically significant of .05 level

From Table 7, it was found that the students' satisfaction towards cha cha cha rhythm with the integrated dance instruction models with both educators was high. (t = 10.86, Sig . < .01, t = 11.55, Sig . < . 01)

1.3 The students' satisfaction for dance instruction model and other model were compared (n = 30 students). It was found that the students studying with the integrated dance instruction model had a higher level of satisfaction at statistically significant of .05 level analyzed by T-Test samples dependent.

Table 8 : The comparison of satisfaction results of means during post-class with dance instruction model and other models (n = 30).

Teaching styles	Integrated patterns $\bar{X}$	Integrated patterns S.D.	Another $\bar{X}$	Another S.D.	$\bar{d}$	S_d	t	Sig.
1. Learning objectives	4.58	0.56	4.39	0.47	0.19	0.78	1.35	. 09
2. Instructor side	4.49	0.49	4.37	0.47	0.11	0.77	0.81	. 21
3. Course content	4.41	0.46	4.31	0.48	0.09	0.70	0.73	. 24
4. The organization of teaching and learning activities	4.67	1.23	4.26	0.34	0.40	1.19	1.86 *	. 04
5. In the assessment of academic performance	4.63	0.40	4.39	0.46	0.24	0.61	2.13 *	. 02
6. Teaching media, equipment, locations and facilities	4.51	0.52	4.17	0.43	0.33	0.70	2.62 *	. 01
Total	4.56	0.50	4.32	0.36	0.24	0.63	2. 14 *	. 02

* statistically significant of .05 level

Table 8 showed the comparison of students' satisfaction of means during post-class with dance instruction model and another model. Students had a higher level of satisfaction towards the integrated dance instruction model (t = 2.14, Sig. = 0.02) which had a statistically significant of .05 level.

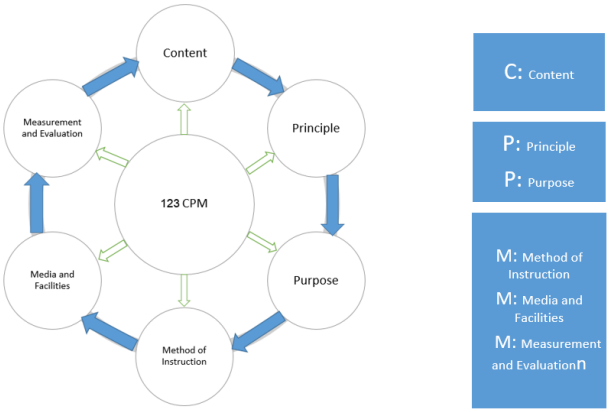


Fig 1: Integration in A dance Instruction model

V. Discussion

From experimenting and assessing the integration in a dance instruction model with beguine rhythm (First 4 weeks) for undergraduate students in General Education at Rajamangala University of Technology, it was found that students were able to develop better dance skills than those who studying with other model which had a statistically significant of .05 level. Also, students' performance studying the integrated dance instruction model was higher, representing a statistically significant of .05 level. Part of the course is evaluating students' dance performance. The educators observe dance performance and skill of students in pairs. Students' performance were classified in 3 groups, A, B and C. Group A consisted of students whose performance reached 80% (5 dances). Group B represented students with less than 80% performance (3-4 dances). Group C included students with less than 50% of all dances (1-2 dances). After the observation and the measurement, the educator divided students into A, B C using TAI method (Team-Assisted Individualization). Students, later, drew tickets for regrouping. Therefore, each group would have mixed skill students. For this reason, students with a strong skill assisted others with lower skill. Students' dance performance came out better at a statistically significant of .05 level. The assessment corresponded to the research of Georgina [13] which investigated the importance of individual assisted team in order to help developing the ability of the students, Hasanuddin University, Indonesia.

As a result, the learning ability and TAI Team (Team-Assisted Indiviualization) were significantly associated. It was very clear that in one classroom, students had different dance skills. The cooperative learning is important as the students would help and discuss with each other in order to share the knowledge and reduce the gab

between good and fair student's dance skill. In addition, the students felt fun and satisfied with the cooperative learning. The teaching and learning with small group division is an important method to create efficient students. With help of other good students among the group, it resulted in students' better skills compared to normal learning and teaching method. However, the integration in dance instruction model that researcher had developed applied to the first group of students showed a better result compared to the another group with a normal instruction model at at a statistically significant of .05 level. Test-retest method was used in cha cha cha rhythm during final 4 weeks with the integrated dance instruction model applied to both groups of students with 2 different educators. The students of both groups had developed a better cha cha cha dance skill during post-class at a statistically significance of .05 level. The comparison of both students' skills with the integrated dance instruction model indicated no difference. The integrated dance instruction model focusing on activities encourage students to develop their skills by using Peer-Assisted Learning Strategies. The better performance students assisted their classmates while the educator was considered as facilitator or a the source of knowledge only. Therefore, the integrated dance instruction model provide students better skills no matter who the educators are. From the results of the experiment and the satisfaction assessment of undergraduate students in General Education of Rajamangala University of Technology towards the integrated instruction mode beguine rhythm, it showed a high level at a statiscally significant of .05 level. Also, the students' satisfaction met all the criteria: objective, educator, content, activitiy, assessment, teaching tool, equipment, location and facility. The mean scores between the integrated dance instruction model and another model were compared. The students' satisfaction towards the integrated dance instruction model was higher than another one at a statistically significant of .05 level. From overall assessment, students are more satisfied with the integrated dance instruction model.

The integrated dance instruction model emphasizing activities in the class and encouraging cooperative learning for small group allowed students to help each other. So, the students had the highest level of satisfaction. According to Kulissara Chitchayawanit [14], it was necessary that the teaching and learning model needed various methods for facilitating students to gain the most knowledge.

VI. RECOMMENDATIONS

From the results and skill assessment of integrated dance instruction model for undergraduate students in general education of Rajamangala University of Technology, during first four weeks in beguine rhythm class, students developed a better performance in post-class compared to students who studied with other models at a statistically significant of .05 level. The skill comparison between students who study with integrated dance instruction model and other model shows that students have better performance with integrated dance instruction model. During the final four weeks of the cha cha cha rhythm course, students were divided into two groups with two different educators, one of them also was a researcher. The results of both groups' performance after receiving the training with integrated dance instruction model are higher than the pre-class at the statistically significant of .05 level using Test-retest method.

The performance of both groups represents no difference at a statistically significant .05 level. From the results and students' satisfaction assessment after receiving beguine rhythm class with the integrated dance instruction model, the students' satisfaction was high (mean scores greater than 3.50) at a statiscally significant of .50 level. Furthermore, the students' satisfaction with beguine rhythm is high or highest level and meet all the criteria: objective, educator, content, activitiy, assessment, teaching tool, equipment, location and facility. Also, the students' satisfaction towards the integrated dance instruction model is at a higher level than other models at a statistically significant of .50 level. In summary, the students' satisfaction towards the integrated dance instruction model is higher than any other dance models. In addition, results of this research can be developed for further study and appropriate to students in order to for them to achieve academically. And this research can be adapted in context to each institution.

CONCLUSION

From the results of the experiments, try and evaluate the results of the use of a dance teaching model, combined with a pattern, divided into 2 subsections as follows. 1) The results of the evaluation of the dancing skills of students from the experimental style of dancing teaching were found. 1.1) The results of data analysis to compare dancing skills before and after class. Of the students who studied with the teaching styles, merged styles, and other forms Have higher dance skills after studying than before. 1.2) The results of comparing the average score of dancing skills of both groups of students showed that the students who studied with the teaching style The average score for dancing skills is higher than students who study with other styles of dance teaching. 1.3) The results of data analysis to compare the dancing skills before and after class. Of the students who study with the teaching style Cha Cha Cha Strokes When the researcher teaches And other teachers found that the students who studied with the style of teaching dance Will have more dancing skills after studying than before studying. 1.4) Students who study with a style of teaching dance. Cha Cha Cha Strokes Classified by instructor It was found that before

learning dance, both groups of students had no difference in dancing skills. And when considering the average score of the dance skills after the students found that the average score of the dance skills of the students who studied with the style of teaching a mixed styles Cha Cha Cha Strokes With the researcher and other instructors, it was found that the students who studied with the style of dance teaching, a combination of the two groups. There is no difference in dancing skills. 2) The results of assessing student satisfaction from the experimental dance teaching model for undergraduate students in general education subjects. Of Rajamangala University of Technology found that. 2.1) The satisfaction of the students after the class with the style of teaching dance combined with Begin rhythm at the highest or highest level. 2.2) Student satisfaction after studying with other styles of dance teaching, Begin rhythm was at the highest or highest level. 2.3) Student satisfaction after learning with a dance teaching model with a pattern Cha Cha Cha Strokes Both 1st and 2nd teachers were at the highest or highest level. 2.4) The results of comparing the mean of the difference of the satisfaction score after learning with the style of teaching dance model combined And other styles of dance teaching, it was found that the students were satisfied with the teaching styles of the combined styles more than the other styles of dance teaching.

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Factors for Capacity Building Community Tourism Khlong Luang District Pathumthani Province

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Abstract—: The purposes of this research were 1) to study factors affecting the development of potential community tourism destinations in Khlong Luang District. Pathum Thani Province. Action research and quantitative research were used and research tools were interview form and questionnaires. Data were collected from in-depth interview, focus group discussion. Qualitative data from 30 key informants was analyzed by using content analysis whereas quantitative data collected from 440 samples (Hair et.al, 2006: 112) Analyze data with basic statistics and structural equations modeling (SEM), The research results were found that Community Attractions in Khlong Luang District Pathum Thani province, including Sufficiency Economy, Sufficiency Economy Learning Center, Lotus Learning Center, Product processing, organic agriculture and community market. Along with factors affecting the development of tourist attractions, tourism communities Khlong Luang District Pathum Thani Province. These include 1) the potential of the community, including the attractions of tourist attractions, facilities and accessibility. 2) Participation consists of finding problems, planning, performing activities Monitoring and evaluation; and3) The service marketing mix consists of products, prices, distribution channels. Promote marketing, personnel, process, creation and presentation of physical characteristics

Index Terms— *Empowerment, Tourist attraction*

I. INTRODUCTION

Direction of adaptation in Thailand focuses on increasing economic potential and technological capacity. Restructuring in terms of social, environmental, regulatory and management aspects [1] for the upper central region concentrate on increasing production efficiency, collaboration with establishments, schools, and communities to promote industries, creative agriculture and restore tourist sites and tourism activities to an international level. [2]

Community-based tourism focuses on participation in resource management, exchange of learning, cultural diversity, and preservation of traditions, lifestyles and cultures [3] where alternative tourism regulations have been established and there have been the preservation of the communities' identities [4] and also encourages the villagers to have their important roles in the management of environmental There has been the implementation of knowledge in science in various fields to integrate into a body of basic knowledge which can be used to develop resources, wisdom, and agricultural products for better efficiency. Moreover, this action has created participatory added values in Khlong Luang District which is an area close to Bangkok; it has convenient transportations and there have been continuous developments in both industrial and agricultura sustainability of localities. [5]

Khlong Luang District, Pathumthani Province has tourist attraction communities with sufficiency economy learning center,s in Khlong Sam Sub-District and Khlong Hok Suan Phak, Ban Lung Poo-Yai's vegetable garden Bua Learning Center in Khlong Ha Sub-district, Safe Agricultural Learning Center in Khlong Ha Sub-district, Honest Livelihood Group in Khlong Ha Sub-district, and the community market in Tambon Khlong Ha which is an area where Valaya Alongkorn Rajabhat University under the Royal Patronage provides academic services. Therefore, it helps promote the communities to be known and self-reliant in line with Pathum Thani Province's plan that has been developed in terms of a tourist attraction development plan in order to create occupations and income for people in the area together with the participation of Valaya Alongkorn Rajabhat University under the Royal Patronage. sectors. [6] From the aforementioned information, it has induced an agricultural extension. Therefore, the researcher is interested to study the potential developments of community tourism sites in Khlong Luang District, Pathum Thani Province in order to create added values and reduce social and economic inequality in order to generate a strong income distribution in the community, learning activities in such communities in

the area mentioned, and creates sustainable community development.

II. Research Objectives

The objective of this research article was to study factors affecting the development of potential community tourism destinations in Khlong Luang District. Pathum Thani Province

III. Research Methods

A. Research Design

(1) Scopes of research consist of (1) the scope of study content which is about leader of change, knowledge management, Human Capital Development, and Competitiveness.

(2) the scope of research variables consisting of (2.1) the primary variables which are community potential, participation, service marketing mix and (2.2) the dependent variable which is the capacity building of community tourism destinations.

(3) The area scope is Klong Luang District, Pathum Thani Province, Thailand

(4) Population scope and sample groups are (4.1) population containing tourists in Thailand with an interest in organic agriculture that embraces the philosophy of sufficiency economy and new theories of agriculture to apply. The exact number is not known; (4.2) The sample group uses the formula of [7] 20 times per parameter or number of paths which is equal to 22 paths yielding a sample of 440.

B. Research Process

There are 4 steps to conducting the research: (1) Study information related to community (2) Create research tools (3) Data Collection (4) Data Analysis Shown in Fig. 1

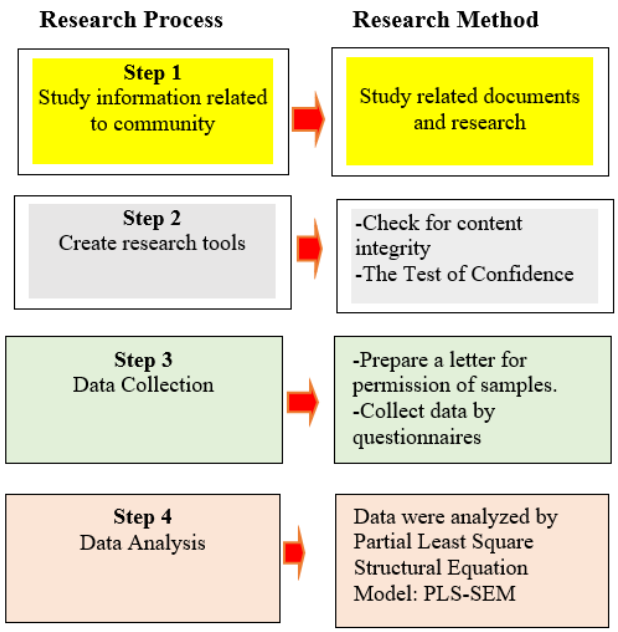


Fig.1 Research process for Factors for Capacity Building Community Tourism Khlong Luang District Pathumthani Province

IV. Results

This study of factors affecting the capacity building of community tourism destinations in Khlong Luang District, Pathumthani Province used the analytics with advanced statistics. There was a quality value of the overall model, including the model evaluation and saturation measurement with three statistics showed that SRMR was less than 0.08 d_{uls} and d_G was less than 95% Bootstrap Quantile (HI95 of SRMR) d_G (Geodesic Discrepancy), dG was <95% Bootstrap Quantile (HI95 of dG) and d_{uls} (Unweighted. Lest Square Discrepancy) where d_{uls} was <95% Bootstrap Quantile (HI95 of d ULS); these mean the model was in good quality [8] as shown in Table 1.

Table 1: Overall Model Quality

Statistics	Goodness of Model Fit (Saturated Model)			Goodness of Model Fit (Estimated Model)		
	Value	HI95	HI99	Value	HI95	HI99
SRMR	0.064	0.025	0.028	0.078	0.027	0.031
d_{ULS}	0.633	0.095	0.123	0.935	0.111	0.144
d_G	0.730	0.096	0.126	0.843	0.093	0.119

According to the model analysis (Outer model, the criteria that were used for consideration were (1) Monological network (2) Multicolinearity (3) Weight Significance, and (4) Weight and Loading relevance by Monological network. The relationship and latent variables were in consistent with the theory. The second criteria were Multicollinearity values; it was determined by the Variance Inflation Factor (VIF); it had to not exceed 5 [9]. The third criteria used were Outer Weights which were statistically significant indicators considered "passed". In terms of quality criteria, it could remain an indicator of a model. The fourth criteria, if there was no statistically significant, the Loading values (must be greater than 0.50) there were found to be able to retain the indicators. If Outer Weights was not statistically significant and Loading value was less than 0.50, some indicators had to be removed from the model of the potential of community tourism sites. There were 3 default indicator values. There were 3 indicators that met the quality criterion. Loading statistics were between 0.815-0.971. The Outer Weights were 0.177 - 0.534. The statistic results passed the quality criteria.

In participation there were 3 default indicator values that passed 4 quality criteria. Loading statistics were between 0.578 - 0.931, Outer Weights were between 0.246 - 0.598 (not exceeding 0.50). The statistic results passed the quality criteria. The potential variables of community tourism sources had the quality according to the specified criteria.

In the aspect of marketing mix, there were 7 default indicators. The other remaining 7 indicators that met the quality criteria were between 0.611-0.927 (threshold 0.50). The Outer Weights were 0.150 - 0.403. The statistic results passed the quality criteria. The potential variables of community tourism sources had the quality according to the specified criteria.

In terms of capacity building in community tourism sites, there were 3 starting indicators. The other 3 indicators were remaining indicators that met the quality criteria which the results were between 0.596 - 0.928. The Outer Weights values were 0.116 - 0.590. The capacity building in community tourism sites were in line with the quality criteria as specified. The weight of the measuring index, the measure of accuracy, and the credibility are shown in Table 2.

Table 2 Weight Values of Measuring Index, Validity Measures, and Dependability

Factor	Loading	Weights	Weights T-Values
Community Potential Factors			
Tourist attraction	0.815	0.177	3.196
Facilities	0.971	0.534	6.085
Accessibility	0.906	0.373	6.526
Participation Factors			
Problem searching	0.702	0.246	7.955
Planning	0.847	0.352	9.143
Activity participations	0.931	0.598	13.255
Monitoring and evaluation	0.578	-0.048	-1.207
Service Marketing Mix Factors			
Products	0.784	0.168	3.170
Prices	0.710	0.062	1.040
Distribution channels	0.927	0.403	6.482
Marketing promotions	0.734	0.197	4.275
Personnel	0.693	0.131	2.352
Process	0.611	0.090	1.525
physical characteristics	0.893	0.180	3.533
Factors for Promoting Potential of Community Sites			
Economic aspect	0.928	0.590	10.585
Social aspect	0.896	0.427	6.902
Environmental aspect	0.596	0.116	3.524

Note: Each index number is not in sequence. This was caused by cutting out the index at the loading weight of less than 0.7.

From Tables 1 and 2, it was found that the structural model quality was determined by the size and the confidence of the weights between the latent variables, the statistical R2 and f2, were the same data. Influence was analyzed for 5 paths, The high weight and there was statistically significant. The 5 paths ranged from 0.383 to 0.917 and f2 values were from 0.056 to 5.311 which were building potential of community tourism sites which had the community potential value equal to 0.713. The development of potential sources was relevant to the relative size of community tourism with participation which was equal to 0.710 and the development of potential community tourism sites has the relationship size with the marketing mix which was 0.837. All correlated variables had a large relationship. The study of the effects of potential improvement of community tourism sites is shown in Table 2. The weights of direct and indirect influences and total influence between latent variables were studied as shown in Table 3

Table 3 shows the influences of variables.

Hypothesis	Effect	Beta (Path Coefficient)	t-value	p-value (2-sided)	Cohen's f^2	Analysis Result
H_1	POT -> ATT	-0.383	-3.606	0.000	0.056	Supported
H_2	PART -> POT	0.917	118.747	0.000	5.311	Supported
H_3	PART-> MARK	0.797	42.987	0.000	1.745	Supported
H_4	PART-> TOUR	0.355	4.736	0.000	0.071	Supported
H5	MARK-> TOUR	0.887	13.896	0.000	0.688	Supported

From Table 3, it was found that the participation and the service marketing mix, affecting the capacity building of community tourism destinations

In this research, research hypotheses had been made which could summarize the test results according to Table 4 are as follows:

Results of the hypothesized study (H1): Community potential consisted of attractions, facilities, and accessibility which affected the development of potential community tourism sites that comprised of economic, social and environmental factors. It was found that the hypothesis (H1) was accepted; capacity building community tourism sites (P <.001) with negative correlation with path coefficient (DE = -0.383)

The results of the hypothesis (H2) consisted of finding problems, planning, performing activities. The monitoring and evaluation of impact on the capacity building of the tourist attractions consisting of economy, society, and environment was found to accept the hypothesis (H2): the development of potential community tourism (p <.001) with a positive relationship

Results of the hypothesis study (H3): the marketing mix comprised of products, prices, distribution channels, marketing promotion, personnel, process of building and presentation of physical characteristics which affected the capacity building of community tourism sites, consisting of economy, society, environment and natural resources. It was found that the hypothesis (H3) was accepted. Community tourism (p <.001) had positive relationship which had the route coefficient (DE = 0.887) as shown in Table 4.

Table 4 shows the results of the hypothesis test.

Hypothesis	Detail	Analysis Result
Hypothesis1	Community Potential affects the improvement of potential tourist attractions in Khlong Luang District, Pathum Thani Province.	Supported
Hypothesis 2	Participations affect the improvement of potential tourist attractions in Khlong Luang District, Pathum Thani Province.	Supported
Hypothesis 3	The marketing mix affects the improvement of potential tourist attractions in Khlong Luang District, Pathum Thani Province	Supported

From the above data, the model of capacity building/the improvement of potential tourist attractions in Khlong Luang District Pathumthani Province can be illustrated as shown in Fig 2.

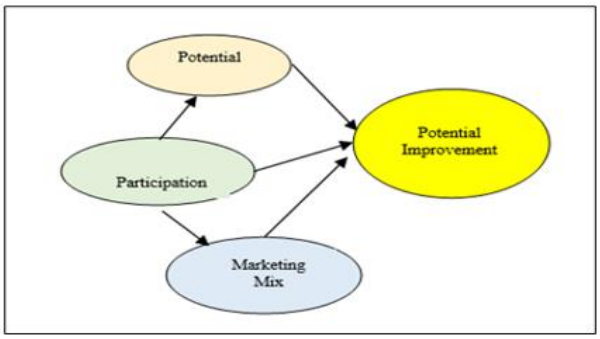


Fig.2 A model for building community tourism attractions/sites in Khlong Luang District, Pathum Thani Province

V. DISCUSSIONS

The factor affecting the capacity building of community tourism sites/the potential improvement of community tourist attractions in Khlong Luang District, Pathumthani Province was community potential affecting capacity building in community tourism sites which corresponded to the research of [10] the guidelines for developing the capacity of local communities to promote cultural tourism in Pla Khao Sub-district, Muang District, Amnat Charoen Province. It was found that in the research of the guidelines

for developing potential for local communities to promote cultural tourism in terms of potential for supporting tourism, there should be adequate welcome places and impressive accommodations; government agencies or government sectors supported knowledge relating to hygienic food and safe restaurants. In terms of tourism management potential, it affected the capacity building of tourist attractions of the communities directly and indirectly. This was consistent with the research of [11] the guidelines for the development of tourism management in Wang Nam Khiao District, Nakhon Ratchasima Province. It was suggested that it should allow people to take part in tourism management by setting up planning committee. Formulating guidelines for monitoring and evaluating the performances regarding local tourism and the service marketing mix which strengthened the improvement of potential tourist attractions indirectly. This was consistent with the research of [12] which was found that the tourism service marketing mix factor had a statistically significant positive influence on the demand for social tourism activities of Koh Phangan.

VI. RECOMMENDATIONS

The researcher has recommendations for improving the potential of community tourism sites in Khlong Luang District, Pathumthani province as follows:

1 Suggestions for applying the results

(1) Tourist attractions in communities should be paid attention on the importance of cleanliness of basic facilities such as restrooms, parking places, food and beverage restaurants, and souvenir shops. Moreover, the accommodations are sufficiently standardized for the number of tourists and has been certified.

(2)Community involvement is emphasized on the importance of community lifestyle in terms of community environment, equality in benefit sharing, and having meetings to solve operational problems, the development of tourist attractions in accordance with the philosophy of sufficiency economy, organic wisdom, and local culture; also providing the opportunity for tourists to participate in the learning of the community through the activity called "Creating the Value of Tourism Resources".

(3) Developing sustainable tourism in the community by using a proactive strategy is the planning of enhancing/ improving the capacity of the "unique" tourist attractions, preparing to accommodate the increasing number of tourists, developing the standard to be internationally accepted, and creating a charming, courteous services with warm welcome.

(4)Capacity building for sustainable tourism in communities using a preventive strategy is to develop a network, pass on knowledge management of "Sustainable Tourism"; the growing pace of OTOP Innovative Paths. Entrepreneurs offer Travel Packages for primary travel - secondary travel, Pathum Thani along with the forecast analysis for ten years of tourism in Pathum Thani.

(5) Public relations of tourism in the community of Klong Luang District on Facebook Page focuses on management. Joint administrators must encourage community members to take part in communicating their stories; community activities such as "Story Telling, Video Clips, Photography" together with providing trainings for co-administrators.

2. Suggestions for the next research

(1) There should be the study the factors influencing the tourism; it will be a decision-making process for deciding in traveling in order to bring information to improve and come up with plans in consistent with tourists' demands.

(2) There should be the study the satisfaction of tourists towards the administrations of tourist sites and services of travel groups.

(3)There should be the study relating to the development of the potential of tourist attractions in communities in other areas of Pathum Thani Province in order to create a traveling network in a very wide range

CONCLUSION

Findings from the research of community potential, participations, and service marketing mix had their effects on capacity building for tourist attractions in the community as shown in Fig.3.

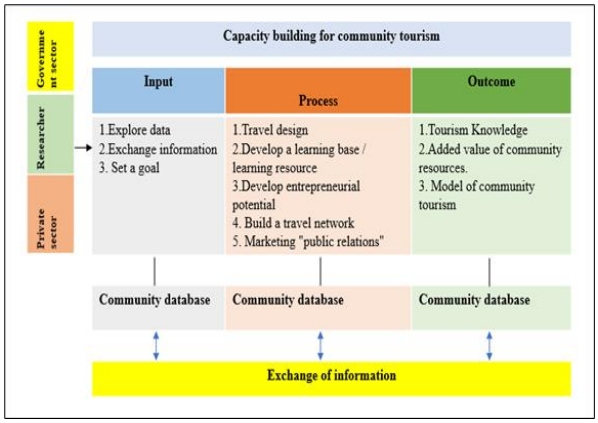


Fig.3 A Model of capacity building for tourist attractions in the community

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Development of Learning Achievement in English for Marketing Subject by Using Project Work "B.E. Hometown Products Fair"

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Abstract*— The purposes of this research were (1) to study the learning achievement of the second year Business English students, the Faculty of Humanities and Social Sciences, Suan Dusit University in English for Marketing subject after using project work "B.E. Hometown Products Fair" to have an average score at 70% or more, and (2) to study the students' satisfaction toward the learning through project work "B.E. Hometown Products Fair" in English for Marketing subject. Quantitative research was used and research instruments were (1) the progress test and (2) the satisfaction questionnaire. Data collected from the sampling group who was 76 second year Business English students, the Faculty of Humanities and Social Sciences, Suan Dusit University. The statistics used for data analysis were frequency, means, and the Standard Deviation (S.D.). The findings revealed that the average scores of the students in English for Marketing subject were 73.25% and the students' satisfaction of learning through project work was 87.98%.

Index Terms— ***English for Marketing, Learning Achievement, Project Work, English for Specific Purposes***

I. INTRODUCTION

According to the National Education Act, B.E. 2542 (1999), and Amendments (B.E. 2545 (2002) and B.E. 2553 (2010)) [1] in Chapter 4, Section 24, it specified the details of learning management for school to arrange the contents and activities to be related with learners' interest and potential. It encouraged students to practice skills, thinking process, management, situation confrontation, and knowledge application in order to solve problems. In addition, activities should be designed for students to learn from real experience. Learning from doing will help them to be able to do and think, love reading, and continue their life long learning. (Minister of Education, 2009). Furthermore, in National Education Plan (between years 2017 and 2032), there are six education strategic plans. The third education strategic plan defined that "building capacity for all ages people and creating a learning society" (Minister of Education, 2017). Therefore, one objective of this education strategic plan is to support schools in all levels to arrange any activities or learning process with good quality and standardize.

Consequently, learning and teaching in higher education focuses on the subject that encourage the students to apply it in their future career authentically because higher education is the last step of their education before getting a job in their field or related field. Effective learning and teaching should concentrate on the relevance of the content in the classroom and how to apply it in the real situation which is similar to their future careers. Therefore, the researcher realized that classroom activity which appropriate and relevant to the National Education Act and National Education Plan is teaching through Project-Base Learning (PBL). However, teaching and learning through PBL effectively and focusing on students' real learning are not easy. There are many relevant factors such as the instructor, the students, the subject, the classroom, teaching and learning media, and the university support, etc. Consequently, the first factor that need to be considered for planning this activity or project work is the content of the subject. As the features of the activity or the project work to be planned have to relate to the content of the subject and be able to really develop the students' learning skills effectively.

For all subjects in Business English Program, Faculty of Humanities and Social Sciences, Suan Dusit University comprise of different groups, there are General Education courses, compulsory courses, elective course, internship course, and free elective course. The specialty of

Business English Program which is distinguished from English Program and other programs is that all subjects in elective course are English for Specific Purposes (ESP). For examples, the ESP subjects in elective course are English for Human Resources, English for Secretaries, English for Banking, English for Import and Export, and English for Marketing. These subjects focus on teaching English skills based on the fundamental content of business. Therefore, students will gain knowledge in both business content and English skills. This is relevant to Hutchinson and Waters (1987) [2] identified the meaning of English for Specific Purposes as one branch of English as a Second Language (ESL) or English as a Foreign Language (EFL) which are the main branch of general English teaching.

The main objective of the Business English program is to generate graduates with the knowledge and competency to use English in the Business field effectively (Policy and Development Strategy of Suan Dusit University, 2006). [3]

Through my teaching experience in the subject of English for Marketing, I have witnessed many problems arising in teaching this subject. Only some students participated in the classroom activities, and it was the same group of students who participated each time. For example, when I asked the entire class questions about the lesson and only a few students answered the questions. Sometimes, I asked them to write the answers on the whiteboard and the same group of students would come out and write the answers. Other students in the class hardly came to the front of the classroom to write down their answers. They seldom expressed their ideas or opinions about the subjects, and instead preferred to sit at their desks and listen to their teacher without participating.

In other words, most of the students remained passive. Furthermore, when I asked them to work in a group, they preferred to work with their friends who sat nearby. They would not cooperate with their friends when I assigned them to work in pairs or in groups. They did not share responsibility in group work, with only a few students appearing to do the work for the entire group. In conclusion, students did not possess cooperative learning skills. When I asked them to do assignments, they usually copied the work from each other and did not apply what they had learned in class. They also copied their assignments from books, Internet, or magazines instead of creating their own. When I received students' projects, I noted their poor quality of work and a lack of creativity. They did not see the connection of what they learned and what they could use in the future career. Furthermore, when the students worked in a group, they mainly spoke to each other in Thai. Students were reluctant to speak English because they were possibly too shy or lacked the self-confidence. They also were not able to communicate in spoken English.

Most importantly, the quiz or midterm scores were not satisfactory with the students not even achieving 50 percent of the total scores. There were quizzes throughout the course and a midterm examination with seventy percent of students in the class scoring less than half of the total scores. These were low achievements from most students.

Therefore, it is significant to find a way to solve these problems and investigate students learning achievement and their satisfaction using project work 'B.E. Hometown Products Fair' in the "English for Marketing" course.

II. Research Objectives

The objectives of this research article were (1) to study the learning achievement of the second year Business English students, the Faculty of Humanities and Social Sciences, Suan Dusit University in English for Marketing subject after using project work "B.E. Hometown Products Fair" to have an average score at 70% or more, and (2) to study the students' satisfaction toward the learning through project work "B.E. Hometown Products Fair" in English for Marketing subject.

III. Research Methods

A. Research Design

The methodology of this study is action research based on the definition provided by Kemmis & McTaggart (1988) [4] who describe a cycle of activities as follows: planning, acting, observing and reflecting. Action research is appropriate to conduct in this situation because it is the process in which teachers investigate teaching and learning methods in order to improve their own teaching and their students' learning. (Vester, 2007). [5] It also refers to teacher-conducted classroom research that seeks to clarify and resolve practical teaching issues and problems. (Richards & Farrell, 2005) [6]

The research tools used in this action research was Project Work in the form of selling product in 'B.E. Hometown Products Fair". This project work encouraged students to work in groups, discuss what to sell, how to produce the product, set the price, write the promotion plan, design the packaging, have their own brand name, decorate the stores, keep track of profit and loss account, etc. The students had to apply their knowledge from English for Marketing subject into this project work.

Another research tool was progress test, used to collect data from students to investigate their learning achievement and the last research tool was questionnaire. Data were collected from 71 second year students in Business English program, Faculty of Humanities and Social Sciences, Suan Dusit University and analyzed by using descriptive statistics.

B. Research Process

Research process of this action research has divided into 4 stages consisted of planning, action, observation (or data collection), and reflection. Before the first stage of planning, the preliminary stage was completed as the prior stage as shown in Figure 1.

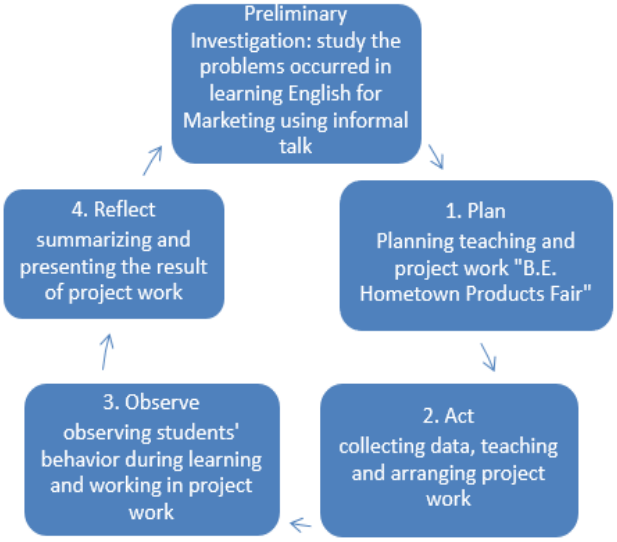


Fig.1 Research Process

IV. Results

Results of the study indicated that there were 54 out of 71 students passed the progress test at the average score of 74.21 (76.06%) which was higher than the setting criteria as it showed in Table 1.

No.	Scores (from 100)	Passed the criteria (more than 70%)	No.	Scores (from 100)	Passed the criteria (more than 70%)
1	79	√	37	68	**X**
2	72	√	38	78	√
3	84	√	39	77	√
4	68	**X**	40	74	√
5	73	√	41	71	√
6	79	√	42	71	√
7	68	**X**	43	82	√
8	76	√	44	69	**X**
9	75	√	45	67	**X**
10	71	√	46	67	**X**
11	77	√	47	75	√
12	73	√	48	74	√
13	78	√	49	74	√
14	87	√	50	76	√
15	78	√	51	77	√
16	78	√	52	84	√
17	78	√	53	74	√
18	75	√	54	82	√
19	73	√	55	71	√
20	68	**X**	56	72	√
21	72	√	57	73	√
22	81	√	58	76	√
23	64	**X**	59	77	√
24	72	√	60	84	√
25	60	**X**	61	78	√
26	62	**X**	62	77	√
27	71	√	63	77	√
28	69	**X**	64	76	√
29	64	**X**	65	64	**X**
30	81	√	66	81	√
31	66	**X**	67	69	**X**
32	62	**X**	68	75	√
33	75	√	69	90	√
34	72	√	70	69	**X**
35	81	√	71	83	√
36	75	√	**Means = 74.21**		

Table 1: Evaluation of Progress Test of Students after Learning through Project Work 'B.E. Hometown Products Fair' in the Subject of English for Marketing (n=71)

Results of the study showed that there were 54 out of 71 students passed the progress test at the average score of 74.21 (76.06%) which was higher than the setting criteria.

Another result of the study can be found that, in overall, students were satisfied with the project work 'B.E. Hometown Product Fair' (X = 4.53, $S.D.$ = 0.74). The students were most satisfied with the fact that they gained

knowledge in distribution channel after attending B.E. Hometown Products Fair (X = 4.67, $S.D.$ = 0.74). They were also satisfied with the fact that they could gain knowledge in promotion (X = 4.60, $S.D.$ = 0.74) and understood the concept of marketing mix after attending B.E. Hometown Products Fair (X = 4.60, $S.D.$ = 0.63). However, they were less satisfied with developing English skills (X = 4.13, $S.D.$ = 0.92), gaining confidence in their knowledge of English for Marketing (X = 4.20, $S.D.$ = 0.77), and having a chance to practice reading skill (X = 4.20, $S.D.$ = 0.94) as shown in Table 2.

Students' Opinion after attending B.E. Hometown Products Fair activity.	**Means ($\bar{x}$)**	**Standard Deviation (S.D.)**
1. Students realized the importance of trademark from 'trademark designing'	4.53	0.64
2. Students understood the concept of marketing mix	4.60	0.63
3. Students developed working skills with others	4.53	0.64
4. Students knew how to work in team	4.53	0.83
5. Students gained knowledge of English for Marketing	4.40	0.91
6. Students developed English skills	4.13	0.92
7. students satisfied in their own products presented in B.E. Hometown Products Fair	**4.53**	**0.64**
8. Students gained confidence in their knowledge of English for Marketing	4.20	0.77
9. Students gained knowledge in marketing	4.21	0.89
10. Students were able to apply marketing knowledge into real situation of selling products.	**4.53**	**0.83**
11. Students gained knowledge in producing products.	4.40	0.74
12. Students gained knowledge in setting prices.	4.33	0.72
13. Students gained knowledge in distribution channel.	4.67	0.74
14. Students gained knowledge in promotion.	4.60	0.74
15. Students had a chance to practice English listening and speaking skill.	4.33	0.72
16. Students had a chance to practice English reading skill.	4.20	0.94
17. Students had a chance to practice English writing skill.	4.47	0.92
18. Students were able to apply knowledge of marketing creatively.	4.33	0.62
19. Students were able to solve problems in the real situation of selling products effectively.	4.33	0.62
20. Overall, students were able to learn English for Marketing from this activity.	4.27	0.80
21. Overall, students were able to comprehend the content of English for Marketing subject after attending B.E. Hometown Products Fair activity.	4.20	0.77
22. Overall, students satisfied with B.E. Hometown Products Fair activity.	4.53	0.74

Table 2: Students' satisfaction toward learning through project work "B.E. Hometown Products Fair"

V. Discussions

Some project work noticeably caused the students to enhance their creativity. After they worked together in groups to complete this project work entitled B.E. Hometown Product Fair, they realized that they practiced thinking skills and were able to apply their creativity with this project work.

It is important to promote creative thinking in the students' learning because they can combine it with English language and use it in their lives in the future. Lang, McBeath, & Hebert (1995) defined the meaning of creative thinking as "the ability to form new combinations of ideas to fulfil a need" (Halpern, 1984, p.324, cited in Lang, McBeath, & Hebert, 1995). They also explained that every student can have creative potential, and that you can foster that potential in your students by valuing creativity even though it may mean adjusting some established rules and procedures. In order to teach in a way that releases creativity, the teacher needs to provide an atmosphere in which students can explore original ideas without fear of criticism or ridicule. (Lang, McBeath, & Hebert, 1995) [7]

Feher (2007) also noted that it is worth putting creativities into the language classroom for many reasons. First, the students can use the language as a tool to complete the creative tasks in its original function. Therefore, creative work in the language classroom can guide the students to be ready for the genuine communication outside the classroom. Second, this creative thinking can be an important skill in the real lives of the students because it can be part of their

survival strategies and a force behind personal growth and the development of culture and society. (Feher, 2007) [8]

Another positive point of applying activities in the class was integrating knowledge with authentic tasks. Students discovered that they got more experience from working on different steps in project work with their friends that in turn they could use in the future. They were able to apply these skills and knowledge to their jobs when they graduated.

Moreover, the students discovered while doing activities and project work in the class was improved their skills in applying knowledge in marketing more than English skills.

Project work is suitable with the task outside the class that requires searching for more information from authentic sources or places such as the stores, the real products, the real details of distribution channels, websites, advertised brochure, etc. I have to consider the format of project work that suitable with diverse students in this subject. This is related to what Fried-Booth (2002) [9] stated that project work is student-centered and driven by the need to create an end-product. When students finish the end-product, they will have a chance to develop their confidence and independence and to work together in a real-world environment. Students in this class have an opportunity to develop their confidence and independence in making products. Moreover, they can work together with their friends who are mixed ability. This is the task for the students to contribute their work that reflect their different talents and creativity. However, in order to make it more effective in this class, I have to teach students how to work in group. The other thing, I should assign less project work, but each project work has to concentrate on bringing up students' skills and knowledge fully. Actually, I will break the big project work into the smaller parts. And all these small project works will be combined together into the big project work. Students will have less stress and have more time to work on these project works. Teacher still has to teach students how to manage their time allocating in each project work though.

The most important thing I have to consider is the evaluation of the project work. I will make an assessment throughout the project work by dividing into small part of the project work. This way will reduce students' stress and the anxiety of the grade of this subject. As Brindley (2003, cited in Nunan, 2003) mentioned that "classroom assessment is part of the learning process, so it should be done with learners, not to them." Additionally, I will use a variety of assessment methods because it shows development of the students over time and gives the teacher a richer picture of learners' abilities in a range of different contexts as well. I will also use in-course assessment to find out how much a student has learned in each part of the project work that derived from a particular unit of instruction. (Nunan, 2003, pp.316-318) [10] Consequently I will give my students the progress test to measure learners' language and skill progress in relation to the syllabus they have been following. As Harmer (2007) defined that progress tests are often written by teachers and given to students every few weeks to see how well they are doing. (Harmer, 2007, pp.379-380) [11]

VI. RECOMMENDATIONS

A. Recommendations for Practices

1. Students should be assigned small task in this project work which focused on English skills more than marketing knowledge such as writing product description, designing promotion brochure, etc.

2. Using project work in the classroom, especially in the English for Specific Purposes subject is suitable because students gain more knowledge and are able to apply their knowledge in the real task.

B. Recommendations for Further Research

1. The samples tested in this study were only a small group in one subject. For the next research, it should be done with different group of students from different subjects to create new knowledge to further research.

2. For the future research, conducting the second cycle of action research based on the reflection from the first cycle should be done. In the second cycle of the action research, it should adjust many points in all four stages of action research.

CONCLUSION

In conclusion, the findings showed that students achieved learning progress and satisfied with this project work 'B.E. Hometown Products Fair'. However, they satisfied with gaining knowledge in marketing more than English skills. It also found both positive and negative results of applying project work in the "English for Marketing" course in an attempt to facilitate learning of diverse students. There were some methods that were useful for the students' learning and I should apply that again when teaching this subject in the future.

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The Model of Holistic Development of the Elderly's Quality of Life through Sustainable Participation Process: A Case Study of Tha Takiab District, Chacheongsao Province, Thailand

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Abstract— This participatory action research was conducted with mixed method. The research was done with Plan-Do-Check-Action process. The research objectives were to create a model of the holistic development of the elderly's quality of life through sustainable participation process in Tha Takiab District, Chachoengsao Province, Thailand. The key informants of this research consisted of elderly, families, government officers, community leaders, and local leaders. Derived from purposive sampling appropriately compatible with the research, 50 key informants were selected through snowball technique. The data collection was done through focus group. The population of quantitative research were 85 elderly living in Moo 2 of Tha Kan Sub-district, Tha Takiab District, Chachoengsao Province. The sample of 70 people was determined with Krejcie & Morgan table at the reliability level of 95%, using simple random sampling. The statistics used for quantitative data analysis was percentage, means, standard deviation, and ANOVA. The content analysis was used with qualitative data.

The research results found that the model of promoting holistic quality of life through participation process for sustainability of the elderly or the warm house model (HESS Model) consisted of 4 dimensions as follows:H: Health refers to the dimension of good physical and mental health of the elderly. The elderly must have knowledge of self-care and be able to take care of themselves, as appropriate for each individual's E: Economic means the elderly who were responsible for their self-reliant. They should work according to their physical condition and spend economically. S: Safety means good surroundings with safety for the elderly, both inside and outside their home, including elderly toilets, travel, roads, various places in the community and fitness centers. S: Social Support means good support from society, such as establishing a network of elderly people in their own communities and develop guidelines in mutual caring for older people.

Index Terms— ***Participatory action research, Quality of life, Elderly, Sustainability, Thailand***

I. INTRODUCTION

Apparently, our world had been changing in terms of economy, society, science and technology. Moreover, the medical development caused people became long-lived. It also resulted in a continuous change of population structure in each country. Incidentally, the United Nations had defined "Aging Society" as on in which a continuously increasing tendency of the sixty-year-old people over six. **"**Aged Society" was a society in which more than of 10 per cent of population of 60 years or older. Also, it might be a society in which more than 7 per cent of total population was 65 years or older. "Completely Aged Society" meant a

society in which more than of 20 per cent of population of 60 years or older. Also, it might be a society in which more than 14 per cent of total population was 65 years or older. **"**Super-Aged Society" meant a society in which more than of 28 per cent of population of 60 years or older. Also, it might be a society in which more than 20 per cent of total population was 65 years or older. According to the aforementioned definitions, it was apparent that Thailand was the aged society because the total population of elderly in Thailand was 17.1 percent. It was reaching to the completely aged society. It was estimated that one if third of total population in Thailand during 2021-2040. By this, Thailand would be classified as the super-aged society) [1]

The main problem condition of Thai elderly was a health problem. It resulted from the physical deterioration of organs due to agedness and the chronically contagious diseases due to long-term unhealthy behavior such as muscle pain, osteoarticular diseases, high blood pleasure, dyslipidemia, diabetes, etc. The elderly's health problem also resulted from the lack of an appropriating understanding and misunderstanding in taking medicine of the elderly and those who took care them. Moreover, the elderly could not conveniently access medical service because they had no any relatives to guide or accompany. [2] Incidentally, the elderly's health problem still originated from inappropriate surrounding for their living. An increasing number of the elderly occurred with a decreasing number of people in labor age which had played a pivotal part in taking care of the elderly in their own family.

According to the aforementioned situation of population structure, the Thai government placed an importance on the development of people's quality of life and providing various kinds of public services in order to facilitate the elderly to have potential and be able to take care of themselves as it had been appeared in the Constitution of Thailand B.E. 2550, Section 53. It decreed that "A person who is over sixty years of age and has insufficient income for living shall have the right to welfare, public facilities and appropriate aids from State". By this, it could be seen that Thai government allotted subsistence allowance for all the elderly according to their right when they were 60 years or older. The subsistence allowance was allotted in the age-staircase patter, namely the 60-69 year-old-elderly would be allotted for 600 baht per month. The 70-79 year-old-elderly would be allotted for 700 baht per month. The 80-89 year-old-elderly would be allotted for 800 baht per month, and the 90 year-old-elderly and the older would be allotted for 1,000 baht per month.

Moreover, the main responsibility in taking care of the elderly's quality of life in Thailand belonged to the community government officers. Those who worked on behalf of Ministry of Interior would be responsible for the relieving-suffering-and-enriching-happiness mission, those who worked on behalf of Ministry of Public Health would be responsible for the public health mission, those who worked on behalf of Ministry of Social Development and Human Security would be responsible for social development and welfare. Therefore, the Thai government had the measure to take care the elderly through the national elderly planning (No. 2) (B.E. 2545-2564)[3] The measure emphasized a cooperation among four sectors namely 1) people, 2) family, 3) community, and 4) society and government. By this, all the sectors were assigned to take care of the elderly. Currently, Thailand had four models for taking care of elderly, namely 1) in-family care, 2) in-institution care, 3) care in special-situation, and 4) care with community-participation. For the care with community-participation, it was a model in which a consciousness-supporting strategy had been used to arouse people in the community to participate in problem solving and brainstorming, as well as mobilizing the cooperation and service development for the elderly in the community. Additionally, the community potential support on problem solving in the community by community members was another strategy to sustainably strengthen community.[2]

A sustainable care of the elderly was aimed to facilitate them to better quality of life and to enable them to take care of themselves appropriately in accordance with individuals' factors and related people's participation. Incidentally, the individual consideration of elderly's holisticness consisted of body, mind, emotion, society, and spirit. As a result, these elements were inseparably related [4]. The development of the better quality of life should be considered about individuals' identity, beliefs, living, and specific environment. Then, the model of development which designed to virtually respond the elderly's needs would push the development to successfully and sustainably achieved. Obviously, the development should be of people's

need. This statement was in accordance with [5]. They mentioned that it was insufficient to only take care of the elderly in a circle of public health, but it needed a cooperation of the network of sectors operating on the elderly care. Additionally, it also needed integrated teamwork. By this, it would be considered as a satisfying dimension of the care of the elderly. In order to secure an efficient system to serve the impending problems of the elderly in the future like building up networks of Ministry of Public Health, Ministry of Social Development and Human Security, Ministry of Education, Ministry of Interior, and Ministry of Finance. Significantly, it must be simultaneously integrated with physical health, mind, and society. This is in accordance with [6]. It was mentioned that there were many factors to facilitate to sustainably and successfully secure a health support. The most significant factor was participation of the target, namely the people joined hand in hand to brainstorm, operate, and assess the health activity. The people could determine their needs and necessity by themselves as well as adjust appropriately how to solve the problems. Therefore, it was believed to be a better way to sustainably solve the problems than the problem solving done by the government sectors which had emphasized on the only-help-providing approach. As a result, the people could take care of themselves and their quality of life appropriately and independently.

[7] mentioned that the quality of life was wellbeing of oneself—in both physically and mentally—and society. By this, its definition covered security, right, and freedom. The development of the quality of life was a process facilitating to develop potentials of individuals and communities in order to accelerate their potential to improve their own lives and others [8]. The holistic development of quality of life meant an improvement of the quality of life in order to build up a balance of body, mind, emotion, society, surrounding, and spirit. The development was done through a consideration of all the elements in people and surrounding around the people. In this case, individuals had participated to take care of their quality of life. At the same time, they would be satisfied to what they had done, causing a change of their way of life. It was in accordance with [9]. It was found that the elderly became satisfied to join the activities which could be responded the four dimensions of quality of life: body, mind, society, wisdom and learning; it was better than any activities in which the holistic strategies had not been integrated. Moreover, the quality of life also was an index Thailand's standard indicating people's wellbeing and could be traced and evaluated. It could guideline people's way of life. By this, if people of any country had a better quality of life, their country would be developed faster than that of a worse quality of life [10].

Chachoengsao province was one of provinces in which the provincial governor had place an importance for lifting up people's quality of life and solving of poverty problem for people's wellbeing. In this case, the governor of Chachoengsao had eagerly supported the program called "the Princess Mother's Medical Volunteer Foundation of Chachoengsao province" and the program called "Chachoengsao Province for Relieving Suffering and Enriching Happiness for People's Smiles" in the fiscal year of 2018. By this, the provincial governor of Chachoengsao had assigned the government and private sectors to participate to solve people's problems. Incidentally, as the only one university of Chachoengsao Province, Rajabhat Rajanagarindra University aimed to develop the local people of Chachoengsao Province through the elimination of their poverty. In this case, Rajabhat Rajanagarindra University had done a field trip to survey people's problem in order to gain the necessary information for solving people's problem appropriately [11].

Tha Takiab District was one of 11 districts of Chachoengsao province. It is 84 kilometers away from the city center, it was located at the east of the city of Chachoengsao. Tha Takiab District consisted of two sub-districts, 47 villages, 8,375 households, and 33,993 population. There were 2,319 elderly; it was 7 per cent of total population [12]. After the survey had been done, it was found that most of elderly encountering the problem of poverty and lack of understanding on taking care and supporting their health for better quality of life. Therefore, when they were ill, they would rely on local herb medication from the, local, traditional doctors, rather than the doctors in the modern hospitals [11]. It was in accordance with the results shown by the survey on Thai people's quality of life in 2017, appearing in criteria of basic necessity of 2017 in a section of health. By this, it was found that the first four ranking which were under the criteria of Chachoengsao Province were 1) people over 35 had not had an annual medical check-up, 2) households had consumed unhygienic, unsafe, and low-standard food, 3) people over 6 had lacked

an regular exercise—three days per a week; 30 minutes per days, and 4) household had had an inappropriate medication. [10]

According to the aforementioned information, it was found that some elderly in Tha Takiab District, Chachoengsao Province still had had a lack of the development guideline for quality of life through participation process for sustainability. By this, the researcher was interested in studying the condition of holistic development context on quality of life among the elderly in Tha Takiab District, Chachoengsao Province. Moreover, the researcher also tried out and evaluate the model through the participation of all sectors in the community namely elderly, families, community leaders, government officers and relevant social networks. Incidentally, the gained information would be a development for Tha Takiab District as a development guideline for strategical policy plan of quality of life for the elderly who were virtually related to the social need and problems. Simultaneously, Rajabhat Rajanagarindra University, particularly Public Health Program would gain a guideline for establish a curriculum in public health program in accordance with area context. Moreover, it still facilitated the students to learn how to conduct research in community with research team. Obviously, it was a participative system management towards people's holistic development of quality of life. By this, the related government and private sectors were integrated to support efficiently the elderly's health and local people of Chachoengsao.

II. RESEARCH OBJECTIVES

The objective of this study was to create a model of elderly holistic development of quality of life through sustainable participation process in Tha Takiab District, Chachoengsao Province, Thailand.

III. RESERCH METHODOLOGY

Research Design

This participatory action research was designed to use local people in the community and related people to participate to conduct research by themselves. By this, the research would be an advisor and consultant in order that the research process could be conducted in accordance with research methodology. This research was comprised of qualitative research and quantitative one. The research process was done with the PDCA (Plan-Do-Check-Action) process or Deming Cycle—it was a quality work management circle. It consisted of "P" (Plan): it meant a planning process to select research problem and to set the goal. It also included solving the problem and planning to solve the problem. "D" (Doing): it was a process on solving the problems as it had been planned. "C" (Check): it was a process of checking and comparing the results. "A" (Action): it was determining standard and improving [13].

Key Informants and Population

Qualitative Research: For the part of qualitative research, it was used through documentary study in both Thai and English books. In-depth interview and focus group were used for this part.

Key informants were elderly, family, government officers, community leaders, and local leaders in Tha Takiab District, Chachoengsao Province.

Derived from purposive sampling, the key informants for focus group and in-depth interview were selected from people most relevant to the objectives of the research, namely, they were related to taking care and developing of the elderly's quality of life through snowball technique. 50 key informants were comprised of 20 elderly, 10 members from the elderly's family, 14 government officers and volunteers whose work related to public health affairs, 4 community leaders, and 2 local leaders. And

Quantitative Research: For the part of quantitative research, it was conducted with survey research through questionnaire which had been designed from the results of qualitative research and the theory on quality of life as research instrument for collecting data after the problem-solving process was done.

Population used for research were 85 elderly living at Moo 2, Tha Khan Sub-district, Tha Takiab District, Chachoengsao Province.

The determination of the sample size was calculated by the [14] sample size table. The confidence level was determined at 95%; its size was equivalent to 70 samples.

Derived from multi stage sampling, the samples were selected from only one village in Tha Takiab Subdistrict, Tha Takiab District. It was Moo 2, Tha Takiab Sub-district, Tha Takiab District, Chachoengsao Province. For the last step, it was done with simple sampling to select 70 elderly.

Research Tool

For the qualitative research: its data was collected by focus group for survey of problems and planning for solving problems. Also, in-depth interview was used for collecting data; it was done with semi-structured questionnaire focused on a present condition, problems and guidelines for solving

problems and improving the elderly's holistic quality of life for sustainability among the elderly in Tha Takiab District, Chachoengsao Province.

For Rigor criteria, the researcher checked through data triangulation like annual report, newspaper, analysis of related documents etc. By this, reflexive note was applied after collecting data in order that the concepts, beliefs on data, and links would be recorded as well as be completely and correctly analyzed.

***For quantitative research*:** its data was collected by questionnaire on the holistic quality of life with participatory process for elderly's sustainability in Tha Takiab District, Chachoengsao Province. There were 70 questionnaires; it was equivalent to 100%. The period of data collecting was during March – October 2018.

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Data Analysis

For the qualitative analysis, it was done through data coding and interpretation as well as creating paradigm in which the theory and conducted researches had been compared with content analysis. Moreover, Atlas Ti 7.1 was applied to help for system management of data analysis. The data analysis was classified into three stages according to [15]. There were as followed:

1.Open coding: It was a process on determining code or index [16] form data from interview. It was an analysis to seek a consistency of kind or group of data from interview. By this, the researcher opened the code line by line. In case of the model of holistic development of elderly's quality of life was found, the researcher would determine the code.

2.Axial coding: it was a process on coding through combining kinds of data and properties. By this, it was building up a relation of data in each code.

3. Select coding: it was a selection of events which were an important key for summarizing what had been found from decoding and interview. This stage was to summarize kinds, relation or theme of data in order to seek relation or phenomena of the model of holistic development of elderly's quality of life.

The stages of quantitative data analysis were as follow:

1. To classify the responded questionnaire following the qualification of respondents.

2. To code the responded questionnaire in each question and then record in computer through computer package.

3. To analyze data in accordance with research objectives the analysis of statistics, mean, and percentage.

IV. RESEARCH RESULTS

They were presented according to the objectives of research as follows:

The first objective: For the study the present conditions and problems of the elderly holistic development of quality of life through sustainable participation process in Tha Takiab District, Chachoengsao Province, it was conducted in accordance with the PDCA process as follows:

1. For the first step "P" or "plan", it was a stage of planning. This step was done through focus group in order to make a survey problems and guidelines for solving problems concerning the elderly in Tha Takiab District, Chachoengsao Province. The focus group consisted of 50 people: elderly representatives, community leader and family. According to the focus group, many problems were found in many aspects. They were 1) economic problem: it was the need to gain more income among the elderly and their family, 2) environmental problem: it was about the inconvenient and uneven roads in the village. The roads were non-asphalted road. By this, they wanted the gravel or asphalted roads, 3) social problem: it was about the lack of suitable places attracting the elderly to join for their activities. There had been no the elderly club. By this, the elderly wanted to conveniently gather for activities as well as wished their family to take care of them without leaving them into oblivion, and 4) physical problem: it was the elderly's illness with chronic diseases like high-blood pressure, diabetics etc.

Incidentally, in order to secure the complete information in all dimension, the researcher had made an in-depth interview for 50 elderly and community leaders. Concerning their need of development of quality of life, it was in accordance with the information reflecting from focus group i.e. increasing income and more care from their own family. Some key informants said that "(I) want to gain more money. The financial support from the government is not sufficient for each month." Also, it was in accordance with another elderly said that "I am now alone, I want my offspring to take care of me".

After the problems were known, the brainstorming for solving problems was conducted. Initially, the two activities were suggested to solved the problems. They were 1) an activity to solve the economic problem: By this, the workshop on making Dok Mai Chan, a kind of Thai traditional wood flower used to be placed on the site of cremation, was suggested. It would be expected to increase income among the elderly and their own family, and 2) an activity to solve the social problem: the petanque court was proposed to be a platform for meeting among the elderly, family and all villagers.

Then, the focus group participated to plan for solving problem. By this, the operation was as follows: 1) to establish a specific committee to push forward the activity. The committee consisted of 12 volunteered elderly who would be assigned to contact with trainers for making Dok Mai Chan as well as to specify the date and inform the group members, and 2) to raise fund for making the petanque

court. This activity was done because this program had not been appeared in the budget plan.

2. For the second step "D" or "doing", it was a stage of doing following the plan determined in the first stage. They were as follows: 1) For economic aspect: the responsible team contacted then trainers from Woman's Council of Phanom Sarakham District for the workshop activity of making Dok Mai Chan as shown in Figure 1 below.



Fig. 1 Trainer was demonstrating how to make *Dok Mai Chan*

2) For the social activity: the responsible team asked for donation from local people in the community and researcher network in order to secure a budget for making the petanque court near the village hall. The budget of 20,000 baht was donated. The petanque court was built in accordance with the determined size and area as it was shown in Figure 2.



Fig. 2 Petanque Court.

3. For the third step "C" or "checking", it was a stage of checking whether the plan successfully achieved after it had been in practicum in the process of doing.

After following up and assessing the economic results through observation and interview of those who had joined the program of making Dok Mai Chan, it was found that the program attendants had insufficient skills to make the perfect Dok Mai Chan. Moreover, they still had the problem concerning a lack of marketing information for increasing incomes.

For the problems and obstacle, it was found that making the perfect Dok Mai Chan required for high skill; it was higher than the elderly's capability since their hand muscle was not strong. Also, their visual ability was not efficient. Therefore, all of them were unable to make Dok Mai Chan.

One of key informants stated that "our product must be made in satisfied quality. We want the trainers teach us again for skillfulness. We still have no a professional to make it and pass on to the others.

4. For the fourth step "A" or "action", it was a stage of improving.

After following up and assessing the economic results, it was obviously found that to develop the skill for making Dok Mai Chan was very difficult and risky for the elderly since they had had problems of hand muscle and visual deficiency due to its complicated and difficult process from binding and tightening the small wires. By this. The responsible team collaborated to find the solution. They summarized that they would invite the trainers to teach again as well as appoint the trainers for workshop on January 8th, 2019. Incidentally, one of key informants mentioned that "they appointed to teach us again on January 8th, 2019. We enrolled already and hope to practice in order that we can pass on to others."

After the workshop had been organized again, the attendants could make *Dok Mai Chan* with more skillfulness. Additionally, they established the specific group for selling and increasing incomes for their members. For marketing promotion, it was done under the guidance of the trainer team. Importantly, the Woman Council of Phanom Sarakham District was established. When Dok Mai Chan had been made skillfully, the trainer team bought Dok Mai Chan on behalf of the Woman Council of Phanom Sarakham District.

For following up and accessing in social aspect through meeting and playing petanque, it was found that the general people and the elderly played petanque on the day in when the meeting has been held. It was considered as a good event in which people had mutually participated the activities. One of key informants mentioned that "it is very good for having the petanque court. People have more times to meet each other and enjoy. We can do something more than only meeting and talking about work."

In summary, for the development on the quality of life through participatory action from all sectors in this qualitative research enabled us to know the importance of the economic and social dimensions. It was done in accordance with the

group member's opinion which these problems were put priority for seeking the guideline of problem solving. In this case, the researcher used this issue as a major element for creating the development model of the elderly's quality of life in Tha Takiab District, Chachoengsao Province. However, the group members still place an importance on other elements as well.

For the second objective: It was to create a model and an experiment of elderly holistic development of quality of life through sustainable participation process in Tha Takiab District, Chachoengsao Province.

According to the mentioned data of qualitative research, the researcher had initially drafted the model and an experiment of elderly holistic development of quality of life through sustainable participation process in Tha Takiab District, Chachoengsao Province. The researcher compared with the various integrated knowledges of quality of life. They were the concept regarding four dimensions of the quality of life indicated by the World Health Organization. They consisted of body, mind, social relativity, and environment. Incidentally, the concept of holistic health care and that of community participation were comprised of four dimensions: economy, society, health, and community participation. They were holistically integrated and regarded qualitative data. In order to gain the complete data before making the suitable model with both qualitative and quantitative data, the researcher had made a survey of the elderly's opinion on the quality of life as quantitative data after they had joined the activity. According to the data from interview through questionnaire on the elderly quality of life in Tha Takiab District, Chachoengsao Province, it revealed as follow:

For the first part: For the general information of the elderly who were key informants, they were female; it was 80 per cent. Their age was between 60-70 years; it was 70 per cent. Most of them were with their spouse, it was 70 per cent. Their income was not sufficient; it was 75 per cent. They were ill with chronic diseases; it was 82 per cent.

For the second part: It was information about the opinion on the participation of community leaders concerning the elderly holistic development of quality of life through sustainable participation process in Tha Takiab District, Chachoengsao Province as it shown below:

Table 1: Mean and standard deviation of community leaders' participation toward the elderly holistic development of quality of life through sustainable participation process in Tha Takiab District, Chachoengsao Province in both overall and each aspect.

Participation of Community leaders	Level of opinion			
	$\bar{X}$	S.D.	Meaning	level
Planning	3.41	.0.48	Moderate	3
Operating as planned	3.37	0.48	Moderate	4
Following up and evaluating	3.43	0.49	Moderate	2
Improving	3.47	1.28	Moderate	1
Total	3.42	0.75	Moderate	

According to the Table 1, it was found that the overall level of the community leaders' participation on the develop of elderly's quality of life in Tha Takiab District Chachoengsao Province. For the overall opinion of the elderly in Moo 2, Tha Khan Village, it was at a moderate level (= 3.42). When considered in each aspect, it was found that that of the highest average was improving (= 3.47), following up and evaluating (= 3.43), planning (= 3.41), and operating as planned (= 3.37).

Table 2: Average and standard deviation of the elderly's quality of life in Tha Takiab District, Chachoengsao Province in both overall and each aspect

The elderly's quality of life	Level of Opinion			
	$\bar{X}$	S.D.	Level	Ranking
Body	2.87	0.60	Moderate	4
Mind	2.93	0.59	Moderate	3
Social relation	3.14	0.44	Moderate	2
Surrounding	3.31	0.52	Moderate	1
Average	3.06	0.54	Moderate	

According to the Table 2: For the overall level of the elderly's quality of life in Moo 2, Tha Khan Village, Tha Takiab District, Chachoengsao province, it was at the moderate level. It was found that the aspect with the highest average was that of environment. The aspects of social relation, mind, and body were less respectively.

According to the summary of evaluating and improving the development of the elderly's quality of life in both qualitative and quantitative data, the researcher created the model and an experiment of elderly holistic development of quality of life through sustainable participation process: a case study of Tha Takiab District, Chachoengsao Province. By this, the focus group activity was held with the guidance of the specialists to assent and affirm the elements of the model of development of quality of life of the elderly. The elements consisted of dimensions like health, economy, safety and social support. Incidentally, the focus group meeting unanimously consented to these elements as the suitable ones. Moreover, they suggested that there should be a continuing development by the establishment of the elderly club in order to create a network for the elderly's development because there was no the elderly club in the

village. Then, the research proposed the model on the quality of life or HESS Model as the warm house for the elderly. By this, the researcher put the overall elements in dimensions in balance like health, economy, safety, and social support. It was a model and an experiment of elderly holistic development of quality of life through sustainable participation process in Tha Takiab District, Chachoengsao Province. Incidentally, the proposal was asked for the opinion from the meeting afresh. Eventually, it resulted in a development model on the quality of life in elderly or HESS Model. It was a model and an experiment of elderly holistic development of quality of life through sustainable participation process in Tha Takiab District, Chachoengsao Province as it shown in a Figure 3 below:



Fig. 3. A development model on the quality of life in Elderly or HESS Model (Developed by Nawasanan Wongprasit, 2018)

According to Figure 3, there are four dimensions delineating a development model on the quality of life (HESS Model) or a model of holistic development for the elderly's quality of life through a sustainable participation process:

1. H: Health: It means a dimension of the elderly's good physical and mental health. According to this dimension, the elderly's quality of life would be developed in physical and mental aspects. Its roles consisted of five aspects as follows:

1.1 The elderly – There must be the knowledge and ability of taking care of oneself in accordance with an appropriateness of individuals' different contexts.

1.2 Family – There must be the support of taking care of the elderly's health. If the elderly were ill with chronic diseases, they must be taken to see doctors as appointed. In cases where they were not ill, they must be taken care of with healthy eating, suitable exercise and joyful emotion. This was called the 3E principle.

1.3 Community – People in the community must be friendly with, understand, and help the elderly in their neighborhood in both normal situations and emergencies.

1.4 Public sector – The public sectors, particularly the sub-district health promotion hospitals, should visit to take care of the elderly's health appropriately and should organize the health promotion activities in tandem with bodily care.

1.5 Local administrative organization – the local administrative organization should take care of the elderly's health as needed.

2. E: Economy: It means the elderly were able to lead their life independently. It consisted of five roles as follows.

2.1 The elderly – The elderly could earn their living as their physical condition permitted. They must be economical.

2.2 Family – The elderly must receive financial support from members of their family as possible.

2.3 Community - The community must support the elderly in ways of earning appropriately.

2.4 Public sector: The public sector should allot capital, budget as well as to support their ways of earning appropriately.

2.5 Local administrative organization – the local administrative organization should support capital and budget for the elderly. Also, the production and selling of products from the elderly in the community should be supported.

3. S: Safety: It means the elderly should be supported in having a pleasant surrounding inside and outside their home. The support should be focused on the elderly's toilet, road, transportation, places in community, exercise areas, etc. It consisted five roles as follows:

3.1 The elderly – They should keep their houses tidy, clean and safe.

3.2 Family – Members of a family should appropriately and safely prepare the room, toilet, and house vicinity for the elderly.

3.3 Community – The community should support and promote in preparing the places in community for the elderly.

3.4 Public sector – It should support and promote the public utility in the community for the elderly.

3.5 Local administrative organization – It should support and promote both budget and policy for preparing public utility, as well as safe and convenient roads for the elderly.

4. S: Social Support: It means good social support, such as building up an elderly's network in the community and neighboring communities in order to develop and exchange the mutual guidelines for taking care of the elderly. This included an exchange of trainers and a workshop for income promotion. The activities consisted of inviting the elderly from Phanom Sarakham District to be trainers for demonstrating how to make Dok Mai Chan for the elderly in Tha Takiab District. Also, an efficient work system should be practiced, such as women assembling in the village, sub-district, district and province.

For the research dissemination, the researcher presented to the community leaders and the operational team at the village assembly hall in order to inform them of her results and to suggest the guidelines for the holistic participatory development of the elderly's quality of life. Incidentally, the problems arose from the villagers and it was the village's product. In order to bring a sustainability to the community, the village committee or community leaders should realize these problems. Also, they should launch the operation after this research was completed in order that the operation was apparently responsible and continuously implemented. The meeting assigned the village's public health volunteers and the chair of village's women development group to operate continuously. The operational team was required to present continuously the results of the mission's operations to the meeting. Moreover, the operation of the village's elderly club was the platform for the elderly's sustainable development and support network. After the research was completed, the elderly's club of Moo 2, Tha Khan Village was established on June 9th, 2019. Apparently, this research was a significant part to encourage the community to place a high priority on the elderly's quality of life. Also, the research played a pivotal part in encouraging the community to establish the elderly club which it had never existed before. It was a significant starting point for the participation and mutual development of the community.

VI. DISCUSSION

According to the study, the researcher would like to present two important issues for discussion. They were as follow:

1. For the issue on problems of the need for development of the quality of life among the elderly in Tha Khan Sub-district, Tha Takiab District, Chachoengsao Province, the first important problem was that of economic aspect. The elderly wanted more income. It was in accordance with a study of [17] who had studied the development of the elderly's quality of life in Singburi Province. Their study revealed that some of the elderly had faced an economic problem and needed an assistance from their family. In addition, their family's income form agriculture was not consistent or determinable. They were also in responsibility to take care of children and grandchildren. They were afflicted from financial problems like debt, lack of money saving and financial planning. Moreover, it was found that most of the elderly had no regular job, causing their income was consistent and determinable. Their family was tightly obliged with debt. With any additional income, they lived on the government's monetary support. It was in accordance with a study of [18] who had studied the guidelines for the development of the elderly's quality of life of the local administrative organization in Phrea Province. It was found that the overall of problems on the development of the elderly's quality of life concerning the health and hygiene, society, family and financial condition, they were at a high level.

Incidentally, all the problems might be arisen from an insufficient income for their expenditure because the elderly—the research sample—lived on agriculture. Also, they were in lacks of knowledge and understanding on saving money before they become old. In the past, they had been strong enough to earn their living and take care of themselves and family. However, when they became old, their physical capability became deteriorate, especially their organ and muscle functions. By this, it caused a decreasing ability of earing their living. Definitely, their income from agricultural works became decreased because they needed physical ability and strength as well as muscle durability.

According to the aforementioned reason, the elderly in Moo 2, Tha Khan Sub-district, Tha Tabiab District, Chachoengsao Province, needed for economic development or wanted to increase their additional income for better quality of life.

2. As the results of the study, it showed that the elements of the development model of the elderly's quality of life in Tha Takiab District, Chachoengsao Province or the model and an experiment of elderly holistic development of quality of life through sustainable participation process in Tha Takiab District, Chachoengsao Province, Thailand consisted H: Health, E: Economic, S: Safety, S: Support System). They were called HESS Model. By this, "H" (Health) meant having a good health in both physical and mental aspects. "E" (Economy) meant an economic element. They must have more income. "S" (Safety) meant safety in their living and leading their life in a safe habitation. "S" (Social Support System) meant the elderly were support for having a better quality of life from both government sectors and local administrative organizations. It was in accordance with a study of [19] which had studied the development of a model of participatory health promotion for the elderly in the community. The result revealed that the elements of health promotion model were community's participation, local administrative organization, public organization, health service entrepreneur, social development, and human security. By this, these elements played a significant role in mobilizing the elderly's thought to a real practice in order to support good health under individuals' suitability. Undeniably, it affected the elderly's better quality of life in various dimensions in their every life like physical health, mental health, economy, surrounding, and society. It was in accordance with a study done by [20]. They had studied a development model of elderly's quality of life in Buriram. The result revealed that the elderly should develop and help themselves. Those who took care of the elderly and members of the family should assist and place an importance on them.

The government organizations i.e. local administrative organizations and subdistrict health promotion hospitals should be responsible for developing the elderly's quality of life. They should allocate the elderly for social welfare, health activities, life and property security, appropriate surrounding, potential promotion activity, courses of training, facilities, public service, and community participation promotion.

Incidentally, due to the fact that the quality of life was individual's personal emotion toward surroundings in their everyday life and living like members in the family, community, society, civil servants, local administrative organizations, sub-district headman, village headman, doctors, nurses, health officers etc. Moreover, the quality of life still meant non-living surrounding like road, public places, toilet, park, recreational places, stadium etc. Obviously, it might be said that these elements were holistic and everything related to develop the elderly's effective quality of life because all parts played an important role in differently developing the elderly's quality of life. However, to develop the quality of life, there must be completely elements in both controllable internal factors and uncontrollable external ones. By this, it could facilitate a complete development under the necessary elements. It was in accordance with a study done [21]. The study revealed that factors affecting the achievement motive model of volunteers of Sa Kaew Province must be consisted of internal and external factors.

According to the aforementioned reasons, the model of holistic development of the elderly's quality of life through sustainable participation process of the community of Tha Khan sub-district, Tha Takiab District, Chachoengsao Province should be completely consisted through a participation of all sectors—from the elderly, family, society, community, and support system from the public sectors. It was in accordance with [22] who had studied a relation of understanding perception concerning the model of health promotion in physical activity and health food consumption among the 50-69-year rural old women. The findings revealed that the factors could predict the rural old women's health promotion behavior. The factors were perception of personal capability, benefit perception, and high-level personal promotion. It was in accordance with [23] who had studied factors affecting models of health promotion for the elderly's life. The study focused on the Korean elderly living in both rural and metropolitan areas in Korea.

The findings revealed that the factors predicting the model of lifestyle and health promotion were benefit perception, self-capability perception, and interpersonal influence. It was in accordance with a study of [24] revealing that the model of the elderly's health development required for holistic elements. It consisted of a complete care with covered goals, physical health, food consumption, mind, society, and learning for the elderly. It was also in accordance with the study done by [25] revealing that the social or community activities had an influence to the elderly's activity attendance than personal activity. Therefore, the elements of the model of elderly holistic development of quality of life through sustainable participation process in Tha Takiab District, Chachoengsao Province, Thailand, covered all dimensions which had been related as the instrument for sustainable and effective development of the elderly quality of life.

VI. CONCLUSION

This participatory action research was conducted with mixed method in which quantitative research and qualitative research had been integrated. The research was done with Plan-Do-Check-Action process or PDCA process. The objectives of this research was to create a model and an experiment of the holistic development of the elderly's quality of life through sustainable participation process in Tha Takiab District, Chachoengsao Province, Thailand.

The key informants of this research consisted of elderly, families, government officers, community leaders, and local leaders. The population of quantitative research were elderly living in Moo 2 of Tha Kan Sub-district, Tha Takiab District, Chachoengsao Province. The statistics used for quantitative data analysis was percentage, means, standard deviation, and ANOVA. The content analysis was used with qualitative data. The research results found that the model of promoting holistic quality of life through participation process for sustainability of the elderly at Tha Takiab District, Chachoengsao or the warm house model (HESS Model) consisted of 4 dimensions as follows: H: Health refers to the dimension of good health for the elderly physically and mentally. The elderly must have knowledge of self-care and be able to take care of themselves as appropriate for each individual context. E: Economic means the elderly who were well-being and can be self-reliant. the elderly should work according to their physical condition and spend economically. S: Safety means good surrounding with safety for the elderly, both inside and outside their home including elderly toilets, travel, roads, various places in the community, and fitness centers, etc. S: Social Support means good support from society such as establishing a network of elderly people in their own communities and nearby to develop and exchange guidelines in caring older people mutually. Recommendation to implement for benefits, the research found that government agencies or government officers should give priority and go to work take care of the elderly in the community at the village level more than in the past. In addition, it found that there is a lack of information sources for development of the elderly in the

community; therefore, there should be a training and inform news about supporting various grants to the people and the elderly more thoroughly

Suggestion

Suggestion for Research Integration

1. According to the research, it was found that all relevant sectors played a pivotal role in taking a sustainably care the elderly's quality of life. However, it was also found that the integration of the policy to practical operation for taking care of the elderly in a community level was a main problem among community leaders because the community leaders had to run their own business and be responsible for other missions. By this, the research would like to suggest that the public sectors and civil servants should place more importance on missions on the elderly in the community, particularly in the village level. Also, the authority should appropriately assign the relevant officers to follow up and support continuously with an understanding on the context of people in the villages.

2. According to the study, the researcher found the problem on a lack of information source for integration of development of the elderly in community. By this, the research proposed that the community leaders and civil servants relevant to the community should organize workshops for the people and inform them sources of financial support thoroughly. Moreover, the relevant officers should place an importance on field-work action and problem-penetrating access in order to alleviate people's problem.

Future Research Suggestion

1. There should be factors affecting the community's participation on the development of the elderly's quality of life in order to response to the national strategy concerning the aged society.

2. There should be a study of the development guidelines on the government sector's welfare allocation affecting the elderly's quality of life in Thailand.

3. There should be a study to compare the elderly's quality of life with other communities in order to understand the strength and weakness for more efficient improvement and development on the elderly affairs.

4.There should be a quantitative study in order to investigate the concept on the development of the model and an experiment of elderly holistic development of quality of life through sustainable participation process in Tha Takiab District, Chachoengsao Province.

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The Participation Model of Ageing as an active citizen

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Abstract - Thai Population as the aged society in 2021, it is expected to reach in 28 percent in 2031 and will become super aged society. The people engaged to older ages, their ability was decreases, and would be referring to the dependence. The activity theory believes that the elderly was active life-style, and they are more satisfied in life. The researcher was interested in developing a participation model of ageing as an active citizen. We collected data by focus group discussion at three best practice of ageing participation regions. Each region consists the chief of organization, practitioners and Active Aging, all of that about 7-10 people. The result showed the Participation Model of Ageing as an active citizen consisted of 1) the policies for joining elderly, 2) the responsible person, 3) notify to the elderly understanding policies, 4) the process was clearly, 5) the elderly decided to activity joining as problem presentation, problems solving activities for the community and themselves, management, modify and improve actions and joining activity, and 6) to their benefits as increasing ADL, Health, social network, increased self-health satisfaction, income, and self-esteem.

Keywords— ***Active Ageing, Participation Model, Best Practice***

I. INTRODUCTION

The aging population is a worldwide phenomenon that is the result of declining fertility rates and longer life expectancy. Therefore, the number of elderly people has increased, thus increasing the aging rate. As of 2018, the world had a total population of 7,633 million. There were approximately 990 million elderly people aged 60 years or more or accounting for 13 percent of the total population, causing the world society to enter an aging society. Europe was the continent with the highest proportion of the elderly at 25 percent. As for ASEAN, it had entered the aging society as well, with 10.2 percent of the population aged. Singapore is the country with the highest elderly, at 20.4 percent, followed by Thailand with 17.6 percent of elderly people. [1]

Thailand fully enters the aging society in 2021, and by 2031 it is expected that the proportion will increase as high as 28 per cent towards "the most advanced elderly society" [2]. As a person grows older, the body changes in a way that deteriorates according to the mechanism of aging. The biological aging theory believes that this mechanism arises spontaneously at the cellular level with increasing age, causing the body's organs to lose their function [3]. This causes the elderly to have reduced ability to function and to enter a dependent state at a later time. An assessment of the health screening of 6,394,022 elderly people in 2015 by the Ministry of Public Health found that 79 percent (5 Millions of people) are elderly people who can help and rely on themselves. 21 percent (1.3 million) are elderly people who are dependent and in need of both health and social care [4]. If the elderly who begin to perceive their own body changes in a deterioration or society see them as the age with disengagement theory [3], the elderly are disengage from their work, despite the fact that work is one of the factors that make them work-ready [5]. This is consistent with the activity theory that the elderly with regular activity are characterized by being active, satisfied in life and adaptable [3]. The socially engaged elderly perceive themselves to be healthy [6], vitality, good health, income, not being a burden to others, self-reliant and self-worth.

The development of elderly participation requires the development of the elderly potential to be able to function effectively, readiness to be involved in successful activities, changing the creative worldview of self and society, sense of self-worth, ability to adapt to environmental activities, potential for social participation [7]. From the Active Aging Index of Thai Elderly survey, it was found that the Active Ageing Index in engagement (0.502) was lower than the others [8]. Participation in activities is the main factor for good health because the body is constantly in motion. It also generates income which will create stability and lead to self-reliance of the elderly and result in the elderly with vitality in life. Therefore, the researcher is interested in studying about "The Participation Model of Aging as an active

citizen" by removing good practical lessons on the participation of active elderly people.

II. Research Objectives

The objectives of this research are 3 as follows.

1. To transcribe the lessons of participation of active elderly people.
2. To develop knowledge about the participation of active elderly people.
3. To develop a participation model of active elderly people.

III. Literature Review

Old age is an age that has changed in deterioration both physically and mentally. Society causes the deterioration of the functions of the body systems, which results in the elderly having reduced ability to perform daily activities. According to disengagement theory explains that aging is a natural process. When organs are used a lot they can deteriorate and go faster if they work hard, even if humans can repair themselves and keep using them. Disengagement theory believes that individuals, as they reach senior age, accept their declining roles and functions; gradually disengage from society. It also made the relationship with society, income and role less, respectively. The elderly feel that their self-worth decreases, causing disengage from social activities. On the other hand, activity theory believes that older people who are always active have a sense of satisfaction in life and are prepared to perform activities due to their health, lifestyle and ability to do activities that are satisfactory. This includes social activities that are suitable for themselves, such as volunteer activities, social activities, or income-raising activities that provide self-stability. Therefore, encouraging the elderly to participate in activities makes the elderly who are active themselves. Consistent with studies of Haruthai Kongmaha, Kannikar Harnsoongnern, Wilaiporn Rungkawat and Pratum Kongmaha [9] found that the enhancement of active in the elderly consists of 5 components: 1) Creating the faith of the active elderly people 2) Creating a social space to allow the elderly to show their talents 3) Promoting lifelong learning through involvement of the elderly and integrating the concept of people of different ages 4) Integrating people of different ages to participate in activities 5) Creating a conducive and safe environment.

Active elderly people refer to the elderly who are always prepared for activities, satisfaction with their health conditions, their ability to live and do activities that they are satisfied with. This includes social activities that are suitable for one, such as volunteer activities, social activities, or income-raising activities. When the elderly have income and the ability to do activities on their own, they feel secure within themselves. The participatory pattern refers to the practice of individuals engaging in established activities, which can occur intermittently or continuously throughout every step without the need for a definite goal. Success is often dependent on an environmental context if it is likely to be productive and readily available in terms of vitality, competence, intelligence, knowledge and appropriate opportunities of participation. Literature reviews show that participation in the elderly society results in the elderly having the power to carry out their activities and to lead their own lives but most older people tend to feel that their physical ability to perform daily activities is reduced, and they disengage from participating in social activities. Therefore, the researcher is interested in studying lessons that help strengthen the participation of active elderly people from related papers and develop a participatory model of active elderly people.

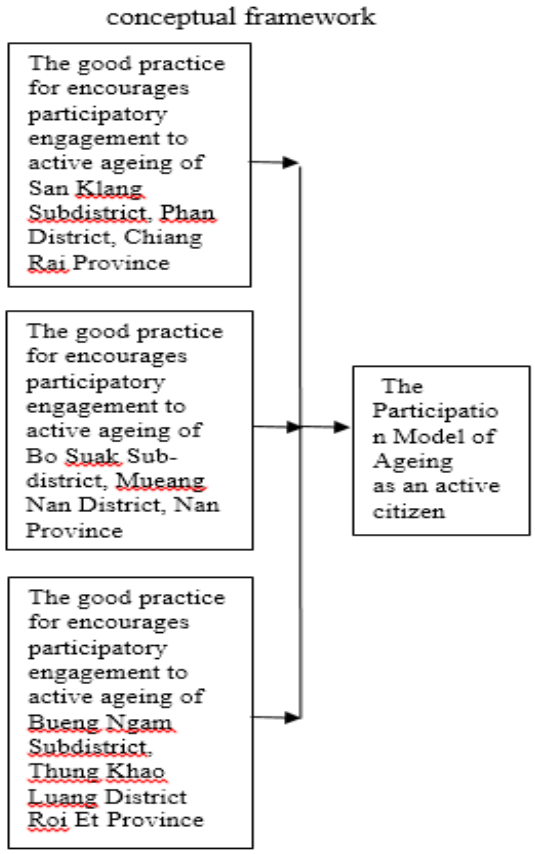


Figure 1 Literature review flow diagram

IV. Research Methods

This research was a qualitative study to study the participation of active elderly people. There were methodologies, divided into 2 steps as follows:

1) Study of documented secondary information and research by studying documented data on the participation of the active elderly people. It was researching and collecting general information from academic papers, related research papers, journals, electronic databases, research findings related to implementing good projects / activities to enhance the participation of the elderly for being active elderly people.

2) Transcribe the lessons obtained from good practice in enhancing participation of active elderly people in three provinces with Active Aging Index of participation in the top 1-5 provinces in Thailand and select the best practices of each province to consider

Population and sample

The sample used in this study was a good practice area. The researcher selected a specific elderly sample by studying the provinces that had an active index in the elderly participation that ranked three of the five provinces of Thailand.

Select provinces with high social participation and respected elderly groups in the provinces and were willing to cooperate in this research:

1) San Klang Subdistrict, Phan District, Chiang Rai Province

2) Bo Suak Sub-district, Mueang Nan District, Nan Province

3) Bueng Ngam Subdistrict, Thung Khao Luang District Roi Et Province

Research instruments

Semi-structured question landscape: The researcher builds on a literature review consisting of questions about the background of the elderly, project preparation, project execution, project results, problems found with solutions and suggestions for the next project implementation. These were 11 open-ended questions.

Testing for validity and reliability

The content validity test of the semi-structured questionnaire was performed by five relevant experts to examine content validity, comprehensiveness, completeness in accordance with the research conceptual framework and meets the desired objectives along with considering whether and how to use language that could be easily communicated and suitable for the sample group. When IOC = 0.78 was obtained, it shall be revised to be correct and appropriate according to the suggestion of the expert by having a dissertation advisor who examines the suitability of the expert.

Research ethics certification

Researcher had submitted a request for research ethics to Huachiew Chalermprakiet University Ethics Committee on Human Research, certified document no. 101722563 on 12 October 2020.

Data collection

Data were collected in all 3 areas by focus group. The group discussion consisted of 7-10 executives, practitioners and active elderly people**.**

V. RESEARCH RESULTS

Secondary data from papers and research and transcription of good practice lessons to enhance the participation of the active elderly people were studied. In the sub-district group discussion, the participants consisted of 1–3 administrators and sub-district administrative organizations, practitioners involved in the work of the elderly 2–3 people and active elderly people number 4 or more, resulting in the following findings:

1) The organization had policies and plans to organize various activities related to the elderly in the community, such as social development policy and elderly participation, in line with the saying that

"... I already had a clear policy, and when Monsignor informed me it, we gave the help that the elderly need. As for the operation, he managed himself.....but we supported him as requested, such as requesting an IT lecturer, we also provided it... " (G1)

2) There was a person responsible for the activities of the elderly group in the area of responsibility with assignments on promoting the building and development of working potential of the weaving group, the basketry group and the herbal group of the elderly by specifying the name at the end of the plan, in line with the saying that

"… Every time I went to coordinate myself, the staff… came to take care, gave assistance and advice. They took good care of us. Like this, I'm happy and ready for the event to the fullest ... " (G2)

"… I had assigned the deputy to be responsible. The staff ... came to look after and visited the elderly almost every week, helping, brought information, brought work. Many elderly people work according to the orders of the staff and they still have good income…" (G2)

3) There was publicity found that the elderly leaders in the community were invited to the meeting to

acknowledge the policy and to inform the elderly, in line with the saying that

"... Second Sister, you went to my village. Told me the details at home. ... I saw that it was interesting, so I tried to look at it first and I wasn't sure. It was really good enough ... " (G2)

4) There was a systematic operation and publicizing the operation system to the elderly, along with preparing publicity documents about the activities of the elderly with a system of assistance, care and support for the elderly to run the project continuously and efficiently, in line with the saying that

"…. At first, the SAO would invite the community leaders to talk, and after that we invited the various intellectuals to come together to meet on how we should do it. Staff ... will come to help take care and service us. We had something to help each other. Recently, the staff ... rarely come to look for work, they may be busy… " (G3)

"…. When the SAO told me ... "There is a budget of 5,000 baht. Community leaders think about how to bring this money to work with the elderly" … After that, we came together to determine what to take, together think and act with ourselves until it is what you see ... but they don't leave their work even though they don't know what to do. I don't wanted it ... "," .... Yes, if going then you won't know what will be ... "," .... If you go and don't know what will be like this, it will not go better …. " (G1)

5) The elderly decide to get involved.

5.1) Participation in thinking, presenting problems, presenting solutions and presenting needs of the elderly in the community

"..... It started with the problem of people who fooled the elderly at home, tricked them into signing their names, giving them fingerprints and taking all their money away. When the school gave the staff to teach and give knowledge, we were not deceived again ..." (G1)

5.2) Participation in community presentations resulting from seeing the problems that arise together, in line with the saying that

".... I thought I would like to get an elderly school and presented it to the staff ... he agreed and presented it and the result is that the SAO agrees, so this was the origin of the school. Here are 4 batchs .... " (G3)

"..... I would like children to learn because in the future children may not be able to do ..... It would not be lost to our generation ...." (G2)

5.3) Participation in project execution, decision-making in terms of corrections, additions, reductions of activities, along with improvement and management of community resources for the effectiveness of the stated goals and ensuring that activities are performed according to demand and quality, in line with the saying that

"... He raised me to be the leader of the group .... Haha ... Well, I live near here ...." (G2)

"… .. Oh… When the project started, they (the elderly) managed themselves. We didn't need much, anything, he (the elderly) came to tell. He was doing better than us .... " (G3)

"….. We said that we would help find a speaker ourselves. We had a volunteer lecturer and we needed someone who knows the law .... SAO ... Change it for me .... We had a retired teacher to help teach. We were very happy and he was not accepting compensation. We then took the money to spend other things .... " (G3)

5.4) Participation in activities from the list of all project operators according to the membership group of each activity such as students, members of basketry and herb groups, etc. Highly interested activities were characterized by easy participation, convenience, suitable for individual elderly health conditions and appropriate experience, past knowledge of elderly and not very long time to attend, in line with the saying that

".... I did too, if I didn't, where do I get my income ..." (G2)

"…. I came early to prepare, then I came to train and join in activities. When he got up and danced, I danced too, but it was fine as both a preparer and a student. It was fun and helped others. May be a bit tired ... Well, it was okay, just let everyone have fun and had the knowledge to take care of themselves…" (G3)

"..... Our activities were very easy each day. You could do a lot of things but didn't get bored. We had a lot of fun conversations with many groups of people. Basketry work did not take long to learn. Today studying, tomorrow teaching is fun, the schedule will rotate .... I'm going to continue knitting leaves, and when finished, show them, and someone will come and buy it .... " (G1)

5.5) In taking part in benefiting, it was found that the elderly who participated in this activity because they perceived that they would receive many benefits, divided into areas related to the elderly themselves and the elderly community society.

5.5.1) Elderly person on health status, social networking, knowledge, lifestyle ability, self-health satisfaction, self-esteem, income and safety, in line with the saying that

"… ..we .. came and felt healthy. .... happy and fun ... and also earn income…We would keep coming, and if told to stop coming, we would not stop coming. We ..... "(Saying and rejoicing together as the whole group and

laughing with joy ....” (G1)

“…. Since coming to school, we had felt that we have been able to get around more smoothly, do more. It was strange ... Now you can walk better. Like the band on the back here, I forgot it ...., …..Yes, I forgot it ...., Don't, we don't need it again, we've stopped using it ...." (G1)

“.....A royal family came to see the event here.. Doctoral, Master's and Bachelor's students had come to see many generations of our work ... This was the accommodation of the Bachelor's degree and that is for the Master's and the Doctor's degrees .... (Point to the residence, which was a very beautiful Thai house) I intended to arrange it and I am glad that I have given knowledge ..... ". (G2)

“..... In the past I couldn't do anything, knee pain, finger pain, and swollen joints that I couldn't bend at all. When I came here to exercise and dance until now I can write and eat by myself. I can do anything I can do without pain. But only 2 inches left with a little pain, but no redness then .... " (G2)

5.5.2) For the benefit of society and the elderly community is progress, safety, external recognition, support, care and sharing in the community, in line with the saying that

“..... Our village is now famous, with more tourists coming. We have sold more. We follow the modernism, but use our folk wisdom, which tourists like to make us earn more. Now we can work together to make roads that cars can run. If we and the state work together, we will get a beautiful road ... " (G2)

"..... Now there is no (deception), then our elders are knowledgeable and knowledgeable about IT ..... We have a network that we can always line up with and no one else can fool. We have a line to tell each other, take pictures and send to each other, which we help each other watch and monitor each other closely. When we first got together we were able to catch a deceitful person. In the past we were deceived and suffered a great deal of damage .... " (G1)

“.... Oh .... We all knew each other ... There were things to share such as chicken, eggs and vegetables. Now we don't have to buy anything, including rice ... very good and economical. We ate fresh vegetables, and some of us rarely had to buy a side dish, with fish and vegetables to share. The fish here are freshwater fish, it's delicious. Teacher, try eating it, it's delicious .... " (G3)

6) Ready to activities. (Active ageing) as increase their ability to perform daily activities by oneself, improve their health. There are more social network. Life satisfaction appears to increase. Have more income And have an increased sense of self-esteem. That

“...Not bored, not tired, I was very helpful. I was glad to apply my knowledge and experience to public benefit. Staying at home was useless. When I leaved my home to join activity. I felt happy…” (G3)

VI. DISCUSSIONS

According to the research, it was found that the participation pattern of active elderly people must start from:

1. The organization had policies and plans for conducting activities on the elderly in accordance with the study and design of the governmental participation of the agency .... which was an international organization that promotes and develops the participation of the people. It was necessary to provide opportunities for people to participate in the government sector [2]. As the organization did not open opportunities, the elderly would not have the opportunity to work with the agency.

2. Having a person responsible for promoting the activities of the elderly group in the area of responsibility and the person responsible for public relations and liaising with the elderly to clearly participate to facilitate the provision of information, this would make the elderly feel confident and valuable in their participation. But if things didn't meet their needs or lack adequate support or the unexpected, they may experience a decrease in self-esteem [10] which disengaged them from participating in activities. In line with the studies of Thanakorn Sirisukantha, Raksir Kietbut and Supattra Wansuebchua [11] found that staff behavior was a factor affecting the participation of the elderly.

3. The agency must publicize the elderly on the opportunities and patterns they want to participate, as well as the benefits that the elderly and the community would receive. Consistent with the education of Chintawee Kasemsuk [12] discussed the process of creating participation, and it was necessary to communicate in various ways that are appropriate to the elderly or community for awareness and understanding in order to make the elderly ready to participate in society. It was imperative to be ready in all respects to enable older people to have self-confidence and to accept that they can contribute effectively.

4.The elderly decided to participate in activities based on obtaining information due to public relations of clear and sufficient information, considering their own ability to participate in social activities. They may consider

issues including the physical, mental, economic, competence and support they will receive when making decisions. This was consistent with the study of ..... [13] that found that physical, mental, educational and occupational health are factors for the participation of the elderly in community development. This was because the decisions of the elderly Depending on the availability of various aspects. These included knowledge, understanding and technology competence in various contexts related to projects / activities to enable the elderly to be able to confidently participate [14].

5.The elderly were involved in the activities, whereby the elderly decide to participate in different steps according to the availability of each person as follows:

5.1) Participation in thinking, suggesting problems and proposing solutions. The involvement of the elderly begins with providing information, presenting problems, initiating projects, discussing issues and needs; this made the elderly feel that participation is the solution to the problems of their communities and themselves. [14]

5.2) Participation in proposing community activities as a result of seeing the desired problems, mutual change, collaboration and taking responsibility in matters affecting oneself and society for change in the desired direction [12]. The elderly were aware of the various contexts of the area, the environment and the needs of the community and themselves.

5.3) participation in the implementation of established projects or activities, making decisions, managing, editing activities, adding and reducing activities to be more consistent, the elderly would play a constructive role in order to return the effects of activities to the elderly and the community [15].

5.4) Participation in activities whereby the activity started from participating in different stages, most older people will participate in programs or activities in terms of productivity and self-satisfaction, for example, participating in exercise to increase physical fitness, joining basketry group to earn more income, participating in teaching and demonstrations to build pride and self-worth.

5.5) In participating in the benefit, the elderly would realize the benefits they arise for themselves and create a continued reliance on those activities. According to Charinya Chansong [16], it was found that the elderly had the highest level of benefit participation, the benefits that the elderly received were as follows:

5.5.1) Elderly aspect: Better health, more social networks, more income, more lifestyle knowledge, sense of self-health satisfaction, increased awareness of self-worth, and increased life safety.

5.5.2) Social aspect: Society had progressed as a result of activities and support to facilitate the participation of the elderly, resulting in safety; it was recognized by the external society in accordance with the available resources, social lifestyles, and the living needs of the elderly [17].

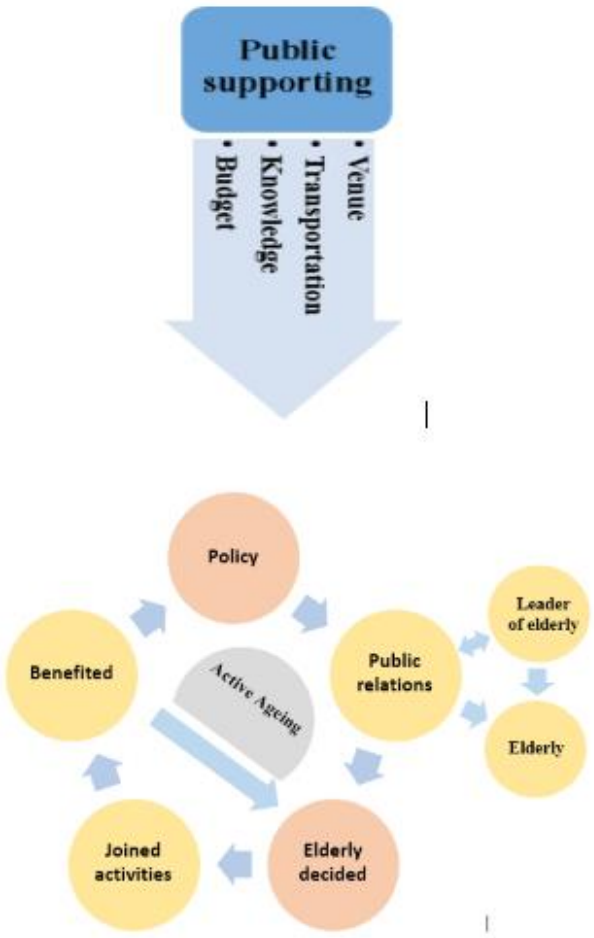


Figure 2 Diagram of The Participation Model of Ageing as an active citizen

VII. CONCLUSION

When the project runs for a while, it will affect the elderly. The elderly will be able to self-assess themselves on their participation in that activity along with meeting and discussing the project performance and the results of participation in that project / activity [12] to personalize the activity. This step was a self-assessment of the benefits. Participation in community activities was the creation of self-worth among the elderly, making them more readily available and energizing in social activities. As a result of

the overall study, it was found that when the elderly who were given the opportunity to participate are activities that benefit the elderly. These included solving problems in life, enhancing stability, earning income, having more social networks and being able to live, etc. This was to allow the elderly to present problems facing the elderly and to propose solutions that are consistent with the elderly lifestyle. The elderly would also take part in that project / activity and as projects / activities run for some time, the elderly would contribute to that benefit in terms of increased social readiness, including social networking, being supported, cared for and shared with each other in the community, increased living ability, self-health satisfaction, increased income, and increased self-esteem. The elderly would have a continuous and lasting participation. The process of community participation came from the operations between the public sector and local administrative organizations jointly develop activities for the development of quality of life and guidelines for community participation. In terms of the promotion of the state, it was done by bringing local cultures to create a common ground in the strong community integration, increased income and jobs contribute to life stability, life satisfaction and a sense of belonging to the community. Participation in activities made the elderly more readily available to practice social activities [18] [19].

VIII. Acknowledgement

In this study, the researcher wishes to pay homage to Dr. Phra Kru Piyawan Phiphat and thank you Mr. Bo Suak Subdistrict Administrative Division, Deputy Officer of San Klang Subdistrict Administrative Division and Deputy Commissioner of Bueng Ngam Sub-District Administration Division, who kindly facilitated the data collection in this research. I would like to thank Prof. Dr. Natchanat Yahan-ngow and Dr. Kittiwan Sasai for giving advice and encouragement in this study.

IIX. Recommendations

The recommendations from this research are divided into 2 points:

1. General suggestions

Related organizations should use the research results as a guideline for organizing activities that enhance the participation of the elderly that will empower the elderly as follows:

1.1 Establishing policies for the elderly to be clearly involved and responsible persons

1.2 Public relations to the elderly to know and understand the policy clearly.

1.3 providing opportunities for the elderly to participate in every step

1.4 Allowing the elderly to participate in the benefits that arise to the community, society and the elderly in a concrete way.

2. Suggestions for further research

2.1 Comparative study on the satisfaction of participating in various types of activities to guide the research results in organizing activities to enhance participation in elderly activities.

2.2 A study of patterns to improve the environment that is conducive to the participation of the elderly.

2.3 Study of factors affecting the participation of governmental organizations in different social, cultural, traditions and environmental contexts.

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Driving Mechanisms for the Agricultural Tourism Network Sector in Phra Nakhon Si Ayutthaya Province

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Abstract— This research aims to study the driving mechanism for the agricultural tourism network sector in Phra Nakhon Si Ayutthaya province with the use of combined approaches. The 2 research processes comprised 1) to study of documents and related research with associate agricultural tourism network in Phra Nakhon Si Ayutthaya province and 2) to study of mechanisms to drive agricultural tourism with Delphi techniques from relevant sector, both public, private, public and academic. Results indicated that the driving mechanism for the agricultural tourism network sector in Phra Nakhon Si Ayutthaya province comprises the following elements 1. Man refers to a group of people or organization who join the network including 1) Government sector; 2) Private sector; 3) Public sector and 4) Academic sectors including educational institutes and related organization; .2. Resources refers to the tool used to promote the development of an area or a government network to support the development of the area, infrastructure to allocate budget to develop tourist attractions, private sector network to promote / support activities in the tourist area, public sector network to perform tourism resource management planning and academic sector network to support knowledge in development coordinating with relevant sector in the area for development and 3. Management System (System) refers to the establishment of a common agricultural tourism management model of network partners with the processes as follows: 1) Defining the needs to be a network; 2) Seeking partners to share information; 3) Forming a network to work 4) Setting goals, objectives, strategies that are common opinions; 5)Establishing working structure and share-decision making process; 6) Designing work plans and activities; 7) Developing network capacity; 8) Creating communication system; 9) Exchanging of knowledge and lesson summary development and 10) Monitoring and evaluation.

Index Terms— ***Driving Mechanism, Tourism Network Partners, Agricultural Tourism***

I. INTRODUCTION

Similar to rural tourism, agricultural tourism (Agrotourism) is a part of ecotourism that evolved from the concept of sustainable tourism focused on environmental conservation and ecology which cause the least impact on tourist attractions. Agrotourism allows tourists to get involved with nature / rural areas especially in agricultural areas where tourists performs agricultural activities that cause fun and learning processes in different ways which makes tourists conscious of conservation and realized the importance of nature and culture of the local society to create sustainable tourism. The environment can also survive without being destroyed as well as all involved parties realize the importance of helping to maintain the quality of the tourist attraction so that it does not deteriorate due to the density that exceeds the carrying capacity of the tourist attraction. (Isichaikul, 2018, P. 5) Agricultural tourism is considered as another form of Alternative Tourism or Niche Tourism (Robinson and Novell, 2005, p. 9) which is the current trend of tourism that tourists are more interested in today. It is a form of agricultural tourism occurring in many countries such as Australia, USA, Canada, Philippines and Thailand because Thailand is an agricultural country with a variety of occupations in agriculture, have agricultural wisdom and famous for its fruit trees, rice, advance fisheries and livestock activities since the past. Such diversity will attract and cause a good impression on tourists, provide opportunities for them to join activities with farmers to experience the natural environment, agricultural lifestyle that combines religious activities, arts, culture and traditions, as well as an education to learn, exchange experiences and find the process of working closely with right livelihoods and also increase income distribution to the locals. The research conducted by the United States Department of Agriculture (USDA) in the United States (University of Tennessee,

2005) found that the reason tourists visit rural or farm tourism is to see rural scenery (86%), to learn about the source of food (71%), to visit relatives in other provinces (63%), to see and participate in farm production or agricultural activities (64%), to buy agricultural produce (39%), to collect fruit (43%), to do hunting or fishing (27%), and to stay overnight in rural areas (8%). The informative agricultural tourism group was approximately 40 years old and about 3 middle-sized families with a college-to-university education, travel for an average distance of about 80 miles from home and spend about $ 45 on day trips.

Phra Nakhon Si Ayutthaya province has interesting tourism activities with various sector involving in promoting tourism in the area including the government sector, private sector, public sector and various groups in the area that formed a tourism network to develop and promote tourism at the local level. However, the purpose of integration for development has not yet been achieved due to different network groups having different competencies to promote spatial tourism as well as unclear and inconsistent approaches with the spatial tourism develop. Researchers and stakeholders therefore wish to study the model for strengthening network partnerships in Phra Nakhon Si Ayutthaya province to drive agricultural tourism, upgrade agricultural products by using tourism activities as a tool to increase income, reduce the problem of falling price products, reduce trade through intermediaries, create pride among farmers and their children in the future for their farming career, encourage farmers to learn and develop communication and create local jobs that prevent young workers from working outside the area. However, good sustainable tourism management cannot be undertaken alone or by any other agency. Hence, it has to rely on various sector such as partners, networks, public sector, private sector, communities, community enterprise groups as well as those who are involved both in the area and outside the area to take part in the management and joint development plans to drive agricultural tourism to achieve the goals of the government policy.

II. RESEARCH OBJECTIVES

To study the mechanisms to drive the agricultural tourism network parties in Phra Nakhon Si Ayutthaya province.

III. LITERATURE REVIEW

Network (Chanhom et al., 2018, p. 52) is a work in the form of a network of community-based tourism networks at both provincial and regional levels under the concept "Brother for brother, friend for friend" which helps to enhance the work performance of network members in each area through consultation, activities, sharing experiences and community-based tourism management. These implementations causes the development of community tourism development strategy tool as a tool for directing development and working with government and academic network partners to support project activities according to the needs of the community tourism network.

Guidelines for the development of agricultural tourist attractions (Songsoonthornwong, 2018, p. 52)

The preparation of agricultural tourist attraction is considerably importance that the things that should be prepared include 1) Personnel to be developed in terms of knowledge, understanding of tourism and hospitality, management of tourist attractions and cultivate awareness of nature conservation, local arts and culture; 2) Physical referring to the improvement of landscape to create aesthetics and maintain the good image of the area; 3) Management including the setting of organization and providing service, creating a community tourism agreement and 4) Marketing which is the improvement of price, public relations, distribution channel and tourism resources

Agricultural tourism management process (Thiansawang, 2018, p. 18) includes 1) Planning refers to the setting of goals in the agricultural tourism business by establishing policies for conducting agricultural tourism businesses; 2)Setting of guidelines or operating methods for conducting business by determining what are the main unit and consulting agency; 3) Employment refers to the emphasizing the participation of community members, focusing on the community to take care of tourist attractions by the community through selecting persons suitable for their work based on experience and expertise in each person; 4) Controlling refers to the supervision of activities to be carried out according to a defined plan or goal that the committee is appointed to perform duties of controlling agricultural tourist attractions.

Factors affecting the promotion of agricultural tourism (Songsunthornwong, 2018)

1) Local tourism resources that locality has a variety of different tourism resources. Locality with rich and varied resources has an advantage in attracting tourists to travel; 2) Providing knowledge about agricultural tourism promotion to relevant persons such as operators, tourist guides, etc; 3) Collaboration refers to a cooperation between locals including local authorities to share resources, help each other in the conservation of agricultural resources, set campaigns to maintain cleanliness in the communities, etc; 4) Marketing promotion which is to make tourists know tourist attractions such as services and activities available in tourist attractions; 5) Availability of utilities such as electricity, water supply,

roads, bridges, and road signs to facilitate tourists to access tourist attractions and 6) Support and investment by sector that both the public sector, the private sector, the communities and the related sector to make the management of agricultural tourism resources to be appropriate.

IV. RESEARCH METHODS

1. Population and samples

The population and sample group in this research were stakeholders from all sectors defined as three groups of key contributors in research as follows:

1.1 15 people chosen from the government sector with purposive sampling method.

1) 6 people from Provincial Community Development Office Phra Nakhon Si Ayutthaya province consisted of Provincial Community Development and District Community Development.

2) 1 person from Ayutthaya Tourism and Sports Office

3) 1 person from Tourism Authority of Thailand Phra Nakhon Si Ayutthaya Province.

4) 1 person from Ayutthaya Provincial Administrative Organization Tourism Promotion Department.

5) 6 people from Provincial Agricultural Office consist of Provincial Agriculture and District Agriculture.

1.2 12 people from community leaders / farmer groups / community enterprise groups and people in the area chosen by the purposive sampling method

1.3 10 people from Local tourism business operators include travel sector, lodging, restaurants, merchandise transportation within the community and representatives for each type of business chosen by the Convenient Sampling method 2 people each.

2. Research tools

In-depth Interview and Structured Interview

3. Data Collection

The data collecting in the area of agricultural tourism was done with the interviews with all relevant sectors, including government sectors, tourism operators in the area, community leaders, farmers, community enterprises and people to study the spatial context with the different issues and questions according to the context and mission of each target group as follows.

3.1 Government sectors: The interviewed issue were the agency's mission, roles and capabilities in the management of agricultural tourism in the area including trends of participation in tourism development in the area.

3.2 Community leaders / farmers/ community enterprises and people in the area: The interviewed issues were spatial contexts, roles, functions of participation in spatial tourism activities as well as demand for agricultural tourism development in the area.

3.3 Private sectors/tourism and related business entrepreneurs: The interviewed issues were the business model of the business, the need to use the area in the tourism business including participation in area development to promote and develop tourism.

4. Data analysis- The analysis of data from in-depth interviews was as follows:

The interview with a group of informants and the results obtained from the group chats of different groups, and all validation has been performed. The researcher categorized and analyzed the data as follows.

4.1 Content Analysis is the analysis of the data obtained from interviews for content analysis, prioritizing the content group including analysis, classifying and summarizing the issues discovered (Topic) and then using inductive descriptions by analyzing the situation in the context of capacity building of the tourism network partners in Phra Nakhon Si Ayutthaya province.

4.2 Three-wire data validation (Triangulation) by verifying information from the source of information in terms of time, place and person to determine whether Information at different times, locations, and information providers also get information with consistent content. Since the results of the data collected by the triangular method resulted in the same findings, it showed that the obtained information was accurate. The researchers used the data from all 3 interviews to analyze and summarize each topic according to the research objectives.

V. RESEARCH RESULTS

Results of the study from all sectors involved in agricultural tourism in Phra Nakhon Si Ayutthaya province found that promoting agricultural tourism had a positive effect that will enhance the way of life of the locals in the area. For the government sector, the government sector embraced policies from the government on the development of tourism in the area by using existing social capital as a means to drive activities to create jobs for the community. As for the community, efforts were made to develop their own tourism management. However, because of the basic way of life of most people are farmers, there is therefore no experience and skills in the management of community tourism although there is an intention to develop the community. The community still faced with various problems.

In conclusion, it can be concluded that the context of capacity building of the current Phra Nakhon Si Ayutthaya tourism network partners has 2 issues as follows

1) Context of the capacity building of network partners

Agrotourism in Phra Nakhon Si Ayutthaya province had no clear responsible agency yet there is only an assignment to the Agricultural Office of Phra Nakhon Si Ayutthaya Province from the Upper Central Region 1 to implement a production system development project and safe food business annual fiscal year 2017 including activities of developing learning centers and tourist attractions. However, after that, there was a lack of continuity of project management. Working in agro-tourism is still lacking personnel who have direct knowledge and competence in agricultural tourism management. Although Phra Nakhon Si Ayutthaya Province has ordered the appointment of the Provincial Agenda Working Group (Agenda), the fifth group to increase the value of agricultural products and the 6th group to increase tourism value. The work of the steering committee is only in line with the mission of its own agency. There is no integration, collaboration, and linkage with relevant departments. It is an operation in a form of different parties working in the nature of unreal cooperation of the network but just a temporary network. As a result, each network partner has duplicated work in developing the same target group. The participants of the meeting or the trainers thus feel that they are participating in activities with the government in a matter that is nothing new and makes them bored and does not want to participate in activities with government sector. They also sometimes it felt that the government took part in spatial activities regardless of the actual needs of the participants. The lack of continuity of activities is also the problem. When the activities are finished, the responsible sector leave the community without extension of sustainable development which affect the regular occupation of people in the community as well as the training techniques used in performance enhancement that is not effective and sufficient such as prolonged on-site training, making the trainees tired of just sitting and listening. Therefore, there should be educational activities in other areas and more platforms to exchange knowledge. In the aspect of budget, each sector has set for spatial development resulting in redundancy, waste on the budget that has been spent on personal development including systematically development of spatial resource. There are only few networks that work together, for example, between government sector and communities, or between private and community sector. More importantly, personnel in various sectors still lack the knowledge and understanding of sustainable agro-tourism management. These problems caused from lack of integrated planning in the implementation of spatial development. Therefore, all sectors must focus on working together with the goal focusing on the development of tourism personnel, community product development, development of tourist attractions and facilities by linking with all parties involved in supporting networks for promoting and developing whether it is a government sector, private sector, public sector, community, educational institution get involved in development. There is a process of organizing training to build skills and competencies in tourism management of the area to empower the community to manage self-reliance tourism, promote and add value from the cost of community resources to products and services, deliver a positive experience for tourists and build community participation as a model in agricultural tourism management with the development of appropriate models of empowerment of network partners There is a management system and linking agricultural tourism to all areas in Phra Nakhon Si Ayutthaya Province.

2) Challenges occurring in Phra Nakhon Si Ayutthaya province

Government sectors, the private sectors, the public sectors and the community have given issues that need to be developed and further their potential to achieve the competency that is competent in driving agricultural tourism in Phra Nakhon Si Ayutthaya province. Such issue can be divided into sectors of the network parties as follows.

Government sectors

1) Lack of personnel with specialized knowledge in community tourism development.

2) Lack of coordination between government sectors which cause a redundant spatial position.

3) Insufficient allocated budget for development in some areas.

4) Lack of public relations agricultural tourism in the area of Phra Nakhon Si Ayutthaya province.

5) No main agency to lead the development in the same direction.

Private sectors

1) The resources used for agricultural tourism promotion of each area are still insufficiently developed to promote tourism.

2) The structure of the area that for accommodate tourism activities is not yet ready.

3) Lack of villagers do not yet knowledge and understanding of community tourism management among communities/locals

4) Government sector place less emphasis on agricultural tourism than historical tourism.

5) Lack of coordination between communities and government sector to support agro-tourism or community tourism activities.

6) No main agency to support or take the lead in promoting agricultural tourism of Phra Nakhon Si Ayutthaya province.

Public sector/Communities

1) Communities does not have sufficient knowledge on the community based tourism management system and tourist behavior

2) Lack of knowledge, understanding and attitude of participation in management including the participation in organized tourism activities by the community on the basis of mutual agreements between members of the community.

3) Lack of knowledge in the process of strengthening tourism promotion with community participation.

4) Lack of knowledge and ability to develop new tourism activities that reflect the wisdom and identity of the community to tourists.

5) Lack of knowledge and understanding of principles strategies for coordinating benefits for all parties in the community

6) Unclear distribution of roles and functions.

7) Suspicious working system which lack of auditing system

8) Lack of participation from planning to develop tourism systems in the community.

9) Lack of skills in writing community tourism development plans.

10) Lack of knowledge of the accommodating capacity of the area

11) Some tourism activities affect their livelihoods and the peace of the community

12) No strong measures to control and prevent social, cultural and environmental impacts as a result of the development of tourism in the communities.

13) Community tourism resources are not properly maintained.

14) Some of the household members of the communities lack awareness of the conservation of tourism resources of the community.

15) Lack of dialogue among community members about the impact and transformation of community tourism resources to find a solution together.

16) Lack of the advice of tourists to cooperate in the preservation of the environment of the attractions in some communities.

17) Lack of knowledge and ability to build a community-based tourism network

18) Lack of knowledge and ability to guide

19) The tourist attractions in the community causing problems in providing information about the community and tourist attractions in the communities.

20) The community has little potential to produce local products causing some communities to take their products from elsewhere which is not a product that reflects the identity of the communities to be sold to tourists.

21) Lack of the ability to interact with tourists.

22) Lack of knowledge and ability to properly manage basic facilities for tourists both quantitatively and qualitatively.

The challenges posed by the various network partners show that competencies of the agricultural tourism network parties in Phra Nakhon Si Ayutthaya province still facing problems in the matter of mechanical systems consisting of people, resources and management systems used to drive the agricultural tourism network parties, consisting of

1) Humans refer to personnel of government, private, farmer sector and related sector who are involved in setting common agricultural tourism development goals by defining roles and duties according to the missions of the departments. The government sector will prepare a budget plan for the area development while the private sector will support the operation of marketing and public relations and other related services. As for the farmers sector, it is responsible for the development of resources in tourist attractions to meet the quality standards and to motivate tourists to travel in the area.

2) Resources refer to the main attraction for tourists to visit the area whether it is an agricultural tourism resource, cultural tourism resources or various traditional activities in which all sectors must participate in the joint care and development. In addition to tourism resources in the area, they are also referred to as resources networked by a partner in each sector based on their own agency's mission that can be used to exchange help groups of partners network appropriately.

3) Management system refers the system that will be used to manage the agricultural tourism network partners in Phra Nakhon Si Ayutthaya province that allows all sectors to be able to manage tourism activities in the same direction, reduce operational duplication for spatial development. The management system will be defined as a network partner that the vision, mission and development plan are set together to drive agricultural tourism in the area of Phra Nakhon Si Ayutthaya province.

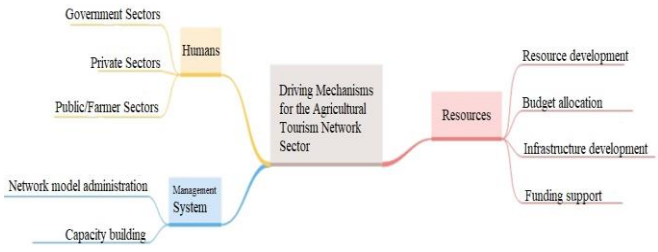


Figure 1. Mechanisms to drive agricultural tourism network parties in Phra Nakhon Si Ayutthaya province

VI. DISCUSSIONS

Agricultural tourism network partners are individuals. Government sector, private sector, public sector and academic sector focusing on participation in helping to promote and encourage collaboration on the basis of the mission of each sector aiming the network of partners to reach a common destination. Therefore, the process of building a network of agricultural tourism in Phra Nakhon Si Ayutthaya province will range from the members of the public sector enterprises performing local activities in order to create jobs and careers for more income, reduce exposure from government sector by reliance on related sector such as the government sector that helps support the budget, trainers in educating, the equipment and machines used in the training; private sectors help support access to services or buy products for further distribution from time to time. Sometime, there will also be academic sector i.e. educational institutions that come into the area to help support the community to develop creative ideas in product processing, raising the standard in products and services. However the work of each sector is still lacking in integration in working together. Therefore, in order to achieve the best benefit of spatial development. All sectors must work together in the form of tourism network partners. This is in accordance with the work of Adam Burke (1999) who said that the approach to networking Inviting organizations and stakeholders to participate in determining the objectives of the network establishment, direction of the main activities, establishing the core group of the network that provide opportunities for members to participate in the decision-making process, cooperative management, information technology exchanging and encouraging a link between the networks to strengthen the network. There should be a follow-up and evaluation as well as network management training courses for core organizations and regular network leaders continually. The training courses must correlate with the development goals in line with the area development mechanisms consisting of people, management systems and tourism resources. These performances are consistent with the Tourist Attractions Development Agency (2553) which states that the management potential of agricultural tourism attractions can operate, plan, supervise and manage tourism sites to be sustainable. The capacity to accommodate agricultural tourism sites is ready to provide basic services for tourists that are suitable for the environment of the tourist attraction. Service potential of agricultural tourism sites can create value for the products that are served within the tourist attraction whereas the attractiveness of agricultural tourism destinations has the ability to impress tourists.

CONCLUSION

Data analysis can be classified into issues that must be applied as a driving mechanism for agricultural tourism parties in Phra Nakhon Si Ayutthaya province which is in line with Prakong Saichan that the mechanism used to drive tourism for sustainability consists of people, resources, tourism and management system.

Humans is a network of partners which is one of the mechanisms driving agricultural tourism including government sector consist of local government organizations, Provincial Tourism and Sports, TAT Province, Community/Province/District Development, District/ Province Agriculture, Head of Village, and Head of Sub-district; Private sector consists of the Tourism Business Association, accommodation /transportation/ restaurant entrepreneur, travel and service sector, financial Institutions, BAAC, Bank of Agriculture and wholesale business; Public sector consisting of community enterprise, farmers, housewife group, farmers, community philosopher, community leaders and community tourism and academic sector consisting of educational institutes and OSMEP.

Management System (System) is the setting up of a model for the management of agricultural tourism in the area arising from the agreement between the parties to the network that will be used to drive tourism in the same direction. The process of setting up a network group are 1) The community is aware and sees the necessity of being a network; 2) the community seek for communities to share ideas and exchange information; 3) the community form a group in a working network; 4) the community set goals, objectives, strategies that are consistent; 5) the community designate working structure, decision making process and mutual agreement; 6) the community design Work plans and activities ; 7) the community forecast the development of capacity in the network; 8) the community test communication system;9) the community exchange knowledge and lesson summary, and 10) the community monitor and evaluate the performance.

Tourism Resource is a form of tourism activities that are used as a tool to promote tourism in the area. Government networks are to support the budget for the development of the area Infrastructure, allocate budget to develop tourist attractions; Private networks are to promote / support activities in the tourist area; Public sector network are to proceed tourism resource management planning and academic networks are to support knowledge in development and coordinate with relevant sector in the area for development.

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The development of the relationship model of causal factors affecting the financial report quality and financial success of small and medium sized hotel business in Thailand

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Abstract*—This research is a mixed research with the objective of develop a causal factor correlation model. And examining the consistency of the relationship model, causal factors affecting the quality of financial reports and financial success of small and medium-sized hotel businesses in Thailand. Developed according to theory and empirical data. The sample group was accounting and finance executives of small and medium-sized hotel businesses in Thailand. The research tool was a questionnaire. Statistics used in the analysis of structural equation Model data and in-depth interview. The research results for the quality of financial reports had a direct correlation with professional accounting skills, coefficient of 0.27, ethics in accounting profession, coefficient at 0.50 and management of accounting department. The coefficient of 0.32 for financial success had a direct correlation with the quality of financial reports 0.40, management of accounting department 0.51 and was indirectly related to professional accounting skills, coefficient of 0.11, ethics in accounting profession, coefficient of 0.20 by Pass the quality of financial reports and it has been confirmed that the model has become possible between a developed small and medium hotel business.

Index Terms— ***Financial Reporting Quality, Financial Success, Small and Medium Hotels***

I. INTRODUCTION

In today's highly competitive environment, measuring the success of an organization will help direct operations in the same direction to achieve the organization's goals. Performance measurement data will reflect the success or failure of both financial and non-financial information (Nopadon Rompho, and Monwika Phadungsit, 2014). A tool for measuring success in order to gain a competitive advantage against competitors and to keep changing (Hasan Darvisha et al., 2013), so a good measure of organizational success must be acceptable to stakeholders. The information must be clear, accurate, reliable, timely and able to be used in planning and management within the organization to be effective and suitable for the organization's objectives. Some tools may be appropriate for one business, but not another (Hatten, 1997). Measuring the success of an organization is therefore important for management to use information in planning decisions (Slizyte & Bakanauskiene, 2007) Most successful organizations measure their financial success by comparing their performance against the target value. Financial data can indicate the progress of the organization's plans. It is also a tool to identify weaknesses and strengths in operations (Bateman & Snell, 2009).

The tourism industry plays an important role in the development of the economy. It is the driving force that plays a role in the economy, creating jobs. Create a career and investment in related businesses such as transport business, accommodation business, food business, tourism business, etc. The Ministry of Tourism & Sports has accelerated and promoted the development of the tourism industry to pass the quality standards of products and services continuously. It earned 60% of its revenues from the hotel business, with a 35.66% increase in registration and a 9.94% increase in revenue in proportion of tourists compared to the same period of the previous year. The hotel business is a business that is directly related to the tourism industry that must support and attract more and more tourists. The expansion of the hotel business came from the small and medium-sized hotel business with an expansion of investment. Due to the quality of foreign tourists from the European zone to the Asian zone. And changing the age group from the middle age group to the younger one, making such tourist behavior less popular to stay in luxury hotels. And there is a reduction in both

occupancy costs and more savings on shopping by choosing to stay in more small and mid-sized hotels. (Ministry of Tourism and Sports, 2018) In addition, the government has promoted the tourism industry to bring all expenses to be deducted from taxes by 100%, such as seminar expenses, room costs or expenses related to the hotel business. From the report on the situation of major problems and obstacles in the hotel business operation in Thailand. It was found that management aims to develop a standard of products and services that're comparable to the international level because small and medium-sized hotel businesses have better profitability. It also requires a lower investment per room, enabling better business management flexibility than large hotel businesses due to its smaller management structure and able to easily adapt strategies to keep up with competition and consumer demand. More than a large hotel business, and places emphasis on enhancing and developing competitive strategies for trade and services by emphasizing the use of technology and management by promoting the development of personnel to have more specialized knowledge and abilities in order to make the organization more efficient. Results of operations according goals (Ministry of Tourism & Sports, 2018) Therefore, the researcher has studied the development of causal models of correlation to the quality of financial reports to success of small and medium-sized hotel businesses in Thailand from Accounting and Finance Department, which is the division. One task that provides information about the performance of the organization, all the information management needs to use in planning decisions about managing the organization to achieve a set goal and to create a competitive advantage. In the development of raising the standard of small and medium hotel businesses to be equal and recognized internationally.

II. Research Objectives

The objectives of this research article were 1. To develop a causal model of the factors affecting the quality of financial reports and financial success of small and medium-sized hotel businesses in Thailand. 2. To examine the consistency of the relationship model, causal factors affecting the quality of financial reports and financial success of small and medium-sized hotel businesses in Thailand developed in line with the theoretical concepts and empirical data.

III. Research Methods

A. Research Design

This research studies the linear structure, development of causal factor correlation models on financial reporting quality and success of the small and medium-sized hotel businesses in Thailand. Area scope for quantitative research Is the hotel business in 12 must-see cities registered with the Ministry of Tourism of Thailand (Tourism Authority of Thailand, 2018) has a total of 347 hotels divided into 5 regions, namely the northern region is Lampang Province, Phetchabun Province. And Nan province, total 49 locations. Northeastern region has 2 provinces, namely Buriram Province and Loei Province totaling 24 locations. Central region has 2 provinces, namely Samut Songkhram Province. And Ratchaburi Province, total 54 locations, the Eastern region has 2 provinces, which are Trat Province and Chanthaburi Province, totaling 128 places, and the Southern region has 3 provinces, namely Trang Province, Chumphon Province and Nakhon Si Thammarat Province totaling 92 places, divided into 144 small hotels and 203 midsize hotels.

The researcher selected small and medium hotel business samples according to the list registered with the Bureau of Investigation and Legal Affairs. Because it is the agency that oversees the registration of the establishment of the hotel business and unconditionally discloses the listing of the hotel business, and the researcher chooses to use the small and medium-sized hotel business classification based on the number of rooms of the association. Only a Thai hotel, a limited liability company, for qualitative research. Is an executive in tourism and hotel management Accounting and finance with at least 5 years of work experience, 8 persons.

B. Research Process

Research tools, the researcher used questionnaires. And interview form The review of literature under the concept, theory, documents and related research is divided into 5 parts: accounting professional skills. Professional ethics in accounting Accounting management Financial report quality And financial success Content Validity was examined by 5 experts with an index value of 0.74–0.94. Researchers used to try out with a group of 30 samples. The reliability of Cronbach's Alpha Coefficient 0.84, which is the acceptable value according to the criteria.

To collect quantitative data the researcher used questionnaires sent by post E-mail and self - repository. A total of 347 sets received 294 responses, divided into 54 sets of central region, 19 sets of northeast region, 44 sets of northern region. For the qualitative research, the researchers used the semi structure interview. from the management of tourism and hotel business. Accounting and finance to verify the feasibility of the correlation models causal factors affecting the quality of financial reports. And financial success of small and medium hotel businesses in Thailand.

IV. Results

Results of the study can be presented.The testing of research hypotheses, the development of correlation models

of factors affecting the financial reporting quality and financial success of small & medium-sized hotel businesses in Thailand, found that professional Accounting Skills (AS), professional Ethics in accounting.(CE) And Accounting Management (AM) have a direct correlation to Financial reporting Quality (FQ), Professional Accounting Skills (AS) .Professional Accounting(CE) has an indirect relationship to financial success.(FS) for Management Accounting (AM) has a direct correlation to financial success (FS) factors affecting the financial reporting quality and financial success of small and medium-sized hotel businesses in Thailand.

Direct correlation with descending coefficient the directly correlated with the quality of financial reports was the Ethics of Professional Accounting (CE) factor the coefficient of 0.50 with statistically significant level 0.05. The management factor of Accounting (AM), the coefficient of 0.32 and the professional skills in accounting (AS), the coefficient at 0.27, has a statistically significant level 0.01 for a direct correlation to financial a success: Management factor, accounting department (AM) coefficient 0.51 and financial report quality factor (FQ) coefficient of 0.40, had a statistically significant level of 0.01. in Fig.1.

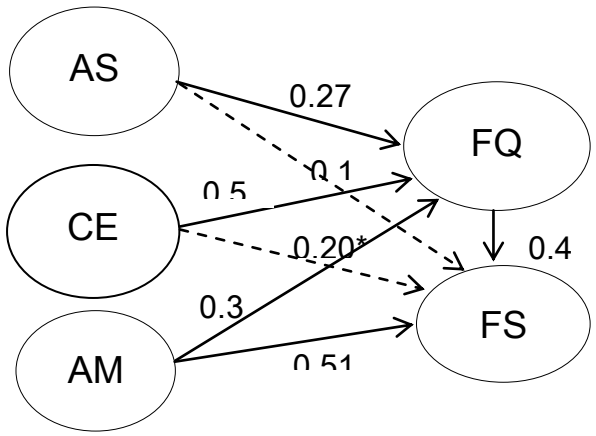


Fig.1 The model summarizes the results of the research hypothesis.

Professional accounting skills affecting the quality of financial reporting and the success of the Thai hotel business found that the quality of financial reports that are reliable, the information must be accurate, complete, and can be used in planning decision making, emphasizing the skills of financial reporting. Fix problems immediately Has intelligence to solve problems in urgent cases that need to be decided. Have knowledge and understanding of the job Connect the information that happens and to be used in planning decisions. That affects the organization and have a positive attitude towards the work. Including transferring, exchanging learning information to others, understanding the information in the report that affects the organization. Summarizing the information from the interview, the additional issues found from the quantitative research were problem solving skills. Intelligence Job management skills have ability to motivate delegate tasks for employees or subordinates to accomplish their tasks according to objectives and link performance with performance. Professional accounting ethics affecting the quality of financial reporting and financial success of the hotel business in Thailand, it was found that professional ethics are a measure of the quality of work performance to be in a good criterion, especially for keeping corporate confidentiality because it is Strategies to differentiate yourself in business and indicate loyalty in the workplace. Since it is a department that knows information about the real numbers, it must work with accuracy, transparency and not misrepresentation for personal gain. Can prove the origin of the numbers The accounting department must be flexible, patient and responsible for the quality of work and the organization to achieve the goals.

The summary of information from the interview, which was found further from the quantitative research, is the Code of Integrity. The sacrifice in work And the operation does not cause damage The management of accounting department that affects the quality of financial reports and the financial success of the hotel business in Thailand found that the organization's success is due to the knowledge and ability to manage the work to meet the specified goals. hold The good management must have a human management system and work management. There must be a management strategy, daring to think differently from the previous model, emphasizing on bringing the performance back to see the impact in order to learn and develop, making the organization successful and efficient. Summarizing the interview data, the additional issues found from the quantitative research were the feedback management of the organization's performance to employees. Should focus on the management of work. Rotate work or learn various fields In other departments to understand, to understand the problems and obstacles in the work of other departments to acquire knowledge skills. A positive attitude towards co-workers: Motivating management to create results using rewards as work inspiration. Management with a focus on change, fostering a positive atmosphere in solving problems, with Kalayanamit encouraging people in the organization to feel valued and be a part of the organization's success. Organizing the work structure by arranging people to suit the job to reduce problems in the work and make the job most efficient.

Management is flexible but up standard. Differentiation strategies to generate new knowledge or methods by switching duties to learn, work, link with documents or evidence in reporting results, the quality of financial reports that affect the financial success of the Thai hotel business was found. Accountants are often expected by organizations to report financial performance, where the reported information must be reliable.

It is impartial and free from errors that will not affect how information is used in planning decisions. The information reported

must be accurate, complete, and able to compare and assess past and future events with clear evidence of the audit. The results of the quantitative research were A careful review of the documents and information to be reported should be reviewed, which leads to the inaccuracies of the financial success of the hotel business in Thailand. The defined goal is the profit generated by the revenue that is a clear measure of operations, but the consideration of income should be revenue after fixed costs. The key variables are the costs incurred must be the lowest, either monetary or non monetary costs such as resource sharing costs. Reduced working time Comparison of the work process with the target value achieved or not, the cost of the investment that will be recovered against the outcome. Summarizing the interviews, further findings from the quantitative research were indicators of cost success, resource sharing, and reduced time costs were taken into account. The cost of the investment that will be recovered is compared to that outcome.

V. DISCUSSION

The results of the study concluded that the causal model of accounting data quality and hotel financial success among small and medium-sized hotel businesses in Thailand found that professional accounting skills were directly related to report quality. Financial Coefficient at 0.27 coefficient of accounting professional ethics has a direct relationship with financial reporting quality; coefficient at 0.50 management of accounting department has a direct relationship with financial reporting quality coefficient of 0.32 is statistically significant that 0.01 Accept the hypothesis consistent with Lsobe et al. (2008, p. 124). Study of the relationship between competence and performance of accountants. The quality of work is credible and knowledge should be developed continuously. Swangnate (2004, p.94) studied the accounting skills employed by executives in the organization. Work differently education. there is an expectation of the characteristics of an accountant for the skills of a professional accountant, differing in professional ethics, attitudes. As with the Thitirat Meemak and et.al., (2016, p.78) study in the United States, the organization focused on issues affecting the quality of financial reporting.

Because of the lack of effective operational integrity, bankruptcy of a publicly traded company and a lack of effective administrative control the US academy emphasizes. Cultivate ethics in honesty and also line with Yahya Kamyabi (2011, p. 86) studies the work of an accountant that affects the operations of SMEs in Iran. It was found that the professional accounting ethics have an impact on reporting financial business results. Lseri-Say et al.(2008, p.76) studied popular management techniques for improving the efficiency of large businesses in Turkey. It was found that management techniques had an effect on the competitive position of the organization, the structuring of the work with strategies to make a difference together with the management knowledge in organizational adaptation to create satisfaction.

In accordance with Chenhall, RH (2003, p.79) it studies management styles that affect work decision-making at both the individual and organizational levels. It was found that management that the organization created in the style of operation, attitude qualitative characteristics of management. And decision-making patterns influence work decisions at both the individual and managerial levels. The accounting department has a direct correlation to the financial success of the business. Coefficient of 0.51. In finance, the coefficient of 0.44 was statistically significant at 0.01. Chang, HH, & Ku, PW (2009, p. 124) hypothesis was accepted. Quality affects earnings It was found that the management model had an effect on the focus of marketing. The quality of service data and the results of the services impacted financial results as well as Doherty MJ (2011, p.98) conducted a human resource study, comparing cultural values of entrepreneurs in Ukraine and the United States. The two countries have different cultural values but the creation of shared values in the organization has no difference in working for the organization to be successful, according to the Lee SM, & Peterson S. (2000, p.57) studies. Entrepreneurial Culture of the Global Competition Found that creating a culture of successful entrepreneurship It must consist of shared values, management models, and impactful performance. Ames (2013, p.114) studies the impact of applying international financial reporting standards on the quality of financial reporting listed companies in South Africa. It was found that the quality of financial reporting information influences planning decision-making. The data must be reliable, accurate and complete, in line with Doherty, MJ (2011, p. 214), who studied the quality of accountants in accounting firms in Norway regarding Accounting competence from the perspective of information users is a key factor in planning business decisions as Everaert & Rommel (2010, p.87) studies the factors for success in the Irish hotel industry. Increased sales or revenues have been found to be part of a strategy for organizations to grow, better managing hotel finance costs and customer service quality ratings compared to competitors. Standards for providing effective asset management services and products employee performance management promoting improvement in innovation, including the ability to manage and develop employees. Komala, AR (2012, p.62) Impact of the adoption of international financial reporting standards affects the accounting quality of companies registered in the country. Kenya it was found that the financial reporting standard had an effect on the financial report used. To measure the quality of financial reports are the reporting of information must be

accurate, complete, transparent, impartial, timeliness for use in decision-making. Therefore, small and medium-sized hotel businesses in Thailand can use the research results in planning the operations of the organization to increase financial efficiency.

VI. RECOMMENDATIONS

A. Recommendations for Practices

1. The organization's management knows the factors contributing the quality of financial reports and the financial success of small and medium-sized hotel businesses in Thailand.

2. The model can be applied to planning the development of operations of the organization, especially the accounting department. Including other departments to comply with the goals of the organization

3. Executives should be aware of and give importance to the information of the accounting department. To support planning and decision-making in the best interest of the organization, emphasizing the importance of taking these factors into consideration in policy formulation and supporting the practice various areas including professional skills. Ethics and work in the management by promoting the accounting department to attend meetings, plan events or attend new knowledge training to promote more perception of correct information and timely changes.

B. Recommendations for Further Research

1. This model should be studied in hotel businesses that are not in the 12 must-see cities in order to lead confirmation of the model.

2. The factors affecting the quality of financial reports and financial success should be further studied by using information from other parties to study, such as information from the marketing department, HR department, etc.

CONCLUSION

In conclusion, the findings from the analysis of both quantitative and qualitative showed that a causal factor model for the quality of accounting information and the financial success of the hotel business among small and medium-sized hotel businesses in Thailand. It was found that professional accounting skills were directly related to the quality of financial reports. Code of ethics for professional accountants has a direct relationship with the quality of financial reports. The management of the accounting department has a direct relationship with financial reporting quality with statistical significance that assumptions are accepted. The management of the accounting department has a direct relationship to the financial success of a business. And the quality of financial reports has direct relationship to financial success. Therefore, small and medium-sized hotel businesses can apply the findings of this research to plan the organization's operations to be more economical.

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Factors Affecting Strategic Leadership of Administrators Sahawittayaket Chonburi 1 Under Secondary Educational Service Area Office 18, Thailand

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Abstract— The purpose of this study were to study 1) the level of Factors Affecting Strategic Leadership of Administrators. 2) the level of Strategic Leadership of Administrators. 3) the relation between Factors Affecting Strategic Leadership and Strategic Leadership of Administrators. 4) Factors Affecting Strategic Leadership of Administrators. Sample were the teachers Sahawittayaket Chonburi 1 about 285 people. The tool was questionnaire for estimating 5 levels. Statistics include frequency, percentage, average, standard deviation, Correlation coefficient and multiple regression.

The results of the study were as follows: 1) the level of Factors Affecting Strategic Leadership of Administrators. Overall, all aspects are in a high level. When considering each aspect, it was found that the highest average factor of factors affecting the strategic leadership was Executive Characteristics. Next were Organizational culture, Achievement Motivation, Organizational Atmosphere, Social Support and the lowest average factor was Personality. 2) the level of Strategic Leadership of Administrators. Overall, all aspects are in a high level. When considering each aspect, it was found that the highest average factor of strategic leadership was Supporting Effective Organizational Culture. Next were Determining Strategic Directions, Organization Resource Management, Appropriate Organization Control and the lowest average factor was Focusing on Ethical Conduct. 3) the relation between Factors Affecting Strategic Leadership and Strategic Leadership of Administrators was high level of positive correlation (rxy = .809) statistical significance at the level of .01. 4) Factors Affecting Strategic Leadership of Administrators Sahawittayaket Chonburi 1 Under Secondary Educational Service Area Office 18 found that the forecasting efficiency (R2) was .761 or 76.10 percent. The statistical significance at the level of .01. Can write the following equation: y' = .438 + .271X3 + .193X4 + .139X1 + .125X2 + .083X6 + .082X5 และ Z'y = .481X3 + .314X4 + .265X1 + .250X2 + .180X6 + .159X5

Index Terms— Strategic Leadership, Sahawittayaket Chonburi 1, Secondary Educational Service Area Office 18, Thailand

I. INTRODUCTION

Education management followed by National Education Act of B.E.2542(1999) as amended (2nd Edition) (2002) section 39 has been determined that Ministry of Education must been decentralized the direct administration and educational to Educational service Area office and school in Educational Service Area.So the management included academic management,budget management, personnel management and general management in educational to be effectiveness its needed the high leadership of administrators. For adapting to the changing. globalization world. with using the knowledge and capability. to the effectiveness educational management. Ministry of Education has been the policy of changing. educational management by educational reform which determined the guideline of its by school reform teacher and educational personnel, course and educational process, Educational institution was the important personnel educational agency for educational management[1]. So the leadership had an important role for adjusting standard. Overall development meant to make the longer. organization structure, procedure. and thinking system development which high standard. The strategic development could be efficiency especially for standard management. As using the strategic leadership. to

motivate the organization created for improvement and standard. Administrators stimulated every employee to use standard management adjusted. for structural organizational. And the management to be effective as expectancy and context of organizational [2].

Strategic Leadership was the procedure of alternative orientation and viability. As this theory, the leadership believed that organizational achievement must be the result of following the changing outside, situation and fortune the future of organizational in the long period. And development of strategy was for expected future. So organizational leadership must have strategic leadership for strategic management consisted on planning, viability control and assessment. School would be effectiveness its depend on many factors such as good management of resource. Strategic leadership was the leaders had on ability to create. the future vision and bring it come true for effectiveness organizational. Beginning from, leadership had a widely vision and successful conducted [3]. The educational management strategy was the management which had been planned to oriente, time and obviously procedure to protect the problem The strategic management had a widely vision which included the relationship of inside and outside. environmental for successful working. There had been guessed the future for obviously short and long term and analyzed the wisely working path for success and competition, knowledge for suitable situations [4]. Nowadays, Administrators should have the model of strategic leadership for achievement and advancement which began from widely vision. and step-on assessment. School administrators must have strategic leadership to have new cognitive and new management for the change situation. And plan for the prefer strategy covered all mission and assignment. The strategic management could be useful for structural, cultural, technology, personnel resources in academy even though control and evaluation for advancement. The high-level of administrators would have responsibility for every step of strategic management [5]. For the concept of [6] showed that the administrators should be consist of strategic leadership 5 side as follow,1) high-level cognitive 2) ability of taking all factors to determine strategy 3) expectancy and creating the future opportunity 4) reform thinking 5) vision. However, the school administrators could achieve the strategic management its must have good training and advanced courses in appropriate way and timing. The improvement method had many ways such as conference and training. The self-improvement administrators included personnel characteristic, mental, emotional, sociality, knowledge working-ability and modern leadership that correspond with the changing situation [7].

Leadership strategic was the procedure of alternative orientation and viability. As this theory the leadership believed that organizational achievement must be the result of following the changing inside and outside situation including fortune the long-period future of the organization. The strategic leadership should have achievement future to determine strategy, direction resource management, culture supposting ethical, appropriate control [8].

The strategic management was important for administrators to determine the strategic of education and put it to perform appropriate and successful for the heart of administration. Administrators must be planned for wisely strategies different creativity for guideline of efficient working in educational area and assessment the goal. If there had not the strategy, academy would not have obviously direction and plan for the appropriate changing situation [9].

From the above importance researcher interested to study the factor affecting strategic leadership of administrators Sahawittayaket Chonburi 1 Under Secondary Educational Service Area Office 18 to find the result of research to improve planning and strategic leadership of Sahawittayaket Chonburi 1 Under Secondary Educational Service Area Office 18

II. RESEARCH OBJECTIVES

1) To study the level of factors affecting strategic leadership of administrators Sahawittayaket Chonburi 1 Under Secondary Educational Service Area Office 18.
2) To study the level of strategic leadership of administrators Sahawittayaket Chonburi 1 Under Secondary Educational Service Area Office 18.
3) To study the relation between factors affecting strategy leadership and strategic leadership of administrators Sahawittayaket Chonburi1 Under Secondary Educational Service Area Office 18.
4) To study factors affecting strategic leadership of administrator Sahawittayaket Chonburi 1 Under Secondary Educational Service Area Office 18.

Scope of study

The scope of this study consisted of scope of content population and sampling group and study variables as follows.

1.Scope of contents

Researcher studied the principle, concept, theory and related research which concerned about the factor affecting the strategic leadership administrators so it's concluded to 6 factors. 1)organizational culture 2) organizational atmosphere 3) achievement motivation 4) Social support 5) executive characteristic 6) Personality and also studied the principle, concept theory and relation research. which concerned about strategic leadership as 5 aspect 1) Determining strategic direction 2) organization resource management 3) supporting effective organizational 4) Focusing on ethical conduct 5) appropriate organization control

2.Poppulation and sampling group

Population was the teacher of Sahawittayaket Chonburi 1 Under Secondary Educational Service Area Office 18 for1,068 people (data year 2018)

Sampling group were teacher in Sahawittayaket Chonburi 1 Under Secondary Educational Service Area Office 18 The determining sampling size by the calculation of [10]. There was 285 people by simple random sampling by compare, the rule of three proportionally of each teacher in each secondary in Sahawittayaket Chonburi 1 Under Secondary Educational Service Area Office 18

3.The study variables

1)independent variables were the factors affecting strategic leadership of administrators Sahawittayaket Chonburi 1 Under Secondary Educational Service Area Office 18 consisted 6 factors 1) organizational culture 2) organizational atmosphere 3) achievement motivation 4) Social support 5) executive characteristic 6) Personality

2)dependent variables were strategic leadership of administrator Sahawittayaket Chonburi 1 Under Secondary Educational Service Area Office 18 have 5 aspect 1) determining strategic direction 2) organization resource management 3) supporting effective organizational culture 4) Focusing on ethical conduct 5) Appropriate organization control.

III. RESERCH METHODOLOGY

Research Design

This Research was quantitative research. The tool used for collect data was questionnaire which researcher created by factors affecting strategic leadership of administrators Sahawittayaket Chonburi 1 Under Secondary Educational Service Area Office 18 There was 3 parts Part 1 Data for Personnel factors of sampling for sexual age education level working period Part 2 The question about the factor of affecting strategic leadership Part 3 The questionnaire for strategic leadership scale 5 level For Reliability Tools Uses cronbach method [11] was 0.91 and content validity was

0. 89

The collected data method was done by researcher sent the 285 questionnaires to the school of secondary educational service area office 18 and perfections collection 100 percentage. The statistics for quantitative data analysis were frequency, percentage, average, standard deviation, correlation coefficient and multiple regression.

IV. RESEARCH RESULTS

1.The analysis result of personal factor found that the mostly was female 230 as 80.70 percent and male 55 as 19.30 percent mostly age was 30-40 years 139 as 48.77 percent. The other one less than 30 year for 78 as 27.37 percent, 41-50 years for 55 as 19.30 percent and 52.63 percent, master's degree for 106 as 37.19 percent and Doctoral degree for 29 as 10.18 percent. The working period mostly was 11-20 years for 152 as 53.55 percent, 24-30 years for 78 as 27.37 percent, less than 10 years for 30 as 10.53 and more than 31 years for 25 as8.77 percent

2. The analysis result of factor affecting strategic leadership of administrators Sahawittayaket Chonburi 1 Under Secondary Educational Service Area Office 18 was high level. The descending order was the executive characteristics factors,organization culture factor, achievement,motivation,organizational atmosphere,social support and personality factor.

consider each aspect found that.

2.1. Organizational culture aspect overall was high level average that colleague as the number in family and keeping the reputation of organizational at the best. The Next one was considering the organizational as the home and come to do everything for organization in the development and successful. The lowest one was sacrifice and devotion for organizational

2.2. Organizational Atmosphere aspect overall was high level average that the important of trust for working of colleague and administrators. The next one was the trust for responsibility and the lowest average level was organization of working environment and equipment material for sufficient working.

2.3. Achievement motivation aspect overall was high level average that administration to be important the of morale and encouragement on working to motivate successful working. The next one job satisfaction and the lowest average was justice and friendly working.

2.4. Social support aspect overall was high level. The mostly average was promoting, support and community support for organization activity. The next one was

community participation and the last one was community supported the activity budget.

2.5. Executive characteristic aspect overall was high level. The mostly average was ideology, consciousness, professional ethics and obviously structure management. The next one was good leadership characteristic.

2.6. Personality aspect overall was high level. The mostly average was friendly and help other willingly about working. The next one was teamwork. importance. The last one was a discipline and responsibility about works.

3. The result of analysis strategic leadership administrator Sahawittayaket Chonburi 1 Under Secondary Educational Service Area Office 18 overall was high level. The highest to lowest average as follows, supporting effective organizational culture, Determining Strategic direction, organization resource management, appropriate organization control and the lowest average was focusing on ethical conduct. For each aspect analysis found that:

3.1. Determining strategic direction aspect was overall high level. The mostly average was ability of policy determining. which correspond with goal and vision of the community development department. The next one was the ability of strategic determining which analyze the straight and weak point, opportunity, and outside on inside throats, The lowest one was the clearly communication of planning.

3.2. organization Resource management overall was high level, the mostly one was the ability of appropriate budget management. The next one was promoting and supporting for personal learning of increasing working capacity. The lowest one was efficient in material management at costly user.

3.3. Supporting effective organizational culture overall was high level. The mostly one was an administrator as a good model in working the next one was the ability of adjusted working culture and values for corresponded with changing situations. The lowest one was the ability of evating trusted for love and unity in organizational.

3.4 Focusing on ethical conduct side and analyze by side found that honest in performance consistently The next one was the house towards subordinates with morality and ethic and the lowest average was the love and generosity toward subordinates

3.5 Appropriate organization control side overall was high level and considering each aspect was Modified Development of strategy management for consistent developed quality. The next one was the arrangement for employee to worked with efficiency The lowest level was to understand and response the need of consummation appropriate

4. The analysis result of relation between factor Sahawittayaket Chonburi 1 Under Secondary Educational Service Area Office 18

Table 1 Correlation coefficient between the factors affecting. Strategic leadership and Strategic leadership of administrators Sahawittayaket Chonburi 1 Under Secondary Educational Service Area Office 18

variable	X_1	X_2	X_3	X_4	X_5	X_6	X
X_1	1.00						
X_2	.097	1.00					
X_3	.182**	.048	1.00				
X_4	.106	.172**	.353**	1.00			
X_5	.196**	-.003	.089	.117*	1.00		
X_6	.006	-.040	-.080	-.137*	.141*	1.00	
X	.544**	.448**	.509**	.496**	.539**	.369**	1.0
y	.443**	.346**	.652**	.549**	.315**	.113**	.809

**signifieancy .01
* signifieancy .05

From tabel 1 Found that factors affected to the strategic leadership and strategic leadership of Sahawittayaket Chonburi 1 Under Secondary Educational Service Area Office 18 high positive Relation (rxy = 809) at significant .01 by order of the relation factor between strategic leadership and strategic leadership administrators Sahawittayaket Chonburi 1 Under Secondary Educational Service Area Office 18 as follow. Achievement motivation factor social support organizational culture organizational atmosphere executive characteristic and personality.

5.The analysis result of factor affecting strategic leadership administrators Sahawittayaket Chonburi 1 Under Secondary Educational Service Area Office 18

Table 2 The result of multiple regression analysis for factor Sahawittayaket Chonburi 1 Under Secondary Educational Service Area Office 18

Model	*b*	*S.E.b*	β
(Constant)	.438	.130	
X_3	.271	.018	.481
X_4	.193	.020	.314
X_1	.139	.016	.265
X_2	.125	.015	.250
X_6	.083	.014	.180
X_5	.082	.016	.159
$R = .872, R^2 = .761$			

** $p \leq .01$

From Table 2 Found that all 6 factors have affected on strategic leadership administrators Sahawittayaket Chonburi 1 Under Secondary Educational Service Area Office 18 For the most powerful to less as follows. Achievement motivation(X3) Forecasting efficiency equal to .271 the next one Social support (X4) forecasting efficiency equal to .193 organizational culture (X1) forecasting efficiency equal to .139 organizational Atmosphere(X2) forecasting efficiency equal to .125 Personality(X6) forecasting efficiency equal to.083 Executive Characteristic(X5) forecasting efficiency equal to .082

Multiple correlation efficiency(R) equal to .872 forecasting efficiency(R2) equal to.761 All 6factors affected to strategic leadership administrator Sahawittayaket Chonburi 1 Under Secondary Educational Service Area Office 18 total 76.10 percent statistical significance .01 show that.

Can write the following equation:

y' = .438 + .271X3 + .193X4 + .139X1+ .125X2 + .083X6 + .082X5

Can write the following equation:

Z'y = .481X3 + .314X4 + .265X1+ .250X2 + .180X6 + .159X5

V.DISSCUSSION

1. Analysis result of the level of strategic leadership administrators Sahawittayaket Chonburi 1 Under Secondary Educational Service Area Office 18 overall were high level which correspond with [12] been studied for the factors affecting transformational. Leadership of administrators in small school under office of the Basic Education commission found that variable factors affected on transformational leadership of small school administrators overall was high level.

This way be because to be an administrator with strategic leadership must have many supporting factors such as specific characteristics personality, achievement motivation, creating organization atmosphere and culture to manage the efficient and effective organization. with widely vision corresponded with [13] should that the characteristics of effective leaders must have the ability of adjustment, social reorganization, aiming for success, good-decision, interdependence, high-enthusiasm working, endeavor and self confident.

Considering each aspects found that:

1.1 The factor affected on the strategic leadership was on executive characteristic which was the just level and correspond with [14] studied for satisfaction of administrators characteristic in the attitude of Sahawittayaket Chonburi 1 Under Secondary Educational Service Area Office 2 found that the overall was high level

This way be because. the administrators must have ideology consciousness, professional ethics and obviously structure management, determination and undiscourage with problem and obstacles. The good leadership would be forced college. to fulfill working. correspond with [15] showed that leadership was the holistic characteristics, ability, behavior and a procedure of that person could be influenced other to do thing with satisfying [16] stated that administrators needed the ability to use an appropriate leadership for creating working-confidence, trusted, supporting, and well leadership.

1.2 The last factor affected on strategic leadership in personnel aspect overall was high level corresponded with [17] studied for the characteristic of school administrators in view of the teachers under Primary Educational service Area Chonburi 1, the personality aspect was a high level and correspond with [18] studied for the factors affected transformational leadership of Ais force pilot which found that the leadership personality aspect was a high level.

This way be because the administrators had friendly mind for helping other and value the team-working, working discipline, participative management and facely management which corresponded with [19] stated that the administrator must have coordinated and good relation with employees for motivating teamwork. Especially for participation and reduced the step working in order to facely working independance

2.Anaysis result for the level of strategic leadership of administrators Sahawittayaket Chonburi 1 Under Secondary Educational Service Area Office 18 overall was high level which correspondent with the research of [20] studied for strategic leadership role of administrators under Municipality at Chantaburi,Rayong and that province found that strategic leadership of Administrators overall was high level and its also correspondent with [21] studied for strategic leadership of the school of private Vocational Education in Bangkok as perception of administrator and teachers found that strategic leadership of administrators overall was high level.

This way because leadership was more important in management. Administrators must showed the strategic leadership in policy planning which corresponded with objective and vision and Budget management in appropriate way correspond with [22] organization leadership management was important factors to assess the goal. The success leadership must had and ability, knowledge and experience of management for assessing the goal with effecientyonal effectiveness. which correspond with [23] studied the strategy for developing organization That the strategic leadership was looked for the changing by analysis data strategy and planned for strategy with his own experience, past culture of organization and past effected organization So the role of cognitive for obviously strategic leadership which were vision, mission, obviously objectives to determine organization and can to perform in the real situation

Considering each aspect found that

2.1 The strategic leadership of administrators in supporting effective organizational culture overall was the first high level which correspond with [24] studied for the relation between strategic leadership administrators and balanced management in academy under Songkhla Primary

Educational Service Area office 3 found that the strategic leadership of administrator had the supporting organization culture at high level corresponded with [25] studied for the strategic leadership affecting leaning organization of Provincial Administrative organization in SongKhla Province which found that the efficient supporting culture at high level

This may be because the administrators could be a good role model in working and adjusted culture,values to accompany with the changing situations.There brought the trusted from subordinates and love,harmony in the organization which corresponded to [26] stated that an administrators should have a leadership mind which have strategy planned to accompany with vision, adjusted atmosphere, school and learning development(automatic library, genius learning room and education technology media)corresponded to [27] stated that the promotion of organization culture,strategic leaders must have activities to promote efficiency culture to be a sustainable organization with the motivation and chance to everybody whom used the energy and participation to develop organization.So the leaders understood its to develop and maintain the culture which importancy to accomplish organization under complex economy.

2.2 The strategic leadership of administration in focusing on ethical conduct overall was high average and lowest level which corresponded to [24] studied for the relation between the strategic leadership and balanced management in academy under Primary Edu cational Service Area Office 3 in Songkhla province found that the ethical conduct overall was high average and also corresponded to [25] studied for the strategic leadership affecting learning organization of Provincial Administrative Organization in Songkhla Province found that the ethical conduct overall was high level.

This may be because administrators had honest for consistently working and also conduct in ethical way love and generosity with their subordinate corresponded to [27] stated that the conducting in ethical way, the strategic leader must focused on ethical conducts by honesty and focusing on ethical and self-valued. The leaders must learned and deeply understanding in values and various culture to increase the accomplishment.

3.The analysis result of the relation between factors affecting strategic leadership and strategic leadership of administrators Sahawittayaket Chonburi1 under Secondary Educational Service Area Office 18 was high level of positive correlation(Rxy=.809)statistical significance at the level of.01 which corresponded to [24] studied for the relation between strategic leadership administrators and balanced management in academy under Songkhla Primary EducationalService Area Office 3 found that the relation was positive correlation statistical significance at the level of.01.

4.Factors affecting strategic leadership of administrators Sahawittayaket Chonburi 1 Under Secondary Educational Service Area Office 18 found that all 6 factors affected on the strategic leadership of administrators by the multiple regression coefficient(R)equal to .872 and the forecasting efficiency (R2) equal to.761 its meant that the 6 factors affected on strategic leadership of administrators Sahawittayaket Chonburi 1 Under Secondary Educational Service Area Office18 was 76.10 percent at the statistical significance level .01 corresponded to [18] studied for factors affected transformational leadership of Air Force Pilot found that its was 58.60 percent at the statistical significance level .01 and also correspondent with [25] studied for strategic leadership affecting learning organization of Provincial Administrative Organization in Songkhla province found that strategic leadership affected learning organization Songkhla Provincial Administrative Organization at statistical level of .05

VI. CONCLUSION

The purpose of this study was to study the Factors Affecting Strategic Leadership of Administrators Sahawittayaket Chonburi 1 Under Secondary Educational Service Area Office 18. The results of the study were found that all 6 factors affected on the strategic leadership of administrators by the multiple regression coefficient(R)equal to .872 and the forecasting efficiency (R2) equal to.761 its meant that the 6 factors affected on strategic leadership of administrators Sahawittayaket Chonburi 1 Under Secondary Educational Service Area Office18 was 76.10 percent at the statistical significance level .01

Suggestion

Researcher suggestion for the guideline using and next study as follows

1.the suggestion for using this research

1.1 The study found that the lowest average of strategic leadership was personality. So the recommendation was the study of personality factors to improve and develop to be a good leadership.

1.2 The study found that the average of strategic leadership of administrators was lowest level as focusing on ethical conduct factor. The recommendation was following, developed, and promoted in this aspect seriously such as knowledge training ,understanding and the right direction.Following evaluation was necessary.

2. Suggestion for next study

2.1 There should be study the model of strategic leadership of administrators

2.2 There should be study the guildline of strategic leadership administrators development.

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Analyze Costs and Financial Return of Phoenix Oyster Mushroom Cultivation Process of Farmers in Pakchong Sub-district Chombueng District Ratchaburi Province

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Abstract— The objectives of this research were to: 1) investigate the cost and yield of Phoenix Oyster Mushroom cultivation, and 2) use as a guideline for those who were interested in cultivating the Phoenix Oyster Mushroom. The sample of this research was a group of 30 Phoenix Oyster Mushroom cultivators at Pak Chong sub-district, Chom Bueng district, Ratchaburi province. An in-depth interview was used to collect data for this qualitative research. The respondents' opinions towards the Phoenix Oyster Mushroom cultivation were analyzed and synthesized using the content analysis statistics in relevant with the facts of the key issues. The results revealed that the respondents included 20 female and 10 male with an average age of 45 years old. The respondents have been engaging in the Phoenix Oyster Mushroom cultivation business between two to thirteen years. Hungarian and Bhutanese Phoenix Oyster Mushroom were the major types that the respondents cultivated and that of they produced their own mushroom compost. The mushroom cultivation period from the beginning stage until harvesting last around one month or forty-five days. Each household owned four houses of mushroom cultivation. In terms of production, each house could yield around one thousand kilograms which its selling price was between 80 to 120 baht per kilogram. The cost of mushroom cultivation was 34, 341.25 baht per house while it yielded worth around 45,125 baht. The production of each house was unequal based on the integrity of the mushroom compost, the weather, and the green mold disease (Trichoderma harzianum Rifai).

Index Terms— Phoenix Oyster Mushroom, Cost, Return, Cultivation Process

I. INTRODUCTION

Thailand is regarded as an agricultural country where agriculture is the main occupation and is an important occupation of the country. The agricultural sector of Thailand in the past was characterized by production primarily aimed at meeting the needs of the family or was traditional agriculture focused on self-consumption and later agriculture developed to increase the efficiency of production. It is a commercial production that allows farmers to rapidly expand their production. By adopting new agricultural technology to aid production, the Thai agricultural way of life has shifted from high household consumption alone to commercial production. And most of the country's population is still working in agriculture which Thailand has a lot of mushroom consumption. (Center for Business and Foundation Economic Research Government Savings Bank, 2016). It also emphasizes the consumption of mushrooms as a highly nutritious food comparable to meat. Therefore, it can be seen that the mushroom has been a food that has been accepted for a long time in terms of its taste and nutritional value. Experiment, because mushrooms in Thailand in 1937 have studied and developed mushroom cultivation from inoculum resulting in high yield, so mushroom became popular and mushroom production began to expand. Originally for eating within the household and has evolved to be sent for sale in the country and outside the country (Kanawut Worasarn, 2010) It is the straw mushroom that contains up to 70% of the total mushroom quantity. Let's go down and see the fairy with 50 percent of it. It is an important economic mushroom that is more popular than the straw mushroom. Because this type of mushroom can be easily

cultivated. It has a short growing time and gives a lot of mushrooming, it is popular to eat the mushroom with a soft texture. Can be processed to cook a variety of food and snacks. Gawley & Hayes, (1985, p.15) such as curry with fairy mushrooms. Tom Yum Kung with Mushrooms Spicy Som Tum with Mushrooms Chicken Galangal Salad with Mushrooms Gold-plated angel mushroom, angel mushroom, and angel mushroom, etc. In addition, there is research

and development of mushroom cultivation to be able to cultivate the mushroom that imitates nature. Both domestic and foreign because the mushroom contains various immune stimulants.

Wasser (2002, p. 258) and knowledge was disseminated to farmers and interested people. Thailand has a production of about 30,000 tons of mushrooms per year, which is worth more than 1,580 million baht (Ruengrit Ruangpaisan, 2007, page 48). Nowadays, farmers are turning their attention to mushroom cultivation more and more. In addition, mushroom cultivation has a simple management process and Thailand has suitable weather conditions and suitable for additional occupation for people of all classes in the form of a supplementary profession. And still being able to develop into the main occupation, thus causing a large number of mushroom farmers to grow.

From a survey in Ratchaburi Province, it is considered one of the largest mushroom production sites in Thailand. Especially mushroom and oyster genus the mushroom production spread from the production sites in Mueang District, Photharam District and Bang Phae District to the outskirts of the city namely Paktho District, Chombueng District, Suan Phueng District, Ban Pong District Bankha District and Chombueng District there are more mushrooms cultivated than other sub-districts. And a large number of cultivated mushrooms are angel mushrooms because most farmers in Ratchaburi Province who work in mushroom cultivation prefer to make mushroom cubes for sale and open their own flowers, which many farmers work in full-cycle mushroom cultivation by making mushroom cubes and open flowers, ready to be packed and sold. Due to the increasing number of mushroom cultivators the following problem was the lack of academic knowledge in mushroom cultivation. Most of them have the knowledge gained from inquiries from people who have experience in cultivating phoenix oyster mushrooms before. Therefore, the researcher is interested in studying the cost and yield of phoenix oyster mushroom cultivation of the group of phoenix oyster mushroom farmers at Pakchong Sub-district Chombueng District Ratchaburi Province. Is it worthwhile and correct ? Because these factors can be used to guide teaching planning at higher education levels and to guide communities in further planning for mushroom cultivation or processing.

II. Research Objectives

1.To study the cost and yield of phoenix oyster mushroom cultivation.

2. To be used as a guideline for phoenix oyster mushroom cultivation for those interested in further study.

III. Research Methods

A. Research Design

This is a qualitative research by conducting research from secondary sources from documents, publications, theses, research papers, articles, textbooks and other information. Involved and conduct an in-depth interview. A group of farmers who cultivate mushrooms Pak Chong sub-district Chombueng district Ratchaburi province. There are 30 population groups number of households cultivating phoenix oyster mushrooms Pakchong Subdistrict Chombueng District Ratchaburi Province (2019)

Using Purposive Sampling method to provide data by collecting data on the analysis of production costs. In order to see the actual cost price and correct from the beginning of the production until the end of the sales process, which is a course that students have to apply their knowledge to further enhance their courses.

The researcher used an In-depth Interview, divided into 4 parts: general information of the respondents. Information on costs and expenses for cultivating mushrooms information about the return from cultivating mushrooms.

Collect research data by conducting an interview with informants. Summarize the results, analyze the qualitative data by Content Analysis, and classify the wording or text of the sample's opinions and interpret it. Synthetic by reason Build inductive conclusions (Induction Analysis) discuss facts found based on circumstances phenomena relationships and key points to answer study questions.

B. Research Process

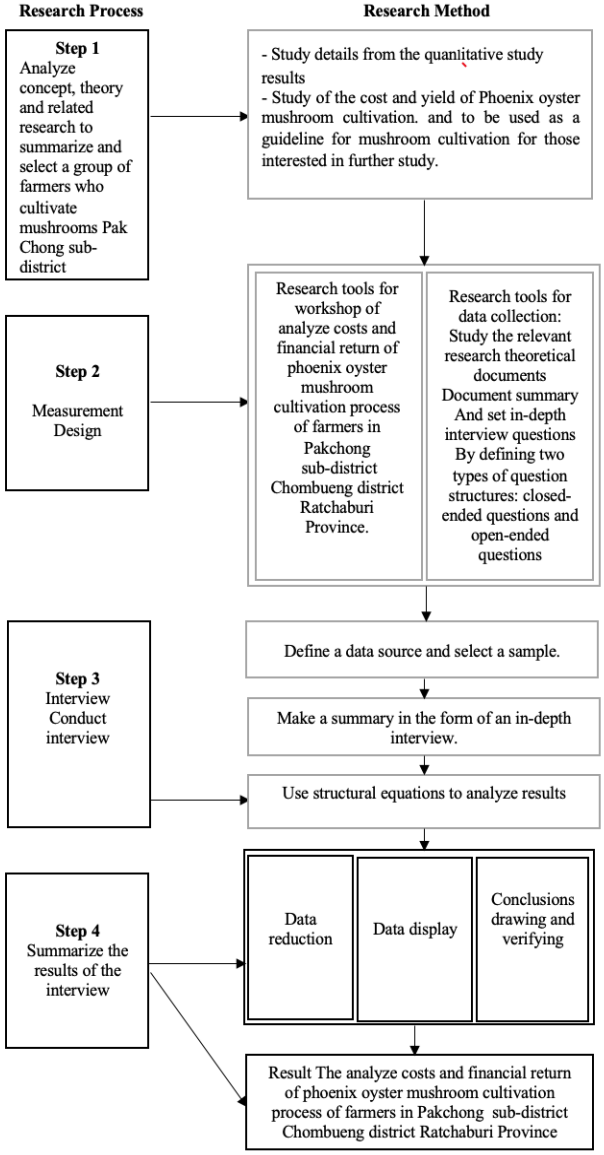


Fig.1. Research process for a Analyze Costs and Financial Return of Phoenix Oyster Mushroom Cultivation Process of Farmers in Pakchong Sub-district Chombueng District Ratchaburi Province

IV. RESULTS

Results of the study can be presented by Part 1 General information of the interviewee. The results of the general information study of the interviewees in the cultivation of the mushroom were mostly male, 10 persons, 20 females, aged between 21 - 62 years. Occupation of farming, horticulture and general contractor. Most of them have started their mushroom farming business for 2 - 13 years. Hungarian mushroom and the Phuthan mushroom. The production method can produce Phoenix Oyster Mushroom by itself including the production period until harvest is approximately 1 month - 45 days.

From entrepreneurs of phoenix oyster mushroom farm business who have previously operated and researched on the internet Mushroom cultivation per household is 4 sheds. Productivity per house is about 1,000 kilograms. Selling price is 80-120 baht per kilogram. The product obtained. Including the fungi of the mushroom as for the mushroom fungi, customers came to buy it themselves. The phoenix oyster mushrooms are good in winter. Because the mushroom likes moist air. Most farmers spend about 40,000 - 50,000 baht in growing phoenix oyster mushrooms and most of them are personal funds. As for the oyster mushroom, there are dealers who buy it for further distribution and may sometimes be sold at the local market or someone asks to buy it at home.

Part 2 The results of data analysis on the cost of mushroom cultivation are divided as follows.

2.1 Data Analysis of Initial, Costs of Fermented Mushrooms. The initial cost of cultivating mushrooms is 100,000 baht of land a cube mill 120,000 baht, a mushroom house 20,000 baht, a sieve 50 baht a milling machine 23,000 baht, a steaming stove 27,000 baht, a water pump motor 4,500 baht, a trolley 1,000 baht and a water tank 100 baht. 295,650 baht.

2.2 Analysis of cost data for preparing fairy mushroom loaf cost of preparing mushroom cubes consists of 3 types:

1) Raw materials per house: sawdust, rubber 7,500 baht, mushroom seed 455 baht, bran 750 baht, flour 200 baht, lime 100 baht, including all raw materials 9,005 baht.

2) Labor cost per house including the cost of hammering people 2,500 baht. Cost of people mixing sawdust and steaming cubes 500 baht mushroom sterilization and closing paper 500 baht, total labor cost 3,500 baht.

3) The cost of producing cubes per house, including electricity costs 500 baht, bags with cubes 1,700 baht, mushroom neck 750 baht. Paper 35 baht, rubber band 50 baht, cotton swabs 40 baht, alcohol 35 baht, depreciation of the cube mill 1,250 baht, depreciation of mushroom coop, 1,666.67 baht, sieve depreciation 93.75 baht, milling machine depreciation 479.17 baht, stove depreciation depreciation. Steaming 1,125 baht, water pump motor depreciation 281.25 baht, cart depreciation fee 83.33 baht and water tank depreciation 8.33 baht, total cost 8,097.50 baht.

2.3 Analysis of the cost and maintenance of mushroom. Maintenance costs in respect of labor costs consist of wages for people to open the mouth of the mushroom 300 baht and the wages for hormone injection 1,200 baht, including the total labor cost 1,500 baht for the cost of maintenance per house, consisting of maintenance hormones 1,600 baht, water costs 195 baht, electricity costs 100 baht, depreciated. The

hormone injection tank is 27.08 baht, the hose depreciation is 10.42 baht, the knife depreciation is 2.08 baht, the large basket is 7.5 baht, the spoon depreciation is 0.42 baht, including the total maintenance expenses 1,942.50 baht.

2.4 Data analysis on the cost of collecting angel mushrooms. The cost of collecting fairy mushrooms for labor consisted of Wages for collectors 1,050 baht, wages for pack mushrooms 5,250 baht, including labor costs for collecting all mushrooms 6,300 baht for the cost of collecting and packing fairy mushrooms consisting of foam 2,090 baht, film 200 baht, bag 160 baht depreciated.

The price of the pack 833.33 baht, the depreciation of the pack is 75 baht, the depreciation of the table and chair is 291.67 baht, the depreciation knife is 2.08 baht, the depreciation of the large basket is 7.5 baht, the big fan depreciation is 156.25 baht. The scale depreciation is 79.17 baht, the small basket depreciation is 52.08 baht, the large basket depreciation is 56.25 bath, and the scissors depreciation 2.50 baht, including the total storage and packing costs 3,996.25 baht.

Part 3 Analysis of the yields from the cultivation of phoenix oyster mushrooms.

1.The wholesale price is 8.5 baht per pack.

2. Return from the sale of angel mushrooms 44,625 baht (5,250 kg x 8.5 baht)

3. By-products from the sale of 1,000 phoenix oyster mushroom cubes is equal to 100 baht.

Part 4 Results of analysis of data on finding net profit. The calculation of the return for cultivation of mushrooms less the cost of cultivating mushrooms. Revenue from the sale of angel mushrooms 44,625.00 baht. Plus income from the sale of 500.00 baht. Total income 45,125.00 baht Deduct cost from mushroom mushrooms 34,341.25 baht. Profit from sales of 10,783.75 baht.

V. DISCUSSIONS

The results of the review of the community in the field of conservation indicated that Part 1 General information of the informant about the cultivation of angel mushrooms. Most of the informants were female, 20 in total, aged between 21 and 62 years. Has started the business of cultivation for the maximum of 13 years, the mushroom varieties that are cultivated in the greenhouses are hungarian mushroom and mushroom. The period of production to harvest is not less than 1 month and not more than 45 days by obtaining knowledge and participating in phoenix oyster mushroom cultivation training from entrepreneurs who have operated phoenix oyster mushroom farm business before and from studies. Researching internet Mushroom house cultivation per house hold not less than 3 houses and not more than 5 houses. Selling price is 80-120 baht per kilogram. The yield obtained per 1 house is approximately 1,000 kilograms. With customers to buy by themselves mushrooms work well in winter. Because the mushroom likes moist air. Most farmers spend not less than 40,000 baht and 50,000 baht in the cultivation of phoenix oyster mushrooms as personal funds, the same as Pimwipa Thaijaiuoon (2014, p.43). It was found that shiitake and phoenix oyster mushroom cultivation in Chiang Mai was 25-35 days using rice straw

Part 2 Information on costs and expenses for cultivating angel mushrooms Side1: Initial costs for cultivating phoenix oyster mushrooms consisted of land, greenhouses, machinery and equipment for the production of oyster fungi, which was consistent with Chonticha KoPrakon (2016,p.47). The initial investment in mushroom cultivation requires 35,470.00 baht per house and total machinery cost 69,000.00 baht. Comparing the investment in cultivating angel mushrooms, 1 house, 3 houses and 6 houses, found that growing 1 fairy mushroom will cost a high investment. The value for mushroom cultivation was consistent with Pornphan Chaiyachumpon (2014, p.27). The cost and return of the mushroom farming business in Lampang Province found that the initial cost of land and houses had the same investment in land. 240,000 baht and a house for making mushroom fungi mushroom Infection cube. And root fungus is 25,000 baht, a house for holding phoenix oyster mushroom infection that has already been removed is 6,500 baht, a house for opening fairy mushroom is 28,000 baht. The total housing price was 11,900 baht, the same as Fanadzo et al. (2010, p. 227). Mushroom culture was studied using the substrate compared with wheat straw.

Grow mushrooms with a five day substrate under the same growing conditions. The loss of substrate drying material after mushroom growth varied from 30.1% to 44.3%, indicating that fungal fermentation did not improve feed values.

Side 2 Cost of preparation of mushroom culture mass There are raw materials for preparing the cubes, namely sawdust, rubber, talc, mushroom bran, lime, the amount of 9,005 baht, the labor cost of preparing the loaf 3,500 baht, and the cost of preparing the loaf 6,951.66 baht, which is in line with the research of Chonticha Koprakone. (2559, p.34) investment study in mushroom cultivation. The production cost per house in a period of 1 year was 95,470 baht, in line with Pornphan Chaiyachumpon (2014, p. 31). To study the costs and returns of the mushroom farming business in Lampang Province. It was found that the production cost of the fungi, which consisted of Direct raw material was 174,688 baht, direct labor was 30,000 baht, production cost was 11,040 baht, and found that in the first year, the cost of production of oyster fungi had production costs equal to 5.39 baht per bale, or 215,728 baht per year. This is the base year and will increase by 3%, in line with Pimwipa Thai Jai-un (2014, p. 46). Comparative studies were conducted on

the yield of mushroom cultivated with rubber wood sawdust under different bran ratios. It was found that the first experiment using 100 kg rubber wood sawdust formula yielded the highest mean of the width of the mushroom, 7.75 cm / flower, the fruit of the mushroom cultivar type on the physical quality of the flower. Straw mushrooms on fresh weight (G) It was found that the mushroom count of all six subjects were statistically significant ($P \leq 0.05$). (G) is in the range of 52.11-91.69 g. Mushrooms using 100% New Paraplegic (T1) mushroom has the highest weight. The highest (g) was 91.69 g, followed by the yeast (T6), which was 84.26 g, which from this effect, because the mushroom nodule is an important food source for the growth of the oyster mushroom. Mushrooms normally have the same needs for nutrients, minerals and vitamins as other plants, only the difference in their form of nutrients. The mushroom lumps with the ratio of 100% rubber wood sawdust have a high feed content, resulting in the highest weight (g), the same as Nongnuch Thammapitak (2011). Study the results of using fermented rice husk as a replacement for rubber wood sawdust for culture It was found that the experiment method using 100 kg of rubber wood sawdust fermented with 1 liter of expanded microorganism EM gave the highest yield weight, the average of 249.00 g per bag.

VI. RECOMMENDATIONS

A. Recommendations for Practices

1. On the productivity of the mushroom cultivation, it was found that the yield per rai was uneven, resulting in the farmers' income somewhat unstable. From the data of mushroom cultivation for 1 house, the yield of mushroom cultivation is about 750 kg. If farmers find ways to increase the yield per house to higher, it will increase the net profit.

2. Documentation of expenses information and the income that has been fully generated will result in farmers to know the information of various expenses. Used in investment and cultivation of phoenix oyster mushrooms and real income in full. And used to plan to develop phoenix oyster mushroom cultivation for higher profit.

3. Public relations since angel mushroom is an agricultural product that is nowadays health-conscious and therefore is more interested in mushroom consumption, therefore, there should be more searching for markets or promoting the benefits of mushroom because nowadays most of them are the same customers who have been here. Buying products and have been told to the next, so the mushroom cultivation may have more distribution channels. Internet to become more famous.

B. Recommendations for Further Research

This study was to collect data on the cultivation of phoenix oyster mushrooms. By the study of the main elements are raw materials, labor and production expenses only. For the next study, there should be a study of other mushroom businesses. And other types of agricultural businesses for diversity and efficient cost management or calculating the cost payback period by using each step of the production process as a guideline for calculating costs in order to obtain truthful and effective information for decision-making of business operators.

CONCLUSION

A study of cost and yield of phoenix oyster mushroom cultivation of a group of phoenix oyster mushroom farmers at Pakchong Subdistrict, Chombueng District, Ratchaburi Province, found that 20 female and 10 male respondents with an average age of 45 years, the maximum age of 62 and the youngest of 21 years has started a mushroom farming business for 2-13 years.

Phoenix oyster mushroom cultivations are Hungarian mushrooms. And the phutan mushroom production method can produce its own fungi total production period to harvest is about 1 month to 45 days, there are 4 houses for cultivating mushrooms per household about 1,000 kilograms of yield per house, the selling price of 80-120 baht per kilogram. And a yield equal to 45,125 baht. The cultivation period for 5 months per crop one time. And the net profit of 10,783.75 baht, which yields different mushrooms in each house, depending on the integrity of the fungus, weather and green mold.

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The Chemical Properties and the Combustion Duration of Fuel Briquettes from Corn Kernel Residues, Thailand

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Abstract*— This research was studied the feasibility of using corn kernel residues from the plants to manufacture the frozen sweet corn to make the fuel briquettes. The initial stage of the research was the analysis of the chemical properties of corn kernel residues. It found that had the moisture content of 0.00%, volatile matter content of 79.03%, ash content of 2.30%, fixed carbon content of 54.28%, and heating value of 4217.1 calories per gram, had properties that could be used to make the fuel. Then, mixed the corn kernel residues with emulsifiers such as cassava starch at the ratio of 10:0:1, 10:1:1, and 12:1:1 and then compressed the briquettes. The compressed briquettes were obtained to test the chemical properties and the combustion such as heating value, moisture content, volatile matter content, fixed carbon content, ash content, and the combustion duration. The results of this research found that the compression of the corn kernel residues at the ratio of 10:1:1 is the most suitable proportion due to easy compression, high strength, and low ignition time. It had the moisture content of 0.00%, volatile matter content of 75.05%, ash content of 1.41%, fixed carbon content of 54.77% heating value of 3923.2 calories per gram, and the combustion duration of 111.67 minutes.

Index Terms— ***Fuel Briquettes, Corn Kernels, Residues, Chemical Properties, Combustion Duration***

I. INTRODUCTION

Nowadays, the research finding on alternative energy is currently an interesting issue [1, 6]. Important factors are the cheap, sufficient, sustainable energy and easily procured fuel in the locality, including the method without complications to apply it [2, 5]. One source of the better alternative energy is renewable energy from bio-briquettes [3, 4, 5]. It is saving and slowing down to use fossil fuels, reducing the climate change by a result of the increase of carbon dioxide in the atmosphere [2, 3, 5, 8, 11], reducing the impact of increasingly biomass dumping that affecting the economic, social and environmental balance [2, 5, 12, 13]. The benefits of reusing biomass are beneficial to rural and industrial sectors, either directly and indirectly [3, 5, 12]. All results are useful in the national and global levels [2, 8, 12].

Thailand has currently to be popular to use biomass as renewable energy widely. Since, Thailand is an agricultural country which has the abundant variety of the agricultural productivity that can be used in the form of the biomass energy (8, 9) such as firewood, rice hulls, bagasse, manure, straw, agricultural residues, wastes from agrarian processing plants, others [3, 6, 7, 12]. These raw materials will be used as the fuel in the direct combustion process and then utilized heat for electricity production or biogas production by biochemical reaction process using microbial activity [9, 11]. In the past, most of the biomasses were left to organic fertilizer within the cultivation area. The farmers sometimes eliminated them by incineration, which results in pollution to the environment [10]. In fact, all biomasses are quality fuel and provide heating energy levels that can be utilized [11, 12]. Due to the recession of energy sources, therefore, searching for alternative energy sources with potential and sufficient quantity is as important [14, 15].

Chiangrai Frozen Foods Company Limited is the industrial factory (about frozen sweet corn) in Thailand. This factory has a problem with some of the corn kernels. They were trapped by a sieve and a machine to separate the kernels from the water; nevertheless, the poor quality of corn kernels mixed with wastewater through downstream of the production line. Many corn kernels have been separated. Some corn kernels were sold to farmers for animal feed, and some parts were left and unused, resulting in spoilage and bad smell. Therefore, if there is management of agricultural residues from corn, that will also reduce the problem. Thus, the management of agricultural residues from the processing found that it can be extruded to fuel rods, which reduce the number of useless corn residues as waste. From the mentioned importance and problems, therefore, the author conducted to study the residue of corn kernels as fuel briquettes with the case study in Chiangrai Frozen Foods Company Limited, to apply knowledge and results of research to solve problems in the management of corn kernels for the factory.

II. Research Objectives

The objectives of this research was the feasibility of using corn kernel residues from the plants to manufacture the frozen sweet corn to make the fuel briquettes.

III. Research Methods

This research was the experimental research that experimented with making the fuel briquettes (16) with the residue of corn kernels from Chiangrai Frozen Foods Company Limited's processing. The analysis was to study the properties of fuel briquettes on both parts (chemical [17] and combustion properties [17, 18], and to study the most suitable emulsifier proportion (cassava starch) of fuel briquettes [19] from the corn kernels.

Sampling Method

A sampling of sample group was used to make fuel briquettes that were sweet corn kernels by purposive sampling [20], to select the poor quality of corn kernels remaining from the processing.

Fuel Briquettes

Mixed 10 kilograms of the corn kernels residues from the processing with the emulsifier (water of cassava starch by preparing starch and water at the ratio of 1 kilogram of starch per 1 liter of water) [5, 21, 22, 24], then compressed the briquettes as fuel rods using steel pipes (diameter of approximately 5 centimeters), and then compressed the rod fuel briquettes to a length of approximately 20 centimeters as a cylindrical fuel. Finally, the fuel briquettes were dried in the sun to reduce humidity and the fuel to be hard and combinable for 5-10 days [23, 26].

Analysis of the Chemical Properties of Corn Kernels

Laboratory analyses of chemical properties by the Environmental Center, Suan Dusit University were as follows: moisture content, ash content, volatile matter content, fixed carbon content, and calorific or heating value of corn kernels [27].

Analysis of the Chemical Properties of Fuel Briquettes from the Corn Kernels.

Laboratory analyses of Thai Industrial standard Institute (TISI) by the Environmental Center, Suan Dusit University were as follows: moisture content, ash content, volatile matter content, fixed carbon content, and heating value according to the American Society for Testing and Materials (ASTM) method [5, 18, 25, 26].

Analysis of Combustion Properties of Fuel Briquettes from the Corn Kernels (Determination of the Combustion Duration).

The fuel briquettes were ignited in a brazier using approximately 20 milliliters of 95% ethyl alcohol per ignitable time. Then, turned on the fan to blow into the ventilator of the brazier as the actual combustion state, and counted with the timer when the fuel briquettes began to burn until the fuel briquettes burned up completely [26, 28].

Processing

To compare the chemical properties of the fuel briquettes from the corn kernel with the TISI [24, 29, 31], and compare the emulsifier proportion of fuel briquettes from the corn kernels [29].

IV. Results

Results of the Analysis of the Chemical Properties from the Corn Kernel

The chemical properties of the corn kernels were analyzed, found that the moisture content had 0.00%, the ash content had 2.30%, the volatile matter content had 79.03%, and the fixed carbon content had 54.28%. Moreover, the analysis of corn kernel had the heating value of 4217.1 calories per gram (Table 1).

Results of the Analysis of the Chemical Properties of Fuel Briquettes from the Corn Kernels.

The chemical properties and the combustion duration of fuel briquettes with the residue of corn kernels from Chiangrai Frozen Foods Company Limited's processing which the laboratory experiments (Table 2) were as follows:

Moisture Content

the analysis of the chemical properties of fuel briquettes from the corn kernels found that the fuel briquettes from the corn kernels had the moisture content of 0.00%. The TISI had given the moisture content standard no more than 8%. This moisture content was within the mentioned standard.

Ash Content

the analysis of the chemical properties of fuel briquettes from the corn kernels found that the fuel briquettes from the corn kernels had the ash content of 1.41%. The TISI had given the ash content standard no more than 8%. This ash content was within the mentioned standard.

Volatile Matter Content

the analysis of the chemical properties of fuel briquettes from the corn kernels found that the fuel briquettes from the corn kernels had the volatile matter content of 75.05% which the TISI had given the volatile matter content standard no more than 25%. The volatile matter content was higher than the TISI standard because the fuel bio-briquettes from the

corn kernels in this research were the green fuel that had not been through the carbonization process.

Fixed Carbon Content

the analysis of the chemical properties of fuel briquettes from the corn kernels found that the fuel briquettes from the corn kernels had a fixed carbon content of 54.77%. The TISI had given the fixed carbon content standard no less than 75%. This fixed carbon content was below the TISI standard.

Heating value

the analysis of the chemical properties of fuel briquettes from the corn kernels found that the fuel briquettes from the corn kernels had a heating value of 3923.2 cal/g which the TISI had given the heating value standard no less than 5,000 cal/g. This heating value was below the TISI standard.

Combustion Duration

the analysis of emulsifier proportion (cassava starch) at the ratio of 10: 1: 1 had the combustion duration of 111.67 minutes.

Table 1. Results of the analysis of the chemical properties from the corn kernels.

The chemical properties of the corn kernels				
Moisture content	Ash content	Volatile matter content	Fixed carbon content	Heating value
0.00%	2.30%	79.03%	54.28%	4217.1 cal/g

Table 2. Results of the analysis of the chemical properties of fuel briquettes from the corn kernels.

The chemical properties of fuel briquettes from the corn kernels				
Moisture content	Ash content	Volatile matter content	Fixed carbon content	Heating value
0.00%	1.41%	75.05%	54.77%	3923.2 cal/g

V. DISCUSSIONS

The author had experimented with producing the fuel briquettes from the corn kernels using cassava starch as an emulsifier with three different ratios. The proportion of fuel briquettes from the corn kernels was the ratio of 10 kg of corn kernels: 1 kg of cassava starch: 1 liter of water. It was the most suitable proportion for the production of the fuel briquettes from the corn kernels due to it was an easy compression, high strength, and time use of low ignition, same as the research of Sriket et al., 2019. They had studied improving fuel potential of para rubber wood bottom ash as charcoal briquette with co-extruded materials using the mixture of 10 kg of extruded materials: 1 kg of tapioca starch: 1 L of water. The use of tapioca starch as a binder provided the best quality [24]. However, this research had also experimented with two different proportions of the fuel briquettes; nevertheless, they failed. That was the fuel briquette experiment with 10 kg of corn kernels: 0 kg of cassava starch: 1 liter of water found that it could not be molded as a fuel rod. Another experiment was the fuel briquette with 12 kg of corn kernels: 1 kg of cassava starch: 1 liter of water found that it could be molded as a fuel rod, but it is not stable and fragile briquettes same as the research of Tuates et al., 2016. They had designed the charcoal rice hulls and corn cobs as raw materials in the production of fuel briquettes with a lower and higher amount of starch differently, but the produced briquettes were weak and erratic [21].

In this research, the author used the cassava or tapioca starch as the binder corresponding with many types of research [5, 17, 18, 21, 22, 24, 27, 30, 31]. The cassava starch was commercially available as a binder. This material was cheaper than the other adhesives, and could be easily found in the local markets. Another advantage of cassava starch was its great thickening properties [21]. Zubairu and Gana (2014) said that charcoal from biomass sources (corncobs) as charcoal briquettes was an effective way to manage solid waste and possible methods of alternative energy sources [30].

Moreover, the fuel briquettes of this research used the corn kernel residues that it has not yet been appeared in any study. So, the result of the survey of the fuel briquette properties was not enough. We should be continued the research to improve and develop the fuel briquette processing for reducing agricultural residues.

CONCLUSION

The analysis of the chemical properties and the combustion duration of fuel briquettes from corn kernels found that the most suitable proportion for the production was 10 kg of corn kernels: 1 kg of cassava starch: 1 liter of water. Because it was an easy compression, high strength, and combustion duration of 111.67 minutes, it had the moisture content within the standard that the TISI had given the moisture content standard no more than 8%. It had the ash content within the standard that the TISI had provided

the ash content standard no more than 8%. However, the volatile matter content had not passed the standard in which the TISI had also given the volatile matter content standard no more than 25%. Due to the fuel bio-briquettes from the corn kernels in this research were the green fuel which had not been through the carbonization process. Moreover, the fixed carbon content had not passed the standard, which the TISI had given the fixed carbon content standard no less than 75%. Including the heating value had not also passed the standard, which the TISI had given the heating value standard no less than 5,000 cal/g.

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Verification of a causal factors correlation model: report quality and financial success of medium and small-sized hotels in Thailand

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Abstract— The objective of this article is to examine the relationship, causal and quality factors of financial reports and financial success of Thai small hotel businesses. This was a qualitative research using in-depth interviews. To find out the relationship patterns that affect the quality of financial reports and financial success. The research area was hotel business in 12 cities. The sample group was accounting and finance executives. The hotel business owner and the specific method using in-depth interview form for data analysis. The research found that professional accounting skills were associated with the quality of financial reporting and the financial success of the hotel business. And the ethics of the accounting profession relate to the quality of financial reports and the financial success of the hotel business. The management of the accounting department is concerned with the quality of the financial reports and the financial success of the hotel business. The quality of financial reports is related to the financial success of the hotel business. The financial success of the hotel business is profit, revenue, cost, indicators of cost success should take into account the use of resources. The cost of the time reduced and the cost of the investment to be recovered in comparison with the results.

Index Terms— ***Consistency, financial reporting quality, financial success***

I. INTRODUCTION

The tourism industry plays an important role in driving Thailand's economy. The tourism industry also plays a role in encouraging widespread utilization of the country's resources, helping to promote the recovery art conservation The culture is unique attractive diverse and beautiful with each year generating more income for the country as the number of tourists increases resulting in the continued growth of tourism and hospitality related businesses. (Ministry of Tourism and Sports, 2018) resulting in increased employment and income distribution, increasing economic turnover the tourism industry is also a major source of income in foreign currencies, which can help stabilize the country's balance of payments. Especially the hotel business which is the main business in promoting the tourism industry and influencing the country's economy (Puttachard Lunka, 2019), which the Ministry of Tourism and Sports has continuously promoted the tourism sector of the country. The launch of the Year of the Thai Tourism Project, which aims at using Thai identity, attracts foreigners to Thailand, and encourages Thais to travel in the country more by making tourism expenses to be deducted. 100% tax deduction (Tourism Authority of Thailand, 2018), especially in the 12 must-see cities, including Trat, Nakhon Si Thammarat, Phetchabun, Trang, Chumphon, Chanthaburi, Loei, Nan, Buriram, Lampang, Ratchaburi and Samut Songkhram. Overall, the average occupancy rate was 58%, in which Trat province had the highest occupancy rate equal to 71% overall, the occupancy rate increased by 5.6%, which was promoted through various media fields. In organizing marketing promotion activities on an ongoing basis (Department of Tourism, 2015)

Currently, the hotel business has been expanding more and more due to the expansion of the large hotel business, expanding the business base to small and medium-sized hotels This is because it can be more profitable than the large hotel business, as well as the behavior of tourists who do not prefer to stay in the large hotel business because of the reduction in the cost of accommodation and shopping for more economical products. Including a younger group of tourists from government policies that focus on promoting the tourism industry with a focus on strengthening communities to have a better quality of life and sustainable growth and competitiveness. Therefore, it is important to verify consistency, relationship patterns, factors affecting the quality of financial reports and financial success of small and

medium-sized hotel businesses in Thailand, it is important to measure whether performance is achieved or not.

It depends on the quality of work the employees (Thanyaporn Naphasfangsom, 2013) And the business performance reporting is the duty of the accounting department to reflect the facts about the performance despite monetary and non-monetary in the form of reporting results in financial statements (Franco & Bourne, 2003) which must be reliable, accurate, complete, and can be used in planning planning. Determined (Nopadon Rompho and Monwika Phadungsit, 2014) The objective of this research was to develop a relationship model, causal factors affecting the quality of financial reports and financial success of small hotel businesses in Thailand. Developed according to theoretical concepts with empirical data in order for the executives to be able to use the information to plan the hotel business to be more successful.

II. Research Objectives

The objectives of this research article were to examine the consistency, patterns, relationships, causal factors affecting the quality of financial reports and financial success of small and medium-sized hotel businesses in Thailand developed in theory with empirical data.

III. Research Methods

A. Research Design

The researcher conducted the study using qualitative research with an in-depth interview to examine the relationship model of causal factors affecting the quality of financial reports and the success of the research. Small and medium-sized hotel finance in Thailand developed according to theory and empirical data. By means of in-depth interviews with executives in accounting and finance. Hotel business owners Small and medium-sized hotel business partnerships in Thailand and analyze the content by collecting data from in-depth interviews. By selecting experts who have work experience in accounting and finance. Or tourism and hotel management, both public or private sector, for at least 5 years in order for those who are involved to express their opinions and consider issues relating to the examination of the relationship model, causal factors affecting quality the financial reports and financial success of small and medium hotel businesses in Thailand developed according to theory and empirical data. The researcher selected a qualitative study of the hotel business in both small and medium-sized hotel businesses, each of which consisted of 4 small and four medium to represent the quantitative confirmation of the research results. Use they exchange information and share their views on the broader picture of the quality of financial reports and the financial success that has been achieved. The method of operation can be described as follows.

B. Research Process

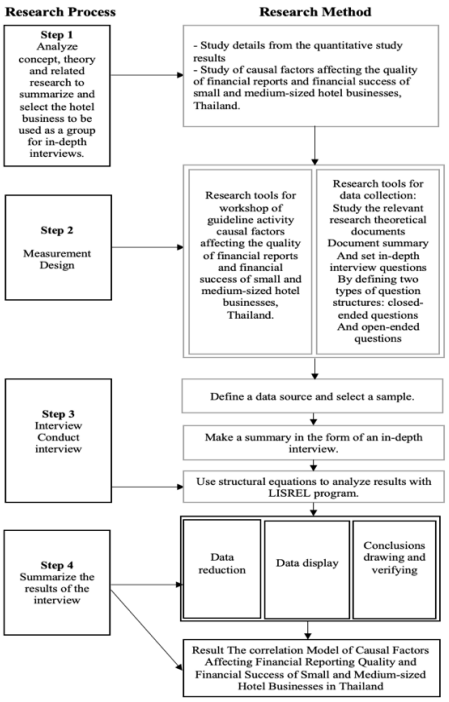


Fig.1 Research process for a causal factors correlation model: report quality and financial success of Medium and Small-Sized Hotels in Thailand.

IV. Results

The Qualitative Data Study The researcher examines the issues questions and their relationship patterns causal factors the quality of financial reports and the financial success of small and medium-sized hotel businesses Thailand developed according to the theoretical concept. Based on empirical data using the interview form analyzing data from the interview, it was found that opinions about causal factors influence the quality of financial reports and financial success of small and medium-sized hotel businesses in Thailand developed according to the theoretical concepts and empirical data namely professional accounting skills that affect the quality of financial reports and the financial success of small and medium-sized hotel businesses in Thailand.

It was found that most of them gave opinions on the quality of financial reports that were reliable the information had to be accurate and able used in planning decision-making emphasizing on the job problem solving skills requiring intelligence able to resolve cases. It is urgent to make decisions to have knowledge and understanding to be able

to connect the information that is generated and to be used in planning to decide how it affects the organization and have a positive work attitude. This includes the exchange of information to others to understand about the information contained in the earnings report that affects the organization.

Summarize information from confirmation interviews. The accounting department have professional accounting skills correlating to the quality of financial reports and financial success. Cognitive skills Numeracy skills Individual skills Interaction and communication skills Information Technology Skills. The ethics of accounting profession that affect the quality of financial reporting and financial success of small and medium-sized hotel businesses in Thailand developed according to the theoretical concept and empirical data.

Professionals are measure of the quality of performance to be in good criteria especially corporate confidentiality as it is a strategy to make a difference in doing business and indicate loyalty in the workplace. Since it is a department that knows the real numbers it must act with accuracy transparency not misrepresentation in order to find personal interest and can prove the origin of numbers. The accounting department should be flexible. High tolerance and responsibility for the workload sacrifice to ensure the quality of work and the organization to achieve its goals. Accounting department must have professional ethics in transparency independence integrity fairness confidentiality Responsibility towards peers

The management of accounting work affecting the quality of financial reporting and financial success of small and medium-sized hotel businesses in Thailand, developed according to the theoretical concept and empirical data, found that the organization could be successful. It arises from the knowledge and ability to manage the work according to the goals set. The good management must have a human management system and work management. There must be a management strategy daring to think differently from the previous model emphasizing the reverse performance to see the impact in order to learn and develop making the organization successful and efficiency The quality of financial reporting that affects the financial success of small and medium - sized hotel businesses in Thailand developed based on theoretical concepts and empirical data, it was found that bookkeepers were expected from organizations about financial reporting in Thailand. The reported information must be reliable, impartial, and free from errors that will not affect the use of the information in planning decisions. The information must be accurate. Completely able to compare and assess past events with plans for the future from the reporting of results, there is a need for audit evidence to be clear.

The financial success of small and medium-sized hotel businesses in Thailand developed based on theory and empirical data. Found that the measurement of the success of the organization is measured from the goals that are set. Profit and income are clear indicators of operations, but when considering revenue, revenue is looked after after fixed costs. Management that should be addressed is The costs incurred must be the lowest, either monetary or non monetary costs such as resource sharing costs. Reduced cost of working time Comparison of the work process with the target value achieved or not the cost of the investment that will be recovered against the outcome.

Description	Agree	Not Agree
Professional Accounting Skills	**82.50**	**17.50**
Cognitive skills	100.00	0.00
Numeracy skills	75.00	25.00
Individual skills	87.50	12.50
Information technology skills	50.00	50.00
Interaction and communication skills	100.00	0.00
Ethics for professional accountants	**87.50**	**12.50**
Independent transparency	87.50	12.50
Confidentiality	100.00	0.00
Responsibility towards peers	75.00	25.00
Accounting management	**84.38**	**15.63**
Building shared values	100.00	0.00
Performance style	62.50	37.50
Operational strategy	75.00	25.00
Person management	100.00	0.00
Financial report quality	**96.88**	**3.13**
Completeness	100.00	0.00
Impartiality	87.50	12.50
Relevance to decision making	100.00	0.00
Report error	100.00	0.00
Financial success	**95.83**	**4.17**
profit	100.00	0.00
Income	100.00	0.00
Cost	87.50	12.50
Total	**89.42**	**10.59**

Fig.1 Summary of interviews, patterns, quality of financial reports and financial success.

From Table 1, it was found that most of them agreed on the pattern, quality of financial reports and financial success. Which can be explained from the data of the interview found that Patterns quality financial reports and financial success. Summary of the development of a causal factor relationship model to affect the quality of the clinical report. The financial and financial success of a small hotel business in Thailand developed according to the theory and empirical data showed that the majority of the informants were female, aged 35-56. 12 - 33 years 3 Chief Accounting and Finance 2 Accounting Managers 3 Tourism and Hospitality 4 small hotels with less than 30 rooms and 4 mid-size hotels with guest rooms. More than 30 rooms, total 4 places and professional accounting skills are directly related to the quality of financial reporting and are indirectly related to the financial success of small and medium-sized hotel businesses in Thailand.

Individual skills Interaction skills and communication computational skills and information technology skills From the interview is Problem solving skills Intelligence and work management skills can motivate, transfer, assign work to femployees or subordinates to accomplish their objectives,

linking performance with the performance. Professional accounting ethics have a direct correlation to the quality of financial reporting and have an indirect correlation to the financial success of small and medium sized hotel businesses in Thailand comprising transparency and independence. Responsibility towards peers Confidentiality. The summary of information from the interview is Ethics and sacrifices in work Code of work ethics not to be detrimental. The management of the accounting department has a direct correlation to the financial reporting quality and financial success of small and medium-sized hotel businesses in Thailand. Operational strategy Personnel management and the creation of shared values

The summary of information from the interview is Management of work to feedback the performance of the organization to employees. Should focus the management of work. Rotate or learn different areas of work in other departments to understand other departments' work barriers to gain knowledge skills. Positive attitude towards co-workers Thought-provoking management to create works by using awards as work inspiration Management with a focus on change, fostering a good atmosphere in solving problems by using Kalayanamit. Encourage people in the organization to feel valued and part of the organization's success. Organizing the work structure by arranging people to suit the job to reduce problems in the work and make the job most efficient. Management is flexible but up to standard.

Differentiation strategies to generate new knowledge or methods by switching pages to learn jobs link with documents or evidence in reporting results. The quality of financial reports has a direct correlation to the financial success of small and medium-sized hotel businesses in Thailand. Report error. The summary of the information from the interview is careful consideration of the documents and information that will be reported. The financial success of small and medium-sized hotel businesses in Thailand consists of profit, revenues, costs. Summary of information from the interview Indicators of cost success sharing resources. And take into account the reduced operating time costs, the cost of the investment that will be recovered against that outcome.

V. DISCUSSIONS

The results of the investigation consistency correlation patterns causal factors affecting the quality of financial reports and financial success of small and medium-sized hotel businesses in Thailand developed according to the theory and empirical data. It was found that most of them agreed that professional accounting skills factors were related to financial reporting quality and financial success of small and medium-sized hotel businesses in Thailand.

Especially problem solving skills in critical situations need to make urgent decisions. Must have courage to make decisions. Lsobe et al.(2008) studied the relationship between knowledge and competence and performance of accountants and found that Professional accounting skills are associated with a high level of performance that impacts job quality to be credible. Kavanagha & Drennan (2008) Professional accounting skills are a part of the success of an organization. Law if bookkeepers. Understanding the accounting system will provide reliable quality information and use financial information in planning making business growth and profitability. Found that most of them agree on professional ethical factors. Accounting correlates to the quality of financial reports and the financial success of small and medium-sized hotel businesses in Thailand. Bookkeepers must be honest that they will not disclosure, damage, or do it for personal gain There is loyalty in the organization to the performance of the report. The numbers are not concealed, misrepresenting the facts. relate to Vincent K. Chong (2004) investigated the uncertainty of the work of the management accounting system on the management efficiency. In a matter of honesty about performing a lot. The bankruptcy issue of publicly traded companies is due to internal corruption and a lack of effective administrative control planning as Church (2012) explains that bookkeepers must not disclose information about their performance. Without authorization, most agree on the quality factor of financial reports correlate with the financial success of small and medium-sized hotel businesses in Thailand developed based on theoretical concepts with empirical data. This is because the information in the financial reports is prepared to be used in planning decisions. The information displayed must be reliable and not contrary to the facts as required by law. The reports can be used to assess events that happened in the past to be adapted in the future. Including the financial reports that are disclosed must be complete, impartial and free from errors.

Able to reasonably assess the resulting information. Verify information financial reports and use the information in financial reports to plan management of the organization to be more successful. Ames (2013) studied the impact of the application of international financial reporting standards on the accounting quality of listed companies in South Africa. This will affect performance if the quality of financial reports is accurate, complete and reliable. In line with Arifur (2014) management can use the information to plan a successful corporate decision. The data quality of accountants in the Australian Accounting Firm found that the information was accurate and complete. It is impartial free from errors can prove the facts. From the perspective of the data user planning the business decisions that make the business more successful.

Most of them agree on the financial success factor. This is because the success of running a business is a measure of the goals that are set by the income and costs generated, and the success of both monetary and non-monetary success. Such as

managing the use of available resources for increased benefits or measuring less time to work on the same subject and the cost of capital to be recovered compared to that result. Operation to be reliable. It was found that the performance measurement of the organization was due to the quality of the performance reporting that was accurate and transparent. As with Aahmi (2014), it studies the success of the organization. Performance is measured in the form of financial information compared with the target value. Then analyze what happened to adjust the action plan, allowing the organization to benefit from the measurement of financial information directly to be used in planning decision-making.

VI. RECOMMENDATIONS

A. Recommendations for Practices

1. Focus on the accounting department to attend meetings to convey knowledge about financial information in order to use the information in planning management personnel or to attend additional knowledge training in order strengthen the operations.

2. To support & develop awareness of correct information and be aware of the changes in the deployment develop the organization to achieve the goals and create a competitive advantage for differentiation and sustainability.

B. Recommendations for Further Research

For the next study, this model should be applied to hotel businesses outside of the 12 must see cities in order to confirm the correlation model causal factors affecting financial reporting quality and reliability. Financial success of the small and medium-sized hotel business in Thailand

CONCLUSION

Management can use the information to plan and develop the organization's operations by giving importance to the accounting department's information preparation process. To support planning control and decision making in the best interest of the organization. The aforementioned factors are taken into account in policy formulation and operational support in various areas such as professional skills. And professional ethics management aspects of work that affect the quality of financial reports and financial success of the organization.

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Effects of Knowledge Sharing Practices in Conjunction with Empowerment Program in Adolescent Pregnant Women towards Promoting Exclusive Breastfeeding: A Randomized Controlled Trial

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Abstract— Background and importance of the problem: *Even though the best natural diet to feed a baby is "maternal milk," the rate of exclusive breastfeeding in the first six months of postpartum period remains below the threshold of International Health Organization especially in pregnant adolescents. The purpose of the research was to study the effects of the Knowledge Sharing Practices with Empowerment Program in adolescent pregnant women towards promoting exclusive breastfeeding during the first 6months of postpartum period compared to obtaining a standard knowledge program of normal maternal breastfeeding techniques.*

Instruments and methods: *The study was conducted in 10 to 19-year-old pregnant women who were more than 32 weeks pregnant, using randomized controlled trial (RCT), which divided the samples into two groups of the equal number: the study group and the control group. Each group has 40 people. The study group was given a knowledge sharing practices in conjunction with empowerment in pregnant adolescent women towards promoting exclusive breastfeeding as well as techniques to follow-up during 6 months of postpartum period while the control group received a standard knowledge program of normal maternal breastfeeding techniques and follow-up during the postpartum period. The research tools included a Knowledge Sharing Practices with empowerment, and a strategy to track during the first 6 months of postpartum period, created by the researchers based on the concept and theory of knowledge sharing practice in conjunction with empowerment strategies according to Gibson's theory (1991) to stimulate exclusive breastfeeding during the first 6 months of postpartum period. The statistics used in the research were paired t-test, unpaired t-test, Chi-square test and multivariate logistic regression analysis.*

Findings: *The exclusive breastfeeding rates during the first six months of postpartum in the study group was statistically significantly higher than the control group at .05 level in the first 14 days (82.5% and 50.0%, P=0.005), the first month (77.5% and 50.0%, P=0.021), the first 2 months (62.5% and 35.0%, P=0.023), first 4 months (35.0% and 7.5%, P=0.008), first 5 months (25.0% and 2.5%, P=0.012) and the first 6 months during postpartum period (40.0% and 5.0%, P=0.002) and the mean score of knowledge , including attitudes and perceptions of self-management competencies in breastfeeding in the study group after being given the program was higher than the control group's statistically significant at the .05 level (P<0.001).*

Conclusion of the research: *Knowledge Sharing Practices in conjunction with Empowerment Program and follow-up strategies to support postnatal breastfeeding could promote the rate of exclusive breastfeeding of adolescent mothers during the first 6 months of postpartum period, statistically significant at the .05 level.*

Index Terms— ***adolescent pregnant women, exclusive breastfeeding, Knowledge Sharing Practices with Empowerment Program (KSPEP)***

I. INTRODUCTION

The best natural food to feed babies, "mother's milk," is beneficial for both physical growth and mental development of babies. Mother's milk is a special form of infant food and is easy to digest. Breast-fed babies have an advantage over formula-fed babies in terms of improving overall health outcomes [1]. In addition, pure breast milk also has the correct proportion of fat, carbohydrate and protein. It also has an optimal temperature [2] and has a positive effect on growth and development as well as in physiological and psychological socials, learning interactions and mother-infant communication [3].

Many domestic and abroad agencies have been widely promoting the increase in the exclusive breastfeeding rate for the first 6 months after delivery. Most health organizations; for example, the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) recommend the exclusive breastfeeding until the baby is approximately 6 months of age before feeding other meals in

conjunction with continued breastfeeding along with feeding supplements for at least the first 2 years of life [4]. The exclusive breastfeeding contains only breast milk that is given to babies; not to fortify with water, juices, milk mixes and other foods, yet drugs, vitamins and oral solutions can be administered [5].

COVID-19 infection is an emerging disease; nevertheless, there is very little known regarding this virus. According to preliminary data, there is no information about the infection of mothers during the first 3 to 6 months of pregnancy; there is only information shown on infected mothers in the last 3 months before delivery. In accordance with the china reports, there were 33 newborns born from Covid-19 mothers; nonetheless, only three were found with COVID-19 and mild symptoms and there was undetected infection in the amniotic fluid and secretions from the vagina, cord blood and breast milk. Therefore, the expert concluded that the infection was most likely caused by contact with infections (droplets), not from a fetal infection (Vertical transmission). The World Health Organization (WHO), the US Centers for Disease Control (CDC), and other health organizations around the world have all reported with no evidence that the infection with Corona virus mothers can pass through the placenta or breast milk to baby. The mothers can still breastfeed their babies, including both suspected mothers (PUI) and confirmed cases. In addition, strict preventive standards must be followed in contact with droplets by wearing a sanitary mask, washing hands frequently with soapy water for 20 seconds or using 70% alcohol and reiterate social distancing. Breastfeeding is important in both body food and mind food. Body food is breast milk which has immunity to protect their children from infections in the early stages, and It contains nutrients that are important for growth while the mind food is breastfeeding which brings the mother and the child close to each other, creating a good relationship between the mother and the baby (Bonding) WHO, CDC, UNICEF, Breastfeeding Center of Thailand and Department of Health, Ministry of Public Health suggested that both mothers, who are suspicious and have already been infected, breastfeed their babies by following guidelines strictly to prevent droplet transmission [6].

However, it was found that exclusive breastfeeding is still somewhat below national and international standards. Thailand started the breastfeeding program in 1989 with the main goal to encourage mothers to exclusively breastfeed during the first 6 months of postpartum period together with giving the dietary supplement until the age of 2, as well as the 12th National Health Development Plan (2017-2021); on the contrary, it has been found that the rate of exclusive breastfeeding during the first 6 months of postpartum in Bangkok is still low (11%) (Laisiriruangrai, 2008) which has many factors affecting the success of maternal childcare promotion, and the results are in contrast to the Department of Health, targeting of at least 50% [7] .

Especially adolescent mothers, pregnancy in women between the ages of 10-19, based on the age at the time of delivery. This can be categorized into adolescents with the age of 15-19 years and younger adolescents with the age of 10-14 years. Each year the worldwide incidence of adolescent mothers is around 14 million with approximately 12.8 million or more than 90% in developing countries. The worldwide average birth rate among the teenagers, aged 15-19 year olds is approximately 65 people per 1,000 adolescent women, the highest rate is in the groups of South African countries, some South Asian countries and Latin America, followed by the Middle East, North Africa, USA and Eastern Europe (World Health Organization, 2004)[4] In Thailand in 2018, a total of 666,207, pregnant mothers were born from adolescent mothers ,aged 10-19 in a total of 94,584, accounting for 14.2 percent of all births. Each day there are 259 adolescent mothers, aged 10-19 years [8].

For adolescent pregnancy, there is a greater risk than pregnancy in adulthood: anemia and preterm [9]. In addition, the incidence of low birth weight in pregnant adolescents are more likely than in adulthood, especially breastfeeding problems during the first 6 months of postpartum period as adolescent women often lack knowledge, attitude and awareness of performance, as well as the power to manage themselves and behaviors related to exclusive breastfeeding in the first six months after delivery, resulting in infants being fed with supplements, which are at risk of infection and malnutrition, which can cause disability and death in infants In the long run. It also affects physical and psychosocial development as well. However, the quality of life of men should begin immediately in the womb and after birth. This is the most important period for adolescent pregnant women to effectively treat themselves and breastfeed their babies for the first six months after delivery, leading to good health, physical, mental and intellectual health of the baby that will grow into good resources and quality of the nation in the future. Therefore, promoting the rate of exclusive breastfeeding for the first 6 months after delivery is an important and necessary measure for adolescent pregnant women [8].

Methods, strategies or programs to promote breastfeeding in the past are unable to increase the amount of breastfeeding mothers during the first 6 months of exclusive adolescent pregnant women in which some research has found limitations such as small sample sizes, other methodological problems that randomized controlled trials were not used and had no effective or effective research programs [10]. Therefore, it is necessary to have special techniques or programs that can increase knowledge, attitudes and perceptions, competencies, and power in self-management and behavior to promote exclusive

breastfeeding effectively during the first 6 months of adolescent pregnant women.

Based on a review and collection of literature on the concept of exchange learning in conjunction with the knowledge sharing practice with empowerment program (KSPEP), it is a suitable method since it contains the theory of knowledge sharing practice [11] in accordance with Udomrat Jaratsorn's study on education knowledge management condition of teachers at the Demonstration School of Ramkhamhaeng University. It was found that teachers had opinions on the condition of the management of knowledge management in all aspects of the knowledge management process [12]. Likewise, the empowerment theory in correspondence with Maliwan Chanchai Viraphan on the effect of programs for empowerment in breastfeeding of adolescent mothers found that the program was effective and could make teenaged mothers more knowledgeable and better attitudes and behaviors towards breastfeeding. Therefore, it can be applied to promote adolescent breastfeeding mothers [13]. The researcher has incorporated the two theories. As research found that an exchange program in conjunction with the empowerment of prenatal training and strategies for monitoring support for postnatal breastfeeding could promote the rate of exclusive breastfeeding during the first 6 months of postpartum period statistically significant at the .05 level [14] that knowledge sharing practice is used in conjunction with empowerment according to Gibson's theory [15], for the strategies on prenatal education and postnatal support strategies to stimulate exclusive breastfeeding to transform knowledge, attitudes, perceptions, competencies, as well as the power of self-management and behavior of Bartholomew's theory [16] to increase knowledge, change attitude and the perception of competencies, including the power to self-manage and stimulate behavior in adolescent pregnant women to effectively promote adolescent exclusive breastfeeding during the first 6 months of postpartum period, the KSPEP program has never been used to promote adolescent's exclusive breastfeeding during the first 6 months of postpartum period.

Nowadays Sirindhorn Hospital Medical Bureau Bangkok located in Bangkok is a high-level secondary hospital with 243 beds, certified quality hospital in 2010 and 2011, and the gold level of "Family Love Bonding Hospital" in 2011 from the Department of Health, Ministry of Public Health. It is a hospital serving Thai pregnant women who earn various incomes at all levels, including teenage pregnancy which means Thai adolescent pregnant women coming for antenatal care, in the fiscal year 2018, equal to 265 people, with the awareness of the value of promoting exclusive breastfeeding for the first 6 months after delivery, in line with WHO, AAP, ADA and the National Health Development Plan at 12 (2017-2021): Exclusive Breastfeeding for 6 Months after delivery consisted of the hospital's policy that "Bond of Love: Sirindhorn Hospital, "Family Love Hospital" where the hospital has set a goal about exclusive breastfeeding the first 6 months after delivery , not less than 50 percent to be in line with the Ministry of Health and the network in 2019, which set a target in 2025 that at least 50 percent of babies will exclusively be breastfed during the first 6 months of postpartum period In line with the goals of all the world's countries ,yet it was found that exclusive breastfeeding rate during the first 6 months of postpartum period in Sirindhorn Hospital in 2018 was only 39.26 percent (Pediatric Outpatient Department Sirindhorn Hospital, 2018).

For all the reasons above, the researcher is, therefore, interested in researching the effects of learning exchange programs in conjunction with empowerment in adolescent pregnant women towards promoting exclusive breastfeeding: a randomized controlled trial to study the effects of receiving a learning exchange program with the empowerment of adolescent pregnant women towards promoting exclusive breastfeeding all the time during the first 6 months of postpartum period ,compared with the standard knowledge program of normal breastfeeding techniques.

II. RESEARCH OBJECTIVES

The purpose of the research was to study the effects of the Knowledge Sharing Practices with Empowerment Program in adolescent pregnant women towards promoting exclusive breastfeeding during the first 6 months of postpartum period compared to obtaining a standard knowledge program of normal maternal breastfeeding techniques.

III. RESERCH METHODOLOGY

The sample group used in this quantitative and qualitative study was pregnant women, Thai teenagers aged 10-19 years older than 32 weeks, who received antenatal care and delivery services at department of obstetrics and gynecology, Sirindhorn Hospital, Bangkok Medical Center during May And June 2020 and follow-up to support breastfeeding mothers during the first 6 months of postpartum period between June and November 2020.

After being certified by the Research Ethics Committee, Western University and the Research Ethics Committee Bangkok, Volunteers who meet the selection criteria and had consents were randomly divided into 2 groups: study group and control group, which collect data conducted by researchers and research assistants, as well as informing the

objectives and procedures of the study, and the protection of human rights in participating in this research; offering positive human relationships, and opening discussions or questions to promote confidence in participation as a volunteer in the study to meet the selection criteria for both groups of 90 people, namely, pregnant women, adolescents and parents / sponsors who are willing to participate in the research project, adolescent pregnant women and their babies who have no complications at the gestational age of less than or equal to 32 weeks, adolescent pregnant women and their babies who are of normal health and have no prohibited diseases during breastfeeding less than or equal to 32 weeks, adolescent pregnant women who do not have nipple abnormalities at a young age less than or equal to 32 weeks, and pregnant women and adolescents pregnant woman who have channels that can communicate through social media.

Randomized Controlled Trial (RCT) was an experimental method. This statistics can be used to examine the effectiveness of healthcare services and technology. The participants showed similar characteristics and were divided into two groups: Treatment Group and Control Group. This allowed the experiment to reduce or avoid bias In the selection of samples and bias from Other factors affecting the results of the study [17] which the researcher has used this method to draw the sample. The samples were randomized by using table of random numbers method. The researcher created the allocation sequence and examined the enrollment of the participants. The researcher had the participants choose sequentially numbered, opaque, sealed envelopes, containing 45 tickets, identifying the study group or control group. The participants were not known to be in the study or control group. Each group was offered a knowledge sharing practices and empowerment (KSPEP) among adolescent pregnant women to promote exclusive breastfeeding for the first 6 months after delivery, which was a study group. Another group was given the standard knowledge program of normal breastfeeding techniques, which was the control group. The treatment of the two groups of participants was identical.

Research instruments used for data collection

This randomized and controlled study with research tool consisted of Knowledge Sharing Practices with Empowerment Program (KSPEP), Knowledge Sharing and Empowerment Program in prenatal training and strategies for monitoring adolescent breastfeeding after 6 months of delivery. The researchers led the Knowledge Sharing Practices with Empowerment Program (KSPEP) based on the Knowledge Sharing Practices concept and theory by adopting a strategy of five areas of exchange theory: adoption, problem-solving, communication, decision-making and compliance together with empowerment of Gibson's theory (1991), in which Kupratakul J. In 2010, both theories were incorporated, adapted to adolescent pregnant women and periodic behavioral monitoring to promote exclusive adolescent breastfeeding throughout the first 6months of delivery by evaluating the basics of knowledge, attitudes, perceptions of competence, and self-management power of Bartholomew's theory (1993) as shown in figure 1.

Statistics used in data analysis

The researcher analyzed the data collected using the standard program SPSS / PC version 13 [18] for statistical analysis. Results are presented as adjusted odds (OR) with 95% confidence interval (CI) P-value < 0.05, considered to be statistically significant.

The categorical data was displayed in percentage and compared with the chi square test. Continuous variables were shown as mean and standard deviation and the test was compared by t-test. The data was analyzed by using descriptive statistics, mean and standard deviation of knowledge, attitudes and perceptions of self-management competencies in breastfeeding per the mean scores of breastfeeding of the sample, comparing the duration and exclusive breastfeeding between the study and control groups. It was calculated by a statistically significant Chi-square test at 0.05, a test of difference between the mean scores of knowledge, attitudes and perception of self-management performance in both groups before and after receiving the program, using the unpaired t-test and the difference test between the knowledge score, attitudes and perceptions of self-management competencies in breastfeeding before and after receiving the program in the study and control groups, using paired t-test.

IV. RESEARCH RESULTS

Prior to the start of the study, the participants were placed into two groups. The sample group was randomized by using Table of Random Numbers method. The researcher created the allocation sequence and examined the enrollment of the participants and had the participants choose sequentially numbered, opaque, sealed envelopes which has tickets indicating the study group or control group. Each group consisted of 45 people who did not know to be in the study or control groups before. Some groups received Knowledge Sharing Practices with Empowerment Program of adolescent pregnant women towards promoting exclusive breastfeeding for the first 6 months (the study group) while the other groups received a standard knowledge program of conventional breastfeeding techniques (the control group).

The treatment of the two groups of participants was identical.

It was found that 10 teenage mothers were missing during the research. It consisted of 5 adolescent mothers in the study group due to the fact that the causes of address change could not be followed up for 3 people, mastitis for 2 people and 5 adolescent mothers in the control group thanks to the change of the address which could not be tracked for 3 people, 1 mastitis and 1 neonatal abnormalities, totally 80 adolescent mothers in the study, calculated approximately 88.89% (40 people in the study group and 40 people in the control group), followed-up for a six-month period, completed in November 2020, as summarized in Figure 2.

Factors for demographic characteristics (age, religion, educational status, occupation status, family income and equities), intention and breastfeeding plans. As summarized in Table 1, the number and percentage of demographic data, intention and breastfeeding plans of the study and control groups showed that regarding the demographic factor, the study group received Knowledge Sharing Practices (KSPEP) with Empowerment Program In adolescent pregnant women towards exclusive breastfeeding while the control groups received the standard knowledge program of normal breastfeeding techniques. There was a statistically significant difference of 0.05, i.e. occupation status, workplace and monthly family income. The leading factors for demographic characteristics were age, religion, educational status, intentions and plans for breastfeeding. There was no significant difference in 0.05, as summarized in Table 1.



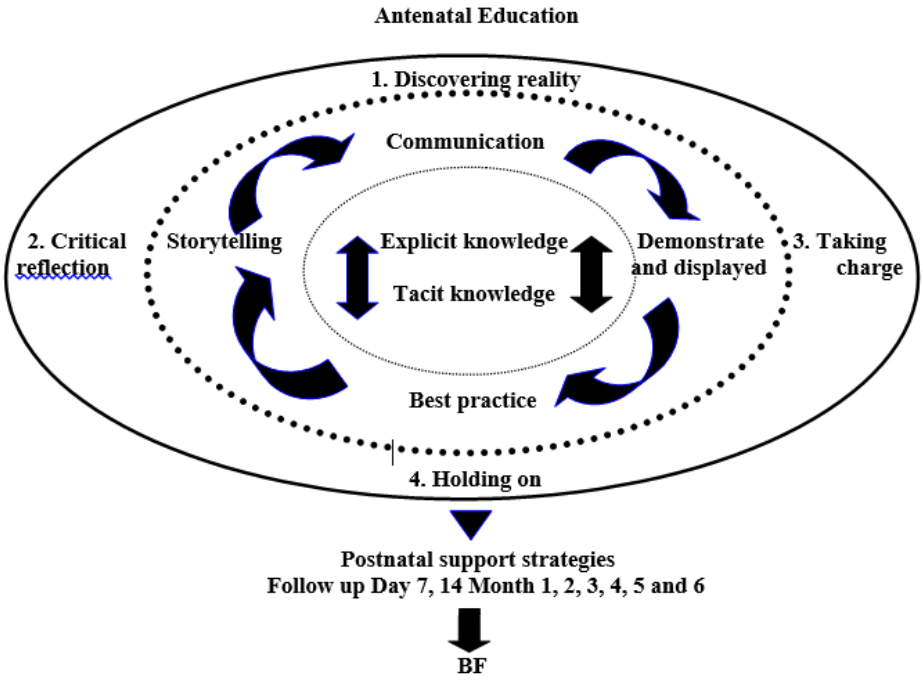


Figure 1: A model for KSPEP (Knowledge Sharing Practices with Empowerment Program)

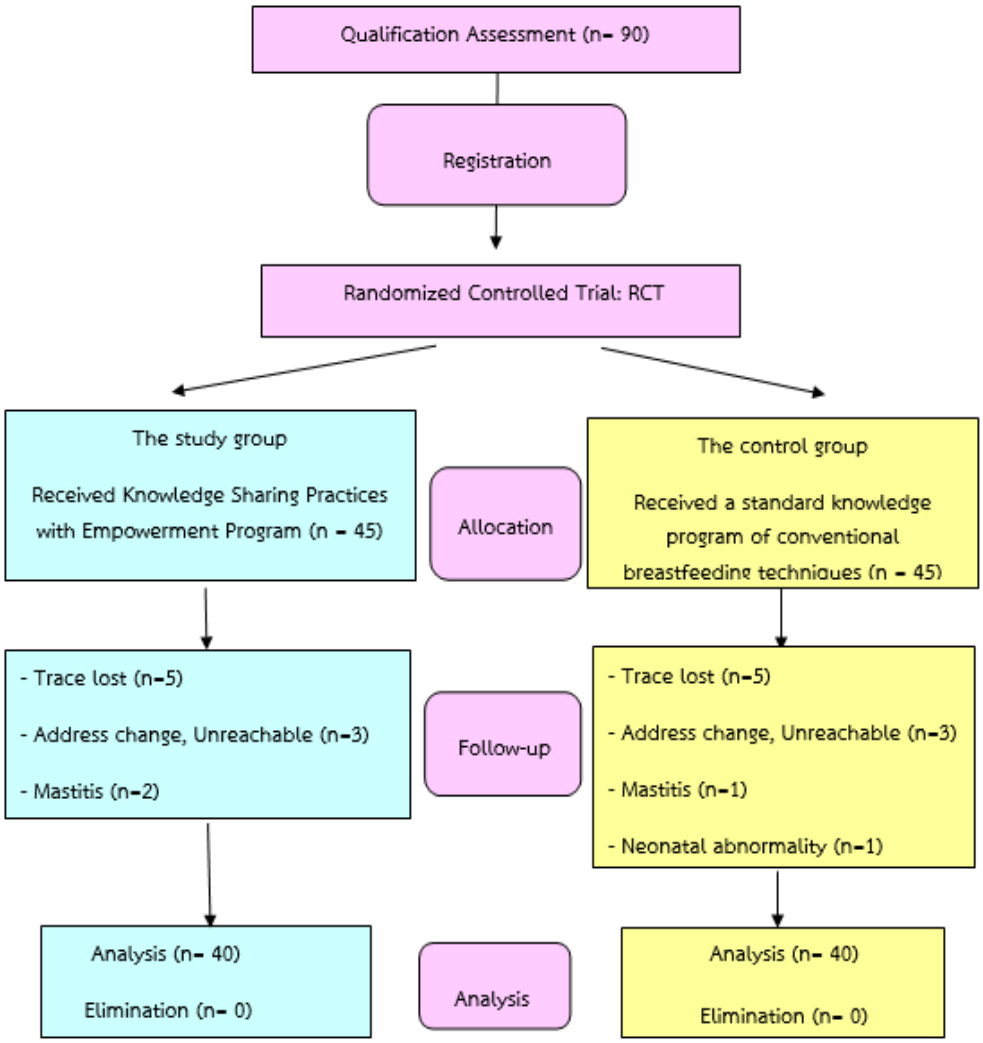


Figure 2: Screening, Randomized controlled trial, Termination and Loss to follow-up

Regarding the leading factors of breastfeeding knowledge, breastfeeding attitudes, perception of self-management competencies in breastfeeding, it was found that before receiving the Knowledge Sharing Practices with Empowerment Program in adolescent pregnant women towards promoting exclusive breastfeeding (KSPEP) in the study group together with the understanding of standard knowledge program of normal breastfeeding techniques in the control group. The average score of knowledge of breastfeeding and attitudes towards breastfeeding and the perception of self-management ability towards breastfeeding. There was a difference of 0.05 statistical significance of attitude towards breastfeeding and the perception of self-management ability to breastfeeding ($p = <0.001$ and $p =< 0.001$; respectively). However, no difference was found in the statistical significance of 0.05 of breastfeeding knowledge ($p = 0.071$).

Demographic characteristics	Study group		Control group		Total		p-value
	Number	Percent	Number	Percent	Number	Percent	
Ages (years)							
1. 14-15	2	5.0	6	15.0	8	10.0	.099
2. 16-17	11	27.5	9	22.5	20	25.0	
3. 18-19	27	67.5	25	62.5	52	65.0	
	Mean=17.85 Mode=18.00 SD=1.63 Min=14 Max=19		Mean=17.40 Mode=18.00 SD=1.50 Min=14 Max=19		Mean=17.63 Mode=18.00 SD=1.57 Min=14 Max=19		
Religions							
1. Buddhism	37	92.5	37	92.5	74	92.5	1.000
2. Islam	3	7.5	3	7.5	6	7.5	
Education status							
1. Primary education	5	12.5	8	20.0	13	16.2	
2. Secondary education	26	65.0	30	75.0	56	70.0	.084
3. Diploma or higher	5	12.5	0	0	5	6.3	
4. Bachelor's degree or higher	4	10.0	2	5.0	6	7.5	
Occupations							
1. Serving	1	2.5	1	2.5	2	2.5	**.026***
2. Company employee / employee	15	37.5	11	27.5	26	32.5	
3. Trading	6	15.0	6	15.0	12	15.0	
4. Student / student	0	0	9	22.5	9	11.3	
5 Housewife (unemployed)	18	45.0	13	32.5	31	38.7	
Workplaces							
1. Work in the home	16	40.0	26	65.0	42	52.5	**.025***
2. Work outside the home	24	60.0	14	35.0	38	47.5	
Average monthly income							
1. Less than or equal to 6,000 baht	3	7.5	11	27.5	14	17.5	**.003***
2. From 6,001 - 20,000 baht	25	62.5	27	67.5	52	65.0	
3. More than 20,000 baht	12	30.0	2	5.0	14	17.5	
Intention to raise children With breastfeeding							
1. Intentional	37	92.5	33	82.5	70	87.5	.176
2. Unintentional	3	7.5	7	17.5	10	12.5	
Plans for breastfeeding							
1. Planned	36	90.0	27	67.5	63	78.8	.014
2. Unplanned	4	10.0	13	32.5	17	21.3	
Total	**40**	**100.0**	**40**	**100.0**	**80**	**100.0**	

Table 1. Number and percentage of demographic characteristics, intentions and breastfeeding plans of the study group and control group

After receiving the Knowledge Sharing Practices with Empowerment Program (KSPEP) in adolescent pregnant women towards promoting exclusive breastfeeding in the study group and the understanding of standard knowledge program of normal breastfeeding techniques in the control group, there were differences of the statistical significance of 0.05 in the knowledge of breastfeeding and the perception of self-management abilities of breastfeeding (p = 0.120), as described in Table 2.

Questionnaire	Study group (N=40)		Control group (N=40)		P-value
	X	S.D.	X	S.D.	
Knowledge					
Before	6.65	4.76	10.30	3.88	0.071
After	18.40	1.74	9.48	3.82	<0.001*
Attitude					
Before	3.06	0.90	3.84	0.41	**<0.001***
After	4.65	0.40	3.64	0.58	0.120
Perception of self-efficacy					
Before	62.35	18.75	79.88	11.61	**<0.001***
After	97.35	8.80	75.68	12.88	**0.012***

Table 2. Mean scores of knowledge, attitudes and perceptions of self-management competencies in breastfeeding before and after receiving the Knowledge Sharing Practices with Empowerment Program (KSPEP) in adolescent pregnant women towards promoting exclusive breastfeeding in the study group and obtaining standard knowledge programs of conventional breastfeeding techniques in the control group.

When comparing the average score of knowledge in breastfeeding, attitudes towards maternal breastfeeding and the perception of self-management ability towards breastfeeding before and after obtaining a standard knowledge program of normal breastfeeding techniques In the control group. There was a statistically significant difference of 0.05 in the perception of self-management performance towards breastfeeding (p = 0.028), but there was no significant difference. At 0.05, regarding breastfeeding knowledge and breastfeeding attitudes (p = 0.092 and p = 0.100, respectively).

But when comparing the average score of knowledge in breastfeeding, attitudes towards maternal breastfeeding and perceived self-management capacity to breastfeeding mothers before and after receiving the Knowledge Sharing Practices with Empowerment Program (KSPEP) in pregnant teens In the study group, the average score after receiving the KSPEP was higher than the score before receiving the KSPEP in the study group, statistically significant at 0.05 on the knowledge of breastfeeding, attitudes to maternal breastfeeding and perceived self-management capacity to breastfeeding. (p = <0.001 total), as described in Table 3.

Questionnaire	Study group (N=40)		Control group (N=40)	
	Mean ± SD of difference	P- value	Mean ± SD of difference	P- value
Knowledge	11.75±5.79	**<0.001***	0.83±3.02	0.092
Attitude	23.88±16.94	**<0.001***	3.00±11.26	0.100
Perception of self-efficacy	35.00±21.60	**<0.001***	4.20±11.61	**0.028***

Table 3. Mean scores and differences of knowledge about breastfeeding, attitude towards breastfeeding and self-efficacy of self-management towards breastfeeding before and after receiving programs in the study group and in the control group.

The relationship of maternal breastfeeding during the 7, 14 days, 1, 2, 3, 4, 5 and 6 months after birth between the study and the control group was seen to be contrary to the fact that the study group received the Knowledge Sharing Practices with Empowerment Program (KSPEP) In pregnant teens to promote exclusive breastfeeding has a higher rate of breastfeeding, or EBF, than the control group that received the standard knowledge program of normal maternal breastfeeding techniques, statistically significant at 14 days 1, 2, 4, 5 and 6 months after birth (82.5% vs. 50.0%, p = 0.005 at 14 days, 77.5% vs.50.0%, p = 0.021 at 1 month, 62.5% vs. 35.0%, p = 0.023 at 2 months, 35.0% vs. 7.5%, p = 0.008 at 4 months, 25.0% vs. 2.5%, p = 0.012 at 5 months, and 40.0% vs. 5.0%, p = 0.0002 at 6 months) The rate of

Predominant Breastfeeding or PDBF was statistically significantly higher than the 3, 5 and 6 months after birth, but the rate of Partial Breastfeeding or PBF did not differ statistically significantly between the groups at all, and Not breastfed or NBF was statistically significantly higher than those 2, 3, 4, 5 and 6 months after birth, as described in Table 4.

V. DISCUSSION

Discuss the results of the Knowledge Sharing Practices with Empowerment Program in adolescent pregnant women towards promoting exclusive breastfeeding: a randomized controlled trial. It was a randomized trial was consistent across the research objectives, research hypothesis and research results. It was found that the rate of exclusive breastfeeding, or EBF, was higher than that of the control group who received the standard knowledge program of normal breastfeeding techniques, statistically significant at 14 days 1, 2, 4, 5 and 6 months at postpartum periods. Especially, exclusive breastfeeding for the first 6 months after delivery was 40%, compared with the Montapachat's study and Sunthorn Kulwong et al. In the year [19] which was found that the first 6 months of exclusive breastfeeding was 34.40%, which is still higher than the study of Patthani Vijakul and his colleagues in [20] which was found that the first 6 months of exclusive breastfeeding after delivery was only 23%.

Duration / Samples	Types of breastfeeding			
	EBF N/%	**PDBF N/%**	**PBF N/%**	**NBF N/%**
7 days				
Study group	37/92.5%	3/7.5%	0	0
Control group	29/72.5%	4/10.0%	3/7.5%	4/10.0%
P-value	0.095	1.000	0.234	0,051
14 days				
Study group	33/82.5%	5/12.5%	2/5.0%	0
Control group	20/50.0%	8/20.0%	7/17.5%	5/12.5%
P-value	**0.005***	0.511	0.148	0.051
1 month				
Study group	31/77.5%	7/17.5%	2/5.0%	0
Control group	20/50.0%	8/20.0%	8/20.0%	4/10.0%
P-value	**0.021***	0.915	0.083	0.051
2 months				
Study group	25/62.5 %	10/25.0%	5/12.5%	0
Control group	14/35.0%	6/15.0%	6/15.0%	14/35.0%
P-value	**0.023***	0.184	0.931	**<0.0001***
3 months				
Study group	20/50.0%	13/32.5%	7/17.5%	0
Control group	14/35.0%	4/10.0%	9/22.5%	13/32.5%
P-value	0.158	**0.018***	0.691	**<0.0001***
4 months				
Study group	14/35.0%	11/27.5%	10/25.0%	5/12.5%
Control group	3/7.5%	6/15.0%	11/27.5%	20/50.0%
P-value	**0.008***	0.116	0.894	**<0.0001***
5 months				
Study group	10/25.0%	12/30.0%	10/25.0%	8/20.0%
Control group	1/2.5%	2/5.0%	12/30.0%	25/62.5%
P-value	**0.012***	**0.004***	0.894	**<0.0001***
6 months				
Study group	16/40.0%	8/20.0%	6/15.0%	10/25.0%
Control group	2/5.0%	0	8/10.0%	30/75.0%
P-value	**0.0002***	**0.005***	0.923	**<0.0001***

*Significant at the 0.05 level

EBF = Exclusive breastfeeding/Exclusively breastfed PDBF = Predominant breastfeeding.

PBF = Partial Breastfeeding NBF = No breastfeeding/ Not breastfed

Table 4. The relationship of breastfeeding during the first *7*, 14 days, 1, 2, 3, 4, 5 and 6 months postpartum between study and control groups.

In addition, when comparing the results of the mean scores of knowledge, attitudes and perceptions of self-management competencies on breastfeeding at 6 months postpartum in adolescent pregnant women before and after participation, it was found that the mean score of the Knowledge Sharing Practices with Empowerment Program after receiving the program was higher than the score before receiving the program In the study group, it was statistically significant in line with Phanthipa BuaKai [21] research on the effect of the empowerment program on knowledge, perception of self-power and health behavior during pregnancy and after childbirth of pregnant inmates and postpartum mothers with children attached to female inmates. The results of the study found that during pregnancy and postpartum period, self-empowerment scores were significantly higher than those before the receiving the program as well.

It was also found that the results of the mean scores of knowledge, attitudes and perceptions of self-management competencies on breastfeeding for the first 6 months of postpartum period among adolescent pregnant women after receiving the Knowledge Sharing Practices with Empowerment Program (KSPEP) towards promoting exclusive breastfeeding In adolescent pregnant women in the study group were significantly higher than the standard knowledge program of normal breastfeeding techniques in the control group. This was consistent with the research of Piyaporn Kong Ngoen, et al. [22] , it was found that at the end of the trial, the pregnant women in the experimental group had the average scores of health promotion in the prevention of preterm birth higher than the control group, statistically significant.

This was due to the efficiency of the Knowledge Sharing Practices with Empowerment Program (KSPEP) towards promoting exclusive breastfeeding In adolescent pregnant women towards promoting exclusive breastfeeding, which consists of knowledge management strategies: KM in line with Vicharn Panich, M.D. [23] states that related knowledge is either explicit knowledge in the form of text or code that is commonly understood (Explicit Knowledge) and Tacit Knowledge that is in people, both in the mind (beliefs, values), in the brain (reasoning) and in the hands and other parts of the body (skills in practice) in which the use of sharing methods. Knowledge Sharing Practice is that one person shares relevant information, suggestions and expertise with others and can make clear knowledge. It is a person's deep-seated knowledge, in line with Davenport and Prusak [24] and O'Dell and Grayson [25] states that knowledge contains information that comes from the interpretation of the individual experience and expertise which new knowledge born from the knowledge of the person. One is combined with the knowledge of the other persons. Therefore, effective knowledge sharing will enhance individual learning and another empowerment strategy based on Gibson's theory states that it is a process of helping people to control various factors affecting their health and quality of life. This gives a person the energy, well-being and awareness of his potential for maintaining health and the empowerment will provide people with the access to the best sources of power with various benefits in people, families and communities [15]. Providing the Knowledge Sharing Practices with Empowerment Program and Follow-up techniques to support after delivery to stimulate exclusive breastfeeding to modify knowledge, attitudes, perception of self-management and behavioral capacities Bartholomew [16'] was applied to increase knowledge, change attitude and the perception of competencies, including the power to self-manage and stimulate behavior in adolescent pregnant women to promote the effective exclusive breastfeeding of adolescent mothers for the first 6 months after delivery.

CONCLUSSION

Knowledge Sharing Practices with Empowerment Program in adolescent pregnant women towards promoting exclusive breastfeeding: a randomized controlled trial was able to promote the rates of adolescent-exclusive breastfeeding after childbirth at 7, 14 days, 1, 2, 3, 4, 5 and 6 postpartum months.

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Guidelines for Creative Ecotourism Management of Bang Pu Community, Pattani Province, Thailand

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Abstract*— The objectives of this research were to 1) to study and analyze the potential of ecotourism resources of Bang Pu community, Pattani Province, 2) to study the needs of stakeholders to the creative ecotourism management of Bang Pu community, Pattani Province, 3) to study behavior and the needs of the Thai eco-tourists towards the ecotourism management model, and 4) to develop products and creative ecotourism activities of the Bang Pu community, Pattani Province. This mixed methods research applied the concept of ecotourism, creative tourism, development of tourism resources, participatory development, and tourism decisions as the research framework. The research area was Bang Pu district, Pattani province. The sample group consisted of 385 Thai ecotourists who were selected by the convenience sampling method. The key informants were 50 local stakeholders who were selected by the purposive sampling and snowball sampling methods. An in-depth interview and participant observation were used to collect the data. There were 5 types of research instruments which are: 1) questionnaires 2) the resource check list by using SWOT Analysis. 3) Diversity Index Survey, and 4) Researcher Interview Form. 5) The quantitative data were analyzed by basic statistics such as Percentage, Means, Standard Deviation, and Inferential Statistics such as T-Test, One-Way Analysis of Variance (ANOVA), Chi Square Test. The qualitative data were analyzed with the content analysis and descriptive writing methods. The results illustrated that the potential ecotourism resources included mullet, scats, eeltail catfish, bass, stingray, egret, Cormorant, Asian openbill, kingfisher, and Brahminy kite. Furthermore, the first demand of the local stakeholders for development was the provision of tourism activities and stations to be consistent with Islamic principles, followed by tourism management and safety. The results also showed that Thai tourists had a high level of demand for ecotourism. Guidelines for the creative ecotourism management of Bang Pu Community, Pattani Province based on the results of the analysis of the potential resources of creative ecotourism of Bangpu Community, Pattani Province. It is a creative ecotourism destination. Therefore, the researcher has recommendations for the development of 7 areas, which are as follows, 1) Tourism locations and attractions 2) Accessibility 3) Accommodation 4)Facilities 5)Tourism activities 6) Management 7) Aspect of community participation.

Index Terms— ***Guidelines, Creative, Ecotourism, Management,Bang Pu Community, Pattani Province***

I. INTRODUCTION

At present, the tourism industry is growing up. It plays an important role in the world's economy and society and being an important source of income, bringing foreign currency, creating jobs, and spreading prosperity to different countries. Tourism is an important economic and social aspect. Tourism industry plays an important role in driving the region's economy, including Thailand. The United Nations World Tourism Organization (UNWTO) predicted that by 2020 there will be 1.6 billion international tourists. The regions that should be tourism destinations and popular for tourists are East Asia, Asia Pacific and Southeast Asia. The Asia-Pacific region is estimated to have 416 million tourists, or a quarter of the global number of tourists [1]. In 2020, there will be more than 45 million foreign tourists in Thailand from the prediction, and in 2030, there will be 67 million foreign tourists (Ministry of Tourism and Sports, 2018) [2]. At present, Thailand is one of the world's major travel hubs and being the major travel hubs of the Asian region. It plays an important role in linking tourism promotion of the ASEAN region at the bilateral and multilateral levels. The government focused on the tourism industry that it had stimulated and built confidence, and attracted new investments from foreign investors who made Thailand as a key regional base to enter into the market in the ASEAN Economic Community with more than 620 million consumers.

Travelers would travel in 2020, and the most popular destination remains in Asia, so it demonstrated the potential of tourist destinations in the ASEAN region according to the statistics of the number of tourists shown, countries with tourism potential set tourism development plans as a national agend to make a master plan for setting tourism directions with the goal of attracting tourists to their own country. Malaysia is one of the world's leading countries in the tourism industry, generating income from foreign tourists. It has a vision that "to triple the GNP from the tourism industry by 2020 to promote per capita income growth" and

employment rates. Thailand aims to develop tourism to be a popular tourist destination or Preferred Destination with the vision defined that "Thailand is a quality tourist destination with the ability to compete in the world-class tourism. It can generate income and distribute income with regard to fairness, balance and sustainability" [3] Tourism development in Thailand is not the only tourism development in the country, but the policy of the country also promotes the development of multinational destination and offers international travel routes in the connecting area as well as presenting its position as a regional tourism center and promote investment in Thai entrepreneurs and Thai laborers to the regional level [3]. It is joint venture by doing markets together or developing trade and investment in border areas and border tourism, including the link area. For the part of Thailand that is an area linked to Malaysia, according to the announcement of the Cabinet which had passed the resolution on October 4, 2016, it was approved for the Model City Project's principle "Stable, Prosperous and Sustainable Triangle" (2017-2020). The Office of the National Economic and Social Development Board in collaboration with the Southern Border Provinces Administrative Center (OCT), organized a model town project "Stable, prosperous and sustainable triangle" to develop economic and social development for 3 districts in the southern border provinces, such as Pattani Province, to be a model city, the Agricultural Industry and Integrated Development, Narathiwat Province, as a model city, and the Sustainable Development City [4]

Pattani Province is one of the five southernmost provinces located on the eastern seaboard of the southernmost, and it is adjacent to the South China Sea. It is about 1,055 kilometers from Bangkok by car. Currently, the tourism of Pattani province has a continuously increasing number of tourists and income from tourism. Tourism is becoming more and more popular with tourists due to its uniqueness Complete with historical and cultural sites such as Krue Sae Mosque, Chao Mae Lim Ko Niao Cemetery, Wat Chang Temple, etc., and abundant natural resources and food for those who love the atmosphere of the sandy beach, the sea, the river, the canal, the cave, as well as the unchanged way of life. Pattani is a prosperous trading port from the past and continued to grow for a long time until today by accumulating historical stories as a legacy in many tourist attractions. Visiting the southern border provinces Pattani City is; therefore, counted as having manyl kinds of historical land, nature, and way of life. It is a fusion of all religions to coexist. The service is also provided by a good host according to the motto of Pattani Province that has been around for a long time, saying it as "The beautiful city of three cultures with excellent Halal Center and people embrace faith and natural beauty, Pattani, the happy Southern Region" One of the communities with tourism resources as well as the uniqueness of Pattani's strong and complete community lifestyle is Bang Pu Village, a 100 percent indigenous Muslim community located right next to the beach. There is a famous marine life crab, Bang Pu house, has a fertile general condition. There are mangrove forests along the entire length of Ban Bang Pu area that is suitable for many occupations and appropriate for managing natural tourism and ecotourism. There is a mangrove forest tourist attraction that has a complete ecosystem that it is able to develop a variety of important tourism activities. For the result of the study, the researcher has received broad benefits that can be further applied to ecotourism based on biodiversity and Local wisdom for economic development of Thai-Malaysian border tourism in Bang Pu area Pattani province, along with the development of the linked tourism route as a guideline for the management, marketing promotion, and development of the quality of tourist attractions, including benefits for tourists who will receive services that meet the needs of tourists. I have learned a great ecotourism experience from tourism, including the value of the tour compared to the lost expenses.

II. Research Objectives

The objectives of this research article were 1) to study and analyze the potential of ecotourism resources of Bang Pu community, Pattani Province, 2) to study the needs of stakeholders to the creative ecotourism management of Bang Pu community, Pattani Province, 3) to study behavior and the needs of the Thai eco-tourists towards the ecotourism management model, and 4) to develop products and creative ecotourism activities of the Bang Pu community, Pattani Province.

III.. Research Methods

Research Design

This research is a combined research. The research area is Bang Pu community, Pattani Province, Thailand.The population is the Thai ecotourists who come to do ecotourism activities in the ecotourism sites of Thailand. The sample group is 385 eco-tourists using a probability-based selection to do simple random sampling. The researcher determined the sample size using the Cochran population unknown formula (1953) . The reliable rate of selecting the sample group was 95%, and the determining acceptable errors were not more than 5%. For the key informants, there were 50 Key Informants as stakeholders involved in tourism management on Creative Ecology of Bang Pu Community Pattani Province [5], and they are: 1) Government personnel responsible for the supervision and support of tourism and tourism of Pattani Province, 2) People who play a role in the area are Toh-Imam, community leader, and villager philosopher, 3) villagers in Bang Pu community area, 4) business operators supporting ecotourism in the province, and 5) eco-tourists using the selection method for totally 5 people by using specific method and a chain sample selection. There were 5 types of research instruments which are: 1) questionnaires used to study tourists' behavior and needs to be in accordance with the concept of ecotourism, 2) the resource list check form to study about natural resources, cultural resource, Expo resources, activity resources, service resources, and assessment of quality, uniqueness, and power of attraction. It was analyzed by using SWOT Analysis as the concept of [6], 3) Diversity Index Survey, and 4) Researcher Interview Form. The results from the study of documents, concepts,

principles and theories related to the ecotourism development components come as a guideline for creating an interview. The quantitative data were analyzed by basic statistics such as Percentage, Means, Standard Deviation, and Inferential Statistics such as T-Test [7] One-Way Analysis of Variance (ANOVA), Chi Square Test, an independent T -test, and double comparison. For the qualitative data analysis, research papers were used to analyze and synthesize information and then use the information on descriptive lectures as well as using scientific data to analyze the Diversity Index according to Shannon's Index method, and use the Evenness Index according to the Pielou index method to assess the Ecological fertility based on the relationship between living organisms and water quality. The researchers conducted a qualitative and quantitative research process from January and September 2018.

IV. Research Results

1. Results of the study and analysis of the potential of ecotourism resources of the Bang Pu Community, Pattani Province

1.1 The results of ecotourism survey of Bang Pu Community, Pattani Province

Table 1 Remarkable nature, Remarkable culture, Significant expo, tradition, and events, Remarkable activities, Services

The results of ecotourism survey of Bang Pu Community, Pattani Province	
1) Remarkable nature	
Interesting natural attractions	Tree Tunnel, Ancient Forest, Bird Island, Pattani Bay, I Love Bangpu Viewpoint
Plants	White Bean - Black Bean Group, Black Taboon Tree Group, Sea astragalus Group, mangrove, Lumnitzera racemosa, white Sea Holly, Klu, Samae khao, Pho thale, Prong Thale, Pak Bia Talay from Lamphu, Lamphaen
Water animal	Kee Tang (Takrab) Fish, Krabok Fish, Sea Catfish, Sea bass, ray crab, black crab, clam (Lo-gae)
Poultry	Egrets, cormorants, White-breasted Waterhen, Bubulcus ibis, little egret, pond heron, large egrets, tailbills, group of red-nosed kingfishers and ducks.
2) Remarkable culture	
Cultural heritage	Ancient southern Javanese civilization house in Muslim style, plaited bamboo-striped wall, wood carving group, Batik Group Hakkumuslimin Mosque, Taawun Mosque, Middle Eastern architecture, Dekehulu, and Cila.
Religious heritage	Mass hadith is a part of goodness, fasting, and prayer.
Local food heritage	Bird's nest, herbal drink, Madu Ja Dong dessert, Ba Pae Ubi dessert, Spicy Seaweed, Budu, beef sausage
3) Significant expo, tradition, and events	
Traditional heritage	Azuro Day, Maulik event, Fasting month, Harirayo Day, Hadith, marriage tradition
4) Remarkable activities	
Recreational activities	Finding shellfish (Lo Kae), ship cruising to the mangrove forest, study the coastal ecosystem, study the traditional fisherman's way of life, cruising along Pattani Bay, learn to make Pom Nang seaweed, natural black crab raising actvity, Mangrove Root Therapy for Foot Massage, and relaxing activities at the bamboo garden under the shadow of the mangrove, Ancient Forest Touring, fish feeding activity in the cage, local cooking activities, fishing trip (at night), and cycling to see the way of the community, etc.
Facilities	Boat transfer service, Shuttle service, Bicycle service
5) Services	
Various services related to tourists supporting	Homestay, mosque, gas station, school, district/village health promotion hospital, Sub-Police Station, Sub-District Post office, and Restaurant

1.2 For the results of natural resource analysis, the top 5 plants, birds and fish potential suitable for promoting ecotourism of Bang Pu community, Pattani Provinces are as shown in Table 2 as follows.

Table 2 natural resource analysis, the top 5 plants

No.	Natural resources (plants, trees)	Natural resources (birds)	Natural resources (fish)
1	Scientific name : Acanthus ebracteatus Vahl. Family name : ACANTHACEAE	Scientific name: Mullet Family: Mugilidae	Common name: egret Scientific name: Ciconiiformes
2	Scientific name : Avicennia marina (Forssk.) Vierh. Family name : ACANTHACEAE	Scientific name: scats Family: Scatophagidae	Common name: Cormorant Scientific name: Phalacrocoracidae
3	Scientific name : Sonneratia caseolaris (L.) Engl. Family name : LYTRACEAE	Scientific name: eeltail catfishes/ striped sea catfish Family: Siluriformes	Common name: Asian openbill Scientific name: Ciconiidae
4	Scientific name : Pluchea indica (L.) Less. Family name : Asteraceae	Scientific name: bass/perch Family: Perciformes	Common name: kingfisher Scientific name: Coraciiformes
5	Scientific name : Rhizophora apiculata Blume Family name : RHIZOPHORACEAE	Scientific name: stingray Family: Elasmobranchii	Common name: brahminy kite Scientific name: Accipitridae

1.3 The results of Ecotourism Management of Bang Pu Community, Pattani Province are as shown in Table 3 as follows.

Table 3 SWOT Analysis Results

Strengths	Weaknesses
1. The community has a complete mangrove forest ecosystem. 2. The community has a variety of tourism resources: place man-made, culture, traditions, way of life, and nature. 3. Community-based tourism management based on the identity of the community. 4. There are tourism activities that allow tourists to participate. 5. There is a diversity of areas in the community in the food chain. 6. People in the community are good hosts and friendly to tourists 7. Community leaders have strength in community-based tourism management.	1. History, stories, and interpretations of some attractions are not the same, lack of unity 2. Lack of management of the entire tourism supply chain, tourist attraction, tourism activities, accommodation, restaurants, transportation and travel activities 3. Lack of common areas for tourism activities or welcoming large groups of tourists. 4. Some tourism products lack value added and some community products are in high demand Bbt less productive, lack of market in some points. 5. Lack of supervision of community environmental health system. 6. The number of homestays in the area is insufficient and some parts have not been certified to the standard. 7. Some activities still lack the safety of tourist services.
Opportunities	**Threats**
1. The number of tourists from ecotourism has been increasing. 2. The government encourages communities to create community-based tourism. 3. Travel agencies help communities to market. 4. Community partners to support/promote tourism, provincial culture, schools in the area, provincial tourism and sports areas, and District Office. 4.Social media makes it easier to reach tourist groups. 5. There is a network of community-based tourism in the south and community-based tourism of the country to support/promote.	1. Lack of budget for infrastructure development. 2. The image of the area is not a safe image. 3. Lack of integration to work in the area, training, educating, monitoring and evaluating the performance of various projects of government agencies, and the private sector to educate the community. 4. The moving of youths who are at working ages to work in different areas or provinces.

2. The results of the study of stakeholders' needs for creative ecotourism management of Bang Pu community, Pattani Province

2.1 Tourism and safety Stakeholders want the community to improve the safety system for life and property by allowing the network of entrepreneurs to participate in the safety inspection in the community on the day the tourists travel to stay in the community. The Community Executive Committee will develop a system for waste classification according to the type by coordinating with Bang Pu Subdistrict Administrative Organization to request trash bins. The community will rule out homestay operators who are a member of the club's membership network to install a wastewater treatment system before draining into rivers, canals, and the Pattani Sea.

2.2 Accessibility The stakeholders share the same opinion that the community should be welcoming, friendly, and doing tour guide. The community will improve the signboards in the community to be clearer and easier to understand, and the signs meaning should be more clearly. The researcher and the community administration committee will use the information of various learning bases to create 3 different meaining signs at the Bang Pu learning base for 3 bases: 1) learn about the plants in Bangpu, 2) learn about Bangpu sea animal, and 3) learn about birds at Bang Pu. These should be sticked to each learning base to add value to make it more interesting and another important issue is the development of accessibility areas. Nowadays, there is a road that can easily access the community through both small cars and large vehicles to the Bang Pu community, but there is no public bus

service available. Therefore, it is considered an obstacle to the tourists who travel themselves. However, tourists can contact the community to pick them up at the bus terminal or Hat Yai airport, or they can rent a van from Hat Yai.

2.3 Accommodation, food and drinks, and souvenirs Stakeholders recommend the Bang Pu Tourism Club to develop products and souvenirs to be more unique among Muslims and always develop products to have quality, clean, fresh as well as developing packaging to be modern and add value to the products in the community. The community must improve cleanliness and fresh food. The menu of food and drink to have a more local identity. More and more products from the community are used in cooking for tourists to reduce the purchase of raw materials outside the community. In the future, the community has an idea to do a vegetable planting project to emphasize participation for the villagers in the community to grow vegetables within the community, so that it can be used to cook food for tourists and to make seafood. There should be more seafood than beef because some tourists do not consume beef.

2.4 Tourism activities and learning bases The stakeholders have the opinion that the community should develop a learning center that reflects the way of life of the Bang Pu community to be more interesting, with the development of 3 learning bases at Bang Pu: 1) Plants base for Bang Pu people, 2) The sea animals of Bang Pu sea, 3) Learn about birds in Bang Pu. The Bang Pu Tourism Community has expressed its readiness to develop more facilities to support tourism such as room quality, vessel quality, and safety matters such as developing bicycle routes in the community and meaning signs, etc.

3. The results of a study of behavior and needs of Thai Eco-tourists on the ecotourism management model of the total 385 persons in the sample group is found that, the majority of the sample group were females for 225 persons (58.44%) and 160 males (41.56%). For the age of the sample, the majority were in the age range of 21-38 years (Gen Y) for 196 cases (50.91%), age 39-53 years (Gen X) for 111 cases (28.83%), age under 20 years (Gen Z) for 62 cases (4.16%), and sample group of the elderly with over 54 years old (Gen B) for 16 cases (4.16 percent).

For the educational level of the sample, it was found that most of them studied at the bachelor's degree, totally 199 cases (51.69%). Most of the sample group worked as employees of private companies (34.81%). For the domicile of the sample, it was found that the majority of the sample were in Bangkok and metropolitan areas (Nakhon Pathom, Nonthaburi, Pathum Thani, Samut Prakan and Samut Sakhon), and it counted as number 1 in the rank (40.52%). For the frequency of travel in one year, it was found that most of the sample group traveled more than 5 times (31.69%). For the average salary, the majority was more than 35,001 baht. For the traveling characteristics of the sample group, it was found that most of the group traveled with their families (36.62%).

For the types of activities that the sample group was interested in ecotourism, it was found that that most of them were interested in leisure and dining activities (54.50%), followed by natural scenery activities in a calm atmosphere (47.90%), waterfalls (46.40%), camping activities (31.70%), nature photography activities, video tapes, and audio tapes (27.50%), Canoeing activities/kayaks/dinghy/ sailing activities (24.30%), nature trail cycling activities (22.80%), nature study cruises (% 21.60), rubber rafting/bamboo rafting (18.60%), educational activities/caving activities (17.70%), sky and astronomy studies (17.10%), nature study activities (15.90%), climbing/hiking activities (100% 13.20 percent), Scuba diving activities (12 percent), bird watching activities (8.10 percent), windsurfing activities (7.50 percent), and small glider activities (7.50 percent).

The analysis of the relationship between the age of the tourist sample and the tourism activity component and tourism demand of the Thai Eco-tourists will use a cross-tab analysis method to identify the frequency of the behavior of the tourists sample group by using the data validation method to find the correlation through the Chi Square Test and the One-Way ANOVA analysis to find the relationship between the age of the sample group and the tourism activity component as well as the tourism needs of the Thai eco-tourists. The data analysis result is as follow:

1) The relationship between the age of the sample group and the component of tourism activity was found that the attractiveness of the sample group in each age range has no differences with statistically significant by having F-test equals to 2.178, 1.385, 1.855, 2.299, 0.837, 1.022, and 0.707, respectively, and Sig equals to 0.090, 0.247, 0.137, 0.077, 0.474, 0.383, and 0.548, respectively.

2) The relationship between the age of the sample and the accessibility component of the tourist attraction was found that the sample group in each age range has no differences with statistically significant by having F-test equals to 1.763, 0.477, 0.271, and 2.189, respectively, and Sig equals to 0.154, 0.699, 0.284 and 0.089, respectively.

3) The relationship between the age of the sample and the composition of the facilities was found that, in terms of having ATMs, restaurants, tourist souvenir shops, are adequate to accommodate tourists, the sample group in each age range has different average idea with statistically significant by having F-test equals to 0.787, 1.882, 3.120, and 0.383, respectively, and Sig equals to 0.502, 0.132, 0.026**, and 0.765, respectively.

4) The relationship between the age of the sample and the component of accommodation was found that the sample group in each age range has no differences with statistically significant by having F-test equals to 1.429, 1.688, .243, and 0.947, respectively, and Sig equals to 0.234, 0.169, 0.867, and 0.418, respectively.

5) The relationship between the age of the sample and the component of tourism activities was found that the sample group in each age range has no differences with statistically significant by having F-test equals to 1.248, 1.529, 1.222, 1.516, and 0.357, respectively, and Sig equals to 0.292, 0.207, 0.301, 0.210 and 0.784, respectively, are as shown in Table 4 as follows.

Table 4 The Analysis of the Relationship between the Age of the Tourist Sample Group and the Tourism Activity Component of the Sample Group

Lists	Average	Standard deviation	Level of agreement	Age				F-test	Sig.
				Gen-Y	Gen-X	Gen-Z	Gen-B		
1) Elements of Ecotourism									
1. The integrity of the tourist attraction suitable for learning and experience the ecosystem.	4.42	0.69	Strongly agree	4.5306	4.5856	4.6935	4.6875	2.1777	0.0902
2. Tourist attractions with clear air, perfect for recreation activities.	4.58	0.59	Strongly agree	4.3827	4.5225	4.5968	4.6875	1.3852	0.2469
3. The surrounding area is linked to tourist attractions, such as historical sites, green areas, lifestyle, culture, etc.	4.3	0.73	Strongly agree	4.3367	4.5135	4.4516	4.625	1.8554	0.1367
4. It is a tourist destination that has a beautiful scenery or is impressive compared to other attractions.	4.47	0.72	Strongly agree	4.2296	4.3874	4.3065	4.5625	2.2993	0.077
5. The hostility and good courtesy of the host to the visitors.	4.48	0.71	Strongly agree	4.4286	4.5315	4.5645	4.5	0.8374	0.474
6. Natural attractions have outstanding local identity.	4.43	0.73	Strongly agree	4.3265	4.3243	4.4677	4.375	1.0221	0.3828
7. Tourist attractions have a variety of biological natural resources, both plants and animals.	4.35	0.7	Strongly agree	4.4286	4.4144	4.5323	4.1875	0.7073	0.5481
2) Accessibility elements of tourist attractions									
1. Public transport access to tourist attractions or nearby tourist areas.	4.19	0.82	Agree	4.102	4.2523	4.3387	4.3125	1.7625	0.1538
2. Roads or traffic routes that enter the tourist attraction are comfortable.	4.27	0.84	Strongly agree	4.2551	4.4685	4.4839	4.3125	0.4766	0.6988
3. Easy access to resources and various channels such as social media channels, recommended documents for tourist attractions in the community, tourists service center, etc.	4.37	0.75	Strongly agree	4.2245	4.3423	4.2581	4.3125	1.2708	0.2841
4. Road signs or symbols showing tourist attractions and various places within the tourist attraction are clear, easy to observe, not confusing for you.	4.36	0.83	Strongly agree	4.301	4.4505	4.4516	4.3125	2.1889	0.0889
3) Facility elements									
1. Adequate facilities for tourists such as restrooms, parking lots, staff to advice or have a public relations point for tourists.	4.39	0.76	Strongly agree	4.3571	4.4234	4.4677	4.1875	0.7869	0.5018
2. Tourist sites have arrangements or safety management.	4.46	0.76	Strongly agree	4.4133	4.5405	4.5323	4.125	1.882	0.1321
3. ATMs, restaurants, tourist souvenir shops, sufficient to accommodate tourists.	4.1	0.87	Agree	4.3367	4.4234	4.3387	4.5	3.1197	0.0261 **
4. There is a sewage disposal process or system or adequate waste bins for tourists, and does not destroy the environment.	4.37	0.87	Strongly agree	4.0612	4.0541	4.371	3.75	0.3828	0.7655
4) Accommodation elements									
1. The accommodation or a hotel with facilities to travel.	4.35	0.76	Strongly agree	4.2959	4.3514	4.5161	4.25	1.4286	0.234
2. The accommodation is unique.	4.25	0.76	Strongly agree	4.2653	4.2162	4.3387	3.875	1.6882	0.1691
3. The accommodation or hotel and the surrounding area are viewed and cleaned as well, no trashes on the floor and feel safe when staying.	4.54	0.66	Strongly agree	4.5255	4.5495	4.5806	4.4375	0.2426	0.8666
4. Accommodation or hotel is harmonious and environmentally friendly.	4.44	0.71	Strongly agree	4.4898	4.3514	4.4194	4.5	0.947	0.4179
5) Tourism activity elements									
1. There are a variety of activities to choose from and the tourism activities are interesting.	4.28	0.78	Strongly agree	4.2704	4.2613	4.4032	4.0000	1.2484	0.2919
2. Activities have enjoyment, and it relieves stress both body and mind.	4.42	0.71	Strongly agree	4.4082	4.3874	4.5645	4.1875	1.529	0.2065
3. Tourism activities to create a good experience for you.	4.43	0.72	Strongly agree	4.4133	4.4414	4.5484	4.1875	1.2223	0.3013
4. Form of activities to promote the conservation of natural resources and the environment.	4.36	0.76	Strongly agree	4.2908	4.3874	4.5161	4.4375	1.516	0.2099
5. A model of activities that emphasize value creation for the surrounding society in the community of ecotourism.	4.36	0.77	Strongly agree	4.3469	4.3333	4.4516	4.375	0.3571	0.7841

NOTE: 1.00 – 1.81 = strongly disagree, 1.81 – 2.60 = disagree, 2.61 – 3.41 = uncertain, 3.41 – 4.20 = agree, 4.21 – 5.00 = strongly agree

The results from the analysis of ecotourism elements of various aspects of Thai ecotourism was found that the attractiveness aspects of the sample group had opinions towards the issue of tourist attractions with clear air suitable for recreation the most as strongly agree (4.58) For the level of accessibility, the sample group had opinions towards the issue of easy access to sources of information and various channels, such as social media channels, recommended documents for tourist attractions in the community, tourists service centers, etc. as strongly agree (4.37) For the viewpoints about the facilities, the sample group had opinions towards the issue of having adequate facilities for tourists such as toilets, parking lots, staff to advice, or have a public relations point for tourists as strongly agree (4.46) on accommodation. For the accommodation or hotels and the surrounding areas that cleaned without having trashes on the floor and feel safe when staying had opinions at the level of strongly agree (4.54). For the tourism activities, the sample group had opinions on the issue of tourism activities that created a good experience with an opinion at the level of strongly agree (4.43).

One-Way ANOVA was analyzed to find the relationship between the age of the sample and the travel demand of the Thai Eco-Tourists. The sample group of each age group had an average opinion on the need to go to a source with multiple routes and easy linking of different routes. For the cost of purchasing, the product is suitable for the quality of the products and services. For the procedures or services receiving, it is convenient, uncomplicated, understandable, and easy to follow in each age with statistically significant difference by having F-test equals to 1.036, 1.403, 0.411, 0.943, 2.409, 4.569, 0.823, 1.469, 1.213, 1.896, 3.422, 2.805, 1.038, and 0.983, respectively, and Sig equals 0.377, 0.242, 0.745, 0.420, 0.067, 0.004**, 0.482, 0.223, 0.305, 0.130, 0.017**, 0.040**, 0.376, and 0.401, respectively, are as shown in Table 5 as follows.

Table 5 The relationship between the age of the sample and the travel demand of the Thai Eco-Tourists.

Lists	Average	Standard deviation	Level of agreement	Age				F-test	Sig.
				Gen-Y	Gen-X	Gen-Z	Gen-B		
1. Tourism in tourist attractions that are local identity such as history, culture, and local traditions.	4.24	0.76	Strongly agree	4.4	4.42	4.58	4.63	1.036	0.377
2. Learn a way of life or culture that is different from the resident tourist destinations.	4.32	0.71	Strongly agree	4.41	4.51	4.68	4.56	1.403	0.242
3. Fame or souvenir product and historical sites, and local customs.	4.15	0.82	Strongly agree	4.43	4.57	4.61	4.44	0.411	0.745
4. Travel to diverse tourist resource areas such as history, traditions and cultures.	4.29	0.77	Strongly agree	4.39	4.45	4.56	4.44	0.943	0.42
5. Travel into the area/tourist area is convenient.	4.37	0.74	Strongly agree	4.42	4.39	4.73	4.38	2.409	0.067
6.Easy access to a source with multiple routes and links to travel options	4.44	0.69	Strongly agree	4.42	4.5	4.55	4.38	4.569	0.004
7. Provide people in the community to travel. They are friendly towards visitors and provide very welcoming feeling to tourists.	4.46	0.68	Strongly agree	4.42	4.41	4.65	4.31	0.823	0.482
8. Accommodation or hotel is comfortable and secure.	4.5	0.71	Strongly agree	4.3	4.41	4.56	4.25	1.469	0.223
9. Rest in an energy-efficient managed accommodation. Do not invade nature or create rooms with natural materials.	4.45	0.75	Strongly agree	4.22	4.35	4.37	4.25	1.213	0.305
10. The location of the accommodation: Can access the tourist attractions easily and convenient access to public transportation.	4.45	0.74	Strongly agree	4.42	4.45	4.5	4.19	1.896	0.13

NOTE: 1.00 – 1.81 = strongly disagree, 1.81 – 2.60 = disagree, 2.61 – 3.41 = uncertain, 3.41 – 4.20 = agree, 4.21 – 5.00 = strongly agree

V. CONCLUSION AND DISCUSSIONS

A study of the Creative Ecotourism Management of Bang Pu Community, Pattani Province has a conclusion and discussion as follows.

1) The result of the study of the potential of the Bang Pu Community, Pattani Province presented that it is a community with creative ecotourism potential. The community has abundant tourism resources, including mangrove forest, mangrove tunnel

(ancient forest), the Gulf of Thailand, Birds Island, agricultural farm, community market, local culture and traditions, and tourism activities that tourists can participate in, such as, raising black crabs, picking up each other, planting mangrove forests, etc. The prominent point of Bang Pu is the Mangrove Tunnel and Bird Island as the location is the area on the Gulf of Thailand, and it is also located in the three southernmost provinces, so there are abundance of resources as it is not disturbed, especially the Birds Island where it is full of plants that are food for birds and a perfect forest containing lots of birds and being an important learning center, so it is in line with the Bird Research Group. Faculty of Science and Technology, Prince of Songkla University Pattani Campus had studied on the densities of various bird species were studied and found that the cattle egrets began to change their breeding plumage to enter the breeding period, with neck and back feathers that becomes yellow in color; whereas, from now one (November onwards) is the breeding period of little egrets. The number of little egrets is not much in December, but the cattle egrets have the increasing number as same as the pond herons that have increasing number clearly when compared to November. However, the cormorants increased slightly. On the other hand, the sleeping area at Ban Bang Pu is only a roosting site. There are no birds to lay eggs, and little egrets use the same area at the moment as a nesting site, namely the mangrove forest in Pattani Central Prison and Samae Forest near hotels. If analyzed the overall image of natural resources for ecotourism of Bang Pu community, it is considered as one of the most fertile mangrove forests in Thailand, in line with [9], saying that this place is rich with enormous resources. In addition, marine resources from Bang Pu sub-district is another important resource that has been supply to the Muang Pattani District for many generations. Mangrove forest ecosystems of Bang Pu sub-district residents are being pushed as a major tourist destination under government policy.

The relationship finding between the age of the tourist sample and the tourism behavior, tourism activity elements, and travel needs of Thai eco-tourists to analyze the behavior of eco tourists in each age group by age grouping by Gen B, Gen X, Gen Y, Gen Z, was found that the relationship between sample age and attractiveness elements had the ability to access tourist attractions, accommodation, and tourism activities with no statistically difference, but the relationship between the age of the sample group and the factors of having ATMs, restaurants, souvenir shops, tourism, sufficient to accommodate tourists, the average opinion of each age group are significantly different, so it is consistent with the [10], that Gen A consumers have more convenient travel behavior than Gen B, and they want to spend time after a tiring day of work by start spending money in their relaxing time.[11]

2) Guidelines for the appropriate creative ecotourism management of Bang Pu Community, Pattani province consists of 1) tourist locations and attractions, 2) accessibility development, 3) accommodation development, 4) development of facilities, 5) tourism business, 6) tourism development, and 7) tourism management. These aforementioned 7 management approaches are considered as appropriate for Bang Pu Community whether it is the availability of resources in the Bang Pu area considered as an area with resources to develop to suit the ecosystem and the Muslim cultural society in the area by setting guidelines for spatial development in both conservation areas and community areas, including management guidelines which emphasizes community-based tourism management in line with the research. [12] has studied the subject titled the guidelines for sustainable creative tourism development of Baan Rim Klong Community, Samut Songkhram Province, discovered that the potential of creative tourism resources so that the Ban Rim Klong Community's area becomes a creative tourism attractions with recommendations for the development of sustainable creative tourism of the Ban Rim Klong Community, Samut Songkhram Province according to the following details. Marketing development approach, Tourism development approach, and attraction, accessibility development approach, accommodation development guidelines, Facilities and Personnel Guidelines, Management approach, and the organization of tourism activities. In addition, Bang Pu Community has joined together to develop tourism network. The participatory process is consistent with [13]. It is a process for people to be involved in the development of co-thinking, decision-making, and solving their own problems. [14] described the participation without any having role will surely do not result in the participation of that quality. Participants must know how to exercise their powers and control such activities, so it will result in the effective outcome. [15] explained that leaders allow all followers to take part in making decisions in the work as they can, and that explained that participation is an opportunity for individuals and/or groups of people to participate in the activities whether directly or indirectly in the form of co-awareness, co-thought, co-operation, co-decision, and follow-up the results.

4. Products and creative ecotourism activities of the Bang Pu community, Pattani Province

Table 5 The Analysis of the Relationship between the Age of the Tourist Sample Group and the Tourism Activity Component of the Sample Group

Products and creative ecotourism activities of the Bang Pu Community, Pattani Province
1) Learning-based activities at Bang Pu for 3 bases, such as 1) Knowing about local plants of Bang Pu people, 2) Sea life of Bang Pu, 3) Learning about birds at Bang Pu, the consistent with the principles of ecotourism, an activity that focuses on tourism that takes into account nature, knowledge and interpretation, and stimulate conservation awareness.
2) Activities to develop cruise routes, learn about coastal ecosystems and see mangrove tunnels (ancient forest), which are tourism in tourist attractions related to nature that are unique to the area, including cultural and historical sites related to the ecosystem in that area.
3) Mangrove planting activity is one of the tourism patterns involved in traveling to nature and responsible cultural sites without causing interference or damage to natural resources and the environment, but with a determined objective to appreciate, learn, and enjoy the scenery, flora and fauna as well as cultural features that appear in natural sources.
4) Bird watching activities at Bird Island are activities to learn about the environment and the ecosystem of tourist attractions. It is the enhancement of knowledge, experience and impression as well as raising awareness, cultivating correct awareness of tourists, local residents as well as entrepreneurs involved in the birds' conservation.
5) Skating tourism activities emphasize tourists to have a joint experience in ecotourism and has created an impressive portfolio creatively skating in 5 areas: 1. I Love Bangpu Viewpoint, 2. Mangrove Tunnel, 3. Sunset view point at Pattani Bay, 4) Bamboo Lan Viewpoint, and 5) Giant Crab Viewpoint.

5. Guidelines for the creative ecotourism management of Bang Pu Community, Pattani Province based on the results of the analysis of the potential resources of creative ecotourism of Bangpu Community, Pattani Province. It is a creative ecotourism destination. Therefore, the researcher has recommendations for the development of 7 areas, which are as follows.

5.1 Tourism locations and attractions

5.1.1 Develop tourism activities in which tourists can participate in the activities, which may be part of the tourism activities or as a partial tourism activity as appropriate for their skills and travel term of tourists.

5.1.2 Develop local curriculum for schools in the area for teaching and learning, production of tourism products and products, including building activities to raise awareness of conservation and inheriting traditions of local wisdom to youth.

5.1.3 Develop tourism souvenirs to meet the needs of tourists and develop various tourism activities.

5.1.4 Tourism management, manufacture of tourism souvenirs must bring a narrative of multiculturalism to create identity, and distinctive features of Pattani style.

5.1.5 The development of ecotourism routes in intact forest areas that cannot be explored, and there should be staff or specialists in exploring the area and developing new ecotourism routes, such as ancient forests.

5.2 Accessibility

5.2.1 Develop or add routes to and from tourist attractions both by land and water by linking tourist attractions in different sub-districts and nearby tourist attractions such as Ta Chi Cape.

5.2.2 Community owners of tourist attractions/areas arrange a car service to transport tourists from the province to the tourist attractions, taking into account the transportation service, and travel in an environmentally friendly manner. Thus, this may be considered an expense in tourism.

5.2.3 Increase and develop tourism information communication channels, including tourist attractions, eco-tourism activities, traditions, Muslim festivals in each month, as well as historical information in the area since the reign of Yaring City, so that tourists can search/access information easily.

5.2.4 update tourism information of Bangpu Community to be up-to-date, and prepare documents in an online format or QR Code or travel route to distribute to various locations, and use social media to serve as information to tourists interested in traveling.

5.3 Accommodation

5.3.1 Provide training and knowledge on accommodation management, experience Muslim culture, and community lifestyle (Homestay) for the villagers in the community.

5.3.2 Encourage and support villagers in the community to organize accommodations that provide experience with the Muslim culture to accommodate tourists along with making rules and regulations.

5.3.3 A homestay committee should be established to conduct a queue, examine, and handle the accommodation reservation.

5.4 Facilities

5.4.1 Develop infrastructure and facilities in the area for the use of the people of the area as well as facilitating the creative eco-tourists

5.4.2 Prepare meaningful signs explaining the history of tourist sites, archaeological sites and antiques in every tourist attraction or place by creating 2 or 3 languages as appropriate, such as Thai, Malaysia, and United Kingdom.

5.4.3 Train youth in the area to act as a tour guide leading tourists to tourist attractions and being a demonstrator of ecotourism activities to create awareness of conservation as well as inheriting the traditional way of life, local wisdom, or local tourism activities to the youth.

5.5 Tourism activities

5.5.1 Arrange an experiential tourism route in sub-district, district and connected areas by focusing on activities that allow tourists to participate classified as individual tourism, group, family, and in community to create more options for tourists.

5.5.2 Make an eco-tourism program in the form of a charter, including travel expenses as well as participating in tourism activities, camps, meals, etc., including creating a separate experiential tour program and cost for information and facilitates the needs of tourists.

5.5.3 Design tourism activities for tourists to take part in tourism activities to create an experience of doing real action with the owner of the local wisdom.

5.5.4 Develop a form of tourism activities that allow tourists to spend the longest time in the area. There are various programs for tourists to choose according to the length of time needed by the tourists.

5.6 Management

5.6.1 Provide training and knowledge on ecotourism management in the community.

5.6.2 Establish a one-stop visitor service center in the community.

5.6.3 Create a database of ecotourism in the community and disseminate it to the public and tourists to be able to search

easily, including updating the information to be up to date all the time

5.6.4 Make a history and narrative of all ecotourism activities by writing written information as a reference from generation to generation and cut the story short to disseminate the history attached to the tourism souvenir products or tell stories to tourists. It is a presentation of a unique local identity and make a difference in tourism activities.

5.6.5 Jointly formulate short-term plans with long-term sustainable tourism management does not destroy the community ecosystem, and tourism is environmentally friendly.

5.6.6 Use marketing tools as a tool for promoting ecotourism with an emphasis on community participation, sustainable tourism, and tourism is environmentally friendly.

5.7 Aspect of community participation

5.7.1 Create a network of experienced tourism entrepreneurs in the community and nearby areas Including building a network of business operators to facilitate creative ecotourism management;

5.7.2 Establish a community enterprise or a professional group to meet and discuss production, and development of product design for tourism souvenirs to support ecotourism in the Bang Pu community, Pattani Province.

VI Research proposal

1. Suggestions to the relevant organizations

1.1 Suggestions to the government

Government organizations involved in tourism of the province should take it as a guideline to promote creative ecotourism in order to attract more tourists to travel in the Bang Pu Community, Pattani Province, including the use of a tool to increase competitiveness in the eco-tourism business creatively with Malaysia and other regional competitors.

1.2 Suggestions to the private sectors

Entrepreneurs should cooperate with the community in managing the tourist area, taking into account the impact on the community. Moreover, the demand of tourists is greater than the profits obtained from doing business and operators and owners of tourist attractions by using the results of the analysis on strengths, weaknesses, opportunities and obstacles to apply to develop creative ecotourism activities in Bang Pu community, Pattani Province.

1.3 Suggestions to the public sectors

Community leaders must have a high level of leadership, strong, reliable, and can clarify or ask for cooperation in improving as well as developing from the people in the community. For the residents of the community, they should be good hosts, honest, and being a good hospitality in accepting tourists with knowledge, understanding of their culture, and traditions and able to convey to tourists who come to travel in the community as well.

1.4 Suggestions to the tourists

Tourists should strictly follow the instructions and rules of the attractions strictly with conscious as well as conserving and do not destroying the tourism resources in the tourist attractions, including traveling with respect to the differences between the cultures, traditions, beliefs, and lifestyles of the Muslims in such tourist attraction.

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The Potential Development for Business of Hot Spring to Support Health Tourism and High Value Services based on Community Resources for Community Involvement Tourism Management in Mae Sort District, Tak Province

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Abstract— This research aims to 1) study and analyze the potential of medical tourism management at the local areas of hot spring in Mae Sot District, Tak Province 2) study the attributes of minerals and analyze the quality of water at hot spring areas in Mae Sot District, Tak Province 3) suggest the guidelines in managing hot spring areas in the community to become medical tourism sites with high values of in Mae Sot District, Tak Province. This study is mixed research. The researchers used 5 conceptual frameworks and theories, which compose of Tourism and Tourism Elements, medical tourism, Integration and Participation, making decision for traveling, and determining standard and quality of medical hot spring tourism as research framework. The research area is Tak Province, meanwhile the samples as the main informants were divided into four groups. The researcher selected 25 main informants while using 3 types of research tools, which are 1) in-depth interview as conversation, participant observation, and checking lists for tourism resources together with analysis on the quality of water as the tool for collecting data and information. In addition, the researcher utilized content analysis in conjunction with description. Research results revealed that the strength of this locality is the service providers with high service mind and hospitality. However, the weakness is that local members who run medical tourism business still lack for the expertise in designing tourism activities appropriate for a certain group of travelers. However, the main opportunity is the rising trend of medical tourism that is being well-received among travellers worldwide. Meanwhile, the vital treat for developing this medical tourism area is the period of global economic recession that is responsible for delaying tourism excursion. According to the analysis on water by using atomic absorption spectroscopy, minerals, calcium, sodium, copper, potassium, magnesium, and zinc were found in this hot spring. Therefore, the researcher would like to suggest the guideline for developing this medical tourism site based on 5A's Theory and A-I-C procedures that comprise the aspect of tourism site and attraction, the aspect of accessibility, the aspect of accommodation, the aspect of facilities, the aspect of tourism activities, and the aspect of community participation.

Index Terms— ***Development, The Potential for Business, Hot Spring, Health Tourism, High Value Services, Community Involvement, Mae Sort District Poten***

I. INTRODUCTION

According to a study by the World Tourism Organization (UNWTO), it is predicted that by 2030 there will be 1.8 billion international tourists worldwide. Of these, 717 million people traveled to Europe, followed by East Asia and the Pacific. Thailand is a country of diverse and rapidly growing tourism resources. According to statistics of the number of tourists who travel to Thailand by the Tourism Authority of Thailand, the rate is increasing every year. In 2017, the total number of tourists was 29,923,185, generating a significant amount of revenue of 1,457,150.28 million baht. Therefore, the tourism industry is the main industry that drives the economy and continuously brings foreign currency to develop the country.

The current tourism industry of Thailand has been developed and changed continuously in line with the relevant factors such as political, economic, social, cultural and

environmental factors, resulting in a need to adjust tourism direction all the time. As for the relevant factors, today's tourists are likely to be interested in special tourism such as ecotourism, health and wellness tourism, adventure tourism, cultural tourism, religious tourism and sports tourism are increasing, resulting in a greater trend of tourism like this Ministry of Tourism and Sports [1]. The most popular special interest travel in the 21st century is health and wellness tourism. In the healthcare industry, it has great potential and is constantly expanding due to the behavior of health-conscious people, which is a trend in taking care of the body, both young and old. Over the past year, the global health tourism business has grown to over $ 3.7 trillion. [2] As the customer group sees it as essential for improving the quality of life. The key drivers of the market are trends in demographic shifts as the population lives longer, thus making all forms of healthcare more popular for the Niche Market audience. Therefore, the positioning of Thailand as a quality tourism destination combined with data from Global Wellness Tourism found that, in 2017, Wellness Market Value Tourism around the world is worth approximately 124 trillion baht. Thailand is ranked the 13th in the world with an income of 100,000 million baht. Moreover, there are more than 9.7 million foreign tourists entering the service annually due to the capabilities of Thailand's service business. In particular, the medical service is internationally renowned and recognized for its quality, with a relatively low price level compared to neighboring countries. This will be a driving factor for foreign tourists in the health tourism group, who will become the group to come to Thailand with the increased use of health services or related services such as private hospitals, clinics, Thai traditional medicine, spas and hot springs (hydrotherapy) choose to visit Thailand more. [3]

Health and wellness tourism is a tourism that aims to learn about lifestyle, leisure and time allocation from tourism to activities related to health promotion, therapy and rehabilitation such as meditation, spa, aroma therapy and water therapy, mineral bath, exercise training, natural excursion to refresh the body, etc. Overall, it is a tourism for physical and mental relaxation, therapy, as well as taking care of physical and mental health to maintain physical health. Therefore, health and wellness tourism is a form of tourism that runs in conjunction with the health care of tourists. Therefore, as the researcher has undertaken an academic service project by integrating the science of tourism (social science) and environmental management technology (science) in the past academic year, it was made aware of the needs of the area with the need to develop a special experience tourism that is not a general form of tourism as it is today.

Mae Sot District, Tak Province, is an area of Srinakharinwirot University, Mae Sot Campus and is an area bordering the border with Myanmar as well as an area of ethnic diversity. Researchers have studied natural costs for the development of hot spring-type health tourism in Tak Province. The research process integrates knowledge from various sciences, such as science, to examine water quality and mineral content useful for the development of health tourism and the need for good management. Therefore, the research team would like to present the results of the research to find out how to develop the commercial potential of hot spring sources to support health tourism and high-value-added services based on community-based resources such as community-based tourism management in Mae Sot District, Tak Province. The approach will help stimulate the economy, creating a new tourism model that is in line with the trend of the wealthy Burmese people who travel to Thailand for medical and surgical treatments and spend more than double the time spent on medical services while traveling to major tourist destinations in Thailand. Moreover, it would be a good opportunity if Mae Sot City would be able to transform itself into a full and integrated medical center for human medicine and business medicine.

II. RESEARCH OBJECTIVES

1. To study and analyze the potential of community-based health tourism management in hot springs. Of Mae Sot District, Tak Province

2. To study mineral properties and analyze water quality in hot spring sources, Mae Sot District, Tak Province.

3. To recommend community-based hot spring management to be a high-value health tourism attraction of Mae Sot District, Tak Province.

III. LITERATURE REVIEW

Concept used in education

1) Concepts, theories of tourism and elements of tourism Goeldner & Ritchie (2006) [4] explains that tourism refers to temporary travel from normal residence to another location, voluntary travel, travel for any purpose other than occupational travel or income-seeking travel.

Elements of tourism Dickman (1996) [5] explains the component of tourism that the success of tourism must have five essential elements or 5As:

1. Attraction 2. Accessibility 3. Amenity 4. Accommodation 5. Activity

2) Concept of health tourism

Health tourism - Wednesday March 15th, 2017 [6] defines health tourism as a sightseeing trip to visit beautiful sights

in natural attractions and culture, as well as learning about ways of life and recreation, by allocating part of the time from tourism for health promotion activities and rehabilitation activities. Some scholars also focus on mental health.

Linking health tourism with other tourism

1. Guidelines for health care and maintenance that focus on the prevention of illness, it is an action to prevent illness and lead to a long life, which is different from the treatment of ailments that arise after illness.

2. A healthy state of mind and body that takes care of eating, exercising, and forming healthy habits such as not drinking and not smoking.

3. The condition of the body in good health is characterized by being free from disease.

4. The condition of good health is characterized by a pattern of life that promotes the health of the body.

3) Concept of integration and participation

In the process of public participation in development work, people have to be involved in every step of the work. There are external developers or scholars who promote and support in areas such as information and technology, etc. It can therefore be concluded that the participation process will begin with problem and cause discovery, planning, implementation of activities, problem solving, operations, joint benefit, monitoring and evaluation.

Participatory development [7] explains how participation means that members must be involved in four dimensions: decision making, implementation, benefits and evaluation. All members of the community participate and influence the process of development activities and benefit from it equally.

4) Concept of travel decisions

Explains that there are two factors that affect the decision of tourists:

1. Internal factors are divided into 3 aspects: personal factors: age, education, income, occupation, age, life pattern, knowledge and experience; psychological factors: motivation, perception, learning, personality and attitude and social factors: role, social group, level, social status and culture.

2. External factors are tourism stimuli, divided into 3 areas: promotion: tourism materials, advertising, and advice from travel agents; attractions: images of attractions and elements of attractions and environment: socio-economic and political conditions.

5) Concept and setting of quality standards for hot spring health tourism attractions

The Department of Tourism, Ministry of Tourism and Sports (2005) established qualitative standards for hot spring health tourism attractions. This is based on the framework and concept of the project to set the standard for physical, health tourism attractions and natural hot springs along with the natural resource management manual of the Office of Natural Resources and Environment Policy and Planning. [8]

IV. RESEARCH METHODS

This research was conducted on the basis of qualitative research as follows.

1. Key Informants

The researcher used a specific sampling method to obtain real information from the opinions of representatives in all sectors, both at the executive level and at the local operational level, who are involved in health tourism in hot springs in Mae Sot district, Tak province. It could be classified into four groups, with 25 key informants selected. [9]

2. Instrument construction and tool quality inspection

The data collection tools consisted of in-depth interview and semi-structured interview. Guidelines for framing interview questions (Main Question) derived from the study of documents, concepts, theories and research related to health tourism and an examination of the qualitative standards of hot spring health tourism attractions. There were steps for creating a tool as follows.

3. Information Collection

1) Official letters from the Faculty of Culture, Environment and Ecotourism Srinakharinwirot University will be sent for assistance for research data collection.

2) Interview points according to the predetermined interview outline will be prepared in order to be able to delve into the attitudes and perspectives of the key contributors.

3) Key informants will be scheduled for an in-depth interview individually.

4) Data was collected through structured interviews and unstructured questionnaires that would allow key informants to independently answer.

5) The validity of all questions will be examined by the investigator to review the interview data.

6) The interviews received from key informants are classified and categorized in order to prepare the data for further analysis of the data.

4. Data analysis

1) Analysis of qualitative research data can be analyzed using content analysis.

2) The researcher used the method triangulation, such as seeking the reliability of information from different sources. [10]

3) Water quality analyzes in hot springs include turbidity, color, odor, temperature, pH and dissolution of oxygen. The nitrogen value was analyzed by Kjeldahl analysis. Heavy metal groups such as Mg, Zn, Co, Mn Ni, Pb, Cd and Hg, including As and Sn were analyzed by Atomic Absorption Spectrophotometer (AAS). The organic compound group was analyzed by Gas Chromatograph-Mass Spectrometer (GC / MS). Carbon and sulfur content was analyzed by Carbon / Sulfur Analyzer as following details.

1. Water samples from spring wells were randomly collected and heavy metal analyzed by Atomic Absorption Spectrophotometer (AAS) (Agilent) according to Shaltout et al. (2011) and some soil was analyzed for residues such as pesticides with GC / MS (QP2010, SHIMADZU, Japan) followed by Fernandes et al. (2014). [11]

2. For the AAS method, 1 liter of water of each hot spring (repeat 3 reps) is carried out, followed by Whatman filter paper, evaporated with a rotary evaporator at 99 oC to 10-15 ml, then bake at 450oC for 1-4 hours and add HNO3 (25%, v / v), heat with hot plate at 150 ° C, add 25 mL with 3% HNO3, the solution was analyzed by flame furnace for Fe, Si, P, Al, Mn, Mg, Ca, Cu, Zn, Na, K, Sr and a graphite furnace for Pb, Ni, Mo, Co, Cd, As and Hg using the standard (Merk) of such elements as a comparison.

5. Evaluation of the development of integrated health tourism potential in hot springs in Mae Sot District, Tak Province, Thailand, was done using knowledge and innovations that help create added value in Mae Sot District, Tak Province. The researcher builds on the analysis and synthesis of data in order to confirm the feasibility and effectiveness of the researcher development approach. The researcher therefore empowers experts involved in health tourism and geology and health tourism professionals.

V. RESEARCH RESULTS

From the results of the study, the researcher presented the following objectives:

1. Potential of Health Tourism Management in Community-Based Hot Springs in Mae Sot District, Tak Province.

1.1 The results of the SWOT analysis on community-led health tourism management in Mae Sot District, Tak Province are as shown in Table 1 as follows.

Table 1 SWOT Analysis Results

Strength	weakness
1. The community actively participates in the preservation of natural resources in the area. 2. A variety of herbs in Mae Sot district can be processed into health products. 3. Tak Province is a geological route with high quality natural hot springs. 4. The service community has high service mind and hospitality. 5. Mae Sot district has rich nature and suitable for development as the Destination Spa of the west. 6. The location of the area can attract high-potential health tourists from neighboring countries to participate in the Health & Wellness Spa Tourism activity. 7. There are different and interesting local cultural heritage and beliefs that can be linked to health tourism sites. 8. The service rate is reasonable compared to the quality, such as the sun on mineral water / hot springs (Thermalism Balneology) for relaxation.	1. Community members involved in the health tourism business still lack expertise in designing activities to suit the tourist groups 2. Problems in communicating in Burmese, Chinese and English of service providers. 3. There is still a lack of systematic research and innovation in order to support the trend of healthcare services and in line with changing technology. 4. All members of the community lack the involvement and influence of the development activities process, as well as the equitable distribution of benefits from that development.
Opportunities	**Obstacles**
1. The trend of health tourism is gaining popularity with tourists around the world. 2. Modern people are willing to invest more in health care. 3. The spa business and Thai massage are promoted in the national development plan. 4. The government sector supports tourism in the secondary city of Tak Province as a charming city of the second city, which is the land of fog of Tak Province, along with being close to the city of nature and experience the abundance of forests of the province worthy of a visit. 5. More foreign tourists come to the area, including local people are more interested in coming to use the service. There is also an increasing number of niche users who are interested in health care and beauty. 6. Thai-Myanmar Friendship Bridge is a route of the East-West Economic Corridor- EWEC that crosses from the monument of the martyrs to the entrance route to Mae Sot.	1. The global recession 2. The access route is inconvenient and there is no public transport, thus making it difficult for tourists to access. 3. The values of occupation in the community, where youth groups are popular to find work outside the area, thus lacking the inheritance of occupation and wisdom of the community. 4. The neighborhood has been deforested, resulting in the destruction of the natural resources in the tourism area as well, thus lacking the attractiveness of tourists. 5. There are quite a few flight routes which are not sufficient to accommodate tourists from the central areas of the country.

2. The results and analysis of water quality and mineral resources in hot springs in Mae Sot District, Tak Province is as follows:

1. Geographical location

Ban Mae Kasa, Mae Kasa sub-district, Mae Sot District, Tak Province

2. Geological characteristics

The Permian Limestone is located near the nearly north-south faults and the Triassic period limestone.

3. Physical characteristics

There are 6 springs, but there are no cold water cisterns because they use the cold water that flows from the mountain instead (there is a cold reservoir that runs down the mountain).

Today, the landscape is more beautiful because of the renovations and decorations of lawns and gardens, but the buildings are much degraded (but still usable).

4. Chemical characteristics

Characteristics of pH 8.00 and temperature 40-54 ° C

The fountain samples, when evaporated, become white fine sediments and were examined with Fourier-transform infrared spectroscopy, The number of wavelengths were 1786,1455,1082,855 and 709, which reverse the structure of CaCO3 and the similarity was 97%.

In addition, minerals were detected from atomic absorption spectroscopy analysis of water and were found to contain calcium, sodium, zinc, copper, potassium and magnesium.

The minimum value that the meter can measure is not lower than the milligram per liter and it is in the standard level Natural mineral water quality standard Department of Health, Ministry of Public Health (2000) [12] . But the hardness level is very high at 275ppm of total hardness and no pesticide residue was detected from GC / MS analysis.

5. Benefits of minerals

The minerals found in Mae Kasa hot springs in Mae Sot district are as follows.
Table 2 **Minerals found in this area.**

Mineral- type	The Therapeutic Properties of Medicinal Plants
calcium	- Strengthen bones and teeth - Improve the skin's balance condition, prevent dryness
sodium	- Maintain the water balance system in the body - Helps in transmitting the senses - Helps in the digestive system and as a laxative - Stimulate the change of skin cells to be able to work effectively.
zinc	- Helps to shed new skin cells
copper	- Helps to nourish collagen fibers
potassium	- Helps to maintain the pH balance of the body, accelerate metabolism and help nourish and regulate the moisture of the skin cells.
magnesium	- Helps excretion and build and repair damaged skin cells.

Source: Department of Health, Ministry of Public Health (2000) [12]

Therefore, in addition to the use of hot springs for viewing, bathing, bathing and drinking, activities, services and facilities should be developed to make this attraction more attractive.

3. Guidelines for developing the commercial capacity of hot springs to support high-value-added health tourism and services based on community-based resources can be achieved through participatory community-based tourism management in Mae Sot District, Tak Province, according to the theory 5A's and the A-I-C process [13] as follows:

2.1 Attractions

2.1.1 Develop health tourism activities that allow tourists to participate in the activities. It could be a full participation in a tour or a partial tour as appropriate for the traveler skill and time such as tourist attractions where tourists can take a mineral bath / hot spring bath, Thai massage, herbal steam, aroma therapy and water therapy, etc.

2.1.2 Develop local curriculum for local schools by providing teaching and learning on the production of health tourism products and products and tourism in the nearby community area, hot spring sources, including the creation of activities to cultivate consciousness in the conservation of resource base and the inheritance of local wisdom to youth.

2.1.3 Develop souvenirs related to tourism to meet the needs of tourists and develop tourism activities to be diversified such as spa products, mineral water products, etc.

2.1.4 For tourism management, the manufacture of tourism souvenirs, a historical narrative must be used to convey a certain meaning or the history of tourism products in order to create a unique and distinctive identity that is different from other tourist attractions, for example, it is linked to the myth of the Usa Shrine, located in the middle of a river and limestone mountains with a suspension bridge to connect to the shrine, allowing visitors to pray.

2.2 Accessibility

2.2.1 Develop or add a route to and from tourist attractions by linking tourist attractions in various sub-districts and nearby tourist attractions in Mae Sot District, Tak

2.2.2 The community, as the owner of the tourist attraction / area, should arrange a car to transport tourists directly from the airport or public bus terminal to the tourist attraction, taking into account the transportation service and traveling in an environmentally friendly manner. This may be considered a tourism expense.

2.2.3 Increase and develop tourism information communication channels, including health tourism sites, health tourism activities, and monthly festivals so that tourists can search / access information easily.

2.2.4 Add tourism information of Mae Sot District and keep it up to date as well as prepare information in online, Social Media or a document format or tourist route for distribution at various locations as basic information to tourists interested in traveling, along with a QR code to introduce tourist attractions and tourism activities in the area.

2.3 Accommodation

2.3.1 Provide training and education in accommodation management that allows tourists to experience rural culture and community lifestyle (Homestay) for villagers in Mae Kasa community.

2.3.2 Encourage and support villagers in the community to arrange accommodation in a style that can truly experience rural culture in order to accommodate health tourists.

2.3.3 Encourage and support villagers in the community to organize business accommodation in the form of a health resort.

2.4 Amenities

2.4.1 Develop infrastructure and local facilities for the use of local residents and to facilitate health tourists.

2.4.2 Create signs to convey meaning, describe health and natural tourism activities, including methods for balancing food, providing care to increase strength, strengthening the mind to feel. Relaxing, eliminating stress and rebalancing the body. Health tourism sites or anywhere in Mae Subdistrict Kasa should provide documentation in 2 languages or 3 languages as appropriate: Thai, Chinese, English or Burmese.

2.4.3 Train youth in the area to act as a tour guide to guide tourists to tourist attractions and is a demonstrator of health tourism activities in order to raise awareness in the conservation and inheritance of lifestyle, local wisdom or activities that promote good health and without disease, which are local tourism activities for youths.

2.5 Activities

2.5.1 Establish a health tourism route in Mae Subdistrict Kasa, Mae Sot District and its neighboring countries will focus on activities that allow health tourists to participate and classified into individual tourism, group and family to create more choices for tourists

2.5.2 Make an experiential tourism program in the form of a package including travel expenses, participation in tourism activities, accommodation and meals as well as creating a separate experiential travel program for various programs and expenses to provide information and convenience according to the needs of the traveler.

2.5.3 Design health tourism activities to allow tourists to take part in tourism activities such as exercising with the community, bathing in mineral baths / hot springs in the area for Thermalism Balneology, Recovery from Illness and Leisure and Recreation, etc.

2.5.4 Develop a form of health tourism activities to allow tourists to spend the longest time in the area, there are various programs for tourists to choose according to the length of time they want.

2.6 Appreciation-Influence-Control (A-I-C) [13]

2.6.1 Create a network of experienced tourism entrepreneurs in the community and nearby areas as well as create a network of business operators to facilitate the management of experiential tourism.

2.6.2 Establish a community enterprise or professional group to meet and discuss the production, development and design of tourism souvenir products to support community-based health tourism.

2.6.3 Establish a one-stop visitor service center in the community.

2.6.4 Establish short- and long-term plans for sustainable and non-destructive tourism management, community ecosystems, together with eco-friendly tourism.

2.7.5 Use marketing tools to promote health tourism with a focus on community participation, sustainable tourism and eco-tourism.

2.7.6 Set a monthly health tourism calendar in Mae Sot district and organize an annual community based health tourism event. In this regard, information will be presented through information systems, social Media or any other format that tourists can easily and conveniently access information, including promoting to neighboring countries in the neighborhood.

VI. CONCLUSION and DISCUSSIONS

The results of the study on hot spring sources in Mae Sot District, Tak Province, found that there is one hot spring source that can be developed for commercialization, namely Mae Kasa hot spring, located in Banmaekasa, Tambon Mae Kasa, Mae Sot District, Tak Province. Geologic features of the Permian period limestone near the nearly north-south fault and the Triasic period limestone. Physical characteristics of this place, there are 6 hot springs. Chemical characteristics found that the pH at 8.00 and

temperature 40-54 degrees Celsius. Minerals found in hot springs include calcium, sodium, zinc, copper, potassium and magnesium. Minerals have different healing properties, for example sodium helps maintain water balance in the body, helps in transmitting sensory nerves, stimulating changes in skin cells to work more efficiently and zinc helps to exfoliate skin cells, which is especially suitable for developing as a health tourism attraction. In line with the Japan Tourism Organization, it says that a hot spring or onsen is another interesting activity when traveling to Japan. In Japan, there are many types of onsen to choose from throughout Japan. Each place has different specialties, thus giving you a real experience of onsen in Japan.

In terms of the potential for health tourism management in community-oriented hot springs in Mae Sot District, Tak Province, it was found that Tak Province is a geological route with high quality natural hot springs. Mae Sot district has rich nature and suitable for development as the Destination Spa of the west. It also has a location that attracts high-potential health tourists from neighboring countries to participate in the Health & Wellness Spa Tourism. In accordance with Euaamthip Srithong said that health tourism is a specific purpose of health healing or health promotion tourism. In terms of therapy, it is often a trip with a program of occupational therapy or rehabilitation. In addition, it is also a travel program with a health promotion program consisting of a wide variety of health-promoting activities, especially traveling to various tourist attractions and staying overnight in hotels, resorts or health centers. There are many health promotion activities at the venue, such as Thai massage, Thai herbal steam, aroma therapy and spa, which are very popular activities.

Guidelines for the commercial capacity development of hot springs have been undertaken to support high-value-added health tourism and services on the community's resource base through community-based tourism management in Mae Sot District, Tak Province. Experts commented that the most important approach is attractions. Communities should develop health tourism activities that emphasize the participation of tourists, whether they are participation throughout tourism activities or only part of the tourism activities as appropriate for their skills And the time of tourists such as tourist spots where tourists can bathe in mineral water / soak in hot springs, hai traditional massage, herbal steam, aroma therapy and water therapy), etc. In accordance with P. Roopchamlong. (2009) [14] found that the approach to tourism development consists of creating a distinctive point of attraction by bringing nature as a selling point, improving cleanliness and beautiful landscapes and build awareness of the conservation of natural resources for tourists and villagers, preparation for tourism such as amenities, creating meaningful natural and cultural media and prepare local guides for the transfer of knowledge and stories of the attractions; tourism preparation by preparing facilities, creating meaningful natural and cultural media and prepare local guides for the transfer of knowledge and stories of the attractions. The second most important approach is Appreciation-Influence-Control (A-I-C), which consists of building a network of experiential tourism operators in the community and neighborhood including building a network of business operators to facilitate experiential tourism management. It uses marketing tools as a tool for promoting health tourism, with an emphasis on community involvement, sustainable tourism and eco-friendly tourism. In accordance with P. Dechum [15], it was found that the developments of tourism activities in which tourists are involved are necessary to find the identity and understand the value of the culture by creating a unique and differentiated activity, focusing on adding value to tourism products and modifying strategies for market development and marketing communications. S. Kanjanakit [16].

Research proposal

1) Water resource management

The main issue at government agencies in the area and communities is the administration of hot springs to be developed as models in the western region. A management should be made to take advantage of the overflowing geysers by increasing the services for bathing and hot spring baths for tourists. Further, additional hot spring baths should be planned in the future to suit the amount of hot springs available in the area and the community to take care of the participation process of Mae Kasa community tourism.

2) Law enforcement

The government should issue regulations to study earth science information such as survey of underground geyser system, geyser quantity, the quality of the geysers and the environment of all hot spring sources in Thailand, considering whether they have an appropriate potential to be developed before allowing the responsible agency or community to take any further action.

3) Strategic plan

Developing to achieve planning and direction for the development of all hot springs distributed in Tak province to enable the proper use of tourism, to its full potential and to maintain its uniqueness and to Identity of each area

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Tourism Cooperation under the Belt and Road Initiative: BRI and Tourism Opportunities in Phayao Province, Thailand

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Abstract*— The objectives of this research are 1. to study the Belt and Road Initiative (BRI) fundamental concepts in comparison with other multilateral tourism cooperative frameworks in Phayao Province, 2. to analyze the importance, benefits, and limitations of the BRI initiative, including problems, obstacles and tourism opportunities in Phayao Province according to the the Belt and Road Initiative (BRI) cooperative framework, 3. to give recommendations on policies and measures for tourism promotion of Phayao Province under the Belt and Road Initiative (BRI) cooperative framework. The research tool was used PESTEL analysis, SWOT analysis and TOWS analysis method, The population and sample group in this research work were selected by purposive sampling and consist of two main groups, which are the group including the government sectors and the private sectors of Thailand that includes Phayao Province and areas in the Lao PDR consisting of Sainyabuli province, Luang Namtha province, and areas in the China Mainland comprising of Kunming city and Xishuangbanna Dai Autonomous Prefecture. The results of the study indicated that Phayao Province has potential due to the borderline with the Lao PDR in Ban Huak, where the government has approved and promoted the temporarily permitted area at Ban Huak to be a permanent border crossing in 2018. When both countries border checkpoints had been promoted, it causes an expansion in terms of trade and investment, including more tourism. It is a gateway that connects the economic corridors of the North of Lao PDR and northern Thailand. This border-crossing route is an interconnection between Thailand via Phayao Province to Luang Prabang, where the China-Laos railway station is located. The Ban Huak border checkpoint journey to Luang Prabang is only 297 kilometers and can connect to southern China by the China-Laos railway. The service will be available in December 2021. This route will provide an opportunity to connect Phayao province to the New Silk Road of the 21st Century or the Belt and Road Initiative (BRI). It will enable cooperation in the field of trade, investment, and tourism between the three countries.

Index Terms— ***Belt and Road Initiative: BRI, Tourism opportunities, Phayao Province***

I. INTRODUCTION

Over the past 10 years, Thailand has given great importance to the implementation of economic corridors, especially the development of land and water transport routes along the economic corridors as goods distribution and tourism routes in the region under the concept of developing international connectivity in ASEAN transportations and logistics including the establishment of the Eastern Economic Corridor (EEC). It is a strategic plan under Thailand 4.0 and announced the Eastern Special Development Zone Act in the Government Gazette on 14 May 2018. The Thai government expects that the development of the Eastern Economic Corridor will be linked to the New Silk Road or the Belt and Road Initiative (BRI) to foster expansion in agriculture, industry, trade, service, tourism, modern technology, eco-friendly advanced innovation, and traditional agriculture, which results in employment, income generation, and quality of life as well as the increase of capacity and increase of competitiveness of the country in the world trade arena.

Nowadays, connective tourism is widely spoken. For example, R3A (Road 3 Asia), which is the connectivity between China - Lao PDR - Thailand, is part of the route along the North-South Economic Corridor (NSEC) under the Greater Mekong Sub-region (GMS) framework. It is a land transport route connecting Kunming in Yunnan Province of the People's Republic of China, with Bangkok in Thailand. In Chinese, it is called "昆曼 公路". This route has a length of more than 1,800 km. The ease of travel has resulted in a steady increase in the number of tourists. After the Covid-19 epidemic crisis in 2020, more tourists are expected to travel through this route.

Phayao Province is one of the provinces with great potential due to its borderline with the Lao People's Democratic Republic (Lao PDR) from Ban Huak, Village No. 3, Phu Sang Sub-district, Phu Sang District to Ban Ton Phueng, Village No. 16, Rom Yen Sub-district, Chiang Kham District with the distance of about 36 kilometers. Moreover, Kiew Hok Route (PB 502763), located at Village No. 12, Phu Sang Sub-District, Phu Sang District, Phayao Province, is the route of connection between Ban Huak, Village No. 12, Phu Sang Sub-district, Phu Sang District, Phayao Province, and Ban Pang Mon, Khop District, Sainyabuli Province, Lao PDR. Thai Government has approved to promote Ban Huak temporarily permitted area in Phu Sang District to be a permanent border crossing on 28 September 2018 and opened as a checkpoint on 18 December 2018. When both countries' border checkpoints were promoted, it causes an expansion in terms of trade and investment, including more tourism. It is a gateway that connects the economic corridors of the North of Lao PDR and northern Thailand. This border-crossing route is also an interconnection between Thailand via Phayao Province to the World Heritage city, Luang Prabang. The Ban Huak border checkpoint journey to Luang Prabang is only 297 kilometers and can connect to southern China by the China-Laos railway. The service will be available in December 2021. This route will provide an opportunity to connect Phayao province to the New Silk Road or the Belt and Road Initiative (BRI). It will enable cooperation in the field of trade, investment, and tourism between the three countries. However, in the connective tourism development, it focuses on developing utilities and facilities along the way rather than creating stories and tying up similar marketing attractions. In the past, connective tourism had been developed through various routes, such as the R3A route (connecting China, Lao PDR, and Thailand). Still, the story of various attractions has not been linked together to add value and make it more attractive to tourists (Tourism Market Research Division of Thailand, 2015). The government's policy to develop and promote tourism in Thailand to become a tourist destination connected with neighboring countries, especially China and Lao PDR, through the New Silk Road or the Belt and Road Initiative (BRI), will lead to the creation of a national tourism network in the Mekong region including increasing the potential for economic competitiveness through planning promotion. It will turn the route into a route that can meet a broad and diverse traveler's needs. It improves the quality of products and services, increases tourism value, increases the employment rate, continuously distributes income to local people, and ensures tourists' safety.

From the above context, to drive the 2nd National Tourism Development Plan (2017-2021) to achieve concrete results, it is imperative that the study of tourism cooperation projects under the New Silk Road or the Belt and Road Initiative (BRI) concept has to be carried out with tourism opportunities in Phayao Province. Promoting and supporting the connective tourism policy of Thailand, Lao PDR, and China in order to formulate a clear guideline for the connective development of tourist attractions and increasing tourism opportunities in Phayao Province will lead to the development of tourism routes suitable for the context of the environment and the potential of the people in the area. It is also the way to maintain the identity of tourism routes forever.

II. Research Objectives

The objectives of this research are 1. to study the Belt and Road Initiative (BRI) fundamental concepts in comparison with other multilateral tourism cooperative frameworks in Phayao Province, 2. to analyze the importance, benefits, and limitations of the BRI initiative, including problems, obstacles and tourism opportunities in Phayao Province according to the Belt and Road Initiative (BRI) cooperative framework, 3. to give recommendations on policies and measures for tourism promotion of Phayao Province under the Belt and Road Initiative (BRI) cooperative framework.

III. Research Methods

Population and Sample Selection

This research work aimed to conduct a study in Thailand that includes Phayao Province and areas in the Lao PDR consisting of Sainyabuli province, Luang Namtha province, and areas in the China Mainland comprising of Yunnan Province in Kunming city and Xishuangbanna Dai Autonomous Prefecture. This area has the territories that are in contact with the border area, which provides a connecting route for commerce with China's country. The route passes through the Lao PDR and enters into Thailand, which is the area that is expected to receive the impacts in terms of PESTEL Analysis; P: Political, E: Economies, S: Social, T: Technology, E: Environment and L: Legal, with both positive and negative effects resulting from the construction of the Belt and Road Initiative: BRI. The population and sample group in this research work were selected by purposive sampling and consist of two main groups, which are the group including the government sectors and the private sectors of Thailand, Lao PDR and China Mainland comprising of the Immigration Department, the Customs Department, the Office of Tourism and Sports, the Chamber of Commerce, the Department of Commerce, the Thai–Laos Business Council, Thai–Chinese

Business Council, the International Freight Forwarders Association of Laos, the Association of Tourism Businesses and Tourism Operators of the Lao P.D.R., Royal Thai Consulate-General Kunming, Tourism Authority of Thailand Kunming Office and others.

Once the data of tourist site is obtained, combined with data from in-depth interviews, brainstorming, and PESTEL analysis, the next step was analyzed using the SWOT Analysis method, that analysed strengths, weaknesses, opportunities, and threats to see the true potential of tourism development connecting Phayao Province with BRI Silk Road to Lao PDR and the People's Republic of China.

The last step was an analysis using the TOWS Analysis method to find policy recommendations for tourism development and promotion connecting Phayao Province with Lao PDR and the People's Republic of China.

V. Research Results

The results of the study of the potential of Phayao Province are to connect to the BRI route and to provide an opportunity to build an international tourism route to Lao PDR, and China are as follows:

1. Strengths of Phayao Province towards BRI route tourism
   - There are many tourist attractions and a variety of attractions.
   - Infrastructure is almost 100% complete.
2. Weaknesses of Phayao Province towards BRI route tourism
   - Working in various sectors does not harmonize with tourism promotion to be in the same direction.
   - The agency responsible for tourism has not received sufficient information about the BRI route, making it impossible to understand future connections.
   - Tourism-related agencies do not yet understand the actual needs of tourists (insight).
3. Opportunities of Phayao Province towards BRI route tourism
   - The government has the policy to establish the Eastern Lanna Special Economic Zone. As a result, Phayao Province has an opportunity to connect with neighboring countries through the Ban Huak border checkpoint.
   - The government has the policy to construct a double-track railway, Denchai - Chiang Khong. It will provide an opportunity to expand trade and transport in the upper northern region.
   - The government has the policy to study the feasibility of Phayao Airport's construction to create air transport connecting domestically and abroad.
   - The opening of the Ban Huak checkpoint as a permanent border checkpoint connecting the Sainyabuli Province of the Lao PDR will be an opportunity for Phayao Province to connect with the Lao PDR and China.
4. Threats of Phayao Province towards BRI route tourism
   - Thai-China high-speed rail route will not pass through northern Thailand, causing Phayao Province to lose connection.
5. Goal of Phayao Province
   - The researcher would like to position Phayao Province as the source or destination of travel on the New Silk Road of the 21st Century, mostly tourists from the third country. The benefit of being the source or destination (gateway) of the connective tourism to Lao PDR and southern China is that there will be tourists from third countries (mostly Europe, America, Japan, and Korea) coming from far-off countries outside the region and has a form of tourism that takes longer time to travel, they may also spend time in Phayao Province longer. Therefore, in order to achieve the goal, it is necessary to develop tourism to meet the quality and standards so that it will be able to attract more tourists from the third countries traveling via the BRI route, in line with Kobsak Phutrakul (2017), who found that Thailand has a location near the route that the main feature laying down to the south is the location of the journey to the surrounding countries which takes time just over an hour. Moreover, it can link various tourism and distribution routes; therefore, the development of infrastructure will increase population income. Also, Thailand is a country that is important to China because some Thai people have ancestors from China. The key opportunity for Thailand in the BRI initiative is that Thailand must be a gateway to Western China because it is difficult for Western China to get to the sea. At the same time, it can connect Thailand to the south, and the EEC will allow various products heading to Western China on this route.
6. Development guidelines for Phayao Province
   - Develop tourist routes – almost all tourists do not want to travel to and from the same route. They want to travel in a unique circle, both domestic and abroad. Also, they want to travel using different modes of travel (Multimodal Transportation) such as traveling by caravan driving and renting a car from one location and returning the car another location

and returning home by plane. They can also travel by road and return home with a cruise on the Mekong River. The critical routes are Kwan Phayao - Aun Phu Sang Waterfall - Ban Huak Border Checkpoint - Muang Khop (Lao PDR) - Pak Kop (Lao PDR) - Chiang Hon (Lao PDR) - Mueang Ngoen (Lao PDR) - Hongsa (Lao PDR) - Luang Prabang (Lao PDR) - Oudomxay (Lao PDR) - Luang Namtha (Lao PDR) - Mohan (China) - Xishuangbanna (China) - Kunming (China)

- Develop tourist destinations – many tourist attractions in Phayao Province has not been developed as expected yet.

- Develop a standardized interpretation system because it is an international travel route; it is necessary to have a communication system of international language, Laos language, and Chinese language.

- Develop border travel facilities – it requires a lot of cooperation and coordination of government agencies. The Ministry of Tourism and Sports shall take the lead in coordinating cooperation with the Ministry of Foreign Affairs, Ministry of Interior, Ministry of Finance, and the Security Department to assure tourists that they will pass this route safely and to create a One-Stop Service along the route.

- Promote Demand Driven Tourism Plan, which requires in-depth research in order to know the actual demand (insight) of target tourists, an extensive group of tourists with high purchasing power from China.

- There must be brainstorming and building an international travel network throughout the supply chain to achieve sustainable tourism development on the BRI route.

CONCLUSION

From the data analysis, it was found that Phayao Province has the potential for border trade. There is a permanent border crossing at Ban Huak, Phu Sang Sub-district, Phu Sang District, a connecting point to Lao PDR. It can be developed to be a gateway to the BRI Silk Road to support the border trade economy. The connectivity of natural tourism routes (Eco-Tourism) and cultural tourism can connect to the Mekong countries or GMS and China. It also brings the recommendations for developing and promoting sustainable tourism of Phayao Province to the BRI route. The recommendations are divided into several sections. The first section is the presentation of the tourist destination development plan and the tourism route connecting between countries to position Phayao Province as the source or destination of the BRI route tourism, especially to attract tourists from China and Lao PDR by focusing on tourists to stay longer in Phayao Province, expend more, and give the most benefit to local people. The examples presented are divided into 3 sub-sections: 1. Sawasdee Kwan Phayao Tourism Route (Thailand) - Sabaidee Luang Prabang (Laos) - Nihao Kunming (China), 2. The Green Peafowl Route – because Phayao Province is the last stronghold of green peafowl, and there still be a forest connecting Phayao Province with Lao PDR and Southern China. The green peafowl is also a symbol of the Tai ethnic group living in Thailand, Laos, southern China, and 3. Tai Lue Cultural Tourism Route – Phayao Province has the largest Tai Lue community in Thailand. Tai Lue moved down from Xishuangbanna, China, and evacuate to northern Laos and northern Thailand. The BRI Silk Road will provide an opportunity for Tai Lue people to travel across the three countries more easily, in line with van der Leer and Yau (2016), who researched the topic of China's New Silk Route - The Long and Winding Road. It was the study about the BRI policy that the BRI is not only used for economic benefits, but this route is also used to promote commercial interests, cultural exchange, tourism, and social integration. In addition, Hongjian (2016) noted that the People's Republic of China is ready to use the BRI to enhance the role of the existing Asian multilateral cooperation framework to its full potentials, such as the ASEAN-China Framework or APEC and ASEM to strengthen the relationship with relevant countries and attract more countries and regions to join the BRI.

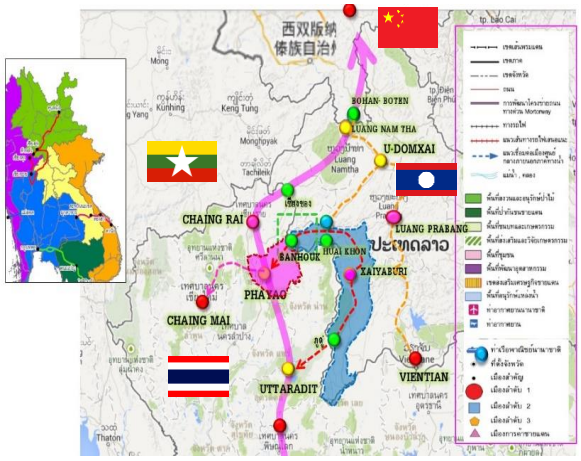


Fig.1 Ban Huak Checkpoint – Lao PDR connection

VI. POLICY RECOMMENDATIONS

From the vision of the Ministry of Tourism and Sports and Phayao Province, it can be seen that policies have been formulated to promote new tourism routes and international route connectivity. Therefore, the researcher has recommendations as follows: 1. Defining the operating units' mission, duties, and responsibilities at the local level to be unique. 2. Developing guidelines for promoting cooperation between the three countries: Thailand, Laos, and China. 3. Coordinating with various departments throughout the tourism supply chain. It is developing tourism routes connecting three countries to become more complex, and well-planning is necessary. It must be realized that the tourism promotion and development plan connects Phayao Province with the BRI route, it is necessary to take the sustainability into account that will arise from domestic and international cooperation, subjected to the conditions of the 6 sustainable tourism developments which are Safety, Accessible, Positive Sum, Volume, Travel with Theme, Be Prepared, and 4. Creating a standardized information presentation system – statistics from the Department of Tourism of the Ministry of Tourism and Sports show that the number of different types of tourists traveling in Phayao Province tends to increase after the Covid-19 epidemic, a statistical process is needed to predict the number of visitors entering the route. Besides, the China-Laos railway will open for service by 2021, so it will be an opportunity for Phayao Province to connect with this tourism route with Lao PDR and China. Therefore, Phayao Province must have standardized information and be able to access them more efficiently.

Also, both public and private agencies usually present information about tourism via social media, especially Facebook, Instagram, and Twitter, as it is easy and convenient. However, it is imperative to consider the accessibility of Chinese tourists who may not have access to these platforms, so it is necessary to provide information in English, Lao, and Chinese to distribute via available platforms in China, such as WeChat or Weibo. Thai operators may need to be prepared to support the electronic payment platform of Chinese tourists.

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The Process of Promoting the Economic base of the Thai Lanna Textile Handicraft Community in Sukhothai

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Abstract - *This research aims to study the potential and develop skills in textile handicrafts of Thai Lanna ethnic group in Sukhothai Province. The research process was carried out as follows: 1) study the community context, 2) community-based knowledge transfer, and 3) the development of textile products using quantitative and qualitative research methods. Research tools include interviews and questionnaires, collected data from group conversations, and the satisfaction was assessed by a specific sampling group from key informants from Thai Chanasuek Sub-District Community, Thung Saliam District, Sukhothai province, in the group of 30 people by analyzing descriptive statistics. Research results showed that 1) the Thai Lanna ethnic community is a community that immigrated from Lampang Province with the traditions, culture, language, traditions and weaving with a flower pattern which has been the identity of the community and has been produced as costumes, blankets and bags. 2) The knowledge of the weaving production of the community arises from the dynamic exchange of knowledge between the conveyer and the recipient of knowledge in the form of explicit knowledge. Knowledge consolidation and the conversion of knowledge were applied to enhance the textile products and the economic base of Thai Chanasuek Sub-District Community. 3) Woven fabric pattern design, using the concept of Neem flower to develop the pattern by using cotton brocade technique and processing of woven fabrics into clothing with satisfaction in utility, shape and beauty. The average was at a very good level ($\bar{x}$=4.58).*

Keywords - ***promotion , community economic base, textile handicrafts, ethnic community***

I. Introduction

Woven fabrics are the main root in local development. Local wisdom is diminished by external factors and Thai consciousness. Most Thais believe that local wisdom cannot solve the economic crisis due to their incomprehensibility and disapproval of the true importance of local wisdom. Therefore, local wisdom cannot be applied for development or solving problems. Understanding local development is an important issue in today's Thai society. Before Thailand was open to the development of capitalism, Thailand existed with Thai wisdom at the national and local levels that resulted in the existence of the nation until today [1]. Weaving is a handicraft and art that has existed since ancient times. This is because weaving is part of the human way of life and is also considered the production of clothing, one of the four most important human factors. In addition, weaving is a kind of art because weaving in each ethnic group has different patterns and patterns of the fabric. The patterns and motifs on the fabric represent a long history of stories or events, including the identity and culture, beliefs and origins of the people from the patterns and symbols that have been named after them. [2]

Community-based economic development is the creation of jobs and income for the community by using local resources and local wisdom and give priority to cooperation and support in the community without an emphasis on competition or monopoly. In this regard, the focus will be on the community to be co-owner to think, co-operate and solve problems in terms of production, consumption and marketing to create jobs and generate income for the community along with strengthening the community by using existing community funds as a driving force in the community. This is to achieve well-being based on the community's potential for self-reliance, an essential base for community economic development [3].

People in Thai Chanasuek conserve local wisdom. There are local products and souvenirs, including baskets made from phonebooks and wicker for household use and

products from local fabrics such as apparel, blankets and satchels. From visiting the area to study the problems and needs of the Thai Chanasuek community, Thung Saliam District, Sukhothai Province, it was found that the community's textile products lacked quality development in terms of pattern, pattern and product processing compared to similar local products such as Discontinuous Supplementary Weft Pattern Weaving of Si Satchanalai District, thus affecting the consumer's popularity and the income of the producer. From the aforementioned points, the researcher is interested in studying the potential and professional development of textile handicrafts for the community. It is the cultural capital of the Thai Lanna ethnic group, which is the local roots, to create new products by developing advanced skills in the production of textiles for the community. It is also reducing socio-economic inequality while enabling sustainable economy within the community through: 1) Study the community context, 2) Knowledge transfer with community participation, and 3) Textile product development.

II. Research Objectives

The objectives of this research article were to study the potential and develop skills in textile handicrafts of Thai Lanna ethnic group in Sukhothai province.

III. Literature Review

Knowledge-seeking process of community knowledge: The researcher studied the concepts of [4] discussed in 6 points as follows. 1) Knowledge identification is a common goal for identifying knowledge of raw material properties, manufacturing processes and marketing as well as new techniques to develop traditional manufacturing processes. 2) The method of acquiring and acquiring knowledge is to seek knowledge from group members, assign or specify duties to knowledge from community guru inquiries, workshops and study visits, etc. 3) Knowledge-building is the basis of traditional knowledge as a basis for the production of local weaving together with the integration of new knowledge gained from training, transfer of academic research results to participants such as dyeing techniques, pattern design, market promotion and community product standards, as well as the processing of local woven products, etc. Much of the knowledge that is generated is embedded in the person, where knowledge is reproduced in order to generate skills and expertise. 4) Organization and storage of concrete knowledge but it uses simple and common organization and knowledge storage such as sample product data storage. 5) Knowledge exchange and transfer is the exchange of knowledge among members through telling, demonstrations, and hands-on training by speakers who are responsible for the transfer of knowledge to the participants of the activity and knowledge transfer in the form of research papers, articles and videos by researchers, scholars or officials of government and private sectors. 6) Use of knowledge Divided according to the function of duty into 3 types as follows: 6.1) Working in group production methods is the reproduction of existing knowledge and the use of new knowledge through practice to create expertise, experience and personal skills such as indigo dye preparation, indigo dyeing, weaving design / processed products, etc. 6.2) Extension of previous knowledge, whereby the group president will use new knowledge to combine with the old knowledge to create new products, both fabric and processed products. 6.3) Product development must be distinguished from traditional products by applying new knowledge and existing knowledge such as mixing other natural colors with indigo.

Knowledge transfer and product development: The concept of product design is an important factor that can be used to create woven fabrics that evoke local identity. Traditions, cultures and natural resource diversity can be used to target common weave designs to differentiate themselves from the general market. Textile product development process [5] has discussed the following guidelines for weaving patterns design: 1) Analysis of relevant data - this is related to the needs of the participants, product information and manufacturing processes. 2) Main Conceptualization - Since traditional patterns still cannot communicate (attract attention) to consumers, new designs have to be developed. When the concept of local identity was applied to come up with the main idea for the design of the new pattern to be more concrete, it highlighted the strength of the indigo-dyed textile products. 3) Sketch design - is the interpretation of the main idea and transforms the result into a concrete draft, divided into 2 parts: 3.1) The product structure design determines the size and shape of the product, which should be selected to use the type, color and fiber type to suit the design concept. 3.2) The design of pattern art elements is the use of visual elements of art such as dots, lines, colors, shapes, shapes or textures, that was inspired in the design to arrange new artistic elements to

form a pattern based on conceptual and theoretical art frameworks. 4) Selection - Once the draft design has been completed, the designed draft is presented by discussion with the target audience based on discussion points, then used to adjust the sketch before being used to create a prototype. 5) Detail Design - At this stage, the work is divided into 2 sub-phases: 5.1) Determining the details of the sketch, such as determining the size of the fabric proportions, the characteristics of the motif, the size of the motif, the nature of the yarns to be used in each fabric and the weaving techniques and weaving patterns in each pattern unit added to the drawing to be used as a requirement in the prototype process. 5.2) Prototyping is a study of feasibility in the production of woven fabrics which [6] has divided the weaving patterns as follows. 1. Geometrical weaving groups are various triangular and trapezoid shapes that are combined to form a pattern. Points and lines are used to create geometric shapes, straight lines and bent lines to form a hook shape. 2. Clusters of plants and naga patterns, most striking is the pine pattern which mimics the nature of the pine tree. It is a line that is bent together in a bouquet from smaller to large. Naga pattern is a line that breaks at the end of the head to be bent like a serpent's head, which is usually combined with the pine pattern. 3. The Khor pattern (comb or lamp) is a line or point that is joined together and bent to form a hook or another name is the comb pattern. The lamp pattern is characterized by a trapezoid or triangle that is lined with lines or dots and 4. Animal pattern (beetle or butterfly) is one of the popular animal patterns which mimic the butterfly pattern in nature. Turtle pattern is an imitation of the turtle's shell.

IV. Research Methods

A. Research Design

The quantitative and qualitative research used research tools, that is, interview and questionnaire. Data were collected from group discussions and satisfaction assessed by a specific sampling group from 30 key informants from the Thai Chanasuek Sub-District Community, Thung Saliam District, Sukhothai Province. The descriptive statistics were analyzed. The researcher has developed potential and professional skills in textile handicrafts of the Thai Lanna ethnic group, Sukhothai Province. The steps were as follows: 1) a community-based context education; 2) knowledge transfer through community-based participation and 3) textile product development and data processing at all stages by gathering, analyzing and presenting research conclusions.

B. Research Process

Research process - In developing potential and vocational skills in textile handicrafts of the Thai Lanna ethnic group, Sukhothai Province by studying the community context, knowledge transfer with community participation and the development of textile products can be divided into 6 steps:

Step 1: Study and collect data from research papers, textbooks, literature works and research related to the Thai Lanna ethnic group of Thai Chanasuek, Thung Saliam District, Sukhothai Province.

Step 2: Plan a field study of 30 people to conduct research and coordination to collect data in a community context, community-based knowledge transfer, and textile product development.

Step 3: Go into the field to collect and analyze data from interview participants in terms of everyday textile patterns, weave designs, materials and production tools and production techniques, then take notes and take photos.

Step 4: Design activities to develop potential through the process of exchanging and transferring community knowledge.

Step 5: Evaluate the results of the process by handing out a questionnaire to assess the satisfaction of the developed products in terms of functionality, shape and aesthetics, and summarize and discuss the findings.

Step 6: Develop a body of knowledge on patterns and textile production processes of the Thai Lanna ethnic group in Sukhothai Province.

Methods of conducting research for potential development and occupational skills in textile handicrafts of the Thai Lanna ethnic group, Sukhothai - The research was conducted as a qualitative research study by studying information from documents, textbooks, literature and research related to Thai Lanna ethnic group from interviews with participants in the context of community and local wisdom. In terms of the quantitative action, the investigators assessed the quality of the research by summarizing the data obtained from the participants' satisfaction with the characteristics of the developed product for functionality, shape and aesthetic. There were methods of conducting research.

Population and sample samples were obtained from a specific sampling from Thai Chanasuek community, Thung Saliam District, Sukhothai Province. The study variables were 1) community context, 2) participatory knowledge transfer, and 3) product development.

Tools and development of research instruments - The quality of the research tools would be examined by qualified persons. The research tools were as follows. 1) The interview questionnaire was used for community context information and community-based local wisdom by in-depth interviews with the participants. 2) The questionnaire was used to find the opinions of the participants on the sketch of the woven pattern, the sketch of the clothing, and to assess their satisfaction with the developed product model in terms of functionality, shape and aesthetics.

The collection of research data has the following processes. 1) To study and collect data of Lanna ethnic groups from Banthai Chana Suek community in terms of textile production patterns and processes and various factors affecting textile products through the survey of related documents, textbooks, literature and research. 2) Enter the field to collect information on the community context and local wisdom about indigenous textiles in terms of apparel textiles, textile articles, products distributed locally, as well as the tools and equipment used in the production process by means of interviews and 3) Enter the field to pass on knowledge about natural dyeing, twill and satin weaves, costume design and collecting data from drafts of textile products from questionnaires and then summarizing the data to create a prototype of textile products.

Analysis of research data from interviews and inquiring the researcher has the following data analysis processes. 1) Analysis of information from documents, textbooks, literature and research related to the Thai Lanna ethnic group of Thai Chanasuek community. 2) Analysis of patterns and processes of local weaving used in daily life, traditional weaving patterns together with materials and tools for the production and 3) Satisfaction analysis of products developed in terms of functionality, shape and aesthetics.

V. Research Results

For the development of potential and professional skills in textile handicrafts of the Thai Lanna ethnic group, Sukhothai Province, in a participatory group discussion forum of Thai Chanasuek community in Thung Saliam District, Sukhothai Province with 30 participants, the results were summarized from the interview and questionnaire for 1) community context 2) Knowledge transfer through community participation and 3) product development.

A. Results of the study of community context

1) Population:

The study found that the people in the area migrated from the northern part of the country called themselves; Lanna Thais who migrated and emigrated from Lampang and came to live in the lowland areas in the foothills of Thai Chanasuek Sub-district, Thung Saliam District, Sukhothai Province. The way of life of the community continues to follow its ancestors that have inherited the local language, tradition and culture.

2) Local wisdom: The foundational economy that generates income for the community is agriculture, which is derived from the production of indigenous woven fabrics of the community using natural fibers such as cotton and rayon threads that are processed into apparel, blankets and satchels (Figure 1). The unique local weaving pattern is orange jessamine pattern, as shown in figure 2.



Fig.1 Indigenous woven fabric with orange jessamine pattern



Fig.2 Ban Thai Chanasuek Community Products

Tools, equipment and looms consist of 1) a 4-post loom 2) warp yarn 3) shuttle and Warp and weft yarn 4) beater 5) core fabric 6) seat 7) Pedal poles 8) heddle 9) pulley for supporting the heddle, as in figure 3.



Fig.3 Tools and equipment for weaving local fabrics

Twill and satin weaves, a traditional weaving technique created by adding a special heddle for raising the standing yarn at the top, is called "Continuous Supplementary Weft weaving". When weaving is alternated with regular plain heddles to build strength to the fabric, this will result in the same pattern throughout the fabric.

B. The results of knowledge transfer through community participation

The knowledge of community-based textile production was created from the dynamic exchange and learning of information between the conveyer and the knowledge receiver in the form of 1) Enlightenment 2) Knowledge consolidation and 3) Knowledge conversion to be applied to enhance textile products and economic base of the Thai Chanasuek Sub-district community. This result can be summarized as follows:

1) Conveying the nature of natural dyeing: The material to be used for fabric dyeing is from neem peel that are hot extracted using heat to dissolve the color, the steps (Figure 4) are as follows. 1.1) Chopped neem peel into small pieces. Cleaned by rinsing and put it in a pot of boiling water. Take 2 kg of neem peel and 15 liters of water in a dyeing pot. 1.2) Add the cotton adhesion material with 1 kg of eucalyptus bark and take 2 hours to boil the color and lift the pot down. The filter separates the water and the resulting color is used to dye cotton yarn. 1.3) Clean cotton yarn by boiling for 1 hour to remove impurities such as factory cotton yarn coating and grease etc. 1.4) Pre-cleaned cotton yarn is put into the dyeing pot, should use a stick to beat the cotton yarn evenly so that the cotton yarn will expand. 1.5) Bring cotton yarn to a boil and dye for 2 hours. While boiling for dyeing, it should be turned over so that the cotton yarn is evenly colored. 1.6) Soak the finished cotton yarn in water and crumple the yarn evenly to increase the strength of the cotton yarn before producing. 1.7) Shake off the cotton yarn to loosen the yarn and dry it in the shade until dry before use in weaving production.



Fig.4 The process of natural dyeing from neem bark

2) Knowledge transfer in the design of local weaving patterns by using neem flowers as the concept of weaving patterns. Neem is a medium to large sized plant, with a

bunch of flowers on the stalk at the end of the branch. The flowers are small, white and have a light fragrance. People in the community prefer to use it for cooking. Neem will bloom from December to March. The process of transferring knowledge was done by practicing practical skills by using neem flower visual elements such as lines, rhythms and balance to format according to the art elements as shown in Figure 5.



Fig.5 Knowledge transfer of twill and satin weaves design by bringing neem flowers as design inspiration.

The results of the analysis and reproduction of neem flowers used as a concept in the design of the weaving patterns in the selection process for actual production, the study participants were given criticism and suggested improvements to the community identity in total of 6 patterns (Figure 6). The researchers evaluated the opinions of the participants from the questionnaire to find satisfaction with patterns suitable for production. The conclusion was that the pattern (b) was the most satisfied ($\bar{x}$=4.63).

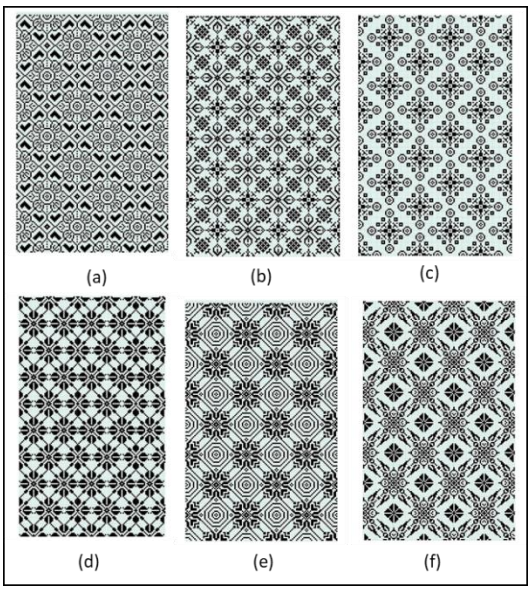


Fig.6 (a) – (f) Neem flower weaving pattern

3) Transfer of knowledge in processing of local woven products to garments in the categories of formal wear, work wear and casual wear (Figure 7), the results from the knowledge transfer and practice of participating communities can be summarized as follows: 3.1) Creating ideas and designs by drawing a dress can reflect local identity 3.2) Creation of a pattern according to the predetermined size and proportion; and 3.3) Sewing.



Fig.7 Knowledge transfer in costume design

The results of the evaluation of the opinions of the participants were done by answering a questionnaire to find: the most satisfied with the work wear (Figure 8) in style (b) ($\bar{x}$=4.74), the most satisfied with the formal dress (Figure 9) in style (b) ($\bar{x}$=4.63) and the most satisfied with the casual wear (Figure 10) in style (c) ($\bar{x}$=4.58).

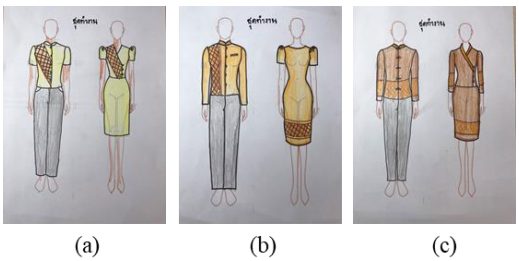


Fig.8 (a-c) Workwear style

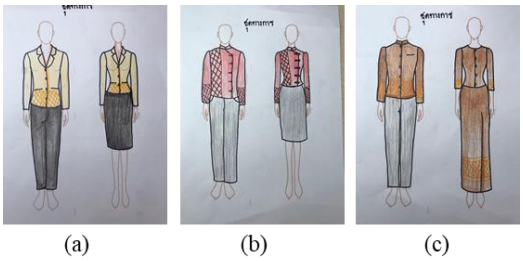


Fig.9 (a-c) Formal wear style



(a) (b) (c)

Fig.10 (a-c) Casual wear style

C. Product development results

The development of indigenous textile products is the use of cultural capital to promote the foundation economy and strengthen the community along with the satisfaction assessment of 30 participants, divided into females (80 percent), aged 46–55 years (40 percent), elementary education (53 percent), earning less than 15,000 baht (43 percent) and opinions on the products of Neem flower pattern weaving and the processing of woven fabrics into garments of local fabrics (Figure 11). The results of the assessment of satisfaction in functionality, form and aesthetic were at a very good level ($\bar{x}$=4.58), as shown in Table 1.



Fig.11 (a) Neem flower pattern woven (b) Costumes from local woven

Table 1 Assessment Results of Satisfaction (n=30)

Satisfaction	$\bar{x}$	SD	Level
Functionality			
1. 1 Product shape conducive to use	4.47	.51	High level
1.2 Suitability of materials used in production	4.60	.50	Most level
1.3 Durability to use	4.60	.50	Most level
1.4 Safety to use	4.53	.51	Most level
1.5 Size that is proportional for use	4.60	.50	Most level
Shape			
2.1 Modern, new and novel	4.60	.50	Most level
2.2 Size of proportions suitable for transportation	4.53	.51	Most level
2.3 Ease of use	4.53	.51	Most level
2.4 Optimized shape placement	4.60	.50	Most level
Aesthetic			
3.1 Beautiful colors and attractive to use	4.43	.50	High level
3.2 Clear pattern	4.77	.43	Most level
3.3 Refinement	4.60	.50	Most level
3.4 Conveying local identity	4.60	.50	Most level
3.5 Creativity	4.60	.50	Most level

From Table 1, it was found that the satisfaction of aesthetic was at the highest level ($\bar{x}$=4.60), followed by functionality ($\bar{x}$=4.58) and shape ($\bar{x}$=4.57), respectively.

VI. Discussions

The research process in the areas of 1) community context 2) knowledge transfer through community participation and 3) Product development for the purpose of developing potential and occupational skills in textile handicrafts of the Thai Lanna ethnic group, Sukhothai Province, the results of the study showed that the way of life of the community continued to follow the pattern of the Lanna Thai people, which was inherited in terms of language, tradition, culture and local wisdom. Most importantly, the production of indigenous textiles in orange jessamine patterns and bundles was transformed into apparel, blankets and satchels as community merchandise for sale to tourists. Knowledge transfer for dyeing cotton yarn from neem bark, the resulting color was brown. The twill and satin weaves pattern from the Neem flower

concept was the most satisfactory ($\bar{x}$=4.63), the satisfaction of the fabric into workwear in style (b) was the most satisfactory ($\bar{x}$ = 4.74), formal wear in style (b) was the most satisfied ($\bar{x}$ = 4.63), casual wear in style (b) was the most satisfied ($\bar{x}$ = 4.58). The satisfaction of the participants with the developed product models in terms of functionality, shape and aesthetics was very good ($\bar{x}$=4.58). From the development of potential and vocational skills of textile handicrafts as a part of the Thai Lanna ethnic group, Sukhothai Province, in Thai Chanasuek community, Thung Saliam District, Sukhothai Province, was consistent with the approach of knowledge management, local wisdom towards ecotourism and culture of [7], [8] as follows: 1) Establishing a knowledge-based approach 2) Knowledge collection 3) Knowledge examination and 4) Dissemination of knowledge and wisdom. From community involvement, stories are presented to give the group of people the opportunity to join, learn and share experiences from the philosophers living in the community; they were all capable of creating and imparting knowledge of beautiful woven fabrics which were hidden by morality, beliefs, culture and traditions. Although it was not studied according to the theory and principles of art but the works of local art in woven fabrics reflected knowledge, abilities, beliefs and deep understanding of life through socialization and participation in customs and rituals with the perspective of "inner people" Wisdom therefore correlates with the balance between all things that lead to a great goal: the peace of the people of the community. Thus, the community's woven products reflected the path of belief, faith and social contracts. It also corresponds to [9]. The learning process was one of the key factors in allowing the group to develop in various areas such as management development, group management, implementation of group production activities and product processing and can enable the group to operate according to its objectives, including the group committee's learning process, which is also considered to be a member of the group. The learning process could be distinguished by this: 1) Production skills training 2) Training. In most cases, the opportunity to receive training was a member of a group committee, as training was promoted by a sponsored area such as the Department of Industrial Promotion in the training of weaving and dyeing. After the training was complete, members would be able to convey their knowledge to the members of the group in order to expand the results of the guidelines [10] to improve and develop community-based businesses towards sustainability. Development was rooted in seven fundamental concepts of driving the creative economy: 1) Use of knowledge 2) Education 3) Creative work 4) Use of intellectual property linked to cultural foundations 5) Culture 6) Wisdom and 7) Modern technology / innovation. It was a guideline for the development of local wisdom coconut shell products in Nakhon Pathom province to promote the creative economy in line with progress, stability, prosperity and sustainability.

CONCLUSION

The development of potential and professional skills in textile handicrafts of Thai Lanna ethnic groups in Sukhothai Province could summarize the results of participatory research of Thai Chanasuek community in Thung Saliam District, Sukhothai Province as follows: 1) Community context in terms of population and local wisdom 2) The explicit transfer of participatory knowledge of the community to achieve the exchange of learning information between the broadcaster and the dynamic recipient. Knowledge consolidation and knowledge conversion were used to enhance the textile products and economic base of the Thai Chanasuek Sub-district community: 2.1) Conveying the message of natural dyeing 2.2) Knowledge transfer in the design of local woven fabrics 2.3) Knowledge transfer on the processing of local woven fabric products and 3) Product development and satisfaction assessment of the participants of the activity, making fabrics and garments made from local woven fabrics in terms of functionality, shape and aesthetic.

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New Product Development from Radish of Ban Phayom Community, Wang Noi district, Phra Nakhon Si Ayutthaya province, Thailand

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Abstract **-** This research paper aims to develop new products from the radish, Ban Phayom community, Wang Noi District, Phra Nakhon Si Ayutthaya Province which is operated using a Qualitative Research process and Participatory action research (PAR). The operating was (1) In-depth interviews and data collection from 50 citizens and stakeholders in the Phayom community, (2) A group meeting to brainstorm and analyze a SWOT from Participatory action research (PAR), which uses a process of involvement by the community and associated networks. The research was found that: (1) the community market survey found that there is a need to transform radish products, which want to modernize packaging design, be able to sell products to different groups of customers, and develop distribution channels to be able to sell products in multiple channels. (2) the community opinions, brainstorming, and analyzing SWOT in order to create a plan for developing new products to truly meet the needs of all groups of customers. (3) the producing a prototype product, it was found that the community has tried to transform radish products to be up to date with the current era and to improve their ingredients and materials to meet the needs of new target customers who have developed new products. was the Korean pickled radish. (4) Market testing, it was found that the community had put the product on sale at the community flea market before improving the product to be sold. (5) the sales were found that the community has developed Korean pickled radish products to be sold both offline and online, which are sold at stores in the Phayom community and on the Facebook page of Phayom Community Products.

Keywords - Keywords: New product development, Radish, Ban Phayom Community

I. INTRODUCTION

Phayom Subdistrict, Wang Noi District, Phra Nakhon Si Ayutthaya Province Located between the road along the canal 26 and the road along Klong Raphiphat, about 20 kilometers away from Wang Noi District, has the shape of a parallelogram, the topography is lowland, flooded houses mostly located along the canal, north, adjacent to Lam Sai sub-district, Wang Noi district, Phra Nakhon Si Ayutthaya province. South next to Klong Nueng Subdistrict, Khlong Luang District, Pathum Thani Province. East next to Tambon Wang Noi, Amphoe Wang Noi, Phra Nakhon Si Ayutthaya Province. West adjacent to Chiang Rak Noi Subdistrict, Bang Pa-in District, Phra Nakhon Si Ayutthaya Province. The number of households with electricity in the sub-district administrative organization area has 3,908 households, 1,520 houses with telephone, or 75.00 percent of the number of houses. The community products such as tangerine, silk, bird's nest beverage, pow radish, and most villagers are farming. (Phayom District Information: 2019).

Most of the Phayom communities work in farming, which after the farming season people will become unemployed, so they try to form a group to create a career in order to generate income in the community in order to strengthen the economy. Government agencies try to encourage communities to produce products for sale to generate income. From the survey of the Phayom community area, encountered a problem, the people wanted to do additional careers to earn income and the community products that were produced were unable to create popularity with their customers and the number of products was not diverse. Moreover, the packaging of the community products is not beautiful, not attractive, the brand is not up more standard, the lack of technology used in packaging, and the distribution is still in a narrow range, that is, it is only available in shops, communities and community markets, and people are interested in developing new products to satisfy customers.

For this reason, the researcher is interested in research to develop new products from the radish of Ban Phayom community, Wang Noi District, Phra Nakhon Si Ayutthaya Province, which is a study and development of new products that are diverse, which are sought after by many target groups and focuses on developing new products, packaging, branding, and distribution channels. Operate with a career development plan for the community and allow the community to participate in the development of new products to create a community business group to drive the community economy and generate income for the people in the community. This will benefit the community in being self-reliant and will result in the community economy having sustainable growth in the future.

II. RESEARCH OBJECTIVES

This research aimed to develop new products from radish of Ban Phayom community, Wang Noi District, Phra Nakhon Si Ayutthaya Province.

III. DEFINITION OF RESEARCH TERMS

New product development, defined as a product that is either reconstructed or improved, modified from an existing product to have better features or an altered design with radish development as Korean pickle radish.

Marketing mix refers to a marketing tool that a business uses in determining to achieve a marketing objective which was considered in doing business include products, prices, distribution channels, and marketing promotion.

Product refers to a variety of products or merchandise such as Style, Quality, Design, Shape, Branding, Package or Case, Warranty, Size, and Service, etc.

Price refers to the amount of money used in an exchange in order to obtain a product (goods and/or services) as agreed by the buyer and seller, however, price is one of the factors of the marketing mix that will create satisfaction with the product price consists of a price tag, selling price, product price discount, payment period, and the price specified on the product, etc.

Distribution Channels, referring to places to sell products, including shops, flea markets, product booths, online media, online marketing channels, etc.

Marketing Promotion, defined as a promotional tool consisting of advertising, public relations, direct sales, dealer promotion, reduction, exchange, distribution, giveaway, etc.

IV. LITERATURE REVIEW

1. New product development concept

Cheewan Charoensook (2017) said New Product Development, refers to products that are newly developed or improved, the existing products of the business to have better properties, new products can be divided into 3 types: (1)

Innovated product is the first innovative research and development product that has not yet been released on the market. (2) Modified product is the original product that has been improved in any way, making it a new product to market again. (3) Me-too product refers to a new business product that mimics the products of competitors that already exist in the market.

McCarthy, E. Jerome, and Perreault, William D. (1991) say three new product developments are: (1) Innovation Product is a new product that has never been introduced in the market before or a concept that consumers may not yet be able to imagine. (2) Replacement Product of Modify Product is the development, change, improvement, the adaptation of the existing products that are already on the market, enabling them to meet the needs and satisfaction of consumers more than ever before. (3) Imitative of Me-too Product is a new product for an enterprise, but not new to the market, arising from the fact that an entity sees it as a product, product, or service that is well-established and popular with consumers or mainstream customers until giving the business an opportunity to make high profits.

Kotler (2006) has listed six new product developments: (1) New-to-the world-product, the first product of the world that was created with certain characteristics, or a new product created exclusively for entering a new market. Thus, making it not the same as any product currently available. (2) New product lines are the company's new incremental product line, but not new to the market. (3) Additions to existing product lines, new products the company produces, but on existing product lines that must be fairly new for the company. (4) Improvements and revision of existing products are improvements of existing products in terms of their appearance and value, most often on the market, often through renovations and changes. (5) Repositioning is the introduction of an existing product into a new market or new target group, or is it the exploitation of a new product. (6) Cost Reductions are new products to replace existing products that retain their usefulness and performance.

Conclusion the new product development concept was developing products both form and packaging or constantly improving products to meet customer needs for satisfaction, including branding, packaging, and product quality.

2. Marketing mix concept

Siriwan Serirat, et al (2009) discusses the idea of a marketing mix 4P's, born of a concept before starting a business or marketing, businesses should or should take into account the availability and use it as a marketing guideline for business operations by using controlled marketing variables such as (1) Product is something offered for sale by a business, which can be a product or service created by the business in order to meet needs or to deliver to customers or consumers must consider appropriate and clear target groups, with details including things that can be touched and cannot be touched such as packaging, color, price, quality, brand, service, and reputation. (2) Price is the price or what a customer has to pay in return for the sale of a product or service, perhaps not just money,

It may include some time or action; therefore, the pricing must be reasonable, calculate the cost price and profit that it is worthwhile or not, how much profit is. (3) Place is a channel for selling products or services that customers can access our products and services such as distribution channels, service channels, including locations for distributing products and services to customers, should be convenient, secure, efficient and accessible quickly, can result in profits from distributing products to customer groups to meet the target group. And (4) Promotion is a communication tool to create satisfaction for a brand or service or an idea or to an individual by using it to motivate, marketing promotion is a marketing communication to enable businesses to communicate to target groups

such as reduction, redemption, giveaway, promotion.

Wheelen, L., Thomas, and Hunger, J., David (2012) says that marketing mix refers to a combination, especially the important variables under the organization's control, that can be used to generate demand, and benefit from the competition these variables are Product, Place, Promotion, and Price.

Goi Lee Chai (2009) discusses the elements of a marketing mix including products, prices, distribution channels, and marketing promotions.

Kotler, Phillip (2012) discusses a marketing tool or an integral component of a marketing strategy called Marketing Mix or called 4P's for short, consisting of Product, Price, Place, Promotion.

Related research, Amenah Hmadsa (2013), Lalita Puttachat (2018), states that marketing mixes include products, prices, sales channels, and marketing promotions. Supattanee Piamsuwannakit and Sutthiporn Piamsuwannakit (2007) said that developing a new product is a transformation of an existing product into a new one. Jittapon Chumkate (2017) says that a newly developed product that conveys a product born from local wisdom and can add value to the product, make the products look valuable, standardized, unique, highlighting the stories, lifestyle of the villagers. Thanyachanok Pawala (2017) noted that a strategy to promote and develop banana products by developing a production technology that can produce higher volumes, which requires a market strategy segmented by 4Ps: Product Development of bananas to have a wide variety of products. Price: Setting the price that is suitable for the quality according to the market price. Place sells the roadside area that is a tourist route, public and private sector fairs and exhibitions, grocery stores, souvenir shops, as well as tourist attractions. Promotion participates in fairs and exhibitions of government and private sectors, public relations through local and provincial community radio stations, as for the new product development strategy, we have developed products from bananas to add a variety of flavors such as Butter Banana, Honey Banana, and Chocolate Flavored Banana. The financial strategy focuses on reducing production costs by analyzing every step of the production process in order to reduce waste and improve production technology to produce faster.

Conclusions for researchers from the synthesis of related concepts and research, developing new products means enhancing, changing from existing products to different from the original, or creating a new product with 5 steps or processes for developing a new product as follows: Market survey, brainstorming, prototype product creation, market testing, and actual distribution. Therefore, the concept was used to define it as a variable in the research and development of new products through a 5-step process as follows;

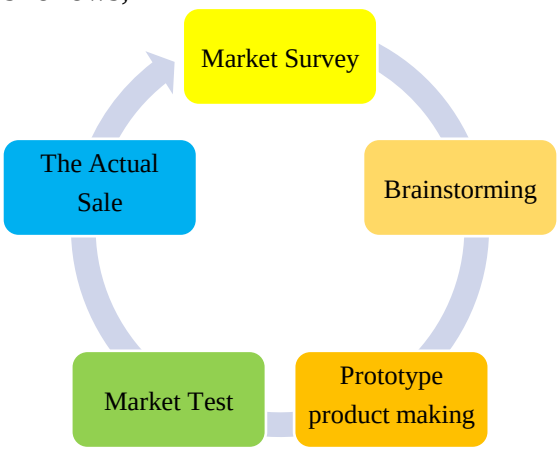


Figure 1 New product development processSource: Synthesis by researcher

V. Research Methods

A. Scope of research

This research is a Qualitative Research and Participatory action research - PAR, which uses the

participation process of the community and the Participation Network of the Phayom community. Research scope It consists of (1) the target population is 50 people in the Phayom community, which is a group of people selected from the interested group to do business, the community consists of community leaders, group leaders, members, and relevant people. (2) The research area is Phayom Community, Wang Noi District, Phra Nakhon Si Ayutthaya Province, Thailand. (3) Academic content consists of one group of variables, namely basic information. The second group of variables is the five stages of new product development: Market survey, Brainstorming, Product development, Marketing examination, and Actual sale. The three group variables are Result / Effect was New product, Group Formation, create career, increase income, and Gain new knowledge. (4) The research period from October 2018 to September 2019 includes a period of 1 year, which can define the research concept framework as shown in Figure 2;



Figure 2 Research Conceptual Framework

B. Research Process

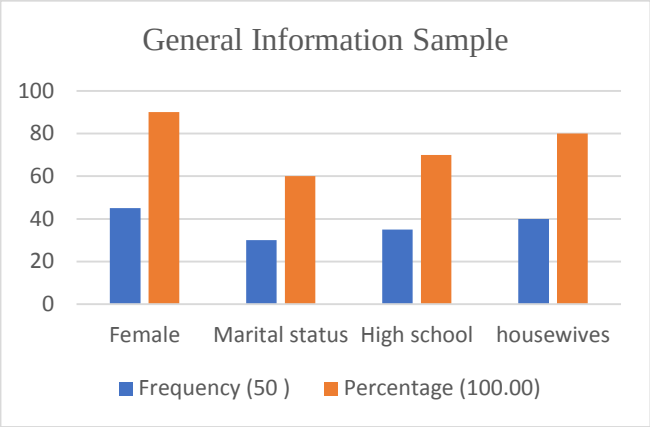
The research process is as follows (1) In-depth interviews and data collected from 50 people and stakeholders in the Phayom community. SWOT based on the results of the Participatory action research (PAR), which uses a process of involvement by the community and the relevant network partners. (3) New product development is a new product development process based on the radish of the local community by testing and processing new products. (4) Experimenting with the market and developing sales channels, with the community being able to bring knowledge to the market, actually distribute products both online and offline, enabling them to generate income to drive the economy in the community sustainably.

VI. Research Results

The results of research and development of new products from radish Ban Phayom community are as follows:

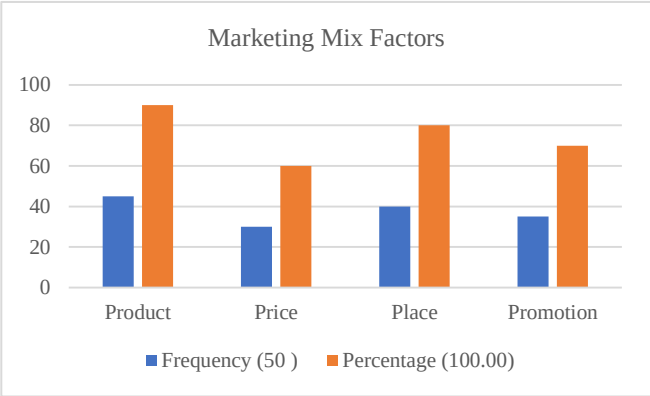
4.1 Market survey

4.1.1 General information



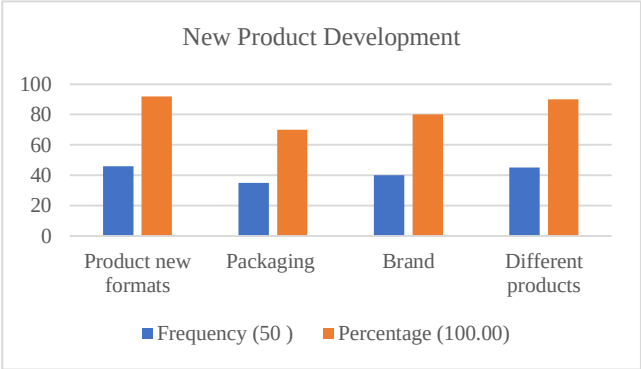
From picture 3, it was found that most of them were female, accounting for 90.00%, with housewives occupying 80.00%, graduated from secondary education 70.00%, and marital status 60.00%

4.1.2 Marketing mix



From Figure 4, it is found that most of them want to develop (1) new product development, (2) diversify sales channels, (3) marketing promotion by developing attractive packaging and brands, and (4) developing a suitable price system, respectively.

4.1.3 New product development



From Figure 5 it is found that (1) the need for product development, (2) new packaging development, (3) brand development, and (4) product development to be different from the original.

4.2 SWOT Analysis of Phayom Community

The results of the group meeting for stakeholders to brainstorm and analyze the environment using SWOT techniques are as follows.

Strength (S)	**Weakness (W)**
- There are radish ingredients in the area. - There is integration of livelihood groups. - Skilled in making radish, sewing, basketry - The community is near the Thai market and near the source of raw materials. - Community leaders and people participate	- Lack of Market survey - Lack of ideas for designing new products - Few marketing channels, only selling in the community - The product does not have a wide variety. - Lack of knowledge in digital marketing - Insufficient production equipment
Opportunity (O)	**Threats (T)**
- There are government agencies to support and provide knowledge - Community, convenient transportation, near the capital - Community leaders help to support	- Lack of group management - Lack of marketing network

From the table it was found that: (1) Strength (S) were there are radish ingredients in the area, there is the integration of livelihood groups, skilled in making radish, sewing, basketry, the community is near the Thai market and near the source of raw materials, and community leaders and people participate. (2) Opportunity (O) were there are government agencies to support and provide knowledge, community convenient transportation, near the capital, and community leaders help to support. (3) Weakness (W) were Lack of Market survey, Lack of ideas for designing new products, few marketing channels, only selling in the community, the product does not have a wide variety, Lack of knowledge in digital marketing, Insufficient production equipment. (4) Threats (T) were Lack of group management, and Lack of marketing network.

4.3 Prototyping products

From the group meeting and brainstorming of the community, Phayom chose to develop a new product, radish, Korean dong, to increase product variety and meet more groups of customers, whose product development process is as follows.

4.3.1 Korean pickled radish products processing steps



Figure 6 New product development "Korean pickled radish"

4.3.2 Brand and packaging development process



Figure 7 Brand development and packaging

4.4 Market test

After the Phayom community has successfully assembled a group to develop a new product, "Korean pickled radish products", the community has therefore applied the products to market testing with customers in the Phayom community market in order to bring back the customer proposals to improve the product to meet the standard.



Figure 8 Market testing

4.5 Actual sale

After the Phayom community has tested the market and brought the product to improve the

quality, then the product is actually sold, which has chosen a distribution channel, both offline, that is, setting up a shop in the community and selling it in the Community Flea Market, and online is creating digital marketing channels through Facebook pages to sell community products, details are as follows:

4.5.1 Offline marketing



Figure 9 Actual sales in community stores

4.5.2 Online Marketing

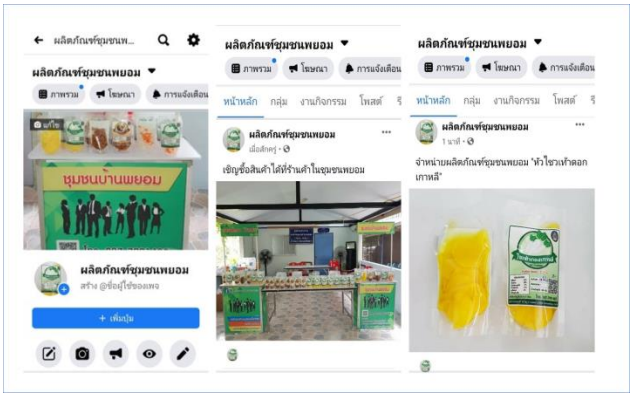


Figure 10 Online marketing channels

VII. DISCUSSIONS

5.1 From the group meeting to brainstorm and analyze the environment with SWOT technique, it was found that (1) Community weaknesses are lack of Market survey, lack of new product design ideas, few marketing channels, only local sales, lack of product diversity, lack of digital marketing knowledge, insufficient production equipment. (2) The obstacles are the lack of group management and the lack of a marketing network. From the weaknesses and obstacles that arise, the researchers and the community, therefore, take these points to proactively formulate a strategy to jointly develop the weaknesses and barriers of the community by developing new products with new product designs and new packaging that add value to the community. Products and packaging resulted in increased product variety, increased customer demand, and improved sales channels which use the digital marketing network and marketing to assist in its development, the research results are consistent with the concept of Kotler (2006: 344-345) found that new product development must develop both product form and packaging or constantly improve the product in order to be able to meet customer needs to be satisfied, including brand development, packaging, and product quality. And in line with the research of Thanyachanok Pawala (2017), it said that strategies for promoting and developing banana products by developing a production technology that can produce higher volumes using a market strategy divided by 4Ps; Product is the development of banana products to have a wide variety of products. Price is the setting of a price that is suitable for quality according to the market price. Place is a roadside sale that is a route for tourists, fairs, and exhibitions of government and private agencies, selling convenience stores, souvenir shops, as well as tourist attractions. Promotion is a participant in public and private sector fairs and exhibitions, promoting publicity through the community, local, and provincial radio stations.

5.2 New product development, it was found that the community was willing to summarize the issue of further development to improve from the original product to develop new products was the Korean pickled radish, which has the following process:

5.2.1 the community market survey has a radish need for converting new products, a modern packaging design, able to sell products to multiple groups of customers, and develop multiple sales channels to sell products.

5.2.2 the Community brainstorming, brainstorming and analyzing through SWOT techniques to analyze strengths, weaknesses, opportunities, obstacles, and used mechanical planning to develop new products to meet the needs of customers thoroughly.

5.2.3 Prototyping products: The community is experimenting with modernizing radish products, and the ingredients and materials are being improved to meet the needs of the new target customers. The community has developed new products, the Korean pickled radish. This is consistent with the concept of Cheewan Charoensook (2017) said that developing new products, developing new ones, or improving existing business products to better qualify them will make the business more competitive. In line with research by Thanyachanok Pawala (2017), it is said that new product development strategies, which are banana-based products, are to add a variety of flavors such as buttered bananas, honey roasted bananas, and chocolate-flavored bananas with analysis of every production process to reduce waste and improve the production technology to produce faster. And in line with the research of Supattanee Piamsuwannakit and Sutthiporn Piamsuwannakit (2007) and Pornsanong Vongsingthong (2002), It is said that the development of a new product is a transformation of an existing product into a new one to meet customer needs.

5.2.4 Market test: The community has put products on sale at the community market before improving the products that will be released in real-time.

5.2.5 Actual sales: The community has developed new products from the Korean pickled radish products to be sold both offline and online, with sales at the Phayom community store and on the Phayom Community Facebook page, in line with Eternal Research by Amenah Hmadsa (2013), found that the marketing mix factor influencing product buying behavior is Facebook online sales, it makes consumers more convenient in choosing to buy products and services.

5.3 Results and impact on the community It was found that the results of the Phayom community research had developed a new product, Korean pickled radish products, which can be seen as a new generation of people who have been influenced by Korean food trends, such as pickled vegetables, various side dishes, and paired with Korean food. Therefore, the consumer groups are increasingly demanding to purchase products, the community develops products to meet consumer demand. The implications include (1) business policy: communities are grouped, create careers, increase income, and create value and prominence in community products, and the concept of marketing 4.0 era has been used as a channel for selling community products. These are the use of information technology, a new service, is fast, easy to reach to consumers, thus making the community more competitive, the community adapted, develop businesses to survive in today's economic challenges, and apply new research knowledge to the business expansion and development in the community. (2) Social: community participation, a good relationship between the community and visitors, leaders have a broad vision. There are a business and career development in the community, resulting in people in the community sharing and learning together until the people can live a sufficient life according to the philosophy of a sufficiency economy. And there is a development of community network, marketing network, as well as promoting career creation, creating value, and generating a sustainable income to the community.

VIII. RECOMMENDATIONS

A. Recommendations for Practices: (1) There should be a Market A survey with diverse consumer groups and enough samples to minimize discrepancies in developing new products. (2) Brainstorming should be more crowded with stakeholder groups and add business analysis tools such as Additional Business Model Canvas to gain more visibility into the business networks that will help you plan your business and support the business community. (3) Prototyping, radish products should be tested in a variety of ways, and the products are introduced into the community product standard in order to build consumer confidence. (4) Market testing, community products should be tested in various channels in order to improve the community products for the better. (5) Actual sales: There should be more distribution channels, possibly going to exhibitions in other communities to increase the sales channels and to sell products on trusted pages and easily accessible to consumers like YouTube, etc.

B. Recommendations for Further Research: (1) The competitiveness development of the community business should be studied in order to determine the production, financial, marketing, and management strategies. And (2) Should study the development of career-building skills of the people in order to know the competencies of the individual and develop the career according to the individual skills.

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Poi Sanglong/Poi Khamsang : The Study of Rite of Passage in Tai man's life in Tai Yai Community of Ban Pangmoo Village, Maehongson, Thailand and Tai Aiton Community of Banlung Mantai , Karbi Anglong District, Assam, India.

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Abstract*— *Poi is the word in Tai which means festival, celebration and religious ceremony. This paper studies on Poi Sanglong of Tai Yai of Ban Pangmoo, Maehongson, Thailand and Poi Khamsang of Tai Aiton of Banlung, Poi Sanglong and Poi Khamsangis the Buddhist ceremony and life cycle ceremony among the Tai boys (the age from 7 to 21 years old) who are ordained and become as novice monks. Participant observation and in-depth interview are the method of this study.

Both of Tai groups reside in different country and settle down far from each other but Poi Sanglong and Poi Khamsang have been practicing in both communities. These two Pois share same meaning and function; firstly Sanglong and Khamsang are used to call novice monk and have same cultural root, secondly Poi Sanglong and Poi Khamsangshare the same pattern of socialization, and lastly these Pois reflect Tai ethnic identity through the process of the ritual.

Tai Yai at BanPangmoo, Maehongson, Thailand migrated from Mawkmai, Mong Nai and Lankher Shan state to Thailand in the nineteenth century as well as Tai Aiton at Banlung Mantai, Karbi Anglong district, Assam, India migrated from Chindwin Valley, Kachin state to India because of the war. Thus, both of the Tai groups maintain their own ethnic identity through culture and practices. Poi Sanglong and Poi Khamsang are one of the important rituals in one Tai man's life as rite of the passage. Moreover, Poi Sanglong or Poi Khamsang is the celebration of the ethnic identity among the Tais.

Index Terms— Tai, Tai Yai, Tai Aiton, Poi, Ethnic Identity, Buddhist Studies

I. Introduction

The term 'religion' comes from Latin word 'religare' which means 'to bind'. Edward B. Tylor explains that religion is the belief in supernatural beings. Emile Durkheim says that religion is the combination of beliefs and practices. Sacred space and profane space, is the space for understanding the social solidarity. Clifford Geertz also gives a meaning to religion saying that religion is all the symbolic which gives all the meaning of everything. Religion is related to faith. It can explain about life and truth. For Geertz, religion can bring about the feelings and the understanding which controls behaviour. (Namtham, 2005: 1-2) Then, religion is the set of beliefs, practices and institutionalized system. The main elements of religion comprise of the beliefs, symbolic system, ritual, practisers, heirs and members. So, ritual and festival is a kind of practice manifesting what people believe.

It can be said as life cycle ritual for a Tai man. Tai's life is attached with Buddhism for his or her whole life. As a Tai baby, he or she has to go to the temple since he/she is in mother's womb. Tai boys are to be socialized by family and society in such a way that they have to purify themselves and gain another status when they turn into 7-15

years and 21 years old. At the same time,a Tai girl has to learn how to be a good woman and housewife. Poi Sanglong or Poi khamsang is a kind of ritual which reflects a prescribed passage to coming of age and achieving adulthood for Tai boys.

Tai's life is attached with Buddhism and agricultural life. There are a lot of rituals and ceremonies in one Tai's lifetime which can be divided into three ceremonies; 1. Buddhist ceremony 2. Cultivating ceremony 3. Life cycle ceremony. Poi Sanglong is Buddhist ceremony and life cycle ceremony and Poi Sangken is buddhist ceremony and cultivating ceremony.

The word 'Poi' is derived from Pali word which means tradition. 'Poi' is used among Tai people (who use South-Western Tai Language) to refer festival, celebration and religious ceremony. In Tai societies, there is a plenty of *'Poi'* which can be divided into different occasions of Tais's lives such as rites of passage or rites of transition, healing rites, fertility rites, calendrical rites and festive rites or rites for social auspiciousness. These kinds of '*Poi*' attaches to Tais from womb to tomb. Moreover, Tai's tradition is bound to Tais. Both of the Tai Aitons and Tai Yai share the same cultural practices in *Poi.*

In this paper, the researchers study on two Tai communities; Tai Yais in Ban Pangmoo village, Maehongson, Thailand and Tai Aitons in Banlung Mantai village, Karbi Anglong District, Assam, India.

Who are the Tai Yais?

In Shan State the word Tai Laung uses to call Tai people in Shan state, Burma. In Thailand, most of people know Tai Luang as Tai Yai. The history of Tai Yai migration from MongMao kingdom has been told among Tai Yais. Nowadays, Tai Laungs or Tai Yais live in many countries such as Shan state in Burma, Southern China, Northeast India, Laos and Thailand. Basically, Tais people once they settled down and built the village, they would call the village as "*Maan*" or "*Ban*" then follow with them name of the village such as Ban Pangmoo. Tai people tend to have a house nearby the river and the mountain because their lives attach to agricultural life and seasonal plants. So, Maehongson is the good spot for Tai people.

During 1830s Tai Yai people used to travel across the border without the boundary of nation-state. They chose to practice cultivation for their livelihood in Maehongson. After the harvesting they would go back to Shan state.

Interestingly, Pangmoo village was founded in 1831. The record was written by the Thai central government. That *Chow KeawMeung Ma* came to this place with the mission of catching wild elephant. At the same time, he had to observe this location. The prince named '*Chow Keawmungma*' was found in the historical records. During 1856, this prince asked Tai Yai people who are scattered throughout the area to settle down in Pangmoo village. Then it got extended to Maehongson town.

The name of Ban Pangmoo comes from the story of pigs in the time of 1831 when *ChoawKeawMungma* visited here and found that so many pigs used to come and eat Salt-Lick here. 'Ban' means village and 'Pang' comes with a slightly difference from 'Pong' which means Salt-Lick. And 'Moo' is 'pig'. The interesting story goes like this that *Choaw Keawmungma* saw the pigs when he was hunting for elephants and suddenly realized that this area suits for building a community. Hence, the story has been told from generation to generation that Pang Moo village is the first village of Meahongson where the Tai people stay for so long in this land. Therefore, the sense of belongingness comes later on to the heart of Tai Yais.

Who are the Tai Aitons?

Banlung Mantai village is established in the late of nineteen century and there is no exact record of the first

settlement of the village. As the oral history said, "Banlung was very big village during the year of 1920-1940". Tai Aitons from Banlung had to migrate from Banlung to Namsai in Arunachal Pradesh, Banhin, Ahomoni and Ban Sai, Balipartha because of the density of people. Nowadays, Tai Aitons from Banlung still have many relatives in those places.

Edward Gait mentioned that Tai Aitons came to Assam in the eighteen century in 1791. Jaya Buragohain (1998) wrote that Tai Aiton village in Bargaon established in 1835. There are 8 villages of Tai Aiton in Assam; 1. Banlung Mantai or Bargaon 2. Ban Hin or Ahomani 3. Ban Sa or Balipathar 4.Chakihola 5. Kalioni 6. Barhola 7. Dubarani 8. Tengani and one village in Arunachal Pradesh, is called Jonapather.

Tai Aiton village in Assam settle down in the middle of Dhansiri valley. The migration of Tai Aitons were told in *Lik Khu Mung* (written accounts) that Aitons migrated from upper Chindwin valley in Burma when Alungpaya made war with many tribes for his conquer. The original homeland that mentioned in *Lik Khu Mung* was *Mong Hi Mong Ham* and then they migrated to *Mung Kwang* and migrated to Assam or *Mung Nun.* The name of Tai Aiton is from two words, Tai as they called themselves and Aiton comes from 2 words in Tai; Ai means the first, Ton or Don or Doi means higher place so the meaning of Aiton is 'Superior'.

In Banlung Mantai village or Bargaon, this village is located on Golaghat-Saoupathar road. Banlung in Tai refers to two words; Ban means village and Lung means big, from the name of the village, Banlung used to be a very big village. Mantai means people who speak Tai language. The environment in the village is similar with Chindwin valley as it is in tropical rainfall zone. Banlung Mantai has residential area and farming area which is not too far from each other. They live by riverside. The land at the river side is abundant for planting vegetable and wet-rice cultivation.

II. RESEARCH OBJECTIVES

This paper aims to understand Tai ritual especially in Poi Sanglong or Poi Khamsang in two Tai communities in two different countries and secondly to describe the function of the ritual that reflects socialization and continuity of ethnic identity.

III. RESERCH METHODOLOGY

Research Method

This research uses participant observation and interviewing.

Key Informants

The area of this study was to study Poi Sanglong and Poi Khamsang rituals in two Tai communities, Tai Aiton community of Ban Lung Mantai, Karbi Anglong district, Assam, India and Tai Yai Community of Ban Pangmoo, Maehongson, Thailand. Interviewing is conducted for understanding all the details of the ritual from the boys who attained the ritual, Tai elderly people and local historians along with participant observation.

IV. RESEARCH RESULTS

Poi Sanglong of Tai Yai of Ban Pangmoo Community, Maehogson, Thailand.

Poi Sanglong is a kind of ritual. '*Poi'* means festival and *'Sanglong'* means young boys who want to become novice for a short period of time (10-15 days). Poi Sanglong is counted as the greatest making merit among the Tais. Because It is a life cycle ritual for a Tai Yai man which means this ritual is the making a good man process as the Buddhist successor. A life of a Tai Yai is attached with Buddhism for his or her whole life. As a Tai Yai baby, he or she has to go to the temple since he/she is in mother's womb. Tai Yai boys are to be socialized by family and society in such a way that they have to purify themselves and gain another status when they turn into 7-15 years and 21 years old. At the same time, a Tai Yai girl has to learn how to be a good woman and housewife. Poi Sanglong is a kind of ritual which reflects a prescribed passage to coming of age and achieving adulthood for Tai Yai boys.

Poi Sanglong is not only found in Tai communities in Thailand but also is Shan State, Southern China and Assam India. In Thailand, Poi Sanglong is also known as "*Buat Lukkeaw*" (Buat is to ordain or *Pabbajja* in Pali-Sanskrit and *Lukkeaw* means a crystal) which means the boy who is ordained; later on he will become as pure as a crystal. In Shan State, Poi or Poy Sanglong is one of the biggest festivals same as Poi Sang Jan (in Tai Laung, *Thingyan* in Burmese) or Poi Songkran or Poi Sangken in Tai Aiton community (Water festival).

The Ritual and the Process.

'Poi Sanglong' or 'Poi Lern Si' is observed in March and April every year. The big Tai Yai festival is called 'Poi Sanglong'. The festival is the celebration of young boys who are ordained as novices. Their parents and Psuedo parent confer to tonsure upon boys. And then the boys have to change their dress along with wearing crowns like a prince. Then, the procession would be held to announce that all the boys would turn themselves to be monks soon. After the ritual, being monks, the boys have to learn Buddhist religious philosophy and Tai Yai cultural norms. Poi Sanglong is usually held once a year in Maehongson (the field area). April seems to be a joyful month for Tai Yai or Tai Yai people. During summer season, Tai Yais harvest their rice and others crops and before the festival this harvesting comes to an end. Hence, it is the time to take some rest after working hard in the last one year back. In this sense, the festival becomes a kind of recreation activity besides being a means of social-solidarity.

Mythology on Poi Sanglong

The Tai word *'Lern Si'*is used to refer the month of March and April, and Poi Sanglong, which is the biggest festival among Tai Yai, is celebrated during this time. The word 'Poi' means festival, '*Sang*' or '*Choa Sang*' is called novice. And '*Long*' or '*Ar-long*' is related to Buddhist myth about the Buddha when he was a prince. Later, he had decided to become a monk without any hesitation, this story becomes the origin myth (Buddha myth) about Poi Sanglong. One such story has been written by Su Nunta of Ban Kun-or, Jogmae city in Myanmar. 'Arnon Tatong Pan' or 'the question of Arnon[1]' (อ่าหนั่นต่าตองป่าน การทูลถามของพระอานนท์) becomes relevant here. Back to 200 years ago, the story tells us about the question of 'Sanglong', the Arnon monk to Buddha.

> *Once Arnon monk asks the Buddha that if people brings their own sonsto join this ritual what would happen to them. Buddha says that their parents will be in heaven for 8 eternities. If they don't have any son, they can be 'Por Kham or Mae Kham'[2] and they will be in heaven for 4 eternities.Moreover, the story talks about the story of the king, and the rich people holding Poi Sanglong.The story goes this way. An ugly as well as poor boy wants to become the Sanglong, but all the rich people deny him. He is an ugly son of a widow woman. Unfortunately, they didn't have enough money to have the arrangement of the ritual. But that poor boy had merits. He made God Indra feellike helping withmercy. So,*

[1]Arnonor Ananda was a first cousin of Gautama Buddha and one of his ten principal disciples. Amongst the Buddha's many disciples, Ānanda stood out for having the most retentive memory

[2]The Tai word, Por means father and Mae means Mother. Kham means gold. This word refers to meritorious people who wants to support the Sanglong who is not their own child in this festival. Later on, Por Kham or Mae Kham would be like adoptive father and adoptive mother.

Indra took care of him until he became more beautiful with all gems and gold-tinted clothes.And, thus, he could become aSanglong finally.

For Tai Yai people, a boy is more important than a girl. But, it is does not mean that women are always dominated by men. When the boys have to be Sanglong, the girls also become an important part of the ritual, as they have to learn all the woman's works. At least, for Tai Yai people, the equality is maintained like this. Both the sex has their own role to play.

The festival Poi Sanglong has to be arranged in such a way with a Sanglong procession that others, who do not belong to Tai Laung community, must feel what this community believes in. Tai Yaiscelebrate their own identity through this festival by dressing and practicing their own ritual. Hence, this festival has many symbols and many processes. The researcher collected all the data by visitingthe field during 25th March-5th April 2017 when the festival was celebrated.It canbe notedthat, before discussing about the festival or the procession, some instruments and associated stuffs are required which has an immense importance. They consist of:

1. Drum '*Klong Gonyao*'. It is a long drum. A different from Klong Gonyao is called '*Klong Mong Seung'*.
2. *'Ko Long'.* This is a Sanglong's dress. A Sanglong must wear *Ko Long* which is different from day to day dress of a boy.
3. Sanglong's essentials like '*Go-jor'* (carpet, โก่งจอ) and'*Tan Nam Tao'*(Water-Jug, ทันน้ำเต้า), utensils.
4. *Tee Kham'* is a golden umbrella. Every Sanglong uses one each umbrella in the time of procession.
5. '*Koloor*' the associated stuffs for monks and the temple.

The temple arrangements are as follows

5.1 '*OobChoa Para*' (อุ๊บเจ้าพารา) comprising of flower, incense, candle, coconut, medicines, cigarette, betel nut etc. Tai Yais would put all of these items into the basket. This basket is called *'Oob'.* Here '*Choa Para'* means the Buddha.

5.2 '*Ton Patae Sa'* (ต้นปะเต่ส่า). The word comesfrom a Burmese word. It is called 'the tree' in Buddhist myth. It is made of bamboo, colourful paper is used especially of silver and golden ones, colourful thread, and a decoration with cushion, mattress, mosquito nets, trousers, shirt, hair, flute, medicines, notebook, pencil, pen, soap, bowl, etc. And the people or Sanglong's relatives will donate these to the temple and pray that in next life they should be rich persons.

5.3 *'Ton Kojong'*(ต้นโคจอง). It is made for the temple. '*Ton Ko Jong*' is made of bamboo and banana leaves. It is decorated with a pot,a pan,a dish, bowls, spoons, forks which are covered again with colourful threads.

5.4 '*Pok Kao Tak'*(ป๊อกข้าวแตก) is made of bamboo and puffed rice with colourful paper.

6. '*Ten Ngeun Ten Kham'* (เทียนเงิน เทียนคำ). It is the candle and incense-sticks.

'*MogNgeunMog Kham'*(พุ่มเงินพุ่มคำ). It is made of silver colored paper and also golden ones. And '*Gun Tong Pan Tong'*(Jar with the flower and leaves, กุนต่อง ปานต่อง). It is made of flower and leaves.

7. '*Mo Nam Tao'* consists of 9 kinds of leaves and seasonal flowers. All These leaves signify good luck. They are used to freshen up.
8. '*Ko Loo'*(โคหลู่) or the 'Big bowl' contains with rice, dry fish, pickled fish, fish sauce, onion, garlic,and salt for temple.

9. '*Ton ngeun'* (ต้นเงิน) is the money for the temple. Parent of Sanglong or relatives donated these beautifully decorated money to the temple.

10.'*Plik Ka La'*(ปลิกขะหล่า) contains yellow robes (*Sanggan*, ส่างกาน), mattresses, pillows, blankets, soaps, toothpastes, toothbrushes, dishes, spoons and slippers etc which are mainly for the Sanglongs

The process of Poi Sanglong Celebration (4 days celebration from 4-7 April 2017)

1. Preparation and meeting

At the beginning of Poi Sanglong, all rich people will arrange their children to be 'Sanglong'. After that, the meeting will be held to announce that how many Sanglongs would participate in thatparticular year. And the main persons would be called *'Ta ka Long'* or '*Chao Poi Long'* who will pay for everything, because they would be the richest people having and charismatic effect in the community. After the meeting, the news would spread person to person. If some want their children to become *'Sanglong'*but having not enough money, can join as *'ChoaPab Poi'* (shared host). In the past, they didn't fix the rate for these poor people, but nowadays the rate is fixed by the main host.

There is a sub-meeting as well when the host calls'*Choa Pab Poi'* to discuss about

- The date and the management
- The amount of Sanglong
- The place
- The guest
- The temple
- Preparation
- The regulations in Poi Sanglong
- The meeting of'*TapaeSanglong'*

'*TapaeSanglong*' is the one who has to take care of the Sanglong. A Sanglong should have at least 3 to 5 TapaeSanglongs or, sometimes more people than that. They have to take care of the Sanglong's stuffs, and offer rides on their shoulders. Moreover, they have to carry all the stuffs like carpets, pillow, Jar, Betel Nut etc. When they have a meeting, they would meet each other and have the rehearsal with some dances with the Sanglong by giving the Sanglong some riding on their shoulder. All the drummers would also practice.

- The elderly people meeting - The host has to ask for some suggestion from the 'Ju Kohn Tao' (จุ้โกนเต่า)

After the meeting, Tai Yai people have to promote this festival, which is called *'Tok Ten, TokHorNeng*', because, in the past, there was no invitation card. It happened only by person to person. When they go to promote they would carry invitation gift made of tea leaves and water to head of the village, and then, the head would announce the news to the villager. '*Tok Ten'* is a custom that talks of young man and woman carrying sets of candles and incense sticks for the promotion of the festival. It is a trick to make them know each other. And*'Tok ten'*is usually done because people want to spread the news far and wide.

2. Preparation for the place

All the relatives of the Sanglong would come and prepare the place for the Sanglong.

1. The Sanglong's house which is called'Keng-Sanglong', would be built as the temporary house for the Sanglong. It is one metreabove the ground for staying, sleeping and also praying.
   Along with this, '*Soom Man Tab'* is built for the guests. For the Sanglong's eating, a ritual is

called '*HongKhwanSanglong'*is prepared. In case of the guests, a*'Soommue'* is then built.

2. Temple

Inside the temple premise, a*'Soom Man Tab'*would be built for all the guests. Bamboo is the main material used, and '*Bai Plung'* provides the roof. Nowadays, some places use steel and tents instead of bamboo. This is done for the preparation of the feast as well.

3. Preparation for Sanglong's and food

For the procession of the Sanglongs, many things have to be prepared. For example, *'Ton Ko Jong'*, *'PokKhoaTak'*, *'MokNguen'*, *'Mok Kham'*etc. are needed (which is mentioned earlier). It is, because everything has to be ready with the Tai Yai's arts and crafts and paper decoration. Here, *'KhoaTak Pun'* and '*Khoa Pong'* are the main sweets, it made of puff rice and sugar cane. It takes around ten days to make puffed rice. *'Khoa Moon Hor'* is another sweet which has to be prepared one day before the festival.

All these preparations are to be done at least one day before the festival, and all the children and their parents along with '*Tapae Sanglong'* have to come to the temple for having the Sanglongs' hairs shaved by the monks with the help of the Sanglongs' relatives.

In the past, Sanglongs had to stay in the temple before the festival started for 3-7 days. Monks would have taught them how to pray and behave if they chose to become monks. Until the shaving day, Sanglongs would play 'Hide and Seek' games and TapaeSanglong were to find them out. But nowadays, this kind of game is extinced.

Transformation of Sanglong in Poi Sanglong festival

The festival was held in Panglor temple in Maehongson town. There were 12 Sanglongs and 3 Janglongs. Poi Sanglong festival was celebrated in April, 1-3, 2017. Before Poi Sanglong, the festival simply started with the shaving ceremony. On 31, March, 2016 at Wat Panglor, Maehongson the ritual hadbeen started with the sound of Tai Yai music instruments. 15 Sanglongs were sitting on the chair and their Por Kham and Mae Kham would stand behind them. After tonsure ritual, Sanglong would clean themselves with water and perfume and wear white dress. Then, they would ride on TapaeSanglong's shoulder because their feet should not touch the ground. At night, they would stay in 'KengSanglong' or the temporary house for Sanglong.



Figure 1 Tonsure ritual

Day 1 – *'Wan Hak'*

In the first day morning, the Sanglong's parents and TapaeSanglongs along with the hosts would take the Sanglong for taking bath with Son Poy water and perfume. After that, the Sanglong has to dress up with the prince's dress and be ready to go to temple. The researcher interviewed Sanglongs about their feeling before they become Sanglong.

"I come from Ban Pangmoo. Today I feel a little bit excited because I have seen this festival many times. So, I accomplished my family's wish as well as my dream to become a 'Sanglong' today" the name of the boy is JJ, Kittibhum Chaiyon, 11 years, studying in class 5. (personal interviewed on 5th, April,2017)

At the same time, an important ritual starts. Pang Choa Mung is the name of this ritual. 2-3 people with a

horse would go to worship the ancestor spirit and invite the spirit to possess the horse. After that the horse would walk to the temple. Tai Yais believe that the ancestor spirit will look after all the festival and have it accomplished without any barriers.



Figure 2 Pang Chao Mung ritual

Sanglongs would reach temple, they would sit in front of all the monks. They would pray *'Panchasilla'* and make '*Kun tor'* or ask for forgiveness from the monks. After that, Sanglongs have to ride on their TapaeSanglong's shoulders. Their feet should not touch the earth. The TapaeSanglongs would dance even if they would be carrying the Sanglong on their shoulders. The drummers and all the musicians would love to show their own dancing skills too. While they would be enjoying, the Sanglong's parent and their relatives too can join the carrying of theSanglong on their shoulders. Some of them would scatter puffed rice and flower to the Sanglongs. Crackers are fired to announce that this festival has begun. Tai Yais believe that the sound of crackers can protect all the evils as well. After the dancing, the Sanglongs would go to worship ancestor spirits at the ancestor shrine. The Sanglong procession starts from the temple to the shrine along with the musicians and their relatives.

The head of TapaeSanglong would pray to the ancestor spirit and ask them to look after the Sanglong and the festival. After that the Sanglongs would go to the main host's house and have lunch.



Figure 3 TapaeSanglong is carrying Sanglong

In the afternoon, the Sanglongs would visit their relative's houses and get all the blessings from them. Tai Yais believe that if any of the Sanglongs comes and visits their household, it would fetch good luck to them later on. The Sanglong's relatives would treat them well with juices, food and money. Elderly people in their family would bless and tie white thread on their wrist. After that the Sanglongs would pray with the reciting of Pali hymns for them. At night, the main host would arrange a dinner and a Tai Yai's concert and cinemas for the Sanglongs and their guests.

It can be mentioned here that besides, Tai Yai people join this festival, Tais from Shan state also would love to join. Sanglong's family who has relatives in Myanmar would invite their relatives to come to Maehongson and join as a guest. Some family of Thailand want to maintain Tai Yai culture, and that is why they pay more to the musicians of Shan State, Myanmar to showcase the traditional culture and invite the musician and TapaeSanglong to come and perform their best.

Day 2- *'Wan Kham Keak'* - Ko loo Procession, Sanglong visiting houses, Hong Kwan, Kham Kaek

Around 9 o'clock in the morning, the Sanglong's procession would start with the walking from the temple to the main town. The procession has its own hierarchical

arrangement, starting from *'Jeejay'*,*'Oubchao Para'*, the horse, *'Ton Taepae Sa'*, *'Ton Ko Jong'*, *'PokKhoatak'*, *'Tien Nguen'*, *'Tien Kham'*, *'Ton Nguen'*, *'Ton Kham'*, *'Gun Tong'*, '*Pan Tong'*, *'Mo Nam Tao'*, *'Ton Nguen'*, *'Ko Loo'*, *'Plik Ka La'*,*'Sang Gan'*, Mattress and pillows, Sang Longs, all the musicians and their instruments, then the others stuffs along with people.

Today's Tai Yais would love to wear their own traditional dress while carrying all the Sanglong's stuffs. The procession would walk around the town inviting others to share the merit. People in the town would love to prepare water and juices for all the people in the procession.

'Hong Kwan Sang Long' would be arranged in the evening at the temple. The Sanglong's parents would prepare twelve food items for them. *'Ja-reh'* would pray Tai Yais hymns for them in Tai language.



Figure 4 Jareh and "Hong Kwan Sang Long ritual

At night, people would come and visit Sanglongs's houses if they get the invitation. If they are the guest, they will give some money and put it inside the envelope. The guests would have dinner after talking to Sanglong's parent. After the dinner, Sanglong would bless the guest with Buddhist hymns.

Day 3- *'Wan Kham Sang'*

On this day,*'Jang Long'* and *'Sang Long'* would gain new status. The ritual for Jang Long starts in the early morning at 4-5 am. They walk clockwise round the main Vihara for 3 rounds by riding TapaeSanglong's shoulder. Then, they have to come and sit in front of monks and ask for permission to become monks in Pali words. On this very day, *'Ja-reh'* would read Tai Yai ascription (*Tom Lik*) and pray for Sanglongs and Janglongs.After that,the monks would change their white dress (which they wore already inside '*Ko Long'* dress) into the yellow robe. Then all the novices have to learn Buddhist Philosophy and Tai Yai language and culture.



Figure 5 Sanglong is changing the dress

On this day, so many Television Channels would come and take a long interviewing shot. Entire festive environment has been documented by the media houses. Poi Sanglong is supported by Tourism Authority of Thailand along with the local people and organization.

2.2 Poi Khamsang in Tai-Aiton of Ban Lung Mantai Village, Assam

In Tai Aiton of Banlung Mantai, Tai people here don't use the same word for calling this festival but similar as Poi Sanglong, here this festival is also arranged as "*Poi Khamsang*" (young boy who is from 10-20 years old) and Kham-Khey (for a man who wants to become a Buddhist monk or Bhiksu). Poi in Tai Aiton refers to ceremony or festival and "Khamsang" means a boy or man who wants to attend in Buddhist ordination ceremony (*Pabbaja*). Tai Aiton community gives the importance to the son as son can

become a monk to through the ordination as it is the greatest making merit among Tai's belief.

Poi Khamsang in Tai Aiton village is a ceremony where young boys (Sanglong) of the village are ordained for novice. Poi Khamsang in Tai Aiton would be held individually and it is not fixed in every year because it depends on each family's convenience and the schedule of the boy. The story of Poi Kham Sang is related to Buddha life as well as Tai Yai people.

The story of Buddha has been told to recall 'Lord Buddha" when he was a prince "*Siddhartha Gotama***".** Later on he decided to leave his palace to search for the truth of life until he found the middle path for enlightenment. Tai Aitons believe that the ordination is the greatest making merit in one's life and if a son in one family becomes ChoaSang, the parent and his relative would feel so proud. The age of Khamsang should be from 5-19 years old and ChoaKe's age should be above 20. In this

In BanLung mantai village, temple is located in the heart of the village. Chao Ke or monk also once used to be Khamsang. The latest Poi Khamsang in Banlung Mantai village was celebrated in 19-21 March 2006, all khamsangs were ordained as Sramanera (a novice monk).

The preparation

There are three days of arrangement same as Tai Yais but it is different. The first day, the boys would wear prince dress but not in fully dress up and walk around entire village on foot in the late morning after that they would get invited for lunch. Tonight *Khamsang* would stay at "*Song Lang*".



Figure 6 Song Lang



Figure 7 a part of the performance to tell a story of Lord Buddha in Banlung Mantai village , March 2006

On the second day, *KhamSangs* have to pray Pancha Sila or in Tai Aiton "*Kamsil ThomTra*" (the five precepts) and again wear royal dress but today many people would love to carry them to walk around the village on their shoulders in the morning and *Khamsangs* would have lunch in any houses that invite them. In the evening, *Khamsangs* would change their prince dress into white shirt and Tung. (Wrapped skirt for men, it can be in any colors) And Tonsure ritual would do it by the evening too.



Figure 8 KhamSang parade Day 2

Lastly on third day, today Khamsangs would ride on the Chariots (*Jeaw* in Tai Aiton language) that was carried by men and in the evening they would get offered the robe to wear from senior monks. Later on, they will stay in the monastery as long as they want.



Figure 9 KhamSang parade on Day 3



Figure 10 from Khamsangs to become novice monks

"*Por Ling"* and "*Mae Ling"* (father and mother who raise *ChoaSangs*) are the main sponsor, he or she can be anyone who wants to make merit in this celabration. Each KhamSang may have to spend at least rupee 100,000 for overall celebration.

After they become a novice monk, the elder monk would teach him all the Buddhist rules or Vinaya Pitika, Dharma, Tai tradition, Buddhist literature, Pali etc. After 2006, there is no Poi Khamsang celebration in the village because all the children in the village are engaged with all school works and tuitions and most of Tai boys don't want to stay inside the monastery as it is a solitude life.

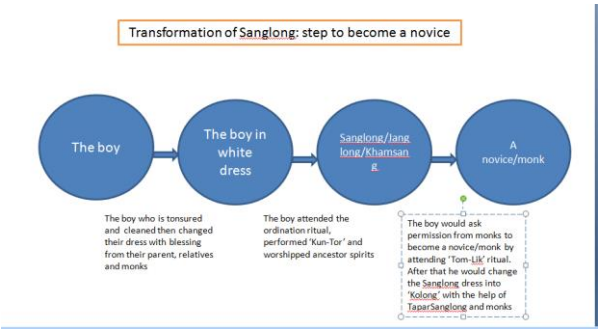
VI. ANALYSIS AND CONCLUSION

Poi Sanglong celebration of Tai Yais and Tai Aiton identity

The process of Poi Sanglong or Poi Khamsang is full of symbolic act of cultural reproduction, cultural orientation[3] and revival of Tai Yai identity. Poi Sanglong is related to Buddhist ceremony and by looking critically at the festival Sanglongs refer to unknown boys who have decided to become a part of the society through the procedure of ordination. In term of symbolic act, the tonsure and the belief of untouchable the earth reflects the idea of purity. According to Buddhist belief says that hair shows sensuality and ego. Hence, hair needs to be cut off for forsaking sin. The boys would have to be tonsured. In the sense of dirt, tonsure is related to sex pollution and to eliminate ego. It is possible to think of Mary Douglas (1984) who mentions that "what goes for sex pollution also goes for bodily pollution" At this moment Sanglongs would feel like their bodies and minds were cleaned. Then, they have been bathed with perfume and water. After taking bath, they should be in the white dress (white which signifies the purity or peace) before wearing the prince's dress. *Sanglongs* or *Chao Sangs* should not let their feet touch the earth reflects that they are not like an ordinary people. So, this kind of hygiene ritual signifies the preparation stage before the most sacred part of the ritual. Interestingly, *TapaeSanglongs* or PorLing MaeLing seem to be special person who can carry the prince on their shoulders and for PorLing MaeLing are the sponsor who support ChoaSang in economic and their personal life from before the celebration until they become ChoaSang. So, it is not only Sanglongs or khamsang who gain new status but also *TapaeSanglongs* and PorLing MaeLing who

[3] A cultural orientation is an inclination to think, feel or act in a way that is culturally determined. It defines the basis of differences among cultures such self-identity, interpersonal relationships, communication, resolving conflict.

become like theirs pseudo-parent. Lastly, they would wear the yellow robe to gain new status as novice/monk.



The festival makes the Sanglongs see things in a completely new way that they are not an ordinary boy/man through the ritual. Becoming novice or monk in Buddhism reflects that they could make merit for their family. Beyond that becoming as Sanglong in Tai Yai society is extremely high prestigious status. Due to Buddhist belief, man should attend ordination ceremony to inherit the religion once in his life for making a great merit. The way that Sanglong parade is walking around the town reflects that this festival needs all the people to see and all the music in the parade is also inviting all people to come and celebrate together no matter what they are Tai or not. What is undeniable about inheritance is that Sanglongs/Janglongs/KhamSang have to inherit Tai culture as well as Buddhism for the next generation. They keep performing this ritual from generation to generation. Hence, this is a kind of cultural reproduction in the sense of inheritance.

Socially, Poi Sanglong expresses cultural orientation. The process of Poi Sanglong and Poi KhamSang create many spaces for example, space of interaction and space of self as a Tai boy. Cultural orientation has been conducted within the family first. When the member of the family has decided to send their boy to become Sanglong/KhamSang, the family has to tell the story about Buddha life and the story of their own male relatives who used to attend Poi Sanglong /Poi KhamSang in the past. The boys would feel like Poi Sanglong/Poi KhamSang festival is a part of their childhood life. On the other hand, the girl would learn how to prepare an artificial flower for the festival along with helping the family in the preparation process. Thus, the festival represents that Tai boys and girls have to concern about the gender roles. In Tai Yai community, the photographs were taken in Poi Sanglong festival every year. Each of Tai family would decorate the wall with Sanglongs pictures who are the member of the family. Those photographs have some function for status representation. According to the budget of Poi Sanglong is around 50,000 baht to 150,000 baht. For each KhamSang in Tai Aiton community has to spend at least rupee 100,000. Moreover, for the preparation needs help from all relatives and the villagers.

Poi Sanglong or Poi khamsang helps Tai Yais or Tai Aitons to recollect the good old days in the past by telling Poi story. Hence, Poi Sanglong or Poi Khamsang marks the identity formation. People are inspired by the photographs and the oral tradition. The researcher has noticed during doing the fieldwork that the story of Poi Sanglong or Poi Khamsang is a kind of prestigious story. Focusing heavily on the preparation of this ritual creates many space of celebration of identity. Firstly, the meetings (The meeting of *ChoaPab Poi*, the meeting of *TapaeSanglong* and the meeting of elderly people) create the space of reaffirmation of identity. The meeting starts with many discussions. The main issue would be the objectives of performing Poi Sanglong or Poi Khamsang festival. All the objectives point out about that this festival has benefit to Buddhism and both of the Tais culture. Moreover, when the mass-media helps Tai Yai people to promote the festival. Poi Sanglong or Poi Khamsang has become one of the must-visit festivals in the northern part of Thailand and Poi Khamsang in Tai Aiton community also invites many Tai groups in North East India to join. Moreover, Poi Sanglong was registered as Thailand's

intangible heritage in 2018. Hence, Tai Yai people feel proud of their own culture. Certainly, the festival promotes a sense of togetherness and represents their identity.

An important point is that *Sanglong* or *Chao Sang* as the medium between the profane space and sacred space who can bring the merit to people in his community. Also, Sanglong is the Tai Yai representative. And Chao Sang or KhamSang is the Tai Aiton representative. Interestingly, the meeting of elderly people expresses the hierarchical society in both communities. The elderly people would talk of the right way to perform this festival and reaffirm that all the process is never changed. Along with that they would explain all the meaning of the ritual. Moreover, the festival creates the space for social interaction. For example, when *Chao Pap Pois* or *Por Ling Mae Ling,* the hosts may come from different community to the meeting, the meeting would help them to know each other than before. Similarly, *Sanglong/Chao Sang* group would stay in the temple for 10-15 days. Emotionally, it expresses that *Sanglongs/Chao Sangs* would have the feeling of attachment among each other, attachment to community and attachment to family. Being as *Sanglongs/Chao Sangs*, they are weaving Tai identity by themselves unknowingly. Especially in their generation, the boys (who used to be *Sanglongs/Chao Sang*) would become friend for whole life and never forgot who they are. Along with this, the festival also creates the bonding between the community members, religious tolerance, Tai identity consciousness.

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Interview

1. Prasert Pradit, The Director of Tai Yai Studies Center, Maehongson, Thailand, 28-30 September 2016.
2. Bichitra Mohathero, The monk of the Bali pathar village of Karbi Anglong district of Assam, India, 10 May, 2017
3. Kittibhum Chaiyon, Personal interview. 1 April 2017.
4. Sutee Angson, Personal interview. 31 April 2017.

Create a 3D map from the old town of Lopburi Province on Mobile

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Abstract— Research in creating a three-dimensional model for tourist attractions in the Old Town, Lop Buri Province, which has data sources from the Lop Buri Old Town Tourism Information Book, divided by age according to the era of the various places. Solved by creating three-dimensional models Which is a research method with the objective of 1. To build an archaeological site that is the main point In all three dimensions according to the era. 2. To create a tourist map of the Old City in Lop Buri Province in a three-dimensional model 3. To assess the satisfaction of users of the Old Town Tourism Map in Lop Buri Province 4. To transfer technology to interested parties or interested agencies Which begins by bringing information from books And analyze concepts for use in event planning It consists of collecting data in a multi-angle, horizontal real-time shooting for creating historic sites in a three-dimensional model. To import into a two-dimensional tourist map model. Target group Are interested parties and 80 tourists.

Research findings that the overall satisfaction level at a high level. The overall average score is 4.29, the standard deviation is 0.678 and when analyzed in each aspect, it is found that the highest score is at the technical level. With an average score of 4.73, the standard deviation of 0.458, with the highest level of satisfaction

Index Terms— ***3D Model, Maps, Historic town***

I. INTRODUCTION

In the past, the area of Lopburi Province used to be the location of an ancient city for many times, whose original name is Lavo since the Khmer reign. There is important evidence that Phra Prang Sam Yot (located in Muang Lop Buri District), a Khmer art in the Bayon period, around the 18th century and there is a San Phra Kan, which is old in the same period. The word "Lavo", presumably, comes from the word "Lava" (Lawaburi became Lopburi today). The Sanskrit word "Lava" means "water" (which may mean that the city has a lot of water). When it comes to Christmas with the words Uthai (Lava + Uthai), it becomes Lawothai (as Suk + Uthai becomes Sukhothai) in the inscription of "Volvo Thaipura". But it is said that the word "Lavo" comes from Mon language, which means mountain due to this town's mountainous landscape. Lopburi is a city with a long history because of the traces of human habitation consecutively since the prehistoric period at least 3,000-4,000 years ago. From the discovery of many archaeological evidence, including evidence, documents and inscriptions, many pieces were mentioned in Lopburi, for example, in the 11th-15th Buddhist century, there is evidence is the northern chronicle saying that Phraya Kanawandis had given Brahmin to build the town of Lavo since 1002 and in the 19th Buddhist century, evidence that Lopburi was probably the town that King U-Thong had reigned before he moved to establish the Ayutthaya Kingdom. In the Ayutthaya period, Lopburi was the most prosperous because King Narai the Great (reigned in B.E. 2199-2231) established Lopburi as the second capital city. When King Narai the Great passed away in the year 2231 at the Sutthasawan Throne Hall Within Phra Narai Ratchaniwet, Lop Buri, it immediately lost importance. King Phra Petracha moved all government units back to Ayudhya, and in the later period no king had finished staying in Lopburi. Until the Rattanakosin period, King Mongkut's reign favored the restoration of Lopburi in 1863 with the restoration of the city walls, fortresses and the city gates including the construction of the royal crown Phiman in the royal palace with the royal name "Phra Narai Ratchanivet", which is now home to the Museum of King Narai the Great. After the change of government, Lopburi was maintained again. In the era of Field Marshal Plaek Pibulsongkram as prime minister, a new town was planned and a military unit was established in Lopburi. Lopburi is therefore known as a military city because it has 11 military units. Lopburi is now a "economic city, tourist city and military town". From the past to the present, it can be seen that Lop Buri has many historical attractions from many eras. The number of people visiting various places comes from different areas, both at home and abroad, especially foreigners have traveled mainly to trace their history. The data collection that is available today is to collect information in the form of various

inscriptions and have been developed as a database. The data collection in each format is only to collect information that allows the interested person to see only the characters and illustrations, thus making the current interest less concerned with the inscriptions or even a database that is stored to be searched. In addition, tourists who come to the ancient sites can only access information on the flyer type.

From the aforementioned problems, the researcher is able to foresee the application of multimedia 3D technology by processing in a video format and presenting on social media systems or social networks that are becoming popular today. The management of tourist information in 3D format is to solve the problem of accessing documented information.

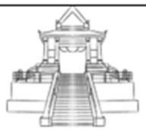
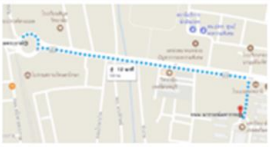
II. RESEARCH OBJECTIVES

1. Make a three-dimensional model of the archaeological site that is the main point in Lopburi Province according to the era
2. Make a tourist map of the old town of Lopburi in three dimensions
3. To assess the satisfaction of users of the old city tourist map in Lopburi Province
4. To transfer technology to interested parties or interested agencies

III. RESERCH METHODOLOGY

The research carried out the scope of the content-based information obtained from the Lopburi Old Town Tourism Guidebook, a book that was screened by the Office of Fine Arts 4, Lopburi, and the content is then summarized as preliminary information for tourists to help tourists understand and make easier decisions. The target population is the general population of 80 people. There is a plan and an operating process by planning areas to collect data in the form of photographs in different angles for analysis, planning and designing a 3D model with a planning process in each perspective. Different perspectives of the 3D model and other perspectives can be obtained from the fielded images as well. The method of drawing from photographs is an example of a model using a 3D modeling program to achieve realism in a 1: 1 scale system, then use a 3D simulation design program that reduces the size of the model view in other angles, such as a high-angle view and a side view. When the 3D modeling process is complete, perspective is done by placing camera angles and lighting in different angles with a caption using storyboard grid system as shown in the chart below.

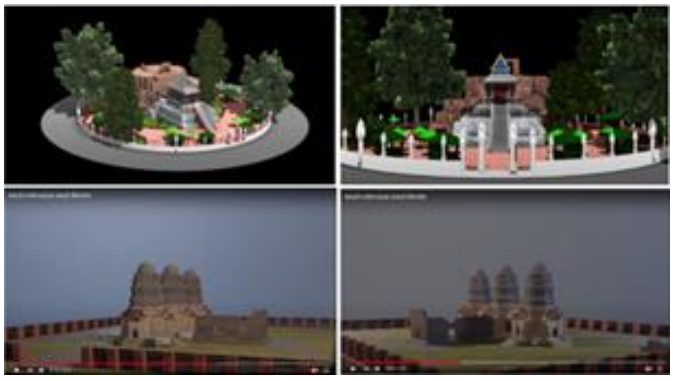
Story Board

Model	Character	Detail
1		Sponsor logo Soft background music
2		Place name Descriptive picture Soft music Displayed for 8-10 seconds per corner
3		Other place names Descriptive picture Soft music Displayed for 8-10 seconds per corner
4		Other place names Descriptive picture Soft music Displayed for 8-10 seconds per corner
5		A picture showing the location's address coordinates Descriptive picture Soft music Displayed for 4-6 seconds

After modeling the 3D model as planned with the storyboard, render it. When the rendering process is complete, the rendered file will be hundreds of still image files, depending on the resolution of the image being set. After that, the rendered image converter will be compiled and converted into a video file to present the 3D model in video format. It is then edited to the audio system recorded from the information in the pre-prepared tourist guide book by using the scene design method as shown in the picture.

Model	Character	Detail
1		Sponsor logo Soft background music
2		Scene 1 Place name Perspective 1 Descriptive picture Soft music Displayed for 8-10 seconds per corner
3		Scene 2 Perspective 2 Descriptive picture Soft music Displayed for 8-10 seconds per corner
4		Scene 3 Perspective 3 Descriptive picture Soft music Displayed for 8-10 seconds per corner
5		Scene X Perspective X Descriptive picture Soft music Displayed for 4-6 seconds per corner







IV. CONCLUSION

The objective of the research was to develop a three-dimensional model of Ancient sites in Lopburi and

presenting tourist attractions, archaeological sites in a three-dimensional model in a video format. The information within the video provides a rough overview of the historical site to help make it easier to make decisions before traveling to that place or to the historical site. The analysis results obtained from the evaluation of the satisfaction with the media from the general public or interested people are divided into 5 parts: 1) Content 2) Technical 3) sound 4) pictures 5) Overall benefits. There are statistical processing of each workpiece and can be summarized as follows. 1) The overall content had a mean of4.40 and the standard deviation of 1.056. 2) The overall technique had a mean of 4.73 and the standard deviation of 0.458. 3) The overall sound had a mean of 4.53 and the standard deviation of 0.64. 4) The overall picture had a mean of 4.07 and the standard deviation of 0.777 and 5) The overall benefit had a mean of 3.73 and the standard deviation of 0.458. Therefore, the total average was 4.29 and the standard deviation was 0.68. From the satisfaction assessment and observing the behavior of the target audience by the researcher while viewing the results, it was revealed that, after viewing the 3D model with good results, it can effectively and appropriately grab the attention of the target audience.

V. DISCUSSION

From conducting research to map tourism for this ancient site, it was found that the finer the model, the more processing it needs to be processed on the Internet. In any area where there is a lag in the Internet, tourists or viewers will lose their interest in that place, but will have a genuine interest in that attraction. This research project has been resolved by presenting 3D models through social media and social networks as an alternative.

VI. SUGGESTION

Research on 3D modeling of ancient sites should be applied in conjunction with virtual work in order to stimulate cultural tourism, learning for children or as a tool for deciding on the area before going to travel, for the elderly or interested people.

VII. ACKNOWLEDGE

Research on the topic of creating a three-dimensional model for the old city tourist attraction, Lopburi will not succeed. If not getting help from many tips such as Ajarn Wilaiwan Chomphirun, the owner of the ancient site tourist site guide Lopburi Province and a consultant for this research project as well as teachers of multimedia technology Adviser Techniques for creating three-dimensional models, images, colors, sounds in various forms. And thank you to the National Research Council of Thailand Board for providing the opportunity to implement the project.

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Relationships between Service Quality, Service Marketing Mix, and Behavioral Intention: Consumers' Perspectives on Short-term Accommodation Service for Tourism in Thailand

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Abstract— This study aims to examine the degree of perceived service quality, service marketing mix, and behavior intention of tourists in Thailand. It also studies the relationship between service quality and service marketing mix on behavioral intention of tourists using Thailand's short-term accommodation service. Research methods used in this study is questionnaire, with 5-point Likert scales. The targeted samples are 1,540 tourists who have used short-term accommodation service in Thailand. 1,127 questionnaires were completed and returned, making up 73.18% of all questionnaires distributed. Collected data were analyzed using both descriptive and inferential statistics. The former includes means and standard variations which were used to determine the degree of each variables. The latter includes Pearson correlation analysis for the analysis of relationships between variables. The study shows that the overall service quality and behavioral intention were rated as high, with overall marketing mix rated at the highest level. As for correlations, service quality is found to be moderately and positively correlated with behavioral intention. A similar moderate and positive correlation is found between service marketing and behavioral intention. All variables are statistically significant at the .01 level.

Index terms – Service Quality, Service Marketing Mix, Behavioral Intention, Short-term Accommodation Service for Tourism

I. INTRODUCTION

In 2019, Thailand has welcomed over 39 million foreign tourists. This number shows that tourist expansion rate in Thailand has grown by 4.24% from that in 2018, and the tourist expansion rate in 2018 has grown by 7.27% compared to that in 2017. Moreover, other than the increasing number of tourists, income from international tourists also amounted to over 1.96 billion Thai baht, with a tendency to further increase[1]. Popular tourist destination provinces for both Thai and foreign tourists include Bangkok, Chonburi, Phuket, Chiangmai, and Nakhonratchasima[2]. Domestic tourism market has been expanding continuously over the years as a result of the government's policies on tourism promotion, as well as low cost of domestic tourism, fuel, transportation, and accommodation. Over 154 million domestic travels marked a 6.2% tourism expansion rate, contributing over 0.96 billion baht[3]. This large number of both Thai and foreign tourists, as well as world's tourism expansion, encouraged airline companies to expand their routes in order to accommodate tourism demands in many countries across the world, including Thailand. United Nation's World Tourism Organization (UNWTO) has estimated that by 2020, the number of tourists in ASEAN countries may reach 123 million, and by 2030, 187 million.

Tourism business has created value chains across regions, such as restaurant, logistics, and transportation services. Souvenir and accommodation services have also generated over 2 million employments in Thailand [4]. Hotel profits are directly correlated with the direction of tourism, that is, the higher number of customers, the higher income. Hotel incomes are from number of tourists, length of stay, and accommodation prices. Of the overall income, 60-70% comes from hotel accommodation, while 25% comes from food and drinks. Note that there may be differences across different types of hotels. For example, 4 and 5-star hotels

usually have more income from food and drinks than smaller hotels do. They also have other incomes which contribute extra 5-10% to their overall income. However, hotel business in Thailand still faces the problem of oversupply in many regions. Due to the increasing number of foreign tourists, demand and supply in tourism has increased in the past five years, with the average of occupancy rate of 59%. As a result, investments in hotel and accommodation industry has significantly increased, as well as competition from substitute services such as online platforms and daily rooms. While these are illegal, no strict regulations and penalties have been enforced yet[5].

Increasing number of tourists and accommodation services may intensify competition in hotel industry. Moreover, the arrival of substitute services mentioned above

may further pressure current hotels, especially SMEs, as they may have to lower their prices to attract customers. There have been attempts to convince substitute businesses and uncertified hotels to have their businesses legalized. However, such attempts have not been very successful, and many hotels are still providing illegal accommodation services[5]. There are currently 20,000 hotels across Thailand, providing 700,000 rooms. Amongst the 20,000 hotels, approximately 9,600 hotels (400,000 rooms) are certified, while other 10,400, most of which are small hotels, are not registered[6]. This means that only 35% of hotels in Thailand are certified.

Furthermore, sharing economy has been continuously growing and expanding short-term accommodation. This may be because this type of accommodation costs less than staying in a hotel and has a variety of accommodation for tourists to choose from, from room in a shared house to condominium. In other words, short-term accommodation becomes popular because it offers something different from a typical stay in a hotel. Over 360,000 Thai tourists have used this type of accommodation service[7]. In 2016, over 160,000 tourists from 135 countries booked their accommodation in Chiangmai through AirBNB[8]. According to AirDNA [9], the number of this type of accommodation in Bangkok is 8,891, followed by 8,238 in Phuket, 2,945 in Patthaya, and 2,423 in Chiangmai. Tourists' preference for local experience may be another reason why tourists may prefer short-term accommodation. Homestay, local life-based accommodation may inevitably affect budget hotels. Overall, uncertified accommodation service such as this is affecting hotel incomes and profits and also limiting their price ranges.

Accommodation services that take a direct impact are small hotels, especially low- and mid-range. Therefore, it is necessary to find solutions. The authors of the present study argue that it is important to study and explore how short-term accommodation business can be supported and further developed without negatively impacting other types of accommodation, as well as how to appropriately prepare this business in order to best accommodate future tourists, both Thais and foreigners. Meanwhile, it is crucial that the government examines the impacts that short-term accommodation services have hotel and small accommodation businesses, especially low- and mid-range. The government could also benefit from policies that encourage short-term accommodation to improve their services and accommodation management to best suit customers' needs and behaviors. According to the literature, tourists' word of mouth and revisit intention to tourism destinations and accommodation are based on perceived service quality and total perceived quality. These concepts come from the analysis of customers' behaviours and expectation of service quality, both of which may affect customers' post-service assessment. According to Grönroos [10][11], customer's perceived service quality comes from correlations between expected quality and experienced quality.

Most of the criteria with which customers assess service quality are about service and service goods. The rest of the criteria are about service staff's performance. Some of the most frequently used research instruments for service quality assessment are SERVQUAL model, and Parasuraman, Zeithaml, and Berry's [12] RATER model. These models were later further developed and applied to the context of accommodation service studies. Akbaba [13], Amissah and Amenumey [14], and Priporas, Stylos, and Fotiadis[15] identified 25 service quality attributes from the initial 29 SERVQUAL attributes and utilized five service quality dimensions, namely tangibles, adequacy in service supply, understanding and caring, assurance, and convenience. Service marketing mix can also be employed in order to accommodate customers and target groups' needs[16]. A marketing tool which facilitates and supports knowledge exchanging and inter-relationships with customers by exploring their needs can be developed into service that can effectively accommodate and satisfy customers. This in return will help support the government's policies to encourage and strengthen efficiency of short-term accommodation business in Thailand. Due to the reasons mentioned here, the authors intend to explore factors influencing customer's positive post-service behavioral intention, that is, revisit intention and word of mouth communication, both in person and online (electronic word of mouth).

II. RESEARCH OBJECTIVES

The objectives of this research are: 1) to study the degree of perceived service quality, service marketing mix, and behavioral intention; and 2) to examine relationships between service quality and service marketing mix on behavioural intentions of short-term accommodation service customers in Thailand.

II. LITERATURE REVIEW

A. Service quality

Service quality emerges when customers compare their service expectation with perceived provided service[17], [10], and the latter have exceeded the former[19]. In other words, service quality is the difference between the actual service and customers' expectation of that service. Lehtinen and Lehtinen[20], Grönroos [11], and Parasuraman, Zeithaml and Berry[12],[21],[22] identified 3 components of service quality: interaction, physical, and corporate. However, from high-rank executives' and customers' perspectives, the two key components of service quality are

output quality and process. Grönroos[11],[12] has pointed out the importance of technical quality and prior performance quality which may affect output quality. Technical quality refers to what being provided to customers, such as food in restaurants, consult session at a consulting firm, and houses by property representatives. Performance quality is relevant to the process in which service is provided to customers in psychological and behavioral aspects, as well as staff's ability to approach customers, staff's behaviors during service, especially their verbal communication, co-production between service providers and customers, and service methods.

B. SERVQUAL Model

Parasuraman, Zeithaml and Berry[12] has proposed two key concepts in service quality assessment: 1) promoting understanding of service quality and customers' expectation, with the focus being placed on the emphasis of differences between customers' needs and minimum expectation, and; 2) recommendation of three-column format SERVQUAL Model with less attributes. Parasuraman, Zeithaml and Berry[22] have suggested that only 21 attributes are sufficient, 9-level scale is more appropriate than 7-level scale, three-dimension perspective is more appropriate than five-dimension perspective, and that responsiveness, assurance, and empathy can be merged into one single category. This was later further developed as following:

1. Tangibles: evidence of physical facilities that are reliable, responsive, confident, and empathetic
2. Reliability: ability to perform the promised service dependently and accurately
3. Responsiveness: ability and willingness to help customers and provide prompt service
4. Assurance: knowledge and courtesy of employees to build trust and confidence in customers towards the service provider
5. Empathy: provision of caring, individualized attention provided to customers, and aiming to understand customers' needs.

Akbaba[23] later identified 25 service quality attributes on the basis of the initial 29 SERVQUAL attributes and utilized five service quality dimensions, namely tangibles, adequacy in service supply, understanding and caring, assurance, and convenience.

C. Service marketing mix

Marketing mix is a set of controllable marketing tool [24], employed by service companies to create a desired response in the target market[25]. Marketing components are used to attract customers' demands for goods and services[24], which in turn could increase sales and profits. Marketing mix components include: product, price, place, and promotion (4Ps). However, service marketing is more complicated than 4Ps or marketing mix in general [26], [27],[28] and thus, require a marketing mix that emphasizes interactive marketing and internal marketing. The three additional Ps (3Ps) are people, physical evidence and presentation, and process. People means that service providers must be skilled, with service-minded and positive attitude towards customers. They should also have creativity and problem-solving skill. Physical evidence and presentation refer to creating and presenting physical appearance and service methods in order to create service values. This includes being clean-cut, polite verbal communication, prompt service, as well as other benefits to which customers are entitled. Lastly, process refers to regulation- and practice-related service activities offered to customers which help provide them with impressively prompt and accurate services. Therefore, 7Ps is a controllable tool which reflects customers' satisfaction. Clear understanding of service providers' marketing mix components may also allow businesses to sustain and turn current customers into regular customers.

Apart from 7Ps, another key factor which marks the main value of tourism and encourages tourists to travel is uniqueness and local authenticity, with the latter meaning real and genuine. In the context of tourism, values of tourists and hosts can be explained as contributions towards cultural development and consumptions. Goods and authentic experience that are relevant to tourism are: 1) objective authenticity: tourists' actual experiences with items or symbols that can be proven authentic; 2) constructive authenticity: encapsulation of subjective nature that has been created and socially accepted, as well as cultural commoditization by applying cultural aspects to goods or tourism activities to show their value and authenticity, attracting tourists to make a purchase or to visit; 3) existential authenticity: authenticity activated by tourists themselves during their genuine and authentic everyday experiences.

Certain groups of tourists may seek for novelty experience, including new destinations and exciting tourism activities[29]. They may want to explore somewhere they have not visited, learn about something new and never-before-seen, take risks, and immerse themselves into different environments. Moreover, tourists' personalities and expressions are of important values as they can reflect tourists' needs, since behavioral expressions are often results of internal subjective factors. Novelty is a process of experiencing and encountering something different from usual daily life experience. It may be referred to as new or unusual, both of which share the same meaning with novelty[30]. In general, novelty in tourism is often defined

as part of experiences that emerge from each individual's expectation, forming foundation of tourism experience and connected to perception of newness and deviation from everyday life encounters[31]. Novelty is also a motivation behind tourists' behaviors[32], and is also relevant to experiences of tourism impression.

E. Behavioral intention

Behavioral intention refers to customers' post-service expressions. It is a motivational factor that can influence further behaviors and indicate that such behaviors are made with effort[33]. That is, it is possible that customers may act on their intention by happily and willingly using the service, recommending the service to others, and revisiting [34],[35],[36],[37]. Tourists' behavioral intention studies may be used to further study tourists' future behaviors and their tendency to revisit and recommend to others[38]. Behavioral intention can be evaluated from two dimensions. First, re-visit intention refers to tourists' intention towards tourism destination and revisiting in the future. And secondly, recommendation intention refers to post-service behaviors in which tourists recommend the service to others or describe their positive experiences and impression so that others may travel to the same tourism destinations.

III. RESEARCH METHODS

This study is a quantitative research using questionnaire as a research tool. The questionnaire is divided into three parts: perceived service quality, service marketing mix, and behavior intention of Thailand's short-term accommodation service customers. 5-point Likert scale is employed, ranking from minimum to maximum, with minimum being strongly disagree = 1, and maximum being strongly agree = 5. The overall reliability is .85.

Research population is customers of short-term accommodation service for tourism in Thailand. The total population is infinite. The authors used Cochran's[39] formula for infinite population to calculate the sample size that estimated 385 samples, with reliability set at 95% and error at 5%. The authors collected data from customers of short-term accommodation service for tourism in Thailand in four provinces with the highest numbers of customers: Phuket, Chonburi, Chiangmai, and Bangkok. The total number of samples is 1,540. Of all the questionnaires distributed, 1,127 were returned (73.18%). Descriptive statistics used to study the degree of each variable are mean and standard variation, which were then evaluated with Phisayaboot's[40] interpretation criteria of respondents' mean scores. Each mean score range indicates as follows: 4.21 to 5.00 – highest degree; 3.41 to 4.20 – high degree; 2.61 to 3.40 – moderate degree; 1.81 to 2.60 low degree; and 1.00 to 1.80 – lowest degree. Referential statistics used is Pearson Correlation Analysis to examine relationships across variables. Interpretation criteria of correlation coefficients[41] are as follows: .81 to 1.00 – very high correlation; .61 to .80 – high correlation; .41 to .60 – moderate correlation; .21 to .40 – low correlation; and .00 to .20 – very low correlation.

IV. RESULTS

Table 1: Mean and standard deviation of service quality, service marketing mix and behavioral intention of the customers using Thailand short-term accommodation service for tourism.

Dimension	Mean	Std. Deviation
Service Quality	**3.58**	**0.55**
Tangibles	3.66	0.67
Convenience	3.59	0.66
Assurance	3.62	0.63
Understanding and Caring	3.53	0.73
Adequacy Service Supply	3.51	0.67
Service Marketing Mix	**3.50**	**0.52**
Product	3.52	0.61
Price	3.50	0.69
Unique and Local Authenticity	3.51	0.70
Novelty	3.54	0.69
Process	3.48	0.63
Sustainability	3.46	0.63
Behavioral Intension	**3.50**	**0.58**
Revisit	3.56	0.71
Word-of-Mouth	3.44	0.68
Total	**3.53**	**0.48**

From Table 1, the finding suggests that respondents' mean scores on service quality in overall is at the high level (*M*=3.58, *SD*=.55). Looking into each aspect, the aspect with the highest mean score is "tangibles", which is at the high degree (*M*=3.66, *SD*=0.67), following by "assurance", also at the high degree (*M*=3.62, *SD*=0.63), subsequently following with "convenience" at the high degree (*M*=3.59, *SD*=0.66), and "adequacy service supply" has the lowest mean score, but is at the high degree (*M*=3.51, *SD*=0.67).

Respondents' mean scores on service marketing mix in overall is at the high degree (*M*=3.50, *SD*=.52). Looking into each aspect, the aspect with the highest mean score is "novelty" at the high level (*M*=3.54, *SD*=0.69), following with "product" at the high level (*M*=3.52, *SD*=0.61) and "unique and local authenticity" at the high level (*M*=3.51,

SD=0.70). "Sustainability" has the lowest mean score at the high level (*M*=3.46, *SD*=0.63). Respondents' mean scores on behavioral Intention in overall is at the high value (*M*=3.50, *SD*=.58), Looking into each aspect, the highest mean score is "revisit" at the high level (*M*=3.56, *SD*=0.71), following with "word-of-mouth" at the high level (*M*=3.44, *SD*=0.68).

Table 2: Relationships between service quality and behavioral intension of customers using Thailand short-term accommodation service for tourism.

Service Quality	Behavioral Intension
Tangibles	.315**
Convenience	.411**
Assurance	.436**
Understanding and Caring	.427**
Adequacy Service Supply	.386**
Total	**.484****

** $p < .01$

From Table 2, the results suggest that service quality factor and behavioral intention of customers using Thailand short-term accommodation service for tourism have moderate positive correlation ($r = .484^{**}$) with statistical significance at the level of .01. Looking into each aspect, behavioral intention has relatively low positive correlations is tangibles ($r = .315^{**}$) and adequacy service supply ($r = .386^{**}$) with statistical significance at the level of 01. and aspect that have medium positive correlation with behavioral intention is convenience ($r = .411^{**}$), assurance ($r = .436^{**}$) and understanding and caring ($r = .427^{**}$) every of this has statistical significance at the level of 01..

Table 3: Relationships between service marketing mix and behavioral intention of customers using Thailand short-term accommodation service for tourism.

Service Marketing Mix	Behavioral Intension
Product	.405**
Price	.377**
Unique and Local Authenticity	.355**
Novelty	.446**
Process	.417**
Sustainability	.444**
Total	**.520****

** $p < .01$

From the Table 3, the findings suggest that the factor of service marketing mix and behavioral intention of the customers using Thailand short-term accommodation service for tourism have medium positive correlation with the value of ($r = .520^{**}$) with statistical significance at the level of 01.. Looking into each aspect, the aspect that has low positive correlation with behavioral intention is price with the value of ($r = .377^{**}$) and unique and local authenticity ($r = .355^{**}$) with statistical significance at the level of 01. and aspect with medium positive correlation with behavioral intention is product ($r = .405^{**}$), novelty ($r = .446^{**}$), process ($r = .417^{**}$) and sustainability ($r = .444^{**}$). All correlations have statistical significance at the level of .01.

V. DISCUSSIONS

1. Overall, mean scores of service quality, service marketing mix, and behavioral intention are at the high level. This may be because Thai people are good-natured and good hosts. Thailand has great diversity of natural resources, arts, traditions, and cultures across regions, which gave rise to many different unique identities. Sharing house or other types of accommodation does not require much cost when compared to hotels. Therefore, cheaper prices can be offered. This is in line with Guttentag [42] who suggests that customers seek for money savers, interaction, and local authenticity. The latter refers to how customers experience real, genuine local ways of life. Most hotels, on the contrary, share similar accommodation standards under the concept of sharing economy. Customers tend to be home seekers, that is, they prefer to stay somewhere that feels like home rather than hotel rooms. The results are also in line with Colliers International Thailand's research[43] that AirBnB can stimulate the economy. Home owners renting out their houses or accommodation earn more income, while tourists receive better experience than staying at a hotel, as they can live the local lifestyle while exploring new destinations. The findings in this study also align with that in Ratsamimala[44] that the factor influencing tourists to make a reservation through the online platform Airbnb due to impression on prior reservation experience and recommendation from other previous customers. The main reasons include location, home feeling, and local experience.

2. Convenience, assurance, understanding and caring, product, novelty, process and sustainability factors are moderately correlated with customers' behavioral intention. This may be due to convenience of reservation and payment through the online platform, accessibility, safety of short-term accommodations, and accommodating hosts. However, tangibles and adequacy service supply, unique and local authenticity, and price factors are correlated with

behavioral intention at a low degree. This is possibly because certain accommodations may lack facilities required by customers to ensure their comfort. Some tourists may assume that short-term accommodation can provide mainly household facilities as opposed to those at hotels. This finding is in line with Onsam-ang[45] who states that factors influencing customers' choice of boutique hotels, from most influential to least influential, are well-equipped facilities, attractive lighting, natural fragrance, beautiful design, and appropriate music. Moreover, similarly to the findings in Thapthimcharoon[46], factors contributing to success and potential of small-scale accommodation business include introducing new technology to the business, adding product and service values, boosting competitiveness by improving strategies and new marketing techniques, developing potentials of small-sized business owners to meet international standards, and supporting values that leave good impression with tourists. Lastly, the findings in the present study also align with that in Chiarananthana[47] that factors influencing decision making of boutique hotel customers are products, reasonable price, cleanliness and scenery, public relations and promotion, room facilities, convenient and accessible location, and staff.

VI. CONCLUSION

Service quality of short-term accommodation for tourism in Thailand, modern tangibles provided by the host that can facilitate tourists' stay as if they were at their own home, and beautifully and uniquely crafted design and decoration intended to give customers a non-tradition hotel experience. Each region of Thailand boasts different characteristics of short-term accommodation for tourism, as each has their own unique landforms, cultures, architecture, and local lifestyles. Service provider also plays an important role in service quality assessment because other than tangibles in SERVQUAL Model, all other dimensions are relevant to service staff's performance and directly affect customers' perception of service quality. Therefore, it is crucial that entrepreneurs realize the important role service staff play. They must have knowledge and skills necessary for the service they provide, be polite and friendly towards customers, treat them like family, and assure customers that they are provided with quality service and safety of life and personal belongings throughout their stay.

Products of service marketing mix of short-term accommodation for tourism in Thailand are accommodation characteristics and novelty activities arranged by the accommodation service provider which respond to customers' desire to explore local experience and city experience in Bangkok, Phuket, and Chiangmai. Tourists that seek novelty tourism experience often seek for tourism destinations that they have not visited and allow them to learn about something never-before-seen. However, it is a challenge to establish service criteria because how service is delivered to customers may vary across service staff and their service production process and expression. Moreover, since service is about perceptive experience, it is intangible and perishable. However, it can be imprinted in customers' memory and can be resold through word of mouth communication. When customers have positive experience with their stay and activities arranged by the accommodation service, they memorize that feeling to which they refer when making next positive interaction.

VII. RECOMMENDATIONS

1. Accommodation should be beautifully and uniquely decorated, and its facilities are modern, in working order, and equipped with detailed user's manual or limitation guidelines in the languages of target tourist groups.
2. Comfort, care, and solution of problems should be readily available upon customers' request. Reservation system or process are uncomplicated, and the platform is user friendly. The host is accommodating, treating customers like family. Both the host and service staff are encouraged to develop basic foreign language communication skills.
3. Accommodation information available on various media should represent the actual and current state of the place. Information or photos of accommodation posted on online platforms should be true to the actual rooms. Security of both rooms and surrounding areas are prioritized, and safety equipment is readily and clearly available at various spots.
4. Accommodation should be prepared or renovated to show its novelty in order to respond to customers' needs to seek novelty tourism experience in local communities, less visited provinces, and new, unique accommodation. If accommodation is in urban area, the focus should be placed on identity or originality. Attention should also be paid on cleanliness of rooms and surrounding areas.
5. Short-term accommodation pricing is often lower than that of hotels, with number of guests taken into consideration. Accommodation with higher pricing may indicate its advantages such as convenient access to tourist attractions and shopping centers, exceeding number of accommodation facilities, and its unique characteristics which cannot be found elsewhere.

6. Specific local characteristics could offer new experience and activities for tourists to try and immerse themselves in local lifestyles, explore nearby local communities, and purchase from local shop. Accommodation may also impress tourists with certain highlights such as enjoying local food with the host, rafting, visiting flower farms, famous tourist attractions nearby, and interesting festivals.
7. Service and check-in process should be uncomplicated. Room sale should be administered on online platforms since most tourists are millennials. They are exposed to technology, access it, and apply it to their everyday lives more than customers from other generations. Therefore, they are more likely to make a reservation through online platforms which offer more convenient and quick options to find cheaper rooms than hotels.
8. Service goods for services provided at the accommodation should be environmentally sustainable, or support local products and services.

VIII. ACKNOWLEDGEMENTS

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The Promotion of Cultural Community - Based Tourism of Chiang Khan District, Loei Province

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Abstract— The purposes of the research were: 1) to study the potential of cultural community – based tourism attraction of Chiang Khan district, Loei province and 2) to study the guidelines for the tourism promotion in Chiang Khan district, Loei province. Research methodology was qualitative. The people relating to tourism management in Chiang Khan district, Loei province were determined as the sample groups. The in-depth interviews were used to collect the data from 20 relating people from government sectors, private sectors, community sectors and technical officers. Research tools consisted of the in-depth and semi-structure interview about the potential of tourism attraction in the community of Chiang Khan district and Marketing Mix '7Ps.

The result showed that cultural community – based tourism of Chiang Khan district, Loei province was presented through the unique local life style. There are distinctly unique religion, local culture, and handicraft in Chiang Khan community. The beauty of architecture of the temples is outstanding and significant in history. The cultural tourism is varied and unique in each community. There are unique and outstanding food, languages, costumes, and ways of life. There are also various kinds of distinct OTOP products in each area. The walking street is one of the most important tourist attractions at Chiang Khan Municipality. The tourists visiting Chiang Khan never miss religious tourism. Many gorgeous temples are famous for Buddhist art like enormous Buddha statues. Chiang Khan Skywalk at Phu Khok Ngio, a new tourist destination, is developed to attract more tourists. Therefore, the tourist attractions in each Chiang Khan community are distinctly unique and outstanding. The most important thing is strong co- operation from all sectors of Chiang Khan community to develop tourism to be sustainable tourist attractions.

Index Terms— ***Tourism Promotion, Culture, Chiang Khan District Community***

I. INTRODUCTION

The development of tourism is of great importance to economic growth and thus provides opportunities for income distribution to local communities and employment. The government has established a community tourism strategy. The Ministry of Tourism and Sports has encouraged local organizations to independently formulate tourism policies, goals, programs and activities. The government will support the knowledge, experience and budget through various forms of government mechanisms to develop community-based tourism for rapid expansion. It is also expected to be a viable tourism, cooperative tourism for the community, along with support for the conservation of natural resources and the environment and generate income for the community economy of local people. Community-based tourism management is the promotion of community-based tourism in its administration. It is likely to grow into more networks because the community-led model is expected to be a viable tourism management solution with an emphasis on community participation because it is the management of tourism resources in the community area. (Economic Development Plan No. 12 2017-2021) {1}

Chiang Khan District, Loei Province, is a natural charming tourist destination located along the Mekong River as well as old wooden houses, old temples, local food and local shopping. Chiang Khan is also unique in terms of history, culture, traditions and way of life, folk wisdom and architecture to admire. Chiang Khan is now an ancient city, which is a community that remains uniquely unique, causing tourists of all ages and genders to pay attention to travel. This might be because Chiang Khan has a quiet and uniquely retained atmosphere, but blends with the modernity that is not too much of Chiang Khan's style. People who live in Chiang Khan are friendly, friendly, and visiting Chiang Khan District is inexpensive. In the next few years, this Chiang Khan will become better known. However, Chiang Khan will not change if all the Chiang Khan people continue to help preserve the uniqueness, the way of life and culture in the Chiang Khan style to maintain its uniqueness. (Source: Loei Provincial Office https://ww2.loei.go.th) {2}

The researcher was therefore interested to study on the promotion of cultural tourism by communities in Chiang Khan District, Loei Province, in order to use the obtained information as a guideline for cultural tourism development, uniqueness and important attractions of the Community of Chiang Khan District, Loei Province including Ban Na Pa Nat Tai Dam Ethnic Groups, offering alms to sticky rice on the walking street, art and religious culture, temples, archaeological sites, museums, skywalk architecture, traditions and ways of life of the people in the community and create tourism that conserve and cherish good art and culture in order to remain sustainable with the people of Chiang Khan.

II. Research Objectives

1. To study the potential of community cultural tourism sites in Chiang Khan District, Loei Province
2. To study the guidelines for tourism promotion in Chiang Khan District, Loei Province

Research scope

III. Research Methods

A. Research Design

The attractions used in this study are important cultural and natural attractions in Chiang Khan District, Loei Province and the way of life of the people in the community, such as Sun Watthanatham Thai Dam Ban Na Pa Nat, Phu Thok, Kaeng Khut Khu, offering alms to monks on the walking street, religious arts, temples, archaeological sites, museums, skywalk architecture, traditions and way of life of people in the Chiang Khan community.

B. Research Process

1. The researcher had studied secondary data, concepts, documents and related literature related to the research topic in order to analyze and find the correlation to the research and used as a preliminary data in determining the direction of collecting data in sequence.
2. Researcher studied by using interview form to survey opinions from representatives of government agencies or organizations, private sector, community people and academics Related to the promotion of cultural tourism in Chiang Khan district, Loei province.

Scope of content

In this study, the researcher defined the content that was defined to cover the following issues:

1) To study the potential of community cultural tourism sites in Chiang Khan District, Loei Province in terms of history, culture, traditions and way of life, folk wisdom and architecture

2) To study the guidelines for tourism promotion in Chiang Khan District, Loei Province in terms of tourism components and marketing mix to use information as a guideline for promoting cultural tourism in the community Chiang Khan District, Loei Province

Time

Researchers conducted from January 2020 to April 2021.

Research conceptual framework

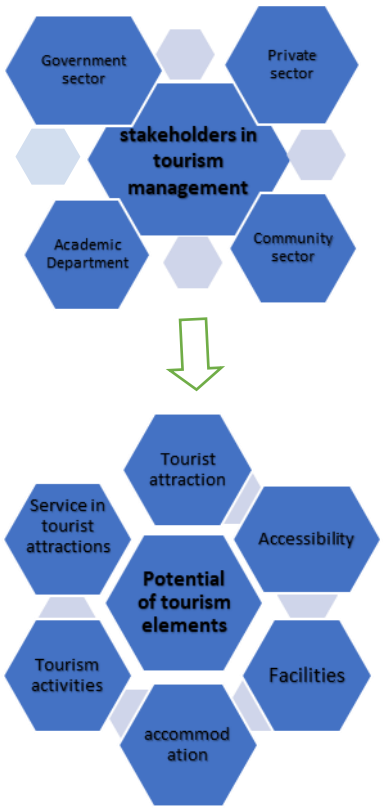


Figure The research framework of stakeholders in community-based cultural tourism management in Chiang Khan District, Loei Province in terms of tourism component potential.

Methodology

1. Resources

This research was a qualitative research. The researcher used tools, namely interview form. Data were collected from in-depth interviews and qualitative analyzes from 20 key informants. An analysis of the content, an implementation process consisting of books, documents, research related to tourism and related articles and documents was used.

2. Data Collection Tools

2.1 From the study of documents and research related to tourism, such as tourism situation, textbooks, printed materials and websites, it could be used as preliminary

information in determining the direction for promotion of tourism in the primary hierarchy.

2.2 There was an examination of the potential of tourist resource resources such as natural resources, cultural resources, activity resources, and lifestyle and local wisdom resources to support cultural tourism to promote tourism.

2.3 In-depth Interview was a data collection tool, which was the collection of information from the key informant to provide in-depth details on the topic or issue to be interviewed. The researcher was the interviewer and records the information in the prepared documents.

3. Data Collection

3.1 The investigator verified the completeness of the information obtained from the collection of relevant research papers and research.

3.2 Collection of field data

3.1.1 Information on important resources in the area of cultural tourism to promote tourism in Chiang Khan District, Loei province was surveyed.

3.1.2 In the interview, researchers used an in-depth interview with 20 key informants to provide information for analysis of the situation, guidelines and impact on current tourism promotion.

Collecting information from the interviewees must be completed as planned. In the interview, the interviewee is able to express his or her opinion fully. The researcher had prepared an interview plan in advance so every question would be sorted. The key informant must answer the interview questions as provided by the researcher above in order to be consistent and useful for further analysis.

4. Method of data analysis

The researcher took all the data obtained from the interview for analysis, review and processing. The data collected were based on the qualitative research basis by interviews, and then classified by question issue, consideration of data integrity, consideration of the research conceptual framework and objectives and the accuracy of the information. The researcher would had a record and an audio recording during the interview. In addition, the researcher would categorize the data and analyze the following.

Based on the collected data, the researcher collected the data through in-depth interviews from the sample and performed all validation; the operator has taken the data into categories and analyzed the data as follows:

4.1 Researcher uses content analysis method: the words, sentences or texts of the interview and the information obtained from the interview is analyzed for content, grouping of the content, including analysis, classification and summarization of key points, was examined.

4.2 Researcher examined by data triangulation method:

Checking data from a data source in terms of time, place, and people at different locations by determining whether the key informant would still get the same information, the results of the data collected by the data triangulation method were the same findings, indicating that the data obtained by the researcher is accurate (Supang Chanthavanich, 2009) {3}.

IV. RESULTS

The researchers summarized the results of the in-depth interviews, key informant of all 4 groups of cultural tourism to cover the set research question. This was an interview from key informant aspects of cultural tourism elements including government agencies, private sectors, communities and academics as follows.

1. Accessibility - The journey to Chiang Khan is convenient and comprehensive because the transportation includes both air and land transportation (by car and by bus). Currently, there are 3 airlines serving Air Sierra, Nok Air and Thai Smile, thus making traveling to Loei with ease. Travel to the tourist attractions in Chiang Khan is convenient and easy to access various areas of the tourist attractions.

2. Attraction - Natural, cultural, traditions and way of life of the people in the community, including Sun Watthanatham Thai Dam Ban Na Pa Nat, Phu Thok, Kaeng Kut Khu, giving monk on sticky rice on walking street, art and religious culture, temples, archaeological sites, museums, skywalk architecture, traditions and way of life of the people in Chiang Khan community, beautiful tourist attractions. In addition, infrastructure and ancillary businesses such as accommodations, restaurants and souvenir shops are also being developed to ensure the availability of tourist services. The government agency also promotes the comprehensive tourism image in terms of convenience, cleanliness and safety.

3. Activities - Chiang Khan has the beauty of natural attractions, culture, museums and activities for tourists to learn. There are cultural resources for learning, including 1) Active activities are activities that do yourself, such as exercise and cycling, etc. 2) It is an activity that the participants can do on their own, such as massage lessons and cooking lessons, etc. 3) Passive activities are activities that other people make, such as quilt making and keyring as souvenirs.

4. Accommodation - This place is readily available: 1) Chiang Khan is ready to accommodate tourists of all tastes, needs and income levels at a very affordable price. 2) Hotels in Chiang Khan have both hotels in the city and hotels outside the city in a quiet resort style. 3) Chiang Khan has a guest house for budget travelers. 4) Chiang Khan has a Home Stay in the community to accommodate tourists who want a cultural experience of the people in the community.

5. Facilities - Chiang Khan must receive tourism promotion and development, which includes the development of various tourist attractions, for example, there are many forms of activities to promote happiness, including seeing,

participating in activities, being entertained, being part of the happy atmosphere, festivals and walking street tours that are part of today's traveler experience. This will make tourists remember and impress for the trip.

6. Service in tourist attractions - Chiang Khan still needs to increase the efficiency in the development of additional services to cover the area of tourist attractions so that tourists can easily visit various tourist attractions. Good telecommunication and information services will enable tourists to communicate easily anytime, anywhere as well as digital search using Google Map for tourism navigation. The use of the Internet to communicate is open to the phone for communication at all times, so Wi Fi is essential for travelers in the highly connected era. Connectivity is a key factor in life, so Chiang Khan needs to have sufficient communication devices and facilities to create a memorable experience for tourists in this digital age.

In terms of promoting cultural tourism in Chiang Khan district

Roles and duties of various agencies that support and promote tourism, all agencies have to cooperate to promote tourism attractions continuously and create interest along with adding more activities to promote tourism in Chiang as follows

1. Product - Chiang Khan is a tourist city with a unique culture and nature: Sun Watthanatham Thai Dam Ban Na Pa Nat, Phu Thok, Kaeng Kut Khu, giving monk on sticky rice on walking street, art and religious culture, temples, archaeological sites, museums, contemporary architecture, traditions and way of life of the people in Chiang Khan community, these can be presented in different types of tourism by tourists to get to know and visit Chiang Khan. Tourism also distributes income to all groups in the community involved in tourism. In particular, cultural tourism products where the community still preserves the traditional way of life. Annual traditions and cultural events are held, allowing visitors to experience the culture throughout the year, because Chiang Khan has a tourist attraction that is full of culture and uniqueness.

2. Price - The expenses for accommodation, food, souvenirs and souvenirs in Chiang Khan District are not too high depending on the choice of tourists. Accommodation prices are not very high, but there are different prices. Travelers often look at the value for money and the service provided by hotels and homestays. Communities must be trained by government agencies on standardized services. In portions that have to be paid for on the tour such as flowers, objects used for worship, car park and toilets are not priced in a faith-based donor.

3. Place - Accessibility: Most tourist sites are increasingly using applications and digital technologies to access them, making the connection and communication more convenient and faster. The use of the Internet requires a comprehensive development of the Wi fi signal. Public sector administrators must recognize the need for digital infrastructure development, with the goal of covering all areas and sufficient for use as the basis for the most efficient development of tourism. This is a key factor in promoting convenience-based services that make it more accessible to travelers.

4. Promotion - Nowadays, online media is the most effective means of communication to capture the attention of tourists, it is a fast channel and there are no restrictions on time and place. Success in online publicity often depends on the ability to write outstanding content and appropriate communication. The integration of public relations through offline and online communication will help to achieve the goal of promoting tourism of Chiang Khan to be more efficient.

5. People - The potential of tourism and service personnel of Chiang Khan District arises from the cultivation of service mind to meet international standards and is impressed with tourists, ability to provide the traveler with the necessary information, the ability to provide advice and guidance and providing assistance when tourists need it. These things will build trust among tourists. Tourists will be happy, feel confident, feel safe, and gain confidence in tourist care measures. It is also important to develop language skills for effective communication.

6. Process - Today, tourism is a business that relies on information technology as a basis for transactions in terms of booking and ordering to provide travelers with convenience, speed, and accuracy. Transactions must be performed via application and web site. Information searching, purchasing air tickets, hotel reservations, restaurant reservations and various purchases in the travel industry, travelers operate using technology as a medium for facilitating accessible tourists.

7. Physical Evidence - Chiang Khan's tourist attractions overall include outstanding in terms of atmosphere, cleanliness and beauty. For tourism facilitation, all sectors must prepare to accommodate tourists such as drawing clear traffic lanes and updating the road signs up to date in order to preserve the scenic beauty of Chiang Khan. Some tourist areas should have a seating area for tourists to sit and relax when traveling for a long time. Chiang Khan is a beautiful, clean and air-conditioned city, so it is urgently needed to develop these things to facilitate tourists.

VI. RECOMMENDATIONS

From the study of community-led cultural tourism promotion in Chiang Khan District, Loei Province, the researcher was able to explain the results as follows: 1) The study of documents and research related to tourism could be used as a preliminary information in determining the direction of tourism promotion. 2) Inspecting the potential of tourist resources such as natural resources, cultural

resources, activity resources and resources on way of life and local wisdom to support cultural tourism to promote tourism. 3) In-depth interviews were a data collection tool, which is a collection of information from key informants, issues to be interviewed and recorded in the document form provided. The researcher discussed the research results according to the objectives as follows:

1. Potential of cultural tourism sites by communities in Chiang Khan District, Loei Province - The potential of the area in cultural attractions in terms of accessibility, attractions, activities, accommodations, amenities and services in the tourist sites were examined. Cultural, traditions and way of life of the people in the community were Sun Watthanatham Thai Dam Ban Na Pa Nat, Phu Thok, Kaeng Kut Khu, giving monk on sticky rice on walking street, art and religious culture, temples, archaeological sites, museums, contemporary architecture traditions and way of life of the people in Chiang Khan Community. Corresponds to La-aet Silanoi (2014) {4} described cultural tourism as a purposeful or motivational tourism for participation in activities, education, cultural learning and livelihoods. Infrastructure had been developed and added businesses such as accommodations, restaurants and souvenir shops have been established in order to make community tourism sites more readily available to serve tourists. This affected the tourism composition, making it more attractive to tourists to decide to visit Chiang Khan. In line with Wirasara Boonsomkiat (2011) {5} researched the development of cultural tourism sites in Nakhon Si Thammarat Province at Wat Phra Mahathat Woramahawihan, Wat That Noi and Wat Mokkalan, it was found that the results of Wat Phra Mahathat Woramahawihan were considered as a tourist attraction with the potential to develop into a cultural tourism attraction. From a tourist's point of view, there was a high level of physical satisfaction, access to attractions, value, attractiveness and amenities.

2. Guidelines for promoting tourism in Chiang Khan District, Loei Province - For those involved in the management of cultural tourism, guidelines and proposals from the interviewees were obtained to use information in the marketing mix to be a part of tourism promotion such as products, prices, distribution channels, marketing promotion, personnel and physical aspects. Most of the key informants commented that Chiang Khan's tourist areas were interesting and beautiful cultural, natural and man-made attractions. These were the sights suitable for tourism. Tourist attractions were Sun Watthanatham Thai Dam Ban Na Pa Nat, Phu Thok, Kaeng Kut Khu, giving monk on sticky rice on walking street, art and religious culture, temples, archaeological sites, museums, contemporary architecture traditions and way of life of the people in Chiang Khan Community. Travelers could afford this price, which was not too high. There were different prices, with tourists taking into account the value for money. In accordance with Seree Wongmonta (2560) {6} explained that marketing mix meant having products that meet the needs of target customers, selling them at acceptable prices and consumers were willing to pay because they saw that it is worthwhile. Travelers used applications and digital technology to reach most tourist destinations, making them more accessible through convenient connections and communication. Today, online media is the most effective means of communication for traveler decisions. All these things make tourists would like to visit and experienced this beautiful nature.

CONCLUSION

From this study, it was found that there are some interesting points for further study of the results as follows.
1. There should be a study on branding to create a clear identity in the tourist attractions of Chiang Khan District in order to create brand recognition for tourists.
2. There should be studies on the factors related to tourism management in order to promote tourist attractions in terms of capacity to accommodate tourists during festivals or traditions because it is a time when tourists are concentrated very well, which may adversely affect the tourist resources of that area.

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The Innovation Model for Small and Medium Enterprises in Thailand

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***Abstract*—** *This research aimed to 1) to study the elements of the innovation model for small and medium enterprises in Thailand 2) to develop the model of the innovation model for small and medium enterprises in Thailand. There are 3 steps of research: 1) study documents and related research. 2) Develop a model for the innovation of small and medium enterprises in Thailand with questionnaire from manager of small and medium enterprises 400 persons 3) analyzed the elements of the development pattern of the innovation model for small and medium enterprises in Thailand by analyzing the elements; The statistics used for data analysis were percentage, range, quartile, mean, standard deviation and elemental analysis.*

Research findings

*1) The study of the innovation model for small and medium enterprises in Thailand found that it consisted of **3** important components: product innovation, process innovation, market innovation of the innovation model for small and medium enterprises in Thailand. 2) development of the innovation model for small and medium enterprises in Thailand found that there are 5 main components: dynamic capabilities, market orientation, intellectual capabilities, innovation, competitive advantage. The innovation model for small and medium enterprises in Thailand overall and the aspects are good.*

Index Terms— ***School Administrators, Office of the Basic Education Commission, Model Development, Thailand 4.0***

I. INTRODUCTION

Small and medium enterprises are very important to the Thai economy. Because it is the business with the largest volume in the Thai economy Most of the small and medium enterprises are small businesses, more than 60% of the country's enterprises. Which these small enterprises are scattered in various provinces All over Thailand Therefore, small and medium enterprises are important to the economy of each province as well. Not only will it help make the economy of each province good it is also creating jobs, creating occupations and generating income for the community and people in the community in the province. Make the community and the people in the community earn income. Better livelihoods, employment, and can also help reduce labor migration problems within the province. It can be seen that small and medium-sized enterprises are very important to the community and their community members [1], and therefore should be promoted and developed for the operation potential of small enterprises. Medium and small to be able to continue business and grow more. But in the past, there have been many problems in the operation of small and medium enterprises. One of the main problems for small and medium-sized enterprises is the problem of adaptation to the environmental factors conducive to the business operation of small and medium enterprises so that their businesses can survive not only in a short period of time. But still have to be able to survive for a long time as well by relying on the resources that exist within the business and create opportunities for businesses to be successful in operating in accordance with the changing circumstances today.

This research therefore uses the concept of dynamic capability. This is a concept that pays attention to adaptation and change under the external environment affecting the business. Allowing businesses to adapt and survive by focusing on capacity building from the use of resources and capabilities within the business to adapt to the environment. In which businesses will have to continually adjust Asset and ability to cope with changing environments are defined and adjusted [2], which is the foundation for creating a competitive advantage [3] for the organization's success. Businesses can survive [4] the dynamic capacity development concept is a concept that complements the lack

of a resource base concept aimed at monopolizing individual resources, finding opportunities and adapting. Transforming Future Capabilities [5] to Targeted Resource Alignment Both internal and external business resources [6] by leveraging in-house resources and capabilities [5] by linking business capabilities embedded within the organization. Integration between internal and external business competencies [7] in line with the changes of the external environment. By searching for opportunities And combine resources and knowledge To transform into a new capability [6], it will affect the value of the business and the performance of the organization [7], allowing the business to continue to survive and grow [8], which could be created by the need for innovation and transformation [6] to provide better product or service satisfaction for customers than competitors [3] and from past literature. Dynamic capability has been tested to influence operational ability. It is a strategy used to create value for the organization. [9], in line with the ideas of Salunke et al. [10] and Cepeda & Vera [11], affirm that dynamic capacities are linked to corporate profitability and growth. Especially in the small and medium-sized enterprise business that needs to be adjusted to survive the change, which the problems of the enterprise Medium and small in Thailand are important. Lack of business planning in order to increase the business adaptability. Lack of factor analysis skills and most small and medium enterprises do not realize the importance or do not know how to integrate knowledge to manage the competitive advantage of their own business. As a result, the operating performance is in a bad level as it should be. And in the end, entrepreneurs had to liquidate their business shortly after starting their operation.

From the theoretical concepts of various scholars and researchers The literature reviews were used in studies of dynamic capacities such as [5], [12], [13], [7], [14] from the competence of factors within business and it is a theory that has been proven theoretically by widespread scholars of Source of dynamic capacity building By leveraging in-house resources and competencies [5] to understand the importance of dynamic competencies and the results of dynamic capacity development in innovation and performance. Of business to develop the foundational potential of the community business to be able to operate the business sustainably, generate income and employment for people in the community and society to prosper. Well-being and it also enhances the well-being of the people in society as well.

II. RESEARCH OBJECTIVES

The research methodology involved the development innovation of small and medium enterprises in Thailand and aimed to study the elements of the innovation model for small and medium enterprises in Thailand and to develop the model of the innovation model for small and medium enterprises in Thailand.

III. RESERCH METHODOLOGY

Research Design

This study was a quantitative research carried out by the following procedures:

1) Study the empirical data that can be applied to all areas to check with the theoretical framework set forth by the researcher based on the principles, concepts and theories to get the findings on key issues.

2) The researcher collected data using a questionnaire with business owners, managers, supervisors or related employees of SMEs in Thailand.

Key Informants

1) The area of this study was to study of Small and Medium Enterprises in Thailand towards using developing the innovation model.

2) We determine sample sizes that are suitable for data analysis with the LISREL program by using the Structural Equation Modeling (SEM) statistical technique. The sample size must be 20-10 for each variable in the research. So the sample size should have 300 (Angsuchote et al., 2015).

3) The researcher used multistage random sampling method because the population in the study was large.

Research Tool (Focus Group Discussion)

The innovation model in this research by questionnaire. The creation of research tools:

1) Studied the related theoretical and literary concepts to define the operational definition and structure of the variables the researcher want to study.

2) Created a questionnaire based on the operational definition that the developer of the instrumentation and the questionnaire has been improved to fit the research.

3) Brings the questions that have been developed to the experts to examine the content validity of the questions from the study of related theoretical and literary concepts.

4) Modified the questionnaire to produce a draft questionnaire.

5) Test validity by using the questionnaire developed by the researcher for 5experts to find the index of correspondence between the question and the objective.

6) The reliability of the questionnaire was tested by 30 participants is not a research sample.

Data Analysis

The researcher has conducted statistical analysis that is appropriate and consistent with statistical data to meet the purpose of the research set. The statistics used to analyze the data are descriptive statistics, pearson's product moment correlation coefficient and Structural Equation Models (SEM).

IV. RESEARCH RESULTS

The findings indicates that researchers divided the topic into five parts, with the details as follows.

1) General information of the respondents; Most respondents are female. 51.64%of them are 50-59 years, 37.86%of them have experience of working 5-9 years.

2) Average Data of Variables; Dynamic Capabilities, Market Orientation, Intellectual Capital, Innovation and Competitive advantage were in table 1.

Table 1: Show average data of variables

Variables	Mean	S.D.	Level
Dynamic Capabilities	4.23	0.34	high
Market Orientation	4.16	0.55	high
Intellectual Capital	4.18	0.32	high
Innovation	4.35	0.49	high
Competitive advantage	4.21	0.42	high

3) The research model consistency check with empirical data, the first model analysis showed that the harmonic index was not consistent with the empirical data. Or does not meet the criteria set. Some important stats. Not yet meet the criteria set. The researcher then proceeded to modify the model by adjusting the parameters by agreeing to relax the initial agreement for the relative error. For Analytical results, after the model was modified, the model was found to be in harmony with the empirical data, with the six harmony indexes that met the acceptance criteria. The index values $\chi 2$ / df = 0.276, CFI = 0.999, GFI = 0.99, AGFI = 0.97, RMSEA = 0.000 and SRMR = 0.000. In harmony with the empirical data.

4) Route Analysis Results

4.1 Dynamic Capabilities (DC) has a direct positive influence on the innovation of the business (IN), with a direct magnitude of 0.56 which is statistically significant at .01 level.

4.2 Market Orientation (MO) has a direct positive influence on the innovation of the business (IN), with a direct magnitude of 0.67 which is statistically significant at .01 level.

4.3 Intellectual Capital (IC) has a direct positive influence on the innovation of the business (IN), with a direct magnitude of 0.36 which is statistically significant at .05 level.

4.4 Innovation (IN) has a direct positive influence on the competitive advantage of the competitive advantage (CA), with a direct magnitude of 0.54 which is statistically significant at .05 level.

4.5 Dynamic capabilities (DC), market orientation (MO) and intellectual capital (IC) and have a positive indirect influence on competitive advantage (CA) through Innovation (IN). The mean was 0.35, 0.48 and 0.63, respectively, which was statistically significant at .05 level. (see Figure 1).

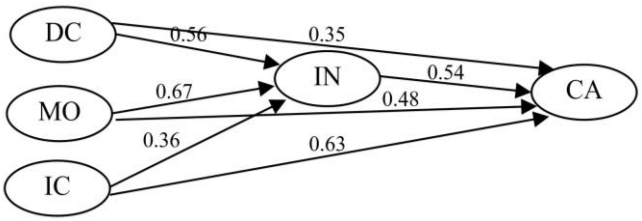


Figure 1: Show route analysis

VI. DISCUSSION

The results show that dynamic capabilities, market orientation and intellectual capabilities influence on innovation and the innovation influences the competitive advantage. At the .01 level, the results of the research were in line with the two objectives. The results were as follows.

1) Dynamic capabilities has a direct influence on the innovation. This is due to the ability to express opinions towards business women over time, and changing the competence of business [4]. Having a family, come to learn and know how to build a new facility for you [13] by searching for and culture and knowledge for the purpose of creating a new facility for you. Adapted to a new competency method [6], [9] research studies the relationship of cognitive management and small and medium-sized performance digging, study findings found. This means that cognitive protection is used as a tool for work development and also finds a relationship between one another and performance. There is a cognitive correlation with the research of [15] studying the dynamics of mannequins. Discourse and Dynamic Characteristics a Case Study of China the results of the study found that the tuition fee of the tool was useful and important to the principle of dynamic competence. The study of the relationship between the dynamical characteristics and performance of the high heel shoes did not affect the ability to control ability at the same level and Wilden et al. [16] study to the dynamic effect on the performance of the latter was found that the performance of dynamic competence depends on the intensity of the

competition the company faces, with Zhou & Wu [12] and Weerawardena & Mavondo [9], who say that the source of cognitive competence. Dynamic dynamics and competence by defining to help build business forts under a dynamic cultural landscape [17], [18].

2) Market orientation has a direct influence on the innovation. This is because these innovative organizations continue to develop innovation leadership positions based on their technological innovation. Not only to meet current needs but still able to meet new demands Of consumers as well, in line with the research of [19]. Factors Contributing to Innovation in Small and Medium Enterprises: A Case Study of the Gem and Jewelry Business The results of the research revealed that the external factors contributing to the innovation consist of 5 main components: 1) raw material suppliers 2) education sector 3) government sector 4) industrial sector 5) customers. On the components of factors that affect the innovation of the gem and jewelry business. This research can be applied to guide innovation planning. To enhance the quality of products and production processes Including various technologies In the industry to be more efficient And increase the competitiveness in a sustainable way In line with [20] has studied research on Guidelines for the development of innovative capabilities of small and medium enterprises in 5 southern border provinces: a case study of the food and beverage business group The results of the research were as follows: The development of SMEs' innovation capability is due to five important conditions: risk appetite. Network building aiming to Meet Market Needs Proactive business operations and corporate learning Taking risks leads to organizational learning and proactive business practice. As for creating a network, entrepreneurs have the risk. Focusing on meeting market needs results in proactive business operations and organizational learning. The study has resulted in a model describing the conditions that contribute to the innovation capability of SMEs in the southern border provinces. And like [21] study on business innovation development in the Thai-Cambodian border area the results of the research showed that the intellectual capital, the learning organization and focus on marketing Have a positive influence on innovation And innovation has a positive influence on the performance of a business. Business performance is influenced by intellectual capital. Learning organization and focus on marketing

3) Intellectual capabilities has a direct influence on the innovation. This is because businesses allow employees to use their creativity to lead new ideas. And take this initiative to create new products and employees are constantly developing new ideas and knowledge, enabling businesses to have new work ideas all the time. Business has adopted an integrated management system in serving customers as much as possible. This management system will help create and support innovative ways of working in business, having up-to-date policies, working methods, and databases. Can solve problems in a timely manner Employee competence can be achieved through the creation of partnerships with external organizations to increase the productivity of the business. And also promote teamwork of employees to be able to work together including diagnosing and solving problems together by the expertise of the employees Teamwork is also a great way to create good relationships between employees in the business, helping businesses create a competitive advantage. And help businesses have better operating results This is consistent with research by [22] that says intellectual capital is an indicator of value creation and an organization's competitive advantage. By measuring the efficiency of intellectual capital management as a key determinant of competitive advantage, it is consistent with [23], who said that in the 21st century, intellectual capital is a key asset to a business. Small and medium enterprises Success in a competitive business environment most businesses will be able to survive a fundamental need for intellectual capital. And want to study the role of intellectual capital in business entrepreneurs Small and medium enterprises to raise awareness about the use of intellectual capital that affects the performance of entrepreneurs and small and medium enterprises as well as

4) Innovation has a direct influence on the competitive advantage. This is because innovation is a new method, process or technology. That the organization developed for use in the organization and marketing The four components of the innovation It is a tool that enables organizations to gain a competitive advantage [24], in line with [25], who say that the influence of competitive advantage is driven by innovation. Like [26], innovation has a direct impact on competitive advantage. And technological and non-technological innovation leads to a competitive advantage. The operation of small and medium-sized enterprises can gain a competitive advantage through the use of innovation to create innovations to support potential changes. Demonstrate an organization's ability to innovate. It not only helps the organization survive. But there is still a need for organizational development [24] for the organization to thrive. Small businesses especially [27] Small and medium businesses need the ability to create new things. To achieve a competitive advantage [28], in line with the research of Yingchon [29], researched on automotive innovation at the SME level This research studies the innovations occurring within the automotive industry. The target group is SMEs entrepreneurs in the automotive industry. The results of the research were as follows: Most of the innovations that happen in small enterprises are through trial and error. Using past experiences And adaptation to the economic and social environment, sometimes resulting in innovations that help in doing business inadvertently, such as product price reductions,

lead to low cost strategies Or the need to produce products to meet the needs of customers, resulting in a collaboration to create new products with customers, etc. When the business grows or enters into a medium-sized enterprise Entrepreneurs will start to develop more management ideas and use tools or innovations to help them raise standards and competitiveness, such as using operating systems to help analyze data and help decision making in production processes and Sell products Using online media to help advertise products And setting up the logistics system to make the work process at every step more efficient And the research of Ketmanee et al. [30] studied the subject Competitive advantages of small and medium enterprise businesses in the era of Thailand 4.0 presenting guidelines for small and medium enterprises business development It should increase the learning ability within the organization and innovation ability. The learning skills of personnel should be developed continually until the personnel have knowledge. Improve personal skills until the acquired knowledge can be developed Related to the daily work processes that are responsible for these will affect the difference. Low cost to give businesses a competitive advantage.

VI. CONCLUSION

The results show that dynamic capabilities, market orientation and intellectual capabilities influence on innovation and the innovation influences the competitive advantage. At the .01 level, the results of the research were in line with the two objectives.

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The Development Model for Digital Transformation of Hotel in Thailand

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Abstract— *This research aimed to 1) study the elements of the development model for digital transformation of hotel in Thailand and 2) to develop the model of the digital transformation of hotel in Thailand. There are 3 steps of research: 1) study documents and related research 2) develop a model for digital transformation of hotel in Thailand 3) analyzed the elements of the development pattern of the digital transformation of hotel in Thailand by analyzing the elements; The statistics used for data analysis were percentage, range, quartile, mean, standard deviation and elemental analysis. Research findings 1) The study of the digital transformation of hotel in Thailand found that it consisted 3 important components: business model, operational process and customer experience. 2) Development of the digital transformation of hotel in Thailand found that there are 5 main components: organization, information technology, innovation, digital transformation and business performance, and the level of the digital transformation of hotel in Thailand overall are good.*

Index Terms— ***Digital Transformation, Hotel, Model Development***

I. INTRODUCTION

Digital transformation is having a widespread impact on all sectors, both social and industrial. In all categories, digital transformation is considered to be the cornerstone of the transformation leading to added value to the organization [1], such as adding benefit from strong relationships with existing customers in the making. Cross-Selling through successful digital transformation [2], [3], digital transformation is not just about providing and adapting technology. Use it for its intended purpose only. But it is also an important means of solving management problems in other areas [4]. In the blur of the industry, innovative companies have rapidly applied new digital technology to each other. Industry to deliver value to customers who love new things and streamline processes to be efficient as an alternative market and respond to customer needs, and gradually break down the roles of existing businesses such as Netflix and Uber are fast-growing companies with digital transformation either creating new forms of business or reshaping existing business models. Kodak and Nokia have failed to respond to the trend of digital people increasingly losing their markets because of their business failures. Companies that are able to develop new technologies meet user expectations and are consistent with the rapidly changing technology [5]. Today's digital transformation is put forward as a complex issue. Has an effect on Many parts of a digital technology company can also lead to fundamental changes in business, product models, manufacturing processes and organizational structures with many options and factors to consider, such as information technology coupled with technological innovation and includes: Organizational management Process Successful digital transformation processes require approach and balance in securing organizational resources with capacity building and human resource development. These are not obvious traits and can lead to difficulties in managing the business if businesses ignore or choose different direction of change [5].

The main problem with digital transformation lies in the differences in digital technology use some businesses are changing with little adoption of digital technology, so it is a question of small change. Is this a digital transformation? [6] Digital transformation is a nature of transformation and transformation driven and built on the basis of internal digital technology. The organization is set to transform it into big data analytics, cloud, mobile platforms, and social media the current business environment is facing a radical shift in the business landscape caused by creating innovation and digital opportunities. Companies are taking on more opportunities. Digital technology is not just affecting the way businesses operate. But it also affects business models

that exist in many industries, and the transformation will expand significantly, so organizations must choose whether to digitally transform their existing businesses and benefit from these technologies or allow them to stop. Disrupted by traditional business processes and models [7], while disruptions caused by digital technology have led to positive business transformation and new opportunities. Manage something linked to digital innovation and transforming the ability to structure business processes [8]. These challenges may arise from the complexity involved in convergence. Of digital business models versus traditional business models, including the embedding of digital technology in non-digital products and services [9], [10]. New business processes that require significant organizational changes [11] In addition, one of the most common problems with technology adoption is the ability to use technology. Most organizations, especially small ones, do not have the skills and ability to properly use modern technology to create value for an enterprise or improve its value [12].

As a result of the aforementioned problems, digital transformation in organizations poses a significant challenge for businesses, especially in the hotel chains that are widely adopted today by digital transformation. The digital transformation in the organization is influenced by the digital revolution and a number of different forms, both in terms of skills and convenience, with digital technology at both the individual or corporate employee level, thus enabling the integration of it is not easy for an organization to digitally adapt to maintain its core values and success [13]. It is very important to the business today, the researcher is interested in studying the development of digital transformation of hotel business in Thailand, a country with high tourism advantages.

II. RESEARCH OBJECTIVES

This research aims to 1) study the elements of the digital transformation development model of the hotel business in Thailand and 2) to develop the digital transformation development model of the hotel business. In Thailand

III. RESERCH METHODOLOGY

Population and sample group

The model of this research was quantitative research. (Quantitative Research Methodology) by conducting broad-spectrum empirical quantitative research that provides general applicable conclusions in all areas to examine the theoretical framework established by the researcher from the principles, concepts and concepts of quantitative research. Theory To obtain findings on important issues, the researcher collected data by using questionnaires for hotel businesses in Thailand, 2020, totaling 9,489 locations to determine the appropriate sample size for the analysis of the data with the LISREL program. Statistical Structural Equation Modeling (SEM) technique in which sample size must be 10-20 persons per research variable. [14] In this research, the researcher had 13 observable variables in the model. Therefore, the sample size that was suitable and sufficient should be 260 (20 x 13). Data were collected by mailing questionnaires and meeting at the workplace to obtain the proportion of questionnaires in response to this research. The researcher used multistage random sampling as the population in the study. With a large number of sizes it is necessary to select the sample from the largest scale and select the sample in subgroups with a minor level. [15] with population divided into subgroups according to step sequence.

Research tool

The tool used for data collection was a questionnaire. Questionnaire can be divided into 6 parts: 1) general information of respondents, 2) organizational management, 3) information technology, 4) innovation, 5) digital transformation and 6) business performance. In creating the research tool, the researcher studies concepts, theories and related literature to define the operational definitions and the structure of the variables to be studied. The developers of the instrumentation and trial issues have been modified to suit the research, and the researcher has presented the developed questions to the experts to verify the content of the questions raised by the researcher. To study concepts, theories and related literature in both domestic and foreign literature, the researcher then took the draft questionnaire to test the validity by bringing the questionnaire that the researcher created to the expert. The content validity of the whole questionnaire was 0.95, which was considered in the criteria (IOC> 0.50) [16]. It covers the content that the researcher wants to study, so it can be used to collect data and test the confidence. (Reliability) with the confidence value of the whole questionnaire is equal to 0.989. [15] Statistics used in data analysis the researcher has determined appropriate statistics and consistent with statistical data in order to answer the research objectives set. The statistics used in data analysis have the following 4 sections:

Part 1: Statistics for descriptive analysis are used to describe or describe the attributes or properties of the data distribution of the variables according to the characteristic factor of the group by defining the measure as percentage (Percentage), mean and value. Standard Deviation: Researcher analyzed the basic statistical values of 13 observable variables,

part 2, inter-variable relationship analysis statistics for the relationship between variables by Pearson's correlation coefficient analysis. (Pearson s Product-Moment Correlation Coefficient) whether there is a linear relationship or not able to determine the direction of the relationship. What is the value of the relationship (positive or negative) and what is

the relative size of the relationship as a basis for analyzing the digital transformation model of the hotel business in Thailand? [15].

Part 3. Statistical analysis of the stability of the latent variable and the mean of the variance that was extracted. The researcher considered the stability of the latent variable (Construct Reliability: pe). And the Mean Variance Extracted (p.) By using the formula of Diamantopoulos & Siguaw [17]

Part 4: Statistical analysis of structural equation models, researchers used it for the analysis of Structural Equation Modeling (SEM) models to verify the harmony of research models with empirical data (Model). Fit) by the researcher to check the conformity of the model with the empirical data (Assessment of Model Fit) by the index used to check the consistency of the Model (Measurement Model) with the empirical data. [14]

IV. RESEARCH RESULTS

Research Summary The researcher divided the topics of presentation into 5 topics. Details are summarized as follows:

1. General information of the respondents Most of the respondents were female, 66.42 percent of the respondents were aged between 40. - 49 years, accounted for 35.17%, has 11-15 years of work experience, or 37.69%, has a current position as manager, 20.48%, respectively.

2. Average data of management variables, information technology organization, digital innovation, transformation and business performance

2.1 Organization Management (Organization Management) The respondents had a high level of opinion about organizational management at a high level. When considered on a single side, it was found that the competitive advantage had the highest level of opinion, followed by the effectiveness of the organization management. There were differences of strategies and relations among stakeholders, respectively.

2.2 Information Technology The respondents had a high level of opinions about information technology at a high level. There was the highest level of opinion, followed by proactive stance and business expansion, respectively.

2.3 Innovation: Respondents had a high level of overall opinion on innovation when considered on a specific basis. Regarding improvement and new direction, respectively.

2.4 Digital Transformation Respondents had overall opinion on digital transformation at the level of digital transformation. When considering each aspect, it was found that the customer experience had the highest level of opinion, followed by the work process and the business model, respectively.

2.5 business Performance) The respondents had a high level of opinion on the overall business performance, when considering each aspect, it was found that financial performance had the highest level of opinion, followed by results. Operating non-financial, respectively

3. The results of checking the consistency of the research model with empirical data the results of the analysis of the model from the model modification (Model Modification) were analyzed for the overall model harmony index after the researcher had performed the modifications. That the model was consistent with the empirical data, with the six indexes that met the acceptance criteria: index 1 / df = 0.265, CFI = 0.999, GFI = 0.99, AGFI = 0.98, RMSEA = 0.000, and SRMR. = 0.021 It can therefore be concluded that the structural equation model is appropriate and harmonized with the empirical data.

4. Path Analysis Results

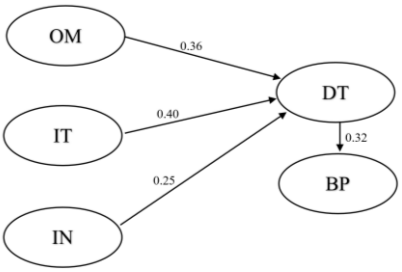
4.1 Organization Management (OM) has a positive direct influence on digital transformation (DT) with a direct influence of 0.36, which is a statistically significant influence at the. 05

4.2 Information technology (IT) has a positive direct influence on digital transformation (DT) with a direct influence size of 0.40, which is a statistically significant influence at the. 05

4.3 Innovation (IN) had a positive direct influence on digital transformation (DT) with a direct influence size of 0.25, a statistically significant influence at the. 05

4.4 Digital Transformation (DT) has a positive direct influence on business performance (BP) with a direct influence size of 0.32, which is a statistically significant influence at the . 01

4.5 Organizational Management (OM), Information Technology (IT) and Innovation (IN) have a positive indirect effect on business performance (BP) through digital transformation (DT), with scale of influence. Indirect was 0,22, 0.32 and 0.28 respectively, which were statistically significant influence at the. 01



ภาพที่ 1

ผลการวิเคราะห์อิทธิพลของตัวแปรในโมเดลดิจิทัลทรานฟอร์เมชั่นของธุรกิจโรงแรมในประเ
ทศไทย

V. DISCUSSION

Research Summary The researcher divided the topics of presentation into 5 topics. Details are summarized as follows:

1. General information of the respondents Most of the respondents were female, 66.42 percent of the respondents were aged between 40. - 49 years, accounted for 35.17%, has 11-15 years of work experience, or 37.69%, has a current position as manager, 20.48%, respectively.

2. Average data of management variables, information technology organization, digital innovation, transformation and business performance

2.1 Organization Management (Organization Management) The respondents had a high level of opinion about organizational management at a high level. When considered on a single side, it was found that the competitive advantage had the highest level of opinion, followed by the effectiveness of the organization management. There were differences of strategies and relations among stakeholders, respectively.

2.2 Information Technology The respondents had a high level of opinions about information technology at a high level. There was the highest level of opinion, followed by proactive stance and business expansion, respectively.

2.3 Innovation: Respondents had a high level of overall opinion on innovation when considered on a specific basis. Regarding improvement and new direction, respectively.

2.4 Digital Transformation Respondents had overall opinion on digital transformation at the level of digital transformation. When considering each aspect, it was found that the customer experience had the highest level of opinion, followed by the work process and the business model, respectively.

2.5 business Performance the respondents had a high level of opinion on the overall business performance, when considering each aspect, it was found that financial performance had the highest level of opinion, followed by results. Operating non-financial, respectively

3. The results of checking the consistency of the research model with empirical data the results of the analysis of the model from the model modification (Model Modification) were analyzed for the overall model harmony index after the researcher had performed the modifications. That the model was consistent with the empirical data, with the six indexes that met the acceptance criteria: index 1 / df = 0.265, CFI = 0.999, GFI = 0.99, AGFI = 0.98, RMSEA = 0.000, and SRMR. = 0.021 It can therefore be concluded that the structural equation model is appropriate and harmonized with the empirical data.

4. Path Analysis Results

4.1 Organization Management (OM) has a positive direct influence on digital transformation (DT) with a direct influence of 0.36, which is a statistically significant influence at the. 05

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3) Innovation has a positive direct influence on digital transformation. Due to innovations for the new digital age, digital transformation is essential to organizations due to the need to compete in the marketplace. Therefore, organizations should undergo significant structural changes. Digital transformations enable organizations to change according to the needs of modern businesses, making their operations more efficient [19], according to a [24] The study found that digital technology is largely dependent on technological innovations such as mobile technology, analytical solutions, etc., while digital trans The floor covering is much more extensive than that, so Thus, digital transformation is studied from different perspectives, and studies have shown that digital transformation affects every aspect of an organization. This is consistent with Cisco & Oracle [25] research focused on the development of new technologies related to digital transformation. In addition, Nwankpa & Roumani [11] on information technology competence. And digital transformation, a case study of business performance perspectives, also found that digital transformation has a positive influence on innovation and company performance. This is also in line with the research of [19] that studies the main characteristics of organizational structures that support digital transformation. Create innovations that are sufficient for internal use.

4) Digital transformation has a positive direct influence on business performance, possibly because the company is able to improve its business competitiveness and promote its growth potential through testing digital transformation. The results show that digital transformation is a task that every company cannot avoid due to: The company needs to adapt

to its potential to fit into a broadly established business activity model and use it as a business development strategy [26], in line with Nwankpa & Roumani [11] the research results are consistent and support how digital transformation affects business performance by studying the capabilities of information technology and digital transformation. In a case study of perspective on business performance, empirical data showed that information technology capabilities would have a positive effect on the Company's operating efficiency. Positive influence on innovation and the Company's performance in line with the results of the [27] study, the impact of digital transformation on the corporate performance of SMEs in Taiwan. In terms of service, it has a significant impact on organizational performance, in addition, it was found that the negative impact of more industry standard data is more correlated with the performance of SMEs. Also, and, like Stief et al. [26], study the transformation to success, the empirical analysis of the digital transformation of all companies facing increased demand. Businesses need to adapt and integrate digital technology to transform business activities to pursue business development through the use of new digital technologies.

VI. CONCLUSION

According to the study, it was found that the mean data of management variables, organization, information technology, digital innovation, transformation and overall business performance were at high levels. Research and empirical data showed that the overall model harmony index was consistent with the empirical data and the path analysis results showed that organizational management, information technology and innovation had a positive direct influence on digital trans. Information technology and digital transformation have a positive direct influence on business performance and organizational management, information technology and innovation have a positive indirect impact on business performance.

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Forms of Integrated Marketing Communications For Community Products by the Locals of Good Agriculture Practice –Klongha Sub-district, Klongluang District, Pathum Thani, Thailand

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Abstract

The research of the forms of integrated marketing communications for community products by the group of a good agriculture practice aimed to study the various forms of marketing communication through participated process with the deep interview, group discussion, and participated observation. The 30 informants were selected from five groups of the community leaders, the good agricultural practice group, the housewives, the teenagers, and the seniors.

The result showed that the old forms of advertisements such as wording, brochures, community banners have been made while the channels via social medias were added to increase the product selling to focus on the specific customer groups. Moreover, the product-booth show has also been supported and publicized by the state. The community has intended to produce the varieties of products and to advertise through different marketing tools, both online and offline, focusing on the public activities. The uniqueness and characteristics of the good agricultural products have continuously been improved to acknowledge the products widely.

Based on the research information, the paradigm of marketing communication forms for the mentioned products has been called 'The SPECIAL Paradigm' with the researcher's intention that the entrepreneurs can form the ideal frame for integrated marketing communication in the future.

Keywords— ***Integrated Marketing Communications, Community Products, Community Enterprises, Good Agricultural Practice Group***

I. INTRODUCTION

The 12th National Economic and Social Development Plan (2017-2021) of Thailand has adopted the "Sufficiency Economy Philosophy" as a guiding philosophy in the continuous development of the country from the 9th -11th National Economic and Social Development Plan. It appears in the preparation of the 12th edition of the National Economic and Social Development Plan. The Office of the National Economic and Social Development Board has created it on the basis of the 20-Year National Strategy Framework (2017-2036), which is the core plan of the Sustainable Development Goals: SDGs, Including the restructuring of Thailand to Thailand 4.0, as well as national reform issues. In addition, the importance of the participation of all development partners to jointly define the vision and direction of national development. As well as jointly prepare details of the strategy of the plan to "Consistency, wealth, and sustainability" [14].

Developing and promoting the foundation economy is one of the government's key policies on promoting local and community products by establishing and supporting the One Tumbon One Product: OTOP project, this is part of an urgent government program that aims to enable each community to apply local wisdom to develop products that can generate income for the community. The government sector is ready to assist in modern knowledge and management, such as business career development training, assistance in distribution channels, loan application techniques in the economic slowdown, etc. This is to distribute products from the community to the market both at home and abroad by means of shops, networks, and the Internet, as well as promoting and developing local communities to

strengthen and self-reliant by the participation of the people in creating jobs. And generate income by bringing resources and wisdom to develop products and services that are unique and quality according to market demand.

From the policy to reduce social inequality aimed at generating income and prosperity, strengthening the economy by allowing the private sector and the public sector to participate in joint actions in the public sector to achieve a vision of stability, wealth, sustainability, which focus on the people in the community to be able to rely on themselves. Which one of the ways to be sustainable self-reliant for the community is the Community Enterprise? Building stability of the community economy by integrating the production process on a balanced basis on the capacity and strength of the community, emphasizing the production for sufficiency consumption within the community. Encourage communities to form cooperatives, occupation groups, support local wisdom and culture to create valuable products and services, and build partnerships with the private sector to make investments, create careers and incomes that are allocated fair benefits to the community, including creating a community enterprise incubation system, along with developing market management knowledge and career skills.

Klong Ha Subdistrict, Klong Luang District, Pathum Thani Province In the past, it was one of the areas where most of the population had a farming career in the form of monoculture with rice mainly because of the abundance of water resources which showed the characteristics of a truly rural community. But nowadays, the way of life of the community has changed according to the economic and social conditions influenced by urban expansion, its characteristic is that the area of farms has decreased and it has become industrial plants, housing estates, golf courses. In addition, the once quiet community was bustling with the number of cars, trucks, buses that pass through and out, as well as the hidden population of immigrants to live and work near the urban areas, thus becoming the Semi-urban, semi-rural communities, that is to say, the majority of their income comes from agriculture, people in the community bring the principles of the sufficiency economy philosophy into practice until there is a grouping activity to build a career, increase household income. Establishment of the Ban Khlong Ha good agricultural community enterprises, which is led by the community leader, Klong Ha Subdistrict, as the head of the Great Army in driving the integration of groups to produce and distribute products such as instant chili paste, Ta Dang chili paste, Fermented fish paste, Pimp chili paste, Hell chili paste, and orange crispy noodles. The major problem for the Ban Khlong Ha good agricultural community enterprises group is the marketing problem in which the products that are sold are not yet known to the general public, members lack knowledge and understanding of the marketing communications process, and there is a lack of ongoing product publicity. The research team is therefore interested in studying an integrated marketing communication model For Community Products by the Locals of Good Agriculture Practice –Klongha Sub-district, Klongluang District, Pathum Thani, and to present the paradigm of the appropriate good agricultural community enterprises.

II. RESEARCH OBJECTIVES

The objective of this research was (1) to study an integrated marketing communication model for community products of the good agricultural practice group, (2) to present a paradigm of integrated marketing communications for community products of the good agricultural practice group. The research was conducted in the Khlong Ha district area. Khlong Luang District Pathum Thani Province.

III. Definition of Research Terms

Integrated marketing communication means the incentive communication used in marketing promotion with integrated strategic planning and management of various motivational communications which are harmonized with the purpose of making a difference to the Brand and aiming to Build Brand Equity is to create unique values that stand out to the brand.

Community products mean products produced from folk wisdom, which shows the way of life and culture of the people in the area of Khlong Ha Subdistrict, Klong Luang District, Pathum Thani Province.

One Tambon One Product means the idea that each village has its own main product, a product that uses raw materials or local resources and wisdom, which is developed into a product that can generate income for the community. OTOP in Thailand is modeled on the One Village process: One Product (OVOP) of Oita Prefecture, Japan. It was so successful that it was able to stimulate community empowerment and develop local production with an international perspective.

Community enterprise means Community enterprise by the community for the benefit of people in the community who use local wisdom and community social capital to operate activities for promoting community enterprises, this is to strengthen local wisdom and community learning process in developing community enterprises to create opportunities and income of the founding communities until they can be self-sufficient sustainably.

IV. REALATED LITERATURE

1. The related concepts

1.1. Integrated marketing communication

Duncan (2002) said that integrated marketing communication (IMC) stands for a business strategy that uses planning, development, processing, analyzing brand-consumer communication, analyzing consumers, primary target groups, secondary target groups, including related to providing relationships with internal and external stakeholders [2].

Dean M. Krungman (1994) said that IMC refers to an attempt to deliver a properly prepared message to a consumer, representative, or other public, this kind of communication strategy can be called one-way marketing because of the effort to deliver a clear and consistent presentation [1].

Schultz (1997) said that the use of IMC will improve the planning of marketing communications, and when it comes to implementing the plan, it will be better because a variety of communication tools are used where appropriate. In order to optimize the use of IMC tools, IMC planners will need to consider the appropriateness of the form of communication from the consumer's point of view by considering whether the consumer is seeking information about the product or What services are he looking for?. Schultz calls the IMC guidance to consumers Brand Contact Points that means the point where the target consumer sees, hears, hears, touches get to know the story of a particular product, both found in mass communication and other forms of communication not through mass communication [23].

Semenik (2002) said that IMC refers to the use of a combination of marketing communication tools to create a powerful communication impact or to properly combine multiple marketing communication tools to run a marketing promotion that focuses on how Alluring communication and clearly showing product personality, or is the process of developing a marketing communication program that requires constant use of multiple motivational communication with the target audience [24].

Marketing communication, if considered by the existing definitions, can summarize the essence of the IMC as follows: (1) it is a communication that uses a harmonious, harmonious multi-motive communication method. (2) it is communication that has both journalism and communication which is not through mass communication. (3) it is a long-term continuous communication to differentiate brands by presenting the brand positioning to be clear and outstanding in the minds of consumers. (4) It is a communication to focus on increasing the frequency of target consumers to have the opportunity to see the brand as often as possible in order to make the target consumer familiar with the brand that will lead to brand trust. (5) It is a communication that is not only a one-way talk through a mass media monologue, but a dialogue between the product owner and the target consumer in order to manage the relationship between the brand and its customers in line with the Customer Relationship Management approach (CRM).

Therefore, the integrated communication is creating a big picture or big picture, it is necessary to use marketing planning, programming, marketing promotion, and coordination of various marketing communication tools are used together as a marketing communication strategy developed by adopting all kinds of corporate activities. It is not merely a marketing promotion tool to communicate with customers, because customer perception of the company or the product it is offering customers is perceived in many ways such as from advertising through various media, from product prices, from direct marketing, from various news, from promotional activities, as well as from types of stores where products are released, etc.

1.2. One Tambol One Product: OTOP

Tawatchai Kitiyapichatkul (2004: 71) said that One Tambon One Product is the development of community products based on local wisdom, culture, traditions and using local resources to strengthen the uniqueness of the community, emphasizing the process of generating income from products to develop into quality products and services that have distinctive and added value is marketable, which is consistent with the local culture and ways of life by adhering to the self-sufficiency principle of the community and developing the quality of production of the community to meet the needs of the international market which will further strengthen the foundation of the community economy This business management model seeks to increase the quality of products with local characteristics mainly to

international standards in order to expand the market scope to the global market [27].

1.3. Community business

Prapaporn Yangprayong (2016) discusses the implementation of the principles of management, production, and marketing, based on the philosophy of sufficiency economy, helping to strengthen and sustainability career groups [15]. Sakonkiet Sungwarakittiwut and Wanna Rattananukul (2018) said that the community business management towards Thailand 4.0 has increased convenience for the buyer group by increasing the distribution channels of products through technology such as Facebook, Line, and BusinessLineX [20]. And Global Inker (2017) discusses Sufficiency Economy Sustainable business solutions should be self-sufficient, rational, and immune, that is, to implement the sufficiency economy philosophy.

1.4. Product development

Kotler and Armstorng (2015) said that adding value to a product requires consideration of product differentiation and (or) competitive differentiation [6], while Rattanaphan, Rattanaphan, Mukdawijitra, Kulthirawong, and Kanchanamukda (2011) said that developing quality products in line with customer behavior and needs should be more technology adoption, need to expand new customer segments, as well as adding a variety of distribution channels and up-to-date [19]. Leelasuwat, Boonchuai, and Teianchan (2015) studied the guidelines for the international development of the OTOP market by developing more product models and be able to produce products according to customer needs, entrepreneurs should develop new distribution channels through online channels more, there should be a new product development by designing products for consumers to be international, increase the international customer market to add value to the product and expand the market more [11]. And Prayalaw and Manmart (2015) said that developing innovative food products will increase the competitiveness of the market [17].

1.5. Marketing channels Development

Schiffman and Wisenbit (2014) said that the development of marketing channels and creating added value for community food products in Songkhla Province should be undertaken in the form of a brother-sister program operated as an entrepreneur with a marketing channel that has the potential to provide assistance to other operators, creating a network of entrepreneurs, communities, alliances or partners as well as developing outstanding product placement on the shelves [22].

Prayalaw and Manmart (2015) said that a display adorns the shelves of merchandise to showcase its uniqueness and to enhance the uniqueness of its merchandise. It must be easy to find, accessible, in addition, expanding more distribution channels in all forms increases opportunities and channels to reach consumers [17].

Mukda (2013) said that the development of marketing channels and creating added value for community products still needs to be supported by government agencies or educational institutions as a mechanism and a hub for networking creating a partner, creating a website or online shopping application is to strengthen your distribution, as well as research for product development (R&D) and quality development, standardization of the product to be different and unique to customer needs [12].

Leelasuwat, Boonchuai, and Teianchan (2015) studied the guidelines for international OTOP market development, Sam Phran District, Nakhon Pathom Province found that the entrepreneur should develop new distribution channels through more online channels and should develop new products. There are products designed for consumers to be universal, to increase the international customer market to add value to the product, and to expand the market more broadly [11].

Jindavong (2015) studied the guidelines for the development of marketing mix of OTOP products to promote tourism in Hat Yai District, Songkhla Province, found that the government agencies and related agencies should support the training of product and packaging design personal development projects, inviting creativity, organizing training to provide knowledge and provide pearls to support packaging, support website visits, displaying the location and details of production and distribution locations, and able to be ordered by phone through the website, including network management, management of exhibition and distribution places, and support the exhibition [4].

1.6. Participation

Prinsloo (2008) discusses the concept of community-based development: involving the community in Project Design and in the implementation. Moreover, the community development process has to include Local Wisdom in the process of making the right choice [18].

Sungkep (2013) discusses participatory community development processes including contributions, collaboration, decision-making, co-

operation, collaboration, co-monitoring and evaluation, and participation in development outcomes [26].

2. Related research

Natchaya Jaijune (2016) It was found that the respondents were the most female with an average age of 20-29 years, most graduated with a bachelor's degree, with an average income between 10,001-30,000 baht, occupation of employees in a private company, where the sample group used to take dietary supplements, which through the internet was the channel in which the sample received the most information about dietary supplements, the products that the majority of sample groups choose to buy are protein, vitamins, minerals, dietary supplements. Each time they are often bought for themselves and others to eat to nourish the body. Most of the samples had an average purchase frequency of more than one month/visit, often making their own purchasing decisions, And the place to buy dietary supplements is a department store [13].

Khachonsak Wongvirat (2011) found that the analysis of the group's potential for product development among members of the Ban Mae Tha Thai Massage Community Enterprise had cooperation in the operation, sacrificed for the common benefit, including the determination to develop products under creating learning guidelines for bringing community products into community product certification. However, the product development guidelines found it necessary to provide group members with knowledge, understanding of product development processes in order to enter community product certification which must be guided by the relevant department, the Lampang Provincial Industry Office, as a support agency, pushing and creating knowledge in product development. Therefore, the approach to product development is to create knowledge for members and allow members of the group to select the most suitable products to develop into community product standards with Lampang Provincial Industry Office as an auxiliary unit [5].

Prasit Rattanaphan (2017) found that the entrepreneurial strength in having certified, quality raw materials and continuous efficient production. On the other hand, there were weaknesses in excessively diversified distribution channels, insufficient labor and product branding, and uncertain sales channels. However, opportunities are available through promotion and support from government organizations, and the growth of online distribution channels. Threats included fierce competition and constant variation of raw material prices. Regarding guidelines for distribution channel development and the creation of added value, entrepreneurs can strengthen existing entrepreneurs through partnerships. The shop of community food products should be developed sorting and layout. Attractive community product centers are required to target tourists and other customers. Finally, the community food products must be quality assured with standardized products. Moreover, products should be unique, comply with customer requirements, and undergo constant development [16].

Thirasak Unaromlert et al (2015) it was found that at present the enterprise group has created innovative wisdom in sufficiency economy processing innovation in highest level product innovation the overall problem were in high level the highest was technology issues follow by production problem. The management and staff development. Leadership, participation, knowledge Management, social capital and supporting from external networks were related with the innovative wisdom of statistical significance .05 The pattern of innovative wisdom in sufficiency economy to strengthen the competitiveness of sustainable community enterprise group in lower central provinces found 5 importance elements (1) community enterprise groups (2) the developers (3) the scholars (4) the professionals (5) local wisdom and 4 basic factors (1) use of community resources (2) physical and mental development (3) potential of the leaders and (4) knowledge management. The innovative wisdom in sufficiency economy should have 9 steps (1) the analyze of community potential (2) innovative wisdom and social capital survey (3) market analyze (4) knowledge management (5) conceptually product/process (6) conceptually product/process checkup (7) manufacture of prototype/process (8) market/process test (9) product/process improving [28].

Kriengkrai Phomanee and Supaporn Plomelersee (2014) found that the marketing patterns of community business enterprises could be explained based on 4 factors as for the product factor, there was a succession of family production for packaging, quality, materials, brand, and Supplies were more than the demands of the customers. For the pricing factor, the community business entrepreneurs set the price of the products according to their production cost as, for the distribution channel factor, there was a direct delivery of products from a producer to a customer. Finally, for the marketing promotion factor, the community business entrepreneurs paid the least attention to this factor they considered it a waste of money and many customers bought their products by word of mouth. The entrepreneurs were demonstrated needs for self-

development which were producing process (workforce, tools, materials, capital, work experiences, knowledge), trend (shape, color, identity, standpoint, product selling), product quality, production standard, packaging, labeling, or branding, product distribution, and product fame. The needs in the development of community business enterprises of the community business entrepreneurs were the government supports, government financial support and training, knowledge support from organizations, loan services, economy, community cooperation, provincial product identity, competitiveness, distribution channel, and governmental public relations [9].

V. Research Methods

This research was participatory action research using in-depth interviews, group discussions, and participatory observations from five key contributors, six participants each. It consists of community leaders, good agricultural practice enterprise group, housewives, youth groups, and elderly groups, totaling 30 people.

The tool used in this study used in-depth interviews, group discussions, and participatory observations. And open-ended questions about the integrated marketing communication model for the community products of the good agricultural practice enterprise group;

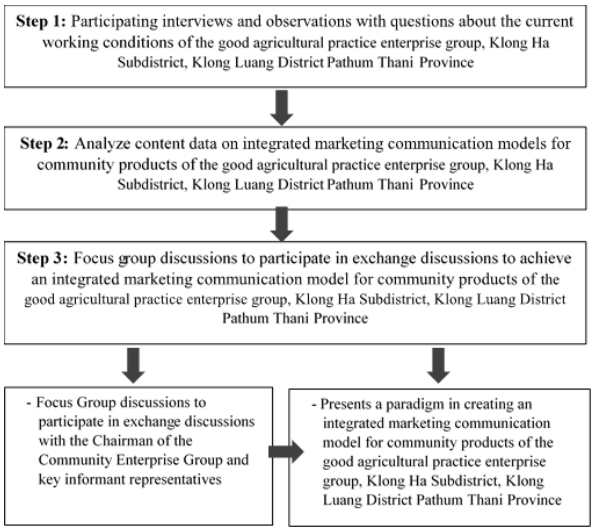


Fig.1 Research Process for Integrated Marketing Communications to Community Products by the Locals of the good agricultural practice enterprise group, Klong Ha Subdistrict, Klong Luang District Pathum Thani Province

The analysis starts with taking the audiotapes during the in-depth interviews to write down the details again, breaking them down into different points, and considering how they are opinionated on the issues. The researcher used a descriptive analysis model based on the research objectives and issues or questions, divided into 4 stages of the qualitative data analysis as follows; (1) Data Interpretation is the process of acquiring in-depth meaning from the raw data generated by the data collection in the form of interpersonal conversation, the qualitative data was then collected and categorized into categories to obtain answers to the research objectives. (2) Data Constant is a systematic search for the same and different meanings of the Qualities or Attributes of two or more sets of raw data, they are then processed together according to the similarity and differences to accumulate findings or sub-conclusions from comparing the data to form a conclusion about the common nature of the data. Found deep meaning from the interpretation of the data. (3) Data Synthesis is the most important step of content analysis because it provides the final overview of all data obtained by the inductive method, all information must be aggregated in descriptive concrete to obtain new abstract information in the summary to be linked to the research objective. And (4) Conclusion is the process that must bring the data to be connected together, and show the relationship of the data as a Descriptive of the data and then find the relationship of each group and each issue to create a holistic thought process.

IV. Results

The research of the integrated marketing communication model for the community products of the good agricultural practice enterprise group can be summarized into the following ten key areas:

Issue 1: Product Highlights of the good agricultural practice enterprise group: The products of the agricultural community enterprise group will be products that use local raw materials, such as crispy mee, orange za will use orange grown in the community. As for the different flavors of chili paste, such as Ta Dang chili paste, Pla Ra chili paste, Pimp chili paste, Hell chili paste, will also use raw materials grown in the community to save costs and costs in purchasing raw materials.

Issue 2: Weaknesses of the product of the good agricultural practice enterprise group: The product of the good agricultural practice enterprise group is a product that does not stand out in the that remains with conventional packaging, lack of uniqueness of the product itself and the brand is not yet

known, affecting the sales volume that will only have loyal customers who buy the products of the group.

Issue 3: Product opportunities of the good agricultural practice enterprise group: The products of the good agricultural practice enterprise group have the opportunity and direction to grow due to the increasing popularity of customers who prefer products that use raw materials in natural food additives, in addition, the government has measures to promote and support both production and investment by accelerating the development and upgrading of grassroots producers by providing training, knowledge on production, management, and product standards. The trend of production and distribution of wicker products has a higher growth rate.

Issue 4: Obstacles in the marketing of good agricultural practice enterprise group products: The products of the good agricultural practice enterprise group had a hurdle in terms of the economic slowdown that impacted sales and the impact of the COVID-19 epidemic led to a decline in sales. Customers are more concerned with cooking at home than ordering. In addition, raw materials have a higher price, whether it is fuel, freight, and packaging. Therefore, when the price of raw materials increases, the production costs are higher as well.

Issue 5: Products of good agricultural practice enterprise group, is there any kind of marketing communication in the form of advertising? How? The product of the good agricultural practice enterprise group has not yet established an advertising budget because it is a community product that is a convenience product, a type of food, and the unit price of a community product is affordable, also, the budget that comes from the income is not enough to cover the expenses of advertising. In addition, members of the good agricultural community enterprises have no knowledge of advertising and marketing knowledge. That will help in promoting marketing and increasing sales in generating awareness for customers.

Issue 6: Products of good agricultural practice enterprise group, is there any kind of marketing communication in public relations? How? The products of the good agricultural practice enterprise group have not been clearly promoted because the members of the group are just villagers or individuals, there is still a lack of public relations knowledge to spread the community products to be known. This receives support and assistance from government agencies that help in the field of public relations such as preparing books and transcribing lessons on the stories of the Ban Khlong Ha good agricultural community enterprises by the Office of Learning Promotion and Academic Services, Valaya Alongkorn Rajabhat University under the Royal Patronage, which is a university that contributes and develops products, packaging of the Ban Khlong Ha good agricultural community enterprises and publicizing news via the province's website, etc.

Issue 7: Products of good agricultural practice enterprise group, is there a marketing communication in the form of a sales by a salesperson? How? The products of the good agricultural practice enterprise group use a direct contact with customers, where there will be a group chairman who will receive the order amount, talk with customers to explain detailed information about the correct product, and to create a good image for the group as well

Issue 8. Are the products of the good agricultural practice enterprise group marketing communication in the form of sales promotion? How? The products of good agricultural practice enterprise group are handmade crafts which have a complex and time-consuming production process, so various promotional programs cannot be held to boost sales, but there will be booths to showcase the products at the fair, in order to stimulate sales in another way.

Issue 9: The products of the good agricultural practice enterprise group have marketing communications in the form of direct marketing? How? The products of the Agricultural good agricultural practice enterprise group are marketed via social media, using the Internet to sell products via Facebook, it is a powerful selling tool that is easily accessible and accessible at all times. By using the Facebook page to promote news and direct contact with customers, which is called "Sufficiency Way Community Market, Ban Khlong Ha" which there was the group's chairman is moderated, and the survey found that the page is not continuously updated, there is no product description and the format of information presented is not interesting.

Issue 10: What makes customers choose to buy products of good agricultural practice enterprise group? The products of the good agricultural practice enterprise group are products that use natural raw materials and are grown in the community, so they are cheap and suitable for product quality, the friendliness of the group members and the unity of all members in producing quality products.

In addition to the information obtained from interviews with the main contributors above, the researcher reviewed the literature on the concept of integrated marketing communication, the sales channel development guidelines One Tambon One Product, the concept of purchasing decision process, and the concept of distribution channels. This allowed the researcher to synthesize a total of 21 components related to the integrated marketing communication of the good agricultural practice enterprise group. Which includes 3S, 3P, 3E, 3C, 3I, 3A and 3L. The researcher has developed the IMC model paradigm called "The SPECIAL Paradigm" as a paradigm for the construction of the IMC model of the good agricultural practice enterprise group that can be presented as a chart showing the integration of various elements to drive strengthening marketing efforts that emphasize the importance of the model. Integrated marketing communication of the good agricultural practice enterprise group as follows:



Fig.2 The SPECIAL Paradigm of an integrated marketing communication model of the good agricultural practice enterprise group, Klong Ha Subdistrict, Klong Luang District Pathum Thani Province

V. DISCUSSIONS

The study of the integrated marketing communication model of the good agricultural practice enterprise group found that the problem of the good agricultural practice enterprise group enterprise group in Khlong Ha District was the lack of good marketing communication, and in communicating information, there is no information movement about the product itself. It also lacks packaging and brand designs that are not unique and do not attract the attention of consumers, which is consistent with the research of Satchuset Raungdessuwon et al (2013) found that the problem faced by the Ban Chok Women's Development Group (Kham Saeng) was the lack of good marketing communication to communicate information about products and services outside, in addition, there is a lack of action on the development of brand identity and design. From the aforementioned problematic conditions, the researcher brought in training to provide practical knowledge on branding, using workshop techniques to determine the brand identity and design, in which the participants were the president and representative of Ban Ton Jok Women Development Group. Then, after the development of the brand identity and design, the information was then used to organize a knowledge exchange platform to jointly study, design, and develop a marketing communication model that is consistent with the existing resources and capabilities of the group. Therefore, the marketing communication formats that are suitable for the products and capabilities of the group are business cards, brochures, catalogs, and promotional banners, and has prepared such media ready to be used in actual operation [21].

It is also consistent with the research of Kwanyupa Srisawang and muslin Buaban (2014): The researcher on the development of an integrated marketing communication model through community participation process to promote cultural tourism of Bang Luang Market, Nakhon Pathom Province, found that the problem with the marketing communication of the Bang Luang market community is that the media is not diverse, the presentation of the tourism model of the market is not clear and not up-to-date, needs the support of the educational agency on this work. In the direction of the presentation of the tourism model of Bang Luang Market, it was found that Bang Luang Market is suitable for tourism to learn about food tourism and traditions due to today's tourist behavior, most of the travel objectives are to experience local food, leisure, and local purchases. In addition, it was found that the guideline for developing an integrated marketing communication model of Bang Luang Market should have a variety of communication formats and not use a high budget, as well as being able to easily modify information such as a webpage, fan page, and Poster. The development of an integrated marketing communication model that is appropriate to the community requires a study of the appropriate tourism model presentation for each target group at different times, and cooperation with educational agencies should be promoted to create a learning resource for this area,

as it reduces problems with the working budget and the presentation of up-to-date information, which is a major problem in this field of Bang Luang market community [10].

VI. RECOMMENDATIONS

A. Recommendations for Practices

1) There should be more publicity about the products of the good agricultural practice enterprise group through public relations through the group's website, which must be updated to be up-to-date at all times, this is to increase the customer group, IE teenagers, to have access to information and to know more about the product.

2) The personnel of the good agricultural practice enterprise group should be developed to be expert in producing quality products that have the same standard in every piece in order to increase the knowledge of all aspects of marketing communication.

B. Suggestions for the next research

1) This study is participatory action research only, therefore, in the next trial, quantitative research should be undertaken along with qualitative research in order to make the information clear and complement other areas of concern. It will be more complementary to the elements in The SPECIAL Paradigm.

2) The next research should be conducted with the Focus Group with experts and related persons of the Agricultural Safe Community Enterprise Group, Khlong Ha Subdistrict, Khlong Luang District Pathum Thani province to adopt the SPECIAL paradigm to create a Focus Group to build on the SPECIAL paradigm.

CONCLUSION

The research of an integrated marketing communication model for community products of good agricultural practice enterprise group, Klong Ha Subdistrict, Klong Luang District, Pathum Thani Province is a participatory action research by A total of 15 community enterprise members conducted research in every process, from listening to group data, group self-analysis, creating learning that could fully answer research questions and research objectives in which this research work focuses on the creation of new knowledge or innovative learning of the research target groups, which will lead to the development of research results as a form of integrated marketing communication. Integration for the community products of the good agricultural practice enterprise group to develop into a different format of marketing communication and can lead to real practice.

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Inheriting and Developing of Tai Lue Singing Participation in Chiang Kham, Phayao Province

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Abstract— ***Inheriting and developing of Tai Lue singing participation in Chiang Kham, Phayao province Thailand was a research article from the Model of Cultural Innovation of a Tai Lue Singing Cultural Identity at Chiangkham District Phayao Province Project of the University of Phayao. The purposes of this study were 1) to create inheritance and development process of Tai Lue singing participation 2) to create Tai Lue singing innovation. Moreover, the engagement focuses in building innovation and innovators of Tai Lue singing by the singers that can utilize knowledge to create Tai Lue singing by driving in producing more community innovators to use these processes to develop the further performance. The study was found that 1) the process in creating innovation of Tai Lue singing was that all singers could conduct the participation cooperatively, 2) the innovation of two songs of Tai Lue were including Pleng Aew Muang Phayao Muan Jai (Travelling in Phayao Happily Song) and Pleng Tam Nan Sueb San Tai Lue (Inheriting Tai Lue Legend Song). However, the traditional songs of Tai Lue singing were recorded namely Khab Pa, Khab Bao Tor Sao which are about flirting between men and women. Lastly, the community innovators under the participation could create the same purposes and promote unity, love, happiness, pride and also the values of Tai Lue singing by using Tai Lue Songs as the main materials to build Tai Lue ethic which influences to create creative process to increase more values in the culture of Tai Lue singing for ethics.***

Index Terms— ***Innovation, Community Innovation, Lue Singing***

I. INTRODUCTION

According to the social change of current world communication, it has multiple channels in borderless way. Moreover, with the condition of epidemic it contributed to the communication tool development which the communication pattern is directly with the objectives of applying. In this case, it affected to the communication of our human society to adapt with situations and quick development ,especially for the communication of performing arts from local people as well as the communication tool effects and the communication patterns for the modern age , such as the performing artsing pattern of Tai Lue ethnic group with adapting by using for performing artsing language with singing called Tai Lue as the uniqueness of this one pattern from the ethnic group.

In this case, Tai Lue is the ethnic group living in the Southern area of China that is Yunnan province of Sipsong panna city with the main residence on Chiangrung town including of having their own governance before being connected with China. Similarly, the last lord of Sibsong panna town is Duchess KhamLue or the last governor of Tai Lue ,and Chiangrung town is the cultural flourish city with having traditions and practicing ceremony methods of Tai Lue as being the ceremony town to make the unity and patriotism. Then, it resulted in the good performing of Tai Lue ethnic group in several areas continually, especially for Tai Lue people in Thailand living in Chiangkham sub-district of Phayao province after moving from China of Sibsong panna city. However, some of them went from Pong town, Yuan town, Mang town , Yang town, Ngen town and Chiangkhan town. Significantly, when they came to Chiangkham town they called the village name as their own hometown ,and originally according to the governance town of Tai Lue people they had the governor of towns called Phraya , such as Phraya Pong , Phraya Yuan , Phraya Yang , Phraya Ngen and others, [1].Therefore, when the governors in towns died they could be admired as the angel of the town to protect for the people in the town, and they would set up for the ceremony to feast for the angles of the town as their tradition called as Khammueung.

Therefore, according to the town ceremony as feasting the angels of the town, the ethnic group or Tai Lue in each town has the different performing methods. However, as for the Lue singing it is involving with the ceremony for both of communication role and entertainment called as the feasting of angle in the town. Similarly, the angle refers to the soul of the well-known people in the town with making for the circle, and those group of people always build the shrine to be the angle home to protect of the town and the people. Thus, it can setup for the ceremony with three days: the first day is the creation day of Pham or covering with banana leaves or glasses or coconut leaves for the ritual. Then, after finishing they would build up for thirty-two small shrines, in which there are thirty-two Arak angels in the town staying at, and in the next day it is the first day of the ritual by twenty people performing the ceremony which each of them has the secondary doctor to assist or having the servants from the town doctor during the ceremony. In addition, during this time there are the slaughters of animals, including pigs, white buffalo, black buffalo to be sacrificed for the morning ritual, and in the afternoon, there will be a game of throbbing blows with the singing of young people plays and the Saba playing to throw something on the crushed ladies. Significantly, on the second day of the ritual there are the sales of the products on the banks of La river with the playing of young people , such as Mong Sheng drumming , dancing , singing of a man and a woman composed the sound of the crushing on and on the third day of the ritual, it is called as Langta day or the day that makes the dark disappear to welcome for the new day with the bright of life and the future. Then, on the banks of the La River, the people always cook for food on the banks of La river with making explosions for three times to make signal of the new welcoming day. Thus, there is Param or Pham to be the performance equipment of the singer for the flirting between men and women by singing along with Pi equipment which in this event is considered as the media of love and unity among La people , [2]. In carrying out these rituals, when the descendants of the Tai Lue people migrated to build houses in the urban lands, these rituals was inherited to follow the original rituals of the ancestry that moved from that town, such as the Tai Lue Nai ethnic group ,and Chiang Kham District is a district of Phayao province that has a long history in the form of two legends that speak of the relationship in Buddhism ; namely the Chiang Kham legend and Nong Wat Rom Yen with mentioning of Phra That Doi Kham located on Doi Kham. Therefore, it was called as the town of Chiang Kham as well as another legend with the telling of the legend for God sitting on the ground, especially for the ruler of Phuttharos or Mueang Charao People to be Lueve in Buddhism, and it enabled to create for a god sitting on the ground with the prediction for the future. Then, this town was called Chiang Kham [3].Currently, Chiang Kham is comprised of various ethnic groups living in this area, including Thai, Hmong, Pa-o or called as the cultural areas including for conducting of the social activities together while the distinctive cultures of the Tai Lue ethnic group are for the dresses, the residences, and the performances, especially for the chorus of the language and the accent of the Tai Lue ethnic group called as Singing of Lue.

The singing is the literature of the Tai ethnic group that has different characteristics of the ethnic group. Thus, these drives have a specific purpose for singing them differently, and according to the function of use, it can be performed on various occasions such as angel rising or ghost raising and flirting with girls. Besides, there is a type of singing of Tai Lue people that cannot be found in the Tai Lue Chiang Kham group that is singing inside the water jar. However, there is a mention of singing inside the water jar among the local intelligent people and those who have listened to such singing about forty to fifty years ago that it is a type of singing that is used to refer to the way of life for being associated with young people. Similarly, there is also has the singing style without using of the instrument, called singing oung ,and it is featured in the beginning word of Lei Hui with the meaning of Nang Hei to spend time with traveling in the journey as if she is listening to something. Then, this is a performance of the Tai Lue group called “Lue Yang”. On the other hand, this group of people isn’t popularly to move to the new land for spending their life easily and peacefully without being closed to other people in much level, but unfortunately as nowadays this singing has disappeared until leaving only the telling of old people only [4].Fortunately, now it leaves only the singing called Singing Lue that is still preserved as their literary and performing arts of the Tai Lue group. Additionally, it is related to the way of life for ethnic groups in the past, especially as a literature which is being as the language communication and the feelings of people in society for both in the form of stories for the current situation by the times. With this case, it is also involving with the transmission of local literature, history, legends and be Lues of ethnic groups with the association with the ritual of worshiping spirits and the angels without knowing of the exact origins for the art of singing Lue, especially to be inherited with the story of an oral trandition to each other, [4]. As the result, it represented that the singing is a melody with beautiful poetry which is a unique song to the Tai Lue ethnic group , and in the past, the singing Lue was very popular among the Tai Lue ethnic groups to be the wisdom that is transmitted mainly from the thoughts and knowledge of the singer, [5].

In this case, singing Lue is a form of chorus that has a melody of poetry ,and there is music for the show. Moreover, it depends on the context of social service,

the forms and functions that change according to the social context of each era. Similarly, it is involving from performances to rituals ,and the courtship shows between men and women to be performed at important events in villages and communities. Thus, the singing Lue should be developed according to the times. With this case, according to the purposes of the needs for the audience it is involving with the talent of the performer in the current social context of singing Lue. Therefore, a communication tool to create aesthetics of people with different social communication functions is according to their contexts for both communication in love relationship through courtship Exchange of mourning among the people in society Acting as a mediator between man and the sacred. However, with the impact of today's society's leap this causes the singing of Lue to decline and disappear, especially in its role as a communication tool in the courtship between young people who have completely disappeared from Tai Lue society. Then, it is including with the reduction of the importance of entertainment that is closing to the loss of the Tai Lue ethnic society including of causing the process of reviving ethnic people and Lue actors with the applying ways to revive Innovative approach to develop the style of singing Lue by creating an identity for preserving ethnicity.

Additionally, the development and inheritance of the Lue singing arts is therefore important for the show to be re-developed and developed to perform or serve in our society in accordance with the present social context. In this case, it is involving through the participation of artists in the community, and this will enable the performance to be inherited and developed by the people in the community who own the performing arts continuously by the community itself, and the process of creating innovators is therefore important for the succession and development of performances when the researcher or creator leaves from the research area. On the contrast, the community innovators still have the processes for succession, development, and creation which those performing arts to ethnic groups. As the result, the research on succession and development of the Lue show with participation in Chiang Kham District of Phayao Province as the community to be appLued and developed further.

II. LITERRTURE REVIEW

The researcher has brought the theory of performing arts for Thailand which the educational theory is the process of learning and innovation as same as the function theory or a social science theory to integrate for analyzing and discussing with the results of the study to explain the research work process by creating an understanding of the management for the researcher with the details as follows:

1. Theories of Thai performing arts are the theory of Thailand, Refinement and the theory of the natural phenomena of life that occur continuously in human beings. Then, with the learning adopting for another culture Adjust to myself to live with the identity for the betterment, this theory is a theory that imitations are then taken or accepted as part of life that is not taken all but partially understood and can be taken including of adapting to the culture of the local family home; then, it is decorated to be beautiful and dignified with the identity and society in the surrounding context, [6].

2. Theories of education are theories of learning processes and innovations consisting of the theory of cooperation in learning while the Collaboration is a collaboration or helping each other in learning for each person to be responsible for their own learning and helping the group members learning as well as the learning of social skills and working with others, which are essential skills for living, [7].

According to the learning skills and innovations for 21st century learning, these skills are based on creativity , critical thinking, communication and participation in work consisting of creative thinking while the creativity thinking consists of the use of open brainstorming techniques. Then, it should create something new and enhance the intellectual skills involving with a thorough analysis, working with others creatively, work creativity with other close, open-minded, and accepting new perspectives or worldviews that affect to the system of work. In this case, it is including with the leaders in creativity to bring about the innovation into practice or applying with Implement after the releasing of Innovations by creative practitioners to benefit from the development and deployment of innovative applying. Thus, they reflect to the urged effects on the basis of experience and learning processes, and the troubleshooting can be defined as questions that will lead to a focus on how to fix the situation to be right and in the best ways.

According to the critical thinking and problem solving, it also includes with rational use efficiency to give a clear reason in the matter by using for systems thinking to think and analyze from subsection to the majority in a holistic manner. In this case, it is involving with making judgments and decisions by building efficiency in analyzing and assessing situations as well as building for the recognition and credibility synthesis linking between data and conclusions arising, [8].

3. Social Science Theory of Talcott Parsons or Theory of Functionalism (1902–1979) is a prominent functional structural sociologist which began to propose the concept of the theory of function structure with the proposed four functional necessities, or the AGIL, consisting of Parsons (1952):

1. Adaptation: the system should be adapted with situations, such as environments and social requirements.

2. Goal Attainment: the system should be controlled with the response to the main goals.

3. Integration: the system can determine the relationships between compositions with the management for other basic roles in relationships.

4. Latency/Pattern Maintenance: the system can maintain, restore, stimulate , create and support for the culture stereotypes to make the motivation individually. Moreover, there are four basic requisites relevantly to the action system: 1. Biological Organism with Adaptation 2. Personality System with Goal Attainment 3. Social system with Integration and 4. Cultural system with the Pattern Maintenance, [9].

In this case, Parson said about the social system and roles with the basic requirements to the system, and he had the perspective that the action system comprising of four basic requisite: Adaptation , Goal Attainment , Integration or stability and regulations. Similarly, the adjustment refers to the acquiring of requisites from environments before distributing through system while the integration refers to the regulation maintenance comprising of two big subjects: regulation maintenance and seriousness management. However, the regulation maintenance is involving with the method to create the suitability for the society system, [10].

According to the above three theories, it can discuss about the operational steps for gaining the innovational procedures by communities including of promoting the innovators to be the knowledge contributors for conducting the research as similar to the exercises of students to be appthai Tai Lued in the real situations to be beneficial for our society. Furthermore, it can express for the importance of performing arts for Thai Tai Lue singing as nowadays.

III. RESEACH OBJECTIVE

1. To create the inheritance procedure with the participation development of Tai Lue's singing
2. To create the innovation of Lue songs

IV. RESEARCH SCOPE

In this case, this research is one part of project the study with creating for Tai Lue singing's innovations to Tai Lue people located at Chiangkham Sub-District in Phayao province, and it was researched during.2020-2021 by noticing, developing, and taking actions to create works with community participation. Thus, it used the theory of performing arts, education theories and sociology theories with work integration by presenting with the study results from the descriptive writing based on the development procedures and the work creation procedures.

V. RESEARCH METHODOLOGY

In this case, the researcher studied the Lue singing patterns of Chiang Kham district by interviewing information from a group of artists and eleven singers by specifying a group of performers. Moreover, it was established in 2005 and has performed on the show until now. Thus, according to the voluntary participation in such research projects from the project participants they are ready to develop a singing style with a group of researchers and can leave from the research area if the dissatisfaction arises with the affecting on the study participants.

According to the research scope study it represented to the styles of singing Lue from artists in traditional performances that have been passed down from their ancestors as well as the self-learning and the learning from teachers with immersion experience to be lead to imitation, practice, public outreach, and it enabled to create a process for creating innovation and innovation in the Lue show as the following procedures:

1. Building an understanding of research objectives to the leadership group to drive understanding so that these people can be conveyed to the members who participated in the operation properly.

2. Coordinating with the leaders of the singer group, with Mr. Jarus Somrit and Mr. Wichai Srichan as the main coordinators.

3. Coordination between local people and community innovators with the coordination between researchers.

4. Applying for the Consolidating Thinking Process Of the singer group with a researcher to compose a Lue script with melody

5.Bring actors to record for adjusting with the singing style to be able to match with the music and the melody that was remodeled two times from the first time to record the performance style with two times.

6. Editing and making music.

7. Present research results by instructing them to the community with the presentations in the form of a descriptive lecture.

VI. RESULT

Under Tai Lue social change development to find the unity group from 1989 until now under development and social change , it made the social group of Tai Lue ethnic group in Chiang Kham District has operated with government agencies including of provincial cultural offices from Phayao University Community Development Office of

the Provincial Administrative Organization in Chiang Kham District and various departments that came to support, such as weaving, tourism, art, culture, community products, food. Since then, the people in Chiang Kham District of Phayao Province have been recognized and famous for the cultural products of the community so that it also makes the performing arts that were created after the disappearance of time to be famous. Later, many shows of personnel have died ,but still remains in the young generation of the artist who has been absorbed by the family in the past with the idea of restoring this performing arts as one of the performing arts that is called as the singing Lue.

Besides, according to the process of creating the singing of Lue in Chiang Kham District, it has raised from longing for the past as well as the memories that remain with the generations from these people with aged between sixty to seventy years old by creating for a stream of longing for the past including of the reviving of these performing arts with love for being the Tai Lue ethnic group. Therefore, it becomes to be the works according to the memories by learning to listen to YouTube, studying from the performance of the country at home and show it in their community. However, with the technology and other evolutions this show has been updated to be up to date and meets the popularity of consumption. Thus, nowadays the singing Lue is not popular among the general Tai Lue groups including of the outsiders because the style of the show is not as interesting as it should be.



Figure 1: The pictures of Lue actors to be reshowed by Mr. Jaras Somrit ; The origin from Rattana Tapang

The showing pattern for singing Lue in Chiang Kham District of Phayao province began with the searching for the Tai Lue ethnic group's identity from the Thai Lue world event in 2005 and 2007, led by Mr. Jaras Somrit. In this case, there were the collections of people who interested in singing Lue to learn about how to sing Lue from a trained local people to be inherited and became to be the singers in the style of Chiang Tung of Myanmar. Then, now it has Mr. Kaew Maklai, singing as Muang Khob pattern and Nang Buatong Saengthong, from Laos to convey the knowledge to the interested groups until they brought this knowledge to practice for further develop. Later, there are several people continuing to develop their knowledge until being the singers of the village; namely, Mr. Prasert Krakad, Mrs. Sida Kaewsaengthong and Mrs. Chanhom Jomkaew as well as other people who are interested in singing Lue for the education field; namely, Mr. Wichai Srichan and Mrs. Mesa Somritincluding by bringing this singing style to promote academic standing for gaining the position of Specialized Teacher. Since then, the knowledge of singing Lue has been distributed to the public according to his aptitude and trying to find ways to develop an interesting performance style, such as applying this singing style to combine with the Mong Sheng drum band or bringing a dance to accompany with the performance under the limited knowledge and resources. However, there is a preservation of the traditional style for this showing pattern with the developing of the role for singing Lue to be fitted with our society.

According to the roles of singing Lue, traditionally it played a role in flirting with girls, also known as crushing on girls at the carnival. For example, the town of Hunt's angels feast Chiang Rung, which is playing in work or flirting during work. In addition, it developed into a role in inviting angels in the town in angels ceremony and the roles of these performances began to develop and change according to the social context.

According to research work, it was found that the present-day dance shows still plays a role in raising urban angels and change the context of the womanhood to create entertainment in various villages, communities, and government agencies. Thus, in response to the use of singing Lue in various events an actor or a singer therefore has to develop both himself and his style on a regular basis in order for the performance to be performed. However, nowadays It is still popular in Tai Lue society or is accepted by other ethnic groups with various generations of artists to be born as the actors or the group of people who have a love for singing Lue and work with great passion for this field of performing arts.



Figure 2: Sing Lue artists in Chiang Kham District of Phayao Province classified into three age groups, ; The origin from Rattana Tapang

In this case, the artist is a group of people with a difference in age from 17 years old to 75 years old. Besides, the work is therefore completely different; thus, the researcher then divided the actors into three groups for the creation of the work and to be a tool to link the talents, ideas and skills in building acceptance of all three age groups:

1. The original singing group: It is a group of singers who have been absorbed by the original artist with a family background as an artist and singer or being in contact with a singer in a past lifestyle including of working with a singers or even people who are interested in showing Lue. Then, it has the self-training until proficient Gathered as an actor, performed in various events in the district until he was acclaimed for acting Conveying to students Including actors, home doctors Including Mr. Prasert Kradet, Mrs. Chanhom Jomkaew, Mrs. Sida Kaewsaengthong and the mechanic who revived Train yourself from the knowledge around him, including Mr. Prathuang Kongmongkol, Mr. Manit Srichan, as well as an actor who trained himself from the teacher, Mr. Kaew came far, and Mrs. Buatong Saengthong.

2. Integrated singer group: It is a singer team that integrates the knowledge of singing Lue gained from education in the system , such as composing with these eight and four poems as a group of singers who are interested in singing Lue including of self-training through online technology ,such as YouTube channels, video clips from the Tai Lue network of Sipsongpanna and Laos and the development of singing Lue in the form of teaching materials with the teaching to students and doing academic works by Mr. Wichai Srichan and Ms. Samrit , (Rattana Tapang, 2019).

3. The new generation of singers: it is a group that is interested in singing for the new generation ,and the word of young generation is from the juveniles and the adults who are interested in singing Lue in the traditional group before studying and becoming to be the students while the learning to sing Lue continously is depending on the interest of Lue singing arts, such as the style of Mr. Yothin Khamkaew, Miss Nichanan Tondee and Miss Thanamas Homnan.

VII. DISCUSSION

According to the data analysis, it was found that the singing of Lue in Chiang Kham district was caused by imitation of the model, such as the teacher who conveyed the Lue singing in the community by learning from teachers in Laos, China and Burma. Besides, for the Another form of imitation it is the transformation from Sibsong Panna artists such as Eon Noi and Lue singers from Lao named Ai Kham Chan who were trained to transmit knowledge to performers in Chiang Kham District. However, according to the chants from both countries they were adopted to sing by using for the dialect words ,and these words have been adjusted to be suited with the context of the mother tongue in each country including with the performer's singing melody to follow the actors' speaking accents in each area. Then, the actors and singers of Chiang Kham have improved the melody in singing Lue similarly to the spoken language including of the use of Tai Lue language in the context of Chiang Kham and Thailand. Later, it is easier to communicate for the audiences in Thailand before developing to a melody as a research process that makes funniness and easy to communicate by integrating with today's music and music genres. As the result, these processes are integrated with the development to communicate easily to the audience; thus, there is aesthetics including of sound, music, language, and recruiting in other forms of integration as well as serving as a social tool for building of happiness for both Lue artists and the community.

According to the learning and the innovation processes of critical thinking, it showed that the innovators are exposed to surrounding information from observations and the reflection from the past performances that the performing artsing community need of concise and interesting performances. Then, it can drive the actors singing Lue to develop their shows to be more interesting and relevant to the audience's understanding. Therefore, the idea of people joining the process was exchanged to each other with ideas from a self-observation of the audience and a critical review for the act of singing Lue resulting in the assessment of the skills for the collaborators and then leads to the acceptance of differences as a group discussion. Significantly, it was found that the original performers were the groups that kept the traditional acting style, except for composing new lyrics by maintaining the style of the show traditional of the ethnicity.

Fortunately, it can make the adjusting development to the sound keys compatibly with international music as the ability to convey chorus and the Pi sound of the orchestra to the singers. On the same way, the performers are integrated into groups for creating with a transmission process to be able to communicate with non-Tai Lue groups as well as developing for the prosody in composing a petition with the easiness to convey more than the past and It is a medium between traditional and new singers. Therefore, as for a medium from the Tai Lue group to the general audience it becomes to be a medium between the old and the new to drive your creativity into the process of creating a comparison between traditional and new styles as well as being the target of the show to create a participatory workflow. Then, it brought about the Thai style poetry such as Poem 4 and Poem 8 into the process of song creation named Lue Aew Meng Phayao , Muan Jai and songs that continue the Tai Lue legend. As the result, according to the new actor group, they are the group of performers who are in the process of learning both of the traditional and integrated forms with the learning to sing in both forms and learn to compose chorus as well as playing the music for the show as the the successor and transmission for the singing Lue.



Figure 3: Recording of Singing Innovation by Community Innovators
; The origin from Rattana Tapang

According to the working processes for creating innovation to sing Lue, it is involving with the popular theory of functional Tacott Parsons for the four essentialities: Adaptation of Lue ethnic culture to cause effects and achieve with a better direction by creating identity on the rapid changing culture and trying to find themselves and questions to specify for the showing arts identity as well as indicating with the musical language unity of the Tai Lue as the concept of the research selection group contributing to the second essentiality , goal attainment to create a system to work with the community and start from the action planning process in a group of researchers into the planning of work together with the innovators relevantly to the community that is the group leader consisting of Mr. Charas Somrit, Mr. Wichai Srichan and Mr. Prathuang Kongmongkol as the people who created the Lue singing group of Chiang Kham district.

According to the groups of people , these are the distributing massagers from the researchers to other singers more clearly and clearly understood. Moreover, this includes with helping for research groups to collaborate with other singers in the community by building cooperation Innovations to gain the song in the integration process , such as technology integration In coordination from creating line groups , contacting on assignments, appointment reviews, music reviews and job updates between researchers and the community innovation group. With this case, it enabled with the faster and clearer communication from the implementation of management contributing to the third essentialities, Latency or Pattern Maintenance as the process of conservation, restoration and development of Lue music including of developing work processes resulting in an exchange of ideas to create music from a group of three ages performers ; namely, traditional performers , Integration performer and young actors What aware and can link the relationship Lahore, the cultural Lue ethnic group is not only in Thailand.

Significantly, it is linked with Chinese, Laotian and Burmese which have the Tai ethnic group connecting to the culture of management performed in four countries with increasing for economic values as well as creating of the performing arts and culture internationally to work for the economic development of the country. In addition, according to the spoken language it showed that the written language is also linked to the Tai Khoen, Tai Yong, and Thai Yuan ethnic groups that can be appLued to and create a variety of cultural economies including of food, shows, clothing , the development of performances for tourism and others.

VIII. SUGGESSTION

The innovators can lead the process of such operations including of production or music, performances, singing, and the research results can be apply ued to their performances to develop the interesting presentations. Then, it can be able to work with other groups such as the chorus to integrate with the performance set together with the Tai Lue drum show, or bring the songs that have been performed as a set of performances with the dance by creating for the new dance moves with songs that have been edited with the innovation process modernly as the evolving model of the show.

IX. ACKNOWLEDGE

This research was supported by the University of Phayao protocol 1 from the Faculty 1 as the signature projects in the model of cultural Innovation for the Tai Lue Singing Cultural Identity of Chiangkham District in Phayao Province, from School's Of Architecture and the Fine Arts. Thus, as behalf of the researcher it should thank you for the chancellor, the Vice-Chancellor, the teacher Preeyachanok Ketsuwankhun , Mr. Natthaphon Kakham and research assistant including of all participants in this research project ,especially for the artists singers of Lue in Chiang Kham District of Phayao Province, who are responding and working together actually for the development of Tai Lue's performing arts.

CONCLUSION

From conducting the research, the researcher can summarize the results of the work and what the participants have received from the research as follows:

1. According to the innovation process, the researchers have discussed with the singer about the operational issues that are the traditional music recording by considering of the images and voices for the performer through a means of educating for community. In this case, the Lue singers have been disappeared from the Tai Lue society for more than 20 years, but the memory of the Lue singing knowledge remains with the Tai Lue people. Fortunately, it has the continuity for the communication of the Lue singing from the leadership of Mr. Jaras Somrit who created the Lue singing process with recreating of unity for the Lue performers of the current group. Therefore, you can see that the creation of the singer artists has taken place since 2005 by trying to create the identity as well as the development of self-training form through the Internet before being transmitted from the learners to the students in the network. Similarly, this operation is based on the needs of the community, where people in the community build knowledge and pass each other by creating a collaborative process of artists of various ages. Additionally, it is also involving with the recognition of different talents in the work of artists to get the results of the show and also to convey exchanging knowledge of actors' performances from the process of working together or collaboration, and the phenomenon that occurs of artists driving Lue is the acceptance of knowledge exchange with the suggestion of differences as the concept of each age for the balance creation.

2. Researcher is another type of intermediary while one that serves encourage is from the creation of a concept, design, and collaboration model between the singers and the researcher and all singers, and there was a collaboration to create the innovative songs from the two songs: Aew Meng and Phayao Muan Jai or the Thai Lue legend song. Moreover, according to the editing of these songs, it arose from the research problem that the researcher gave to the artist singer group as well as the inspiration for such compositions coming from the conceptual process of the artist singers, led by Mr. Wichai Srichan, who was the composer by using his own basic knowledge to singing Lue in an integrated style.

In addition, the knowledge accumulated In songwriting lyrics in the melody of singing Lue ,and for the research music team in singing Leu as the traditional songs it includes of Khabpa song , Khabpor Hueanoun song, Khatha Yanhangphla , Khaongenlung song , Changkhab Honpang song , Champapleui song , Cheapmaehangmai song , Baokern Saokhang song , Panghernmmai song , Yokphlao song , Lablaewmia song , Eeesang Manlao song and Khab Chern Tewa Mueangla song. Then, the recordings of these singing songs were recorded in the format of a video and the sound effects for the show has demonstrated with the process of presenting the show consists of a show management model as well as the location of the performers, working hours, instrument placement and performance costumes with sound-only ,and the recording results in improved sound quality were for the future generations to further study and develop their performances.

3. The happiness at work without expecting compensated from having an area to exchange knowledge Create performances in groups of performers and audiences who share similar interests, give rise to pride in their ability to accept and respect each other in society

4. The unity of artists in working for the community is involving with participation with similar goals and goals to develop their potential and their fellow performers according to the theory.

5. The transmission process occured with the exchanging knowledge in singing and performing instruments for performances with the singing technique and sound techniques to match the international instrument from the community innovator group.

6. The utilization of innovation is occurred by the community creating innovation in the community with the great importance and value and this is due to the knowledge and wisdom of local scholars including of the knowledge for composing scripts or poems and knowledge of learning experience with the continuous accumulating performances including of the knowledge of the environment of the community.

Therefore, it has taken the advantages of innovation by showing it to generate income for oneself and

the group , such as the acting incentives with cause of pride and the acceptance from local people as well as those who saw the performance of the show and hired the job before telling the results by mouths or the dissemination of works from various channels and the employment in both of private formats and the government organizations or even in a local show and others.

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Designing Furniture Equipment from the culture of Thi-Lue Tribal group to Encourage Tourism in Tai-Lue Village, Baan Yuan, Yuan district, Chiangkham, Phayao Province

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Abstract*—The purposes of this research were 1) to design and develop the furniture products from the weaving design of Tai-Lue, 2) to study the different pattern which is suitable to make the weaving cloth for household furniture, and 3) to study the appropriate size of the household furniture. There are 8 processes: 1) Study and collecting the data from the study site by observing and interviewing, 2) interview the participant to collect information on the opinion about developing the products, 3) visit the study site and collect survey questionnaire, 4) Design and develop the furniture products by researcher and the people who make Tai-Lue weaving cloth in Yuan temple, 5) create the products (the initial furniture product), 6) take the measurement tool to the study site to measure the satisfaction of consumer, 7) analyze the primary purpose for design and develop the furniture, and 8) summarize of the research study by analyze the data from participants for the use of this research. The population or participants in this study are included 16 people in Yuan temple weaving group, 29 consumers who need the products or will use these products. Forty-eight people who are interested in this furniture from weaving products to analyze the satisfaction. The researcher collecting data by doing interview and give research questionnaire. The statistics that use in this study are average mean ($\bar{x}$) and Standard Deviation (S.D). The result has indicated that the design of furniture from weaving products (Stool) need to be related with the human physical structure by considered these: 1. Height of seat, 2. Width and depth of seat. The design of furniture products from Tai-Lue that we need is Pattern A. The design which is appropriate is the one with clover leaf and water. We need the product of stool to be made from wood. We also need the natural color. We need the stool to be strong and beautiful as well as comfortable for setting. The satisfaction of developing furniture from Tai-Lue products (Stool) found to have average of ($\bar{x}$=4.762 and S.D.=.037). It also been found that the profit from selling these products will be increase 66% per one month. The research considered about important of designing household furniture from Tai-Lue cultural products so the community can develop and use this knowledge to adapt in solving problem in this. This will increase more variety of the products for producer, consumer and can create the occupation with the saying that the women are weaving and the men are creating or making the furniture products to continue make income for Tai-Lue community in Baan Yuan, Chiangkham, Phayao Province.

Keywords—*Design Furniture, Weaving Product of Tai-Lue, Baan Yuan, Chiangkham, Phayao Province.*

I. INTRODUCTION

The changing situations of consumers have resulted in low distribution of income and led to lack of balance, conservation, and sustainability. Economic and social development plan is therefore initiated to improve tourism with quality and sustainability, including standardized continual service business and health and education tourism, and creative products that increases high value (Mr. Thanit Laiphaiboon, National Economic and Social Development Plan, 12th issue: Strategy Transformation to Strategy plan in Northern Thailand's Natural Resources and Environment Management). Thailand has brought the idea of creative economy to become one of the ways to drive the strategies in National Economic and Social Development Plan, 11th issue (2012-2016). Its main principle is Value Creation using knowledge and innovation, together with cultural resources variety and Thai traditions, which can help the country's development to conform to the developed countries' economic development current (Saowarop Kusuma Na Ayuddhaya 2553:26).

Tai-Lue weaving village, in the Cultural Center of Tai-Lue Wat Yuan, is the cultural art exhibition and vocational training center of Tai-Lue tribal group people, especially in the patterned and colorful weaving designs,

such as Nam Lai Pak Waen, Dok Kor Kruea, Dok Kor, Ma, and Dok Tang. The weaving cloth is also produced in terms of clothes including Tai-Lue shirts, Tai-Lue sarong, trousers, scarfs, and pillow cases.

According to the fieldwork survey, the village has produced the Tai-Lue weaving that conserves local wisdom. It was apparently found in clothes including Tai-Lue shirts, Tai-Lue sarong, trousers, scarfs, and pillow cases, but not found in furniture products in Phayao province. Therefore, Tai-Lue furniture design becomes an option for manufacturers and consumers by integrating original knowledge and capabilities of Tai-Lue Wat Yuan village, Yuan subdistrict, Chiangkham, Phayao, which is to promote vocational opportunities for the villagers and tourism in the village. According to the interview of the villagers, weaving has come from group members and relatives, working in the way of separating their own duties such as dyeing, weaving, or sewing. This research focuses on adapting Tai-Lue weaving into furniture, as Tai-Lue Wat Yuan Cultural Center is prepared for providing information about Tai-Lue weaving, designing Tai-Lue weaving, and collaborating in this research.

II. LITERATURE REVIEW

The researcher has reviewed the history of Tai-Lue Cultural Center. It is located at Wat Yuan in 1993 by the purpose of Provost Suphat Promkhun, Wat Yuan's abbot, that the weaving group in the village should be moved to weave in Wat Yuan, to conserve and restore the weaving culture. Tai-Lue Cultural Center is the cultural art exhibition and vocational training center of Tai-Lue tribal group people, especially in the patterned and colorful weaving designs, such as Nam Lai Pak Waen, Dok Kor Kruea, Dok Kor, Ma, and Dok Tang. Tai-Lue weaving cloth is divided into 2 types: the cloth that is used in a ceremony and the cloth that is used in household. The example of the household cloth is called "Tam Kao Blanket" which cannot find its expert in making it. Tam Kao is Lue dialect, containing 2 meanings: 1. Design name and 2. Its process. Tam means weaving, and Kao means the action of pulling the wood to put the design in and insert to make patterns. It is normally called "Ta Saeng blanket" or "Si Pae blanket" or "Ta Kong blanket". It was a high-relief weaved cloth, weaved into a big square with small one's patterns. Its popular colors are black, red, and white. Its weaving processes are considered complicated and therefore expensive. It is not widely used now but found weaved at certain places. The Center decorates the design in several types of cloth (Source: www.museumthailand.com/th/museum/Centre-of-Tai-Lue-Culture-Wat-Yuan). Additionally, according to the human proportion study by JULIUS PANERO and MARTIN ZELNIK, human's average level of comfortable sitting postures is used with the area of 35.4 – 42.2 centimeters width, 43.7 – 55.1 centimeters length, and 37.8 – 47.8 centimeters height.



Image 1 size of comfortable sitting postures
Source: pinterest.com/ JULIUS PANERO and MARTIN ZELNIK Comfortable Chair Size Body dimensions 2 | Human Dimension & Interior Space, Julius Panero & Martin Zelnik

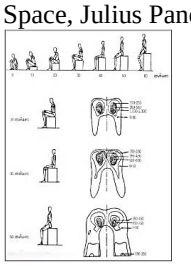


Image 2 Sitting level and balance of hip muscle with the most suitable sitting weight distribution of 40 centimeters height chair
Source: Wannee Sahasomchok, Furniture Design (Bangkok: Technology Promotion Association (Thailand-Japan) 2549), 205.

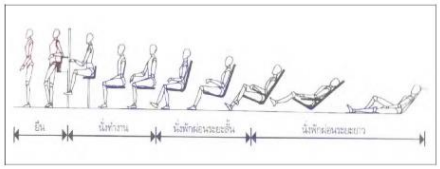


Image 3 3 levels of sitting gestures: working, short-relaxed, and long-relaxed
Source: Wannee Sahasomchok, Furniture Design (Bangkok: Technology Promotion Association (Thailand-Japan) 2549), 206.

The height of Resting Chair is always shorter than a working chair's height, as when people lean their back on the backrest, the legs automatically go forwards. The widely-used chair is 30 – 40 centimeters height, 45 – 53

centimeters depth, and 105 – 125 centimeters backrest slope. The armrest can be designed in parallel with the seat or the floor. The mostly-used height is 50 – 25 centimeters from the seat (Ms. Rojana Chantrasa, Ms. Kanittha Rueangwannasak, and Mr. Phanu Phatthanapanithipong, 2553, 53-57)

Risom Chair was designed by Jens Risom in 1943, and invented from a surplus parachute harness from World War II. Risom Stool is recently made from cotton-harness basket for hard-weaved seats located on solid wood frame. Risom chair is 42 centimeters wide, 39 centimeters deep, and 44 centimeters high.

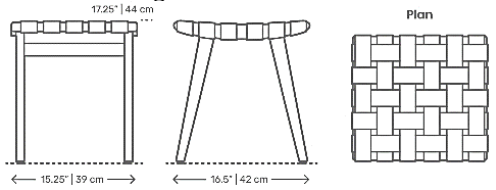


Image 4 Risom Chair, designed by Jens Risom
Source: www.dimensions.com lounge-chair-ottoman, accessed by www.pinterest.com.

Therefore, the researcher specified the appropriate size of sitting chair as 30 – 40 centimeters height and 45 -53 centimeters width.

Purposes

1. to study the weaving designs of Tai-Lue clothes that is suitable for furniture,
2. to study the proportion of furniture for use, and
3. to design and develop furniture.

Scope of Study

The research of Designing Furniture Equipment from the culture of Thi-Lue Tribal group to Encourage Tourism in Tai-Lue Village, Baan Yuan, Yuan district, Chiangkham, Phayao Province was processed in 2020 – 2021, and contains the scope of research namely:

1. details of furniture design processes and its format,
2. Tai-Lue weaving design that matches stool furniture, and
3. stool furniture production.

The scope of sample population includes:

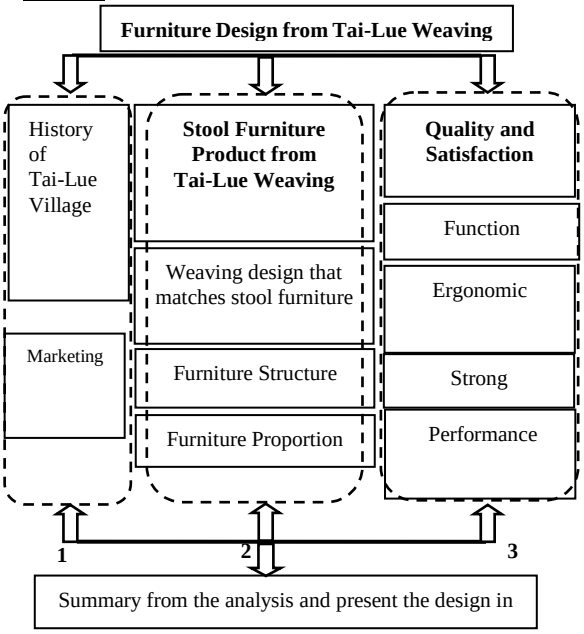
1. 16 people in this research,
2. 29 consumers with interest of improving Tai-Lue weaving furniture products, and
3. 48 people who are interested in Tai-Lue weaving furniture products, for satisfaction assessment.

III. METHODOLOGY

This research was about collaboratively designing and improving Tai-Lue weaving furniture products from Baan Yuan, Yuan district, Chiangkham, Phayao Province, to help the village to adapt the knowledge in solving problems and creating more various options to manufacturers and consumers, with the research frame.

The frame of Collaborative Furniture Design from Tai-Lue Weaving Villagers was used. The idea was divided into:

Table 1 Research Frame



1. interviewing and questioning
2. photography, literature review, interview
3. questioning

The sample population interview was purposed to prepare opinionated data into collaboratively designing and improving stool furniture of Tai-Lue Village, Baan Yuan. Then, the results were cumulated by description. The questionnaires about needs in designing and improving factors were collected, including these processes: 1. Study primary data and collect field data by observing, interviewing, and studying other related researches about furniture design and the history of Tai-Lue weaving village and the ideas of making its products 2. Interview the sample group to prepare opinionated data from the consumers with the interest in developing products in the purpose that can be adapted with Tai-Lue weaving furniture 3. Operate fieldwork to collect questionnaires about needs in designing and improving factors 4. Collaboratively design and improve furniture by the researchers and Tai-Lue weaving villagers 5. Collaboratively create furniture products (model furniture) 6. Bring satisfaction assessment tools into the fieldwork 7. Analyze and synthesize tentative data for designing and

improving model furniture products in the idea of Tai-Lue Wat Yuan village.

IV. RESULTS

The results were divided into issues namely: 1. The design of Tai-Lue weaving that is suitable for using with stool furniture should be a type of sarong cloth since it is tighter weaved; other types are less tight and contain certain buttons or hooks that can harm the cloth, so the stool may not be strong enough to use. It was also found that the design that matches stool furniture is Nam Lai Pak Waen as it was an original and unique design. There were 8 most popular colors to use: green, yellow, black, pink, purple, light blue, and white.

Table 2 Tai-Lue weaving design

Item	Picture	Design name
1		Nam Lai Pak Waen
2		Saeng
3		Ta Saeng, or striped
4		Ngu Loi Salab Lai Nuai Kruea, generally horizontal. Chiangkham people call it Tam Kao blanket.
5		Kor

The researcher concluded the idea by specifying stool patterns, strength, convenience, and natural dyeing colors, and collaboratively developed furniture patterns with Tai-Lue Wat Yuan weaving group in 3 types, by having an assessment about demands of who supports Community Enterprise Group.

Table 3 Stool Furniture Pattern Demands of who supports Community Enterprise Group

Pattern	Stool Furniture Pattern Demands	Demand Level		
		x̄	S.D.	Result
A		4.66	.614	Highest
B		3.90	.817	High
C		3.28	.841	High
D		3.59	.780	High
Total mean		**3.85**	**.102**	**High**

According to Table 3, which is the result from the 29 samples, the demands of stool furniture pattern of who supports Community Enterprise Group was shown that all 4 patterns were in the high level ($\bar{x}$ =3.85 S.D.=.10). Pattern A was the highest ($\bar{x}$ =4.66 S.D.=.614). Pattern B was the second highest ($\bar{x}$ =3.90 S.D.=.817). Pattern D was the second lowest ($\bar{x}$ =3.59 S.D.=.780), and Pattern C was the lowest ($\bar{x}$ =3.28 S.D.=.841).

Table 4 Furniture color demands of who supports Community Enterprise Group, percentage of sample groups, categorized by gender and frequency of color choices (N =29)

Sex	Color			Total
	Red	Pink	Natural color	
Male	3	0	5	8
Female	2	2	17	21
Total	**5**	**2**	**22**	**29**

x^2=3.652 Sig =0.161

According to Table 4, from 29 samples, both male and female consumers need natural colors the most, which was 22 samples. The second highest need was red, which was 5, and the lowest need was pink, which was 2. It was also discovered that gender and frequency of color choices are not influential.

Table 5 Furniture structure demands of who supports Community Enterprise Group, percentage of sample groups, categorized by gender and frequency of structural material choices (N =29)

Sex	Structural material			Total
	Steel	Wood	Plastic	
Male	4	3	1	8
Female	8	12	1	21
Total	**12**	**15**	**2**	**29**

x^2=1.134 Sig =0.567

According to Table 5, from 29 samples, both male and female consumers need wood structural material furniture the most, which was 15. The second highest need was steel,

which was 12, and the lowest need was plastic, which was 2. It was also discovered that gender and frequency of structural material choices are not influential.

Table 6 Demands of appropriate design of Tai-Lue weaving to be made into stool furniture

Item	Design Name	Demand Level		
		x̄	S.D.	Result
1	Nam Lai Pak Waen	4.96	0.18	Highest
2	Saeng	4.45	0.57	High
3	Ta Saeng, or striped	3.31	0.54	Medium
4	Dok Kor	2.24	0.43	Low
5	Ngu Loi Salab Lai Nuai	2.27	0.45	Low
Total Mean		**3.45**	**0.15**	**Medium**

According to Table 6, from 29 samples, the Tai-Lue weaving design that matches stool furniture the most was Nam Lai Pak Waen (x̄ =4.96 S.D.=.18). The second highest need was Saeng (x̄ =4.45 S.D.=.57). The third highest was Ta Saeng (x̄ =3.31 S.D.=.54). The second lowest was Ngu Loi Salab Lai Nuai (x̄ =2.27 S.D.=.45), the lowest was Dok Kor (x̄ =2.24 S.D.=.45).

Table 7 Satisfaction in Furniture Development from Tai-Lue Weaving of consumers and who supports Tai-Lue Wat Yuan weaving group

Item	Furniture Development from Tai-Lue Weaving	Demand Level		
		x̄	S.D.	Result
1	Satisfaction in Developing Tai-Lue Weaving Furniture	4.95	.201	Highest
2	Satisfaction in Tai-Lue Weaving Furniture Benefit	4.85	.460	Highest
3	Satisfaction in Tai-Lue Weaving Furniture convenience	4.89	.308	Highest
4	Satisfaction in Tai-Lue Weaving Furniture Strength	4.79	.503	Highest
5	Satisfaction in Tai-Lue Weaving Furniture Usage	4.72	.535	Highest
Total mean		**4.84**	**0.141**	Highest

According to Table 7, from 48 samples, the overall satisfaction of stool furniture development by the consumers and who supports Community Enterprise Group of Tai-Lue Wat Yuan weaving group was averagely highest (x̄ =4.84 S.D.=.141). The Satisfaction in Developing Tai-Lue Weaving Furniture was in the highest (x̄ =4.95 S.D.=.201). The Satisfaction in Tai-Lue Weaving Furniture Benefit was in the highest (x̄ =4.85 S.D.=.406). The Satisfaction in Tai-Lue Weaving Furniture convenience was in the highest (x̄ =4.89 S.D.=.308). The Satisfaction in Tai-Lue Weaving Furniture Strength was in the highest (x̄ =4.79 S.D.=.503), and the Satisfaction in Tai-Lue Weaving Furniture Usage was in the highest (x̄ =4.72 S.D.=.535).

To conclude the result of this Table, the highest overall satisfaction of stool furniture development by the consumers and who supports Community Enterprise Group of Tai-Lue Wat Yuan weaving group was The Satisfaction in Developing Tai-Lue Weaving Furniture (x̄ =4.84 S.D.=.141).

Table 8 Thoughts and satisfaction in Tai-Lue weaving stool furniture price of consumers and who supports Tai-Lue Wat Yuan weaving group, percentage of sample groups, categorized by gender and frequency in answering questions about the price of Tai-Lue weaving stool furniture (N =29)

Item	Furniture Price Questions	Furniture Price					Total
		4,500 baht	4,000 baht	3,800 baht	3,500 baht	Other (please specify)	
1	Male	2	5	1	0	-	8
2	Female	3	13	5	0	-	21
Total		5	18	6	0	-	29

x^2=0.744 Sig =0.69

According to Table 8, from 29 samples, both male and female consumers considered that the most possible price for Tai-Lue weaving furniture was 4,000 baht; there were 18 samples. The second most was 3,800 baht; there were 6 samples. The least was 4,500 baht; there were 5 samples. It was also discovered that gender and frequency of answering about furniture price are not influential.

Table 9 Satisfaction in buying and selling Tai-Lue weaving stool furniture, percentage of sample groups, categorized by gender and frequency in answering questions about the satisfaction in buying and selling of Tai-Lue weaving stool furniture (N =29)

Item	Furniture Price Questions	Furniture Price					Total
		4,500 baht	4,000 baht	3,800 baht	3,500 baht	Other (please specify)	
1	Male	0	3	5	0	-	8
2	Female	1	5	13	2	-	21
Total		1	8	18	2	-	29

x^2=1.537 Sig =0.674

According to Table 9, from 29 samples, the greatest number of male and female, 18 samples, were satisfied with buying and selling Tai-Lue weaving furniture in the price of 3,800 baht. The second greatest, 8 samples, were satisfies with the price of 4,000 baht. The second lowest, 2 samples, were satisfies with the price of 3,500 baht. The lowest, 1 sample, was satisfied with the price of 4,500 baht. It was also discovered that gender and frequency of answering questions about satisfaction in buying and selling are not influential.

To conclude this result of the Table, the highest overall satisfaction of stool furniture development by the consumers and who supports Community Enterprise Group of Tai-Lue Wat Yuan weaving group was the satisfaction in buying and selling Tai-Lue weaving furniture in the price of 3,800 baht. The cost of manufacturing one piece of furniture was approximately 2,290 baht, sold at 3,800 baht, so the benefit was 1,510 baht; the income was increased by 66 percent.



Image 5 Collaboration in furniture development between the researcher and the villagers



Image 6 Structuring and sewing stool furniture cloth

The structure of stool furniture was built using MDF 20-millimeter plywood and 1X2 inches hardwood to be the main structure adhered to the seat and the legs by screws, and the seat was adhered by glue gum. The first step of sewing is to make a draft model. The cloth must be enough for the cutting and folding to cover the seat. The cloth with Nam Lai Pak Waen design and dyed with natural color was used.



Image 7 Model picture of Tai-Lue weaving furniture

V. DISCUSSIONS

The significant factor for developing Tai-Lue weaving furniture was designing and developing the furniture from Tai-Lue tribal group culture by bringing knowledge in weaving cloth of Tai-Lue Wat Yuan group to collaboratively develop the products to gain more income to the village. The villagers can therefore improve their knowledge to sustainably solve problems and add more options to manufacturers and consumers, in harmony with what Amphai Saengchanthai and Jirawat Phirasan (2558, page 2) stated that it is necessary for Thai household to own furniture. Furniture has nowadays been designed in a more modernized way to match consumers' behaviors, including making use of natural materials to apply into furniture design and make it more attractive and unique. It was also related to what Singha Prarom (2557: 82) referred in Angkab Boonsoong (2556: 85-97) about adapting cultural uniqueness and traditions in designing, what Natthikarn Pinjurai and Songwut Akewutti-ongsa referred in Wiboon Leesuwan (2522, 243) about human nowadays becoming more creative in applying various kinds of materials to assemble into equipment and continuously improving themselves depending on human's creativity in redesigning and developing to suit the period and technology. Handcrafts are valuable themselves since they are made of materials with natural beauty and they are made by hands, which are different from the products made by factories, so they are uniquely precious. Their designs and patterns illustrate different local characteristics. Udomsak Saribut (2550: 18-19) stated that when it comes to designing, designers must consider 1) its proper function 2) its proper strong and low-cost materials 3) the strong, low-cost, and proper 4) convenience in proper size and proportion and 5) the beauty with proper figure and size that suits the consumers' needs.

Lastly, Jeeraphan Kanchanajittra (2526, page 24 -25) addressed that developing the village using this method can help to promote Community Enterprise Group and also improve more knowledge to apply and solve all problems in community's products and sustainably develop the community.

This research is shown that utilizing knowledge in developing Tai-Lue weaving furniture is beneficial for applying in harmony with actual consumers' needs and helping the manufacturers to improve the skills and products with sustainable variety.

CONCLUSION

According to the interview with Tai-Lue Baan Yuan village, the design of Tai-Lue weaving that is suitable for using with stool furniture should be a type of sarong cloth since it is tighter weaved. The design that matches stool furniture is Nam Lai Pak Waen as it was an original and unique design with tighter weaving methods of "Tam Kao". The researcher also studied the appropriate size of furniture in Literature Review and found that the most appropriate height is 40 centimeters as it is the most appropriate weight distribution, and the most proper width is 45 centimeters. The researcher then collaboratively designed 4 types of furniture with Tai-Lue villagers. After accidentally asking people who supports Community Enterprise Group about the demands in patterns of furniture, the result from 29 samples stated that pattern A is the highest need ($\bar{x}$ =4.66 S.D.=.614). The most needed color for the furniture is natural color, which was 22 samples. The second highest need was red, which was 5, and the lowest need was pink, which was 2. Wood structural material furniture is the highest need, which was 15 out of 29 samples. The second highest need was steel, which was 12, and the lowest need was plastic, which was 2. The highest need for weaving design is Nam Lai Pak Waen ($\bar{x}$ =4.96 S.D.=.18). After obtaining the data in Tai-Lue weaving furniture development, the draft of the product model was presented and collaboratively developed with weaving teams, finding appropriate methods and models, then bringing those models to be produced collaboratively with Tai-Lue weaving group for improving skills. Male workers' duty was originally to repair weaving equipment, and female workers' duty was only to weave. Furniture production helps those workers to gain more jobs, as the sayings stated "women weave, men make furniture". After finishing the model furniture production, the researcher collected the surveys about satisfactions by accidentally asking people who supports Community Enterprise Group. The highest overall satisfaction of stool furniture development by the consumers and who supports Community Enterprise Group of Tai-Lue Wat Yuan weaving group was The Satisfaction in Developing Tai-Lue Weaving Furniture ($\bar{x}$ =4.84 S.D.=.141). After that, the questions about that the most possible price for Tai-Lue weaving furniture were accidentally asked to 29 samples, and it was found that there were 18 samples who considered 4,000 baht was the most possible price. When accidentally asking about the satisfaction in buying and selling Tai-Lue weaving furniture price, both male and female consumers were mostly satisfied with the price of 3,800 baht; there were 18 samples. The conclusion was therefore the highest overall satisfaction in buying and selling Tai-Lue weaving furniture price of the consumers and who supports Community Enterprise Group of Tai-Lue Wat Yuan weaving group was in the price 3,800 baht. The cost of manufacturing one piece of furniture was approximately 2,290 baht, sold at 3,800 baht, so the benefit was 1,510 baht; the income was increased by 66 percent.

This research has built a product model for furniture in production and applying knowledge to solve problems, hold vocational trainings, and sustainably encourage tourism Tai-Lue Village.

VI. RECOMMENDATIONS

1. Nowadays, Thailand has become an elderly society. Development in Tai-Lue weaving for the elderly is considered an option to be improved to meet the needs of the elderly.

2. The design of Tai-Lue Weaving is unique. The idea to redesign the weaving should be considered.

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The Development of Muay Thai Learning Management Plan According to Cognitive Behavior Modification Concept for Reducing Aggressive Behavior of Lower Secondary School Students

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Abstract*— *The objective of this study was to develop Muay Thai learning management plan according to cognitive behavior modification concept for reducing aggressive behavior of lower secondary school students. In this study, 60 lower secondary school students aged 13-15 were selected by stratified random sampling and were randomly divided into experimental and control groups. Each included 30 students. The research instruments consisted of (1) the interview form, (2) the assessment form on students' aggressive behavior, (3) observation and note-taking form, and (4) the Muay Thai learning management plan. The learning management plan was applied to the experimental group for 16 weeks, one session per week, and 50 minutes per each. Both groups were assessed before the experiment as a pre-test, during the 8-week trial, and lastly in the 16th week of the experiment. Findings were statistically analyzed with Two-way ANOVA repeated measures and One-way ANOVA repeated measures.

The research results were as follows:

1. The Muay Thai learning management plan consists of 16 learning management plans, five teaching steps: preparation and physical fitness development, explanation and demonstration, practice, implementation, and summary. The physical education learning management and practiced cognitive behavior techniques consisting of thought-stopping, mental arithmetic counting, self-taught, muscle relaxation, and positive reinforcement indicated that an index of item objective congruence was 0.90 (IOC=0.90).

2. The Muay Thai learning management plan according to cognitive behavior modification concept was effective in decreasing aggressive behavior of the experimental group students during the 8-week trial and the post-trial when comparing with the results of the pre-trial. The results were statistically significantly different at .05. However, in terms of the control group, they were not different.

Index Terms— ***Muay Thai learning management plan, cognitive behavior modification, aggressive behavior, lower secondary school students***

I. INTRODUCTION

In today's society, aggressive behavior in children and adolescents is becoming more and more violent day by day, leading to misuse, especially bullying behavior, harming others, destroying other people's property, being rude, brawling, burglary, and physical abuse. In some cases, it can even be fatal. In 2002, a report of World Health Organization revealed that violent and aggressive behavior among students was a major problem, bullying, also known as Bully. It was found that one-seventh of school children had bullied one another and had been bullied before as in [1]. In Thailand, the Department of Mental Health conducted a survey in 2016 among more than four million children and adolescents aged 13-17 years. The survey revealed that aggressive behavior represented 3.8% which was estimated that there were about 150,000 people nationwide. At the same time, Thailand had the second highest rate in the world accounting for 40% of the time, which was mostly abuse on social media. The main causes

of aggressive behavior were parenting and family. These behavioral problems will affect families and society in the future, leading to a major cause of harming each other, a thug, or a criminal as in [2]. For the reasons above, it has been become aware of the necessity to reduce the aggressive behavior of junior high school students. Therefore, Thai society should focus on solving problems and preventing the aggressive behavior of children and youth, which is an important resource of the nation to help them grow into potential adults and be a main powerful force for further national development.

Physical education is another academic learning by using physical education activities or sports as a medium of instruction. It focuses on students to use movement activities, games, sports, and exercise as a tool and medium to encourage children and youth to develop in all aspects of their own, leading to people who have physical, mental, emotional, social, intellectual, moral, ethical, attitudes, and desirable behaviors. The Ministry of Education has designated physical education as one of the learning subjects in the Basic Education Core Curriculum 2008, in the fifth learning area, Health and Physical Education, in the third learning standard consisting of movement, physical exercise, games, Thai and international sports. The quality of learners at the secondary school level is defined as being able to participate in physical, sports, recreational activities to enhance physical fitness for health by applying the principles of mechanical skills, favor for physical exercise, playing games and sports with regular practices according to their skills and interests. The quality of learners also includes self-discipline, observance of rights, rules and regulations, having sporting spirit, having true competitive spirit, working as a team in a systematic manner with commitment and sportsmanship until achieving the goals with appreciation of the aesthetics of sports as in [3].

Muay Thai, or Thai boxing, has been one of the most unique sports in Thailand for a long time until now. It has been applied as a means of teaching and learning exercise to encourage children and young people to practice for their physical, mental, emotional, moral, and ethical health, to protect themselves from any harm, to have desirable behavior, as well as to help preserve good art and culture to be able to carry on with Thai society. Muay Thai is one of the Thai sports that is charming and a form of Thai national martial arts. It has been regarded as valuable culture, tradition, and identity of the nation for a long time since Sukhothai period to the present. In the past, learning and practicing Muay Thai was used as a fighting method to defense from various dangers and to defense the government and people from neighboring tribes. Nowadays, the world has changed in different eras. Instead of being a method for protecting the country as in the past, Muay Thai has been brought to classes and trained for exercise, leading to promoting physical health, mental health, attitudes, beliefs, and values of Thai people passed down from their ancestors. It also represents the perfection and integrity of Thai culture since Muay Thai is a kind of sports and Thai games that has beautiful rules and traditions harmonized through the distillation of good aspects, and reflects Thai-ness with beautiful culture. Moreover, cultural and psychological elements are added to Muay Thai, as a boxer has to perform a traditional "paying respect to the teachers" ritual or Wai Khru ceremony, which is good culture and tradition, and be a blessing to the students from the past to the present. This represents virtue, prosperity, value, way of life, as well as good self-practice as in [4]. Muay Thai is a martial art and combat sport that is the combined use of fists, feet, knees, and elbows. Wai Khru, a ritualistic dance carried out before a fighter engages in the ring, and Ram Muay, a dance unique to each master instructor and taught to his student, are regarded as invaluable Thai national identity that should be preserved and promoted. According to the National Education Act and the Basic Education Core Curriculum 2008 in promoting Thai arts and culture, children and youth should be encouraged to learn about Thai boxing, resulting in the development of physical, mental, emotional, social, moral, ethical, desirable behaviors, and consciousness of being Thai citizen.

According to a study conducted by Thanomsingha and Sarayutpitak [5] on the development of activity model using Muay Thai arts to promote the quality of life of high school students, it was found that an activity model using Muay Thai arts resulted in a better quality of life of the students. In addition, with respect to a study on the development of an exercise program using Muay Thai arts to improve upon life skills regarding emotional coping of upper elementary students conducted by Sukdee [6], it was found that after participating in the exercise program, the experimental group improved life skills regarding emotional coping based on comparison of test results before and after the experiment, and between the experimental and the control groups with statistical significant difference at the 0.5 level. Moreover, Singthit and Thamsaowapak [7] studied effect of keata mouy thai exercising program to physical fitness of pratomsuksa the fifth and sixth grade students. It was found that the students' physical fitness was better after training, and the physical fitness between before and after training had a statistically significant different at the 0.5 level. Muay Thai can be seen to be beneficial on various aspects, which should be encouraged to have Muay Thai learning and training for children and youth in Thailand today. However, there has not been any study on applying related concepts and theories to Muay Thai learning and training in order to achieve the learning goals.

Cognitive behavior modification is an important concept to help change unwanted behaviors of children and youth in order to reduce or stop the negative behaviors. By adjusting the cognitive behavior, this helps to modify the internal behavior in order to cause changes in the behaviors expressed externally in the positive way and suitable for various different situations. This is important to help adjust behaviors in children and young people in self-control in stressful situations, self-discipline, including how to deal with anxiety. These will encourage students to have better internal and external behaviors as mentioned by Iamsupasit [8] and Maneesri [8].

Several studies on applying cognitive behavior modification concept for reducing unwanted behaviors have been conducted in various fields. Chailert [9] studied the effects of cognitive behavior modification on achievement motivation of tennis players. The research results showed that (1) the cognitive behavior modification had an effect on the achievement motivation of tennis players. The experimental group athletes exhibited achievement motivation behavior at the end of the 12-week trial significantly different from the pre-trial period at the .05 level, but in the control group, no efficacy was found, and (2) at the end of the 12-week trial, the experimental and the control groups had as statistically significant difference at the .05 level. Besides, Chen et al [10] studied cognitive behavioral therapy to reduce overt aggression behavior in Chinese young male violent offenders. It was found that there were between-group differences in change of Modification Overt Aggressive Scale (MOAS) total score ($p<.001$) and all sub-scores ($Ps<.01$) except aggression against property. In addition, Lochman [11] studied effects of different treatment lengths in cognitive behavioral intervention with aggressive boys. This study revealed that length of treatment had a significant effect on the outcome of cognitive behavioral treatment of aggressive boys. In accordance with using a quasi-experimental design, a longer eighteen session intervention produced more significant changes in classroom behavior than did a twelve session intervention. Additionally, Smith et al [12] studied effects of cognitive-behavioral training on angry behavior and aggression of three elementary-aged students. The results indicated that the students were able to learn the strategy and that the intervention produced a decreased level of undesired behavior. Maintenance data demonstrated that all three students were able to maintain decreased levels of anger and aggression over time.

Based on the information of the problem and its significance mentioned above, this demonstrates the need for Muay Thai learning management, which is one of the Thai sports that should be conserved and applied in teaching and learning to help reduce negative behavior. In particular, the aggressive behavior of junior high school students is becoming increasingly common in today's society, which should be improved in order to encourage children and youth to be physically, mentally and socially ready. This is important to help them succeed in living in the future. At the same time, the cognitive behavior modification concept has principles consistent with reducing undesired behavior of children and young people. Muay Thai learning management and the cognitive behavior modification concept can be applied together in the development of physical education learning management to be suitable in each class of teaching. Regarding the importance and background mentioned above, the researcher therefore has found that a Muay Thai sports learning management plan should be studied and developed according to the cognitive behavior modification concept in order that this group of children have a chance to learn the correct and appropriate physical education, including learning Muay Thai, a sport that is a unique and valuable sport of Thailand. In addition, for those related to junior high school students, they are able to adapt a Muay Thai learning management plan based on the cognitive behavior modification concept in teaching physical education for this group of children to learn and exercise at school. This will lead to the readiness of the body in every dimension for the children who will grow into adults and the main force for developing the country in the future. It also helps preserve the national culture and values to remain priceless in the future.

II. RESEARCH OBJECTIVES

To develop the Muay Thai learning management plan according to cognitive behavior modification concept for reducing aggressive behavior of lower secondary school students.

Scope of the study

1. The study is based on the data drawn from schools providing physical education teaching at the secondary level under the Office of the Basic Education, Muang district, Udon Thani province.

2. The study is conducted to study two groups of related variables consisting of one independent variable, namely the Muay Thai learning management plan based on cognitive behavior modification concept, and one dependent variable which is aggressive behavior of lower secondary school students.

III. RESERCH METHODOLOGY

A. Population and sample

The population is lower secondary school students aged 13-15 studying at schools under the Office of the Basic Education, Muang district, Udon Thani province.

The sample is a group of 60 lower secondary school students aged 13-15 studying at schools under the Office of the Basic Education, Muang district, Udon Thani province, selected by stratified random sampling and simple random sampling was used to select sample of 60 students, divided into experimental and control groups by random assignment. Each includes 30 students.

B. Instrument

1. The interview form on students' aggressive behavior for teachers and advisory teachers.
2. The assessment form on students' aggressive behavior towards other people
3. The aggressive behavior observation and note-taking form
4. The Muay Thai learning management plan according to cognitive behavior modification concept for reducing aggressive behavior of lower secondary school students consisting of 16 learning management plans has been developed by the researcher based on analysis and synthesis of the contents and theories in relation to physical education learning management, Muay Thai sports, cognitive behavior modification concept, aggressive behavior, and review of related literature. The plans comprises five teaching steps: preparation and physical fitness development, explanation and demonstration, practice, implementation, and summary. The learning management plans are applied to the experimental group for 16 weeks, one session per week, 50 minutes per each.
5. The Muay Thai learning management plan according to cognitive behavior modification concept for reducing aggressive behavior of lower secondary school students is calculated to obtain content validity with Index of Item Objective Congruence: IOC by relevant qualified experts. The consistency index is from 0.5-1.0. It has been found that the consistency is .90. In terms of the content validity of the interview form, behavior observation form, assessment form on students' aggressive behavior towards other people, the index of item objective congruence is 0.65 or higher for all items.
6. The assessment form on students' aggressive behavior towards other people is applied to students who are not the sample to find the quality of each question by testing the significance of the correlation coefficient at the .05 level.
7. In this study, Cronbach's Coefficient Alpha is used to calculate the consistency coefficient of the items in the assessment form on students' aggressive behavior towards other people at the acceptable 0.85 level.

C. Data collection

In order to obtain information, the researcher takes the following steps:

1. The researcher collects data from stakeholders and people related to the high school students by in-depth interviews and group interviews.
2. The researcher analyzed and synthesized of the contents and theories in relation to physical education learning management, Muay Thai sports, cognitive behavior modification concept, aggressive behavior, and review of related literature.
3. The Muay Thai learning management plan according to cognitive behavior modification concept for reducing aggressive behavior of lower secondary school students is applied to a 30-person experimental group for 16 weeks, one session per week, 50 minutes per each.
4. According to aggressive behavior assessment, both experimental and control groups are assessed before the experiment as a pre-test, during the 8-week trial, and post-trial.
5. The data obtained from the experiment are analyzed, summarized, and discussed.

D. Data analysis

The process of data analysis in this study is as follows:

1. Descriptive statistic is used to analyze the data on the students' aggressive behavior assessment to find mean scores and standard deviation.
2. Shapiro-Wilk Test is used to compare the variables in the study including before, during and after the experiment.

2.1 Two-way ANOVA repeated measures are used to analyze the difference in mean scores on aggressive behavior of both experimental and control groups obtained from pre-trial, during the 8-week trial, and post-trial.

2.2 One-way ANOVA repeated measures are used to analyze the difference in mean scores on aggressive behavior of both experimental and control groups obtained from pre-trial during the 8-week trial, and post-trial. Each group is analyzed individually.

2.3 Bonferroni's method is used to analyze a pairwise comparison of the mean scores on aggressive behavior from pre-trial, during the 8-week trial, and after post-trial.

2.4 The statistical significance is determined at the .05 level.

IV. RESEARCH RESULTS

The research findings are as follows:

1. In terms of development of the Muay Thai learning management plan according to cognitive behavior modification concept for reducing aggressive behavior of lower secondary school students, the researcher has studied

and developed the 16 Muay Thai learning management plans based on analysis and synthesis of the contents and theories in relation to physical education learning management, Muay Thai sports, cognitive behavior modification concept, aggressive behavior, and review of related literature. The plans comprises five teaching steps: preparation and physical fitness development, explanation and demonstration, practice, implementation, and summary. The physical education learning management and practiced cognitive behavior techniques consists of thought-stopping, mental arithmetic counting, self-taught, muscle relaxation, and positive reinforcement. The 16 Muay Thai learning management plans are applied to the experimental group for 16 weeks, one session per week, 50 minutes per each. The learning management plans are calculated to obtain content validity with Index of Item Objective Congruence: IOC by relevant qualified experts. The consistency index is from 0.5-1.0. It has been found that the consistency is .90. In addition, the qualified experts' recommendations on the learning management plans are taken into account. Besides, the consistency coefficient of the Muay Thai learning management plans have been tried out with students who are not the sample, but close to the sample. It has been found that the consistency coefficient is 0.85, which indicates that the 16 Muay Thai learning management plans according to cognitive behavior modification concept is effective in reducing aggressive behavior of lower secondary school students, and teachers can apply this learning management plans for teaching in physical education class.

2. According to efficiency of the Muay Thai learning management plan according to cognitive behavior modification concept for reducing aggressive behavior of lower secondary school students, the results are as follows:

Table 1 The analysis of difference in mean scores on aggressive behavior of experimental and control groups before the trial, during the 8-week trial and after the trial

Duration / Group	n	Pre-trial		During the 8-week trial		Post-trial	
		$\bar{x}$	S.D.	$\bar{x}$	S.D.	$\bar{x}$	S.D.
Experimental group	30	106.67	1.82	77.70	1.90	45.57	1.72
Control group	30	97.20	2.58	96.83	2.61	96.50	2.46

According to Table 1, it was found that:

1) Before the experiment, a mean score of the experimental group was 106.67 and a standard deviation was 1.82. For the control group, a mean score was 97.20 and a standard deviation was 2.58.

2) During the 8-week trial, a mean score of the experimental group was 77.70 and a standard deviation was 1.90. For the control group, a mean score was 96.83 and a standard deviation was 2.61.

3) After the experiment, a mean score of the experimental group was 45.57 and a standard deviation was 1.72. For the control group, a mean score was 96.50 and a standard deviation was 2.46.

Table 2 The results of Two-way ANOVA repeated measures in mean scores on aggressive behavior of experimental and control groups before the trial, during the 8-week trial and after the trial

Source of variance	df	SS	MS	*F*	*p*
Subjects between groups					
Groups	1	18727.20	18727.20	1780.48	.000
Error	58	610.04	10.52		
Subjects within groups					
Tests	2	28125.64	14062.82	6742.09	.000
Error	116	396.89	3.42		
Mauchly's W = .97, Chi-square(2,30) = 1.55, p =.46					

*p < .05

According to Table 2, it was found that:

1. Regarding each test, a mean score on aggressive behavior between the experimental and control groups was statistically significant different at the .05 level.

2. There was statistically significant difference in mean scores on aggressive behavior within the experimental and control groups before the trial, during the 8-week trial and after the trial at the .05 level.

In addition, it was found that the experimental group variables and the number of times tested had an interaction effect with statistically significant difference at the .05 level. Therefore, they had to be analyzed individually by One-way ANOVA repeated measures.

Table 3 The results of One-way ANOVA repeated measures of the experimental group before the trial, during the 8-week trial and after the trial

Source of variance	df	SS	MS	*F*	*p*
Tests	2	54974.68	27487.34	9528.75	.000
Error	58	167.31	58		
Mauchly's W = .886, Chi-square (2,30) = 3.396, p =..183					
The results of pairwise comparisons were analyzed using Bonferroni's method.					
Post-trial < pre-trial (p = .000, d = -60.50)					
Post-trial < during the 8-week trial (p = .000, d = -32.13)					
During the 8-week trial < pre-trial (p = .000, d = -28.37)					

*p < .05

Regarding Table 3, in terms of the experimental group, the results showed that the post-trial mean score on aggressive behavior was statistically significantly lower than

the pre-trial mean score at the .05 level. Besides, the post-trial mean score on aggressive behavior was statistically significantly lower than during the 8-week trial mean score at the .05 level. During the 8-week trial mean score on aggressive behavior was statistically significantly lower than pre-trial mean score at the .05 level.

Table 4 The results of One-way ANOVA repeated measures of the control group before the trial, during the 8-week trial and after the trial

Source of variance	df	SS	MS	*F*	*p*
Tests	2	7.356	3.678	2.858	.000
Error	58	74.644	1.287		

Mauchly's W = .912, Chi-square (2,30) = 2.587, p =..274

The results of pairwise comparisons were analyzed using the Bonferroni's method.

Post-trial < pre-trial (p = .251, d = -.700)

Post-trial < during the 8-week trial (p = .582, d = -.333)

During the 8-week trial > pre-trial (p = .327, d = -.367)

*p < .05

Table 4 indicated that according to the control group, there was no statistically significant difference in mean scores on aggressive behavior among pre-trial, during the 8-week trial and post-trial.

Table 5 The analysis of difference in mean scores on aggressive behavior of experimental and control groups

Test	Groups	n	M	SD	t
Post-trial	Experimental group	30	45.47	1.72	- 93.02
	Control group	30	96.50	2.46	

*p < .05

Table 5 revealed that post-trial mean score on aggressive behavior of the experimental group was statistically significantly lower than the control group's at the .05 level.

VI. DISCUSSION AND CONCLUSION

According to the research results, the important results of the study can be summarized and discusses as follows:

1. The Muay Thai learning management plan according to cognitive behavior modification concept for reducing aggressive behavior of lower secondary school students consisting of 16 learning management plans has been developed by applying theories and principles of physical education learning management, Muay Thai sports, cognitive behavior modification concept, aggressive behavior from books, textbooks, documents, and related studies. The plans comprises five teaching steps: preparation and physical fitness development, explanation and demonstration, practice, implementation, and summary. The physical education learning management and practiced cognitive behavior techniques consisting of thought-stopping, mental arithmetic counting, self-taught, muscle relaxation, and positive reinforcement are applied in the study for 16 weeks, one session per week, 50 minutes per each. It was found that the Muay Thai learning management plan according to cognitive behavior modification concept was developed to reduce aggressive behavior of lower secondary school students. In accordance with the use of the unique Thai boxing arts, an identity of Thailand, in physical education teaching, this encouraged students to develop physical, mental, emotional, social and intellectual areas, life skills, and reduced undesired behaviors.

The study results support the findings of a previous study conducted by Sukdee [13] who studied the development of an exercise program using Muay Thai arts to improve upon life skills regarding emotional coping of upper elementary students. It was found that after participating in the exercise program, the experimental group improved life skills regarding emotional coping based on comparison of test results before and after the experiment, and between the experimental and the control groups with statistical significance at the 0.5 level. The results of the present study also support a study on the development of exercise activities using Muay Thai arts to promote the quality of life of high school students by Thanomsingha and Sarayutpitak [14]. The results revealed that an exercise activity model using Muay Thai arts resulted in a better quality of life of the students. With respect to Wright [15] who studied using boxing in social group work with high-risk and offender youth to reduce violence. His article explored the concept of using boxing in social group work with juvenile offenders and high-risk youth as a means to decrease violence in their lives and their communities. It examined how learning the art of boxing could be woven into the group process to address violence. It presented ten attributes of boxing in a social group work setting that contributed to violence prevention. With regard to Azizi [16], effects of doing physical exercises on stress-coping strategies and the intensity of the stress experienced by university students in Zabol, Southeastern Iran was studied. The results showed that non-athlete students dealt with stress using more sentimental oriented coping strategies and yet they reported more intensity of stress. On the other hand, athlete students used higher levels of problem oriented coping strategies and reported less intensity of stress. Thus, it seemed that exercise had effect in selecting efficient and appropriate coping strategies and reduced the intensity of stress. Dealing with a study on effects of a health promotion program by using Thai folk games to reduce aggressive

behaviors of elementary school students conducted by Yasiasat [17], it was found that 1) the mean score on aggressive behavior among experimental group students after applying a health promotion program was lower than pre-trial with a statistically significance at the 0.5 level, and 2) the mean score on aggressive behavior among experimental group students after applying a health promotion program was significantly lower than that of the control group at the 0.5 level. The results indicated that a health promotion program using Thai folk games could reduce the aggressive behavior of primary school students.

2. The results of the evaluation on the efficacy of the Muay Thai learning management plan according to cognitive behavior modification concept revealed that the experimental group students' mean score on aggressive behavior, after being applied with the 16 Muay Thai learning management plans, was lower with a statistically significant difference at the .05 level for pre-trial, during the 8-week trial, and post-trial. When comparing with the control group, the experimental group's post-trial mean score on aggressive behavior was statistically significantly different at the .05 level. This indicated that the Muay Thai learning management plan according to cognitive behavior modification concept could reduce aggressive behavior of the lower secondary school students. This may be due to the fact that the students in the experimental group are oriented and trained based on cognitive behavior techniques consisting of thought-stopping, mental arithmetic counting, self-taught, muscle relaxation, and positive reinforcement, which is a mediator in connecting the thinking process. As a result, the students have better control over their own aggressive and unwanted behaviors, know their self-restraint in taking action and how to stop thinking if what is going to be right or not. They are able to deal with their anger when there is a bully or harassment, know how to teach oneself right or wrong, and how to reduce muscle relaxation from situations that provoke anger and more violent emotions. This is based on cognitive processes and behaviors which are related to each other. Also, in accordance with the theory of social intelligence stated by Bandura [18], learning takes place in social context, person, and environment. Additionally, a comparative investigation of the effects of cognitive-behavioral group practices and psychodrama on adolescent aggression conducted by Karatas et al [19] showed that cognitive-behavioral approach was effective in decreasing aggressive scores, except verbal aggression, and psychodrama approach was effective in decreasing all aggression scores, except verbal physical aggression. ANOVA analysis indicated that cognitive-behavioral approach was more effective in decreasing total aggression, physical aggression, and anger than psychodrama. The follow-up test results showed that the effects of group practices on both experimental groups lasted for up to 16 weeks. Chen et al [20] later studies cognitive behavioral therapy to reduce overt aggression behavior in Chinese young male violent offenders. It was found that there were significant between-group differences in change of modified overt aggression scale (MOAS) total score ($P < .001$) and all sub-scores ($Ps < .01$), except aggression against property. These findings suggest William Life Skills Training (WLST) has the potential to be an effective intervention to reduce overt aggressive behavior in young male violent offenders. Besides, Vorasaksenee [21] studied the development of model for organization physical education activities based on the cognitive-behavior modification approach to decrease aggressive behavior of lower secondary school students. The results revealed that 1) post-trial and follow-up mean scores of the experimental group students applied with the physical education activity models based on the cognitive behavior modification were less than the pre-trail mean scores, and 2) post-trial and follow-up mean scores of the experimental group students applied with the physical education activity models based on the cognitive behavior modification concept were less than the students not applied with the physical education activity models. Moreover, Pomprasit et al [22] studies the results of the use of physical education activities based on self-regulation approach to reduce aggressive behavior of lower secondary school students. It was found that a mean score on offensive behavior of the experimental group students after being applied with the physical education activities was significantly lower than the pre-trial at the 0.5 level.

In addition, the experimental group students were also instilled in the conceptual values and knowledge of Muay Thai in terms of compliance, gratitude, respect for teachers, self-respect, respect for others, duties and responsibilities, sportsmanship, good health, including physical, mental, emotional, moral, ethical, and desirable behaviors.

Applications

1. The Muay Thai learning management plan according to cognitive behavior
modification concept for reducing aggressive behavior of lower secondary school students can be applied by taking readiness of the personnel, location, and safety into account in order to prevent accidents that may occur during the course.

2. In terms of the management of Muay Thai learning and teaching according to cognitive behavior modification concept, the instructor has to monitor in the practice stage closely in order to check for the correctness of the practice.

Suggestions for further studies

The development of Muay Thai learning management plan promoting other skills such as critical thinking, decision making, creative problem solving, and building good relationship with others could be studied since these are the skills necessary for sustaining life and leading to be successful in the future.

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Principle for joint maritime exploitation under the law of the sea: a Case Study of the Scramble for Areas in the South China Sea

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Abstract— South China Sea covers the areas of the main land of Asian continent, southern seas of Taiwan, western seas of the Philippines islands, and northern seas of Borneo. It is the area of the fights for conflicting benefits in the seas north of Paracel /Xisha Islands and Spratly/Nansha Islands. The cause for such fights among various nations to reap the benefits within this area is due to estimation that there is approximately eleven billion barrels of oil and one hundred and ninety million cubic foots of natural gas underneath the land in the South China Sea .

China has claimed the rights in most parts of the area and obstructed such claims made by the Philippines, Vietnam, Malaysia and Brunei, while Taiwan has also claimed the rights over the South China Sea in the same way as China. Under an international agreement, there are provisions in the United Nations Convention on the Law of the Sea 1982 (UNCLOS 1982) on the rights of the nations to claim for the minerals in the seas of which the maritime-power nations are aware. Therefore, the consolidation of the nations entitled to jointly benefit from natural resources by establishing an organization for the sea benefits, engaged by representatives of conflicting members and representatives of neutral countries is indispensable. Such organization should be committed to creating necessary measures to ensure the security and prosperity in this region.

This article provides information about existing rich natural resources in the South China Sea, causing many countries have attempted to claim for the rights to exploit them. The article also analyzes how these countries justify their rights over the said natural resources, how the international law, i.e. the United Nations Convention on Law of the Sea 1982 (UNCLOS 1982) and consolidation of ASEAN play their roles in resolving this problematic issue.

Keywords: South China Sea Conflict, Dispute over Spratly/Nansha Islands , ASEAN Consolidation

I. INTRODUCTION

1.1 The United Nations Convention on Law of the Sea 1982 relating to a Case Study of the Scramble for Areas in the South China Sea

After the Third United Nations Conference on the Law of the Sea 1973 – 1982, there have been about 320 provisions and 9 annexes legislated to control its state parties to comply with the Convention on the Law of the

Sea. Besides, this convention does not allow any member states to make any reservations.

It can be said that the Convention plays its most perfect role as an international law which can control the state parties not to perform their activities under their sovereign power affecting rights on exploration for, and exploitation of the resources of the deep Seabed, providing the state parties can comply with the provisions they agreed upon for ratification [1](M. Dixon.Robert C. Sarah W, 2016). This can help to resolve conflicts on the scramble for natural resources in the sea, and conflicts on occupation of the air space over the territorial sea caused by state parties that attempt to possess natural resources of the sea by means of expanding their national jurisdiction over 12 nautical miles in the high seas in order to have exclusive fisheries jurisdiction and govern technology which can be applied by only developed countries to carry out the mining in deep Seabed so that they can explore and consume natural resources in such area.

In fact, before the Third United Nations Conference on the Law of the Sea 1967, the notion that natural resources in such area should be common heritage of mankind was presented by Mr. Arvid Pardo who at that time was in the position of Malta's Ambassador to the United Nations.

The General Assembly of the United Nations approved his notion and prescribed it as the resolution 2340 (xxii) and established Ad hoc Committee on the Peaceful Uses of the Seabed and the Ocean Floor beyond the Limits of National Jurisdiction) or The Seabed Committee, which was later replaced by the Permanent Committee on the Peaceful Uses

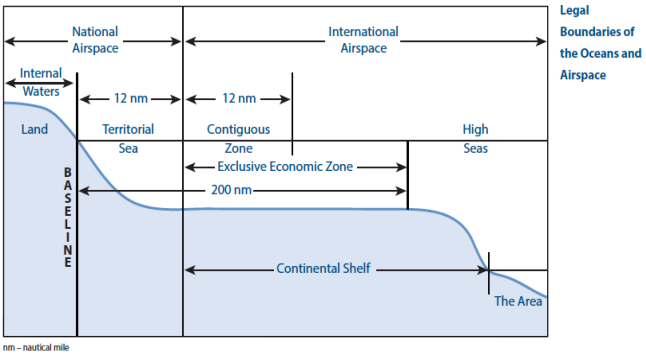
of the Seabed and the Ocean Floor beyond the Limits of National Jurisdiction[2] (Jantree Sinsuppraroek, 2020). This was considered and drafted in the Third United Nations Conference on the Law of the Sea and was provided in Part 11 of the Law of the Sea Convention 1982 stating that Area means the seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction. The part contains the greatest number of provisions provided in the Convention, and it has caused controversies in negotiation. Part 11 majorly caused developed countries, such as, the United States of America, the United Kingdom, , Germany and Japan denied to be obliged with the Convention since they do not agree with some terms and conditions provided therein, such as, transfer of technology to a developing country, and high payment of fee of running activities in the Area. However, state parties are aware of marine code which should be legislated in every state party. Furthermore, they consider that super power states in the west are leaders who can apply technology to mining in deep seabed[3] (Jantree Sinsuppraroek, 2020).

1.2 Definition prescribed in the United Nations Convention on the Law of the Sea1982

- The Area means the seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction. It means that the seabed and subsoil from outer limit of the continental shelf which is rich of a great number of mineral resources being in statuses of solid, liquid, and gas, such as, manganese nodule, cobalt, copper and so on.

-Island is a naturally formed area of land, surrounded by water which is above water at high level. An island, as same as other lands, has its territorial sea, contiguous zone, exclusive economic zone, and continental shelf [4] (UNCLOS III,Art.121). Except as provided for in Article 121(3) stating that Rocks which cannot sustain human habitation or economic life of their own shall halve no exclusive economic zone or continental shelf. Therefore, definition of Area shall come into force in accordance with the Law of the Sea Article 136. According to the Article providing that natural resources are common heritage of mankind, no State shall claim or exercise sovereignty or sovereign rights over any part of the Area or its resources, nor shall any State or natural or juridical person appropriate any part thereof [5](UNCLOS III Art. 136). Any conflicts on seabed and subsoil shall be settled by mutual agreement of the costal states that a part of their territory is under the conflict, and the seabed and subsoil are belonged to non-costal states which have rights to exploit benefits according to the law of the sea under 137 [6] (UNCLOS III, Art.137). and under the provision of benefits as provided in Article 140[7](UNCLOS III, Art. 140) which was in 1967 initiated by Dr. Alvid Pardo, the Malta's Ambassador to the United Nations. His principle was then developed to be the Declaration of Principles Governing the Sea-Bed and the Ocean Floor and Subsoil. It was finally prescribed in the United Nations on the Law of the Sea 1982 [8](Jumphot Saisoonthorn, 1999)

1.3 Maritime Zones under United Nations Convention on the Law of Sea 1982



Source: https://sites.tufts.edu/lawofthesea/chapter-two-TUFTS

2. Conflict on asserting rights over Islands in the South China Sea

Topography and legal status of islands in the South China Sea

There are 4 groups of islands in the South China Sea, namely Spratly Islands, Paracel Islands, Pratas Islands, and Macclesfield Bank. Two groups of the islands are in conflict: Paracel; and Spratly, and there 6 conflicting states, namely China, Taiwan, Vietnam, Malaysia, the Philippines, and Brunei. At present Indonesia has become one of the conflicting states.

Spratly Islands comprise about 150 natural sites of islands, rocks, sand dunes, and so on, but there are only less than 50 natural sites that can be called islands according to the definition as prescribed in the provision of Article 121(1) stating that An Island is a naturally formed area of land, surrounded by water which is above water at high tide. Moreover, it is assumed that most of the islands are so small that they should be categorized as dirty rocks. With reference to Article 121(3)[9] (Jantree Sinsuppraroek, 2018).

Rocks which cannot sustain human habitation or economic life of their own shall have no exclusive economic zone or continental shelf. According to existence of Spratly Islands,

it cannot be said that they are islands for they are under water at high tide. According to their topography, they are above water at low tide. It means that they are under water at high tide. As for reefs, shoals, and sandbars, they are not above water although water is at low tide. As a result, they cannot be under the sovereignty as prescribed by international law. If the provisions of the Law of the Sea 1982 are applied to this fact, China shall have no rights to possess such area in the sea.

Thus, when a state cannot claim the rights over sea territory in the areas which is above water at low tide, it shall not have right to claim its sovereignty over the conflicting areas. Is this correct?

To answer this question, a judgement of International Court of Justice set a precedent in the case of territorial and maritime dispute between Nicaragua and Honduras in the Caribbean Sea (2007). The case concerned about sovereignty over Pedra Branca/Pulau Batu Puteh, middle Rocks and South ledge dispute between Malaysia and Singapore (2008) [10] (M. Dixon.Robert C. Sarah W, 2016). The judgement of International Court of Justice shows that the sovereignty over islands is related to how the sovereignty is settled in accordance with the possession of islands. This means that rights of exclusive economic zone (UNCLOS III. Art. 56) and rights of continental shelf (UNCLOS III, Art.56) shall be granted as prescribed in Article 121 (2). The island which cannot sustain human habitation or economic life of their own shall have no exclusive economic zone or continental shelf as provided in Article 121 (3). According to the conflict in the South China Sea, there were reclamation and construction on the islands that were reclaimed so as to be above water at high tide. This does not comply with the provision of the Law of the Sea providing that an is a naturally formed area of land. Hence, the reclaimed islands of China do not have the status of islands as prescribed by international law, and there shall not be exploration and exploitation on such islands.

2.1 Claim for rights over South China Sea

Every state claims on its supreme right over South China Sea, and the Republic of China claims its rights with respect of marine territory and islands in such area in history. As for the Philippines, Malaysia, and Brunei, they claim to have rights on exclusive economic zone for 200 nautical miles and islands in the zone, while Vietnam claims to have rights on islands, and marine territory [11](Somboon Sangiambut, 2020).

2.2 Disputed Areas in the South China Sea as China Claim-Nine Dash Line

The claim of China is based on the U-shape of the Nine Dash Line shown on the map of China in 1936. The U-shape of the Nine Dash covers marine territory in the history about 90 percent of the area in the South China Sea which covers 3.5millionsquare kilometers. In the past there was U-shape of the Eleven Dash Line, but China removed two of the Dashes which covered the Gulf of Tokin in 1953. Later, China in 2013 added one Dash so that Taiwan is covered by the U-shape.

Map of the South China Sea as China Claim-Nine Dash Line



Source : https://sites.tufts.edu/lawofthesea/chapter-two-TUFTS University

The conflict is that if China claimed its rights on marine territory covered by the Nine Dash which belonged to it in history, the territory would be internal area of China where it could control fishing which would be allowed to do or not depending on the state. Such China's argument can be compared with the case that islands state of Indonesia claimed after the United Nations Convention on the Law of the Sea III,1982) came into force. Thailand, thus, could not claim its historical right on fishing in the marine territory of the islands state if fishing takes place in such area, and fees must be paid to Indonesia. Otherwise, one who conducted the fishing without permission shall be arrested with the offence of violation of sovereignty power to exploit natural resources in the sea.

It is evident that the claims made by costal state on the rights in history result in the claims on the rights over the sea since the ancient time beyond any laws of the sea in such period of time allowed to do so. Obviously, if any coastal state , has continuously claimed such rights until the rights are accepted by states and approved by the Law of the Sea.

The rights therefore convey different meaning i.e., historical right, traditional right, and established right.

China's claim for historical right over the South China Sea has been opposed as it is against the interests of other states. Interestingly, claim for historical rights may be continuously made or abolished depending on power of all the parties concerned since there has not been certain principle in this regard. Each state may have the same or different opinion with others on its rights to exploit benefits from natural resources in the sea territory.

Take the case of Australia. The country did not accept historical right claimed by Japan to explore pearl in continental shelf of Arafura Sea. However, Australia presented it positive manner in the Law of the Sea Conference in Geneva in 1958 to accept historical rights to do fishery activities in contiguous zone since there are not ships of other states fishing in the areas near the shore of Australia [12](Somboon Sangiambut, 2020)

3. Modern theory related to claims for rights over the sea

Initiation of modern theory related to historical-waters

In the era before the World War II, there were no claims for exclusive economic zone, and continental shelf. The U.S. was the first state claiming on continental shelf after the World War II. China still did not claim on other marine territory. As for historical marine territory, China followed western states who have claimed on their historical marine territory since the ancient time. The Anti-China states created new theory stating that historical marine territory can be claimed if it connects with shores, while China's claim for the historical marine territory was the claim for the sea which is far away from the shore. This reflects that China applied general provisions so as to create a modern theory. Indeed, provisions in the Law of the Sea allow the rights to claim for marine territory based on the shore, but do not allow the rights to claim for historical marine territory. Records show that the European states claimed their historical rights when they wanted to claim for marine territory which the laws do not allow to do so, or in the case they claim beyond the rights provided by the laws.

3.1 Result of China's claim for historical rights

In the past, China did not explicitly announce details of its claim over the South China Sea. But when the country has more marine power, it expands power to control the South China Sea.

This reflects that China claims on historical marine territory based on the Nine Dash and claims on ownership of islands located in the territory according to ownership doctrine so as to reserve its rights to exploit benefits from natural resources in the sea and on land surrounded by the sea and on the land under the sea. Interestingly, China does not want to exercise sovereignty over such area because it never claims on sovereignty over the historical marine territory in the South China Sea as claimed in the historical marine territory. As a result, other states can have sovereignty and possess such territory since China does not announce its sailing and routes of aircraft over the territory so as to not disturb routes of other states. Rights of sailing ships and flying are historical rights of China which can be approved based on facts and the rights are consistent -with the provision as prescribed in the part of freedom of sailing ships and flying as provided in the Law of the Sea. However, whether the rights shall be approved or not depends on agreement from states in the international community which shall be proceed respectively.

3.2 Legal status of islands in the South China Sea after the ending of the World War II

In the period of time when the World War II almost ended, there were documents indicating rights over Paracel and Spratly island, the details of which are as follows:

a) Cairo declaration of the leaders of the U.S., China and England on 1 December 1943 declaring that islands in the Pacific Ocean possessed by Japan were returned to China;

b) Paus Adam declaration, a leader of the U.S., China, and England on 26 July 1945, Article 8 providing that Japan shall have sovereignty over Honshu, Hokkaido, Kyushu, Shikoku island and small islands.

c) China – Japan Peace Treaty signed in Taipei on 28 April 1952, Article 2 stating that Japan shall give up its rights to possess Paracel and Spratly islands[13](Somboon Sangiambut, 2015).

As the aforementioned evidence, it is indicated that Japan gave up all of its rights to possess Paracel and Spratly islands as recorded in the Treaty. The islands shall be returned to China in accordance with the Cairo Declaration. However, the islands were not returned to China due to political issue. In 1950, China was governed by communism and it was fighting with the U.S. in Korea. China was enemy of the U.S.: thus, the islands were not returned to it.

The U.S. considered that if the islands had been returned to Taiwan who was a representative of China in the United Nations, Taiwan might have been colonized by China. It meant that the islands were returned to its enemy. This was concerned by the United Nations. The U.S. did not act according to what its leader had announced in Cairo. Rather, it left this issue to the states around China to fight for the islands[14](Somboon Sangiambut, 2018).

3.3 Claims of Vietnam, the Philippines, Malaysia, and Brunei

When the new law of the sea allows coastal states to claim on their rights of exclusive economic zone, and continental shelf, the area of the Nine Dash therefore overlapped the exclusive economic zone and/or the continental shelves of Vietnam, the Philippines, Malaysia, Brunei, and Indonesia. However, Indonesia whose Natuna Island was overlapped by the Nine Dash negotiated with China peacefully . It did not protest like the other four countries [15] [Bangkok Post ,4 April,2014]

The Philippines, Malaysia and Brunei in the past did not express their intention for years as they were concerned that they claimed for less benefits in comparison with their rival states. These states –claimed on their rights as much as allowed by the United Nations Convention on the Law of the Sea. This can be claimed based on exclusive economic zone at 200 nautical miles and/or continental shelves depending on geographical characteristic. Besides, they and China claim on sovereignty over islands of Spratly Islands.

As for Vietnam, it claims on possession of Paracel Islands, and rights of exclusive economic zone and continental shelves for it also claims on rights of fishing and concession of oil drilling.

3.4 Claim of Taiwan

Claim of Taiwan shall be considered together with China's since Taiwan is a part of China. Taiwan has claimed in accordance with U-shape of the Nine Dash since China was ruled by the National Commission before Communism-, and even after the National Commission moved to Taiwan, the claim still remained.

When the the National Commission ruled the mainland China, it -claimed only on the rights of islands in the area of U-shape of the Nine Dash and territorial sea of the islands. (At that time, coastal states were not given rights by the law of the sea to claim on rights of exclusive economic zone) As for China, it claimed marine territory in the area of U-shape of the Nine Dash as historical marine territory more seriously than Taiwan. If the claim of Taiwan was successful-, China would gain benefits since when China and Taiwan are united, all the rights obtained by Taiwan would belong to China.

3.5 Competition of construction in the South China Sea

In 2012, China built Sansha on Yongxing Island or Woody Island in Paracel Islands. Sansha covers 13 square kilometers. It is a home to 2 kilometer runway for aircrafts, a pier for huge ships of 5,000 tons, post office, parking spaces for helicopter, shelters for small warplanes , underground shelters for stocking oil, and bullets, banks, hospitals, schools, and there are 1,000 people living there [16](Bangkok Post ,12 October 2014).

China uses this island as its army headquarter and contact center in the South China Sea. Such city building caused Yongxing Island to become an island on which people are living, and in turn, entitled to claim on rights in the sea against its conflicting states. China filled the sea, constructed buildings, piers, and runways.

In 1994, China constructed concrete building on Mischief Reef consisting of many floors, piers, space for helicopter parking, and radar station. This island is 209 kilometers away from Palawan of the Philippines in exclusive economic zone[17] (Bangkok Post, 4 April 2014)

China filled the sea and constructed runway about 3,110 meters on Fiery Cross Reef located on Spratly Islands. Moreover, it dug sand and built piers. This island can be used as airport for army aircrafts and can be used as huge piers for army ships and ships carrying oil. Besides, China dug sand to fill rocks sand areas so that it can form new islands in Spratly Islands (Johnson South Reef, Cuarteron Reef, amd Gaven Reef),[18] (Bangkok Post ,18 April 2015).

Mr. Albert del Rosario, Foreign Affairs Minister of the Philippines stated that China is controlling areas in the South China Sea. China fill 7 rocks with soil in Spratly Island [19](Bangkok Post, 27 March 2015).

According to award of the (Permanent Court of Arbitration, it is clear that claim for rights in the South China Sea is contrast to the provisions of the United Nations Convention on the Law of the Sea 1982 [20] (Permanent Court of Arbitration, Hague, (2016).which China has ratified. The Convention determines marine territory of states to be far away from coast for 12 nautical miles, and provides the states with rights to control economic activities in the sea for 200 nautical miles away from their coast. China has denied the award. China states that the Court does not have jurisdiction on the conflict in the South China Sea [21] (Jantree Sinsuppraroek,2018)

Conclusion

Conflicting countries for the benefits in the South China Sea consist of all ASEAN member countries of one part, and China, a super power country, of the other part. As far as economic development is concerned, China has advantage over the ASEAN member countries, especially where the law of the sea does not have any provision covering the land occupation by means of using relatively advanced technologies to develop buildings on the artificial islands effectively for the purpose of territory expansion in the Area.

In this circumstance, the chances of other states which also claim for the benefits in the sea are very slim.

This article suggests the conflicting countries get together and create international agreement to regulate on the benefits in the Area, in which the states entitled to claim for benefits should be all the states in ASEAN, both coastal and

non-coastal states. This is because the natural resources in such area are the common heritage of mankind. The said international agreement should introduce the Framework under the Permanent Committee on the Peaceful Uses of the Sea-Bed and the Ocean Floor beyond the Limits of National Jurisdiction. Such Permanent Committee should jointly work with a working group appointed from the representatives of the ASEAN member countries. This will reflect the neutrality for allocating benefits proportionally among all states concerned rather than allowing the sea-power countries to monopolize the benefits from the sea solely. In this regard, China should agree with such principle to reinforce the balance of power in the South China Sea where the United States has been playing increasing roles in this region.

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Analytical Study of the Raft in Buddhism

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Abstract— *In the Alagaddupama Sutta, the raft is concerned with the dhamma, the dhamma should be seen as instrumental to achieving religious goals; it is not an absolute to be clung to. So the Buddha says "you should abandon the dhamma, all the more what is not the dhamma". This statement has led some interpreters to suggest that the enlightened person, having crossed over from saüsàra to nibbàna, does not live by the dhamma, that the Buddha's teachings are to be abandoned once enlightenment is attained. But such an interpretation of the parable of the raft is unwarranted. The Buddha does not mean that one gives up living by the dhamma after achieving enlightenment. Enlightened existence is not a life beyond good and evil with no ethical and religious principles.*

Index Terms— ***Raft, Buddhism***

I. INTRODUCTION

This is a parable which appears in different forma in several Buddhist texts. Like all parables, it attempts to communicate a concept by reference to an experience which was familiar to the audience. This parable is supposed to offer a metaphor for understanding our progress on a spiritual journey. Let's imagine that we are preparing to cross a vast river by boat. Before the boat arrives at the port, our perceptual interest will be focused on the preparations for the journey, who are fellow passengers may be. What we cannot focus on in any clear sense is our ultimate destination – we cannot see the far shore – and having never been there, we have no idea what it really will be like.

From first to last, the Buddha taught a practice whose goal was overcoming suffering. Though his teaching has significant theoretical dimensions, both metaphysical and epistemological, these are always subservient to the aim of the practice. According to Christopher W.Gowans says that "The heart of the teaching involves the idea of non-clinging or non-attachment"[1]. As first desires may be like the trickle of a stream, but they grow into a river of craving which carries us away like the current of a swift flowing river. Craving is understood to crystallize as 'grasping' or 'attachment' (upadana): the various things we like evoke desires in us : these turn to creavings; as a result of our craving we grasp at things and try to take possession of them; in short, we try to call them our own. Buddhist texts provide a stock list of four kinds of attachment: attachment to the objects of sense desire, attachment to views, attachment to precepts and vows, attachment to the doctrine of the self [2]. These suggest the complex and subtle network and web of attachment that Buddhist thought sees as enmeshing beings.

II. THE TITLE OF THIS ARTICLE IS "ANALYTICAL STUDY OF THE RAFT IN BUDDHISM"

What is the use of a raft? The raft is a thing of value, and it has a value because it helps the man escape danger and cross the river. It ceased to have value, the implication seems to be, when tha condition was no longer met: to a man not in danger and in no need of crossing a river, a raft has no value at all. The true teachings of the Buddha have a value too. They help a man to 'cross over', to leave behind the world of craving and attachment and reach the state of enlightened life [3]. When their purpose is finished, the simile seems to imply, the Buddha' s teachings are of no further use or value. If attachment in any shape or form is a cause of suffering, then so is attachment even to the truth.

In the Alagaddupama Sutta, the raft is concerned with the dhamma, the dhamma should be seen as instrumental to achieving religious goals; it is not an absolute to be clung to. So the Buddha says "you should abandon the dhamma, all the more what is not the Dhamma"[4]. This statement has led some interpreters to suggest that the enlightened person, having crossed over from samsara to nibbana, does not live by the dhamma, that the Buddha's teachings ara to be abandoned once enlightenment is attained. But such an interpretation of the parable of the raft is unwarranted. The Buddha does not mean that one gives up living by the Dhamma after achieving

enlightenment. Enlightened existence is not a life beyond good and evil with no ethical and religious principles.

In the majority of cases, nibbana is represented by the further shore. The symbolism is helpfully spelt out in Samyutta Nikaya [5], the water is the 'four floods' ; the near shore isbelief in a self (sakkaya) ; the further shore is nibbana; the raft is the Eightfold Path; and the man who has crossed over is the Arahant.

III. The Doctrine is like a raft to be used in crossing the flood and then to be abandoned

Even good things must eventually be discarded, therefore, how much more bad things? To explain the idea of crossing over, the Buddha used the simile of a raft [6]. Let us listen to him:

"Bhikkhus, I shall show you how the Dhamma is similar to a raft, being for the purpose of crossing over, not for the purpose of grasping. Listen and attend closely to what I shall say". "Yes, venerable sir," the bhikkhus replied. The Blessed One said this:

"Bhikkhus, suppose a man in the course of a journey saw a great expanse of water, whose near shore was dangerous and fearful and whose further shore was sage and free from fear, but there was no ferryboat or bridge going to the far shore. Then he thought: There is this great expanse of water, whose near shore is dangerous and fearful and whose further shore is safe and free from fear, but there is no ferryboat or bridge going to the far shore. Suppose I collect grass, twigs, branches, and leaves and bind them together into a raft, and supported by the raft and making an effort with my hands and feet, I got safely across the far shore'. And then the man collected grass, twigs, branches, and leaves and bound them together into a raft, and supported by the raft and making an effort with his hands and feet, he got safely across to the far shore. Then, when he had got across and had arrived at the far shore, he might think thus: 'This raft has been very helpful to me, since supported by it and making and effort with my hands and feet, I got safely across to the far shore. Suppose I were to hoist it on my head or load it on my shoulder, and then go wherever I want. 'Now, bhikkhus, what do you think? By doing so, would that man be doing what should be done with that raft?"

"No, venerable sir".

"By doing what would that man be doing what should be done with that raft? Here, bhikkhus, when that man got across and had arrived at the far shore, he might think thus: 'This raft has been very helpful to me, since supported by it and making an effort with my hand and feet, I got safely across to the far shore. Suppose I were to haul it onto the dry land or set it adrift in the water, and then go whererver I want'. Now, Bhikkhus, it is by so doing that man would be doing what should be done with that raft. So I have shown you how the Dhamma is similar to a raft, being for the purpose of crossing over, not for the purpose of grasping

"Bhikkhus, when you khow the Dhamma to be similar to the raft, you should abandon even good states, how much more so bad states".

The Dhamma [7] taught by the Buddha is compared to a raft used to ferry a man from the dangerous and fearful shore of a river, to the other, safe shore: from the unenlightened world of the suffering to the state of the enlightened person, the arahat. Once on the far shore, the man would be unwise to carry the raft around with him when is function was fulfilled. This is to show that one should "abandon", that is, not be attached to, the teachings, practices, and engendered states of the Buddha' s Dhamma. The Theravadin commentary on the passage plaus ibly explains that what is meant is that a Buddhist practitioner should not be attached to the states of calm (samatha) and insight (vipassana) that the meditative path cultivates[8].

This statement that "you should abandon even good states, how much more so bad states" could almost be a summary of the Buddha Dhamma itself insofar as our subjective attitude is concerned. If the Buddha's teachings are to make people realize that clinging is the source of suffering, wouldn't clinging to these teachings defeat the very purpose of them? This does not mean that we should disregard the teachings or hold them lightly. It does mean, however, that they are useless to us if we don't put them into practice and that when we have gotten the point we no longer need to make an issue of them

Another point at issue here is the fact that the realization of the Buddha goes beyond the many metaphors and analogies that the Buddha used to convey it. It is commonly observed that all analogies eventually break down, and yet when it comes to religion, people seem to forget that the Ultimate Truth cannot be fully expressed in terms of conventional ideas and concepts. The Buddha, however, used his analogy of the raft to underline the merely metaphorical nature of his own teachings. He wanted to be sure that his disciples did not fall into the common trap of mistaking the map for the territory or the menu for the meal. The four noble truths, the eightfold path, the twelve-fold chain of dependent originstion, even nirvana itself are all very helpful teachings in that they can point the way to the sam experience of awakening that Shakyamuni Buddha himself had, but the realization itself is organic and alive and canmot be so rigidly containcd. In the end, the Dharma is something that one cannot take anyone else's word for. This is something that Shakyamuni Buddha knew very well, and so he never presumed to replace the individual's own insight with any kind of fixed revelation, he merely showed the way so that each person could cross the stream, reach the other shore and see the truth for themselves.

The parable of the raft in Alagaddupama Sutta is supposed to represent our spiritual journey toward enlightenment------and the ferryboat is the particular religious

doctrine which aids us on that journey. The point of the parable is supposed to be that once we have outgrown the doctrine, we can leave it behind and move forward. The worst thing that could happen is for the ferryboat to begin circling in the middle of the river and for the passengers to think that they were still making progress.

According to Damien Keown, the parable of the raft is concerned essentially with illustrating the danger of a wrong grasp or misappropriation of good things rather than advocating their transcendence.9 The Buddha sums up the parable as follows: "Even so I have shown you that the Dhamma is comparable to a raft, which is for crossing over (the water to the far shore), not for the purpose of grasping". As Damien Keown notes:

The word 'grasping' (gahana) echoes the "wrong grasp" (duggahita) of the by Aritttha, and also the "wrong grasp of the scriptures. (dugahitatatta dhammanam) by the foolish men who master them for the wrong purpose. The Buddha is saying that he has taught dhamma in the Parable of the Raft so that people will realize that his teaching are to be used for the purpose he intended, namely, reaching salvation, and not for anything else. It is a warning to the brethren not to pervert the teachings as a means to gratifying their personal desires, be it for carnal pleasure as in Aritttha's case, or "reproaching and gossiping" in the case of foolish men.

The wrong grasp of religion can lead man to justify his greed (lobha), hatred (dosa) and delusion (moha). His wrong views, wrong perception and wrong consciousness force him to grasp a religion wrongly and undermine its very foundation, causing more pain and suffering (dukkha) as does the wrong grasp of the snake.

The total of the article "Analytical study of the Raft in Buddhism" is not transcendence but a warning that even good things can be misused. As Known summed up that "The scriptures are good but some people twist them to their own ends. The raft is good but becomes a handicap if misused by being carried around. Calming and insight meditation are good but can be a hindrance if an attachment for them is allowed to develop. From a Buddhist perspective, those who do not follow the way have little hope of salvation"[9].

We are supposed to use the Buddha-Dhamma without clinging to it, but only to cross this cycle of birth and death-----Samsara. He advised us to use his teaching like a raft which is used only to cross a body of water not to cling to it. It is the passionate clinging to what we believe, rather than understanding how we should use it to guide our daily lift in the right direction,that arouses our deeply rooted hatred which may force us to solve our problems through violent means. It is the passionate clinging to things that creates all kinds of problems.

IV. CONCUSSIONS

The Raft Parable. In this parable, the crossing over from the mundane, unenlightened life to a religiously liberated life (nibbàna) is compare with crossing over a river. Like saüsàric existence, the near shore is dangerous and frightening, whereas the farther shore promises peace and security. But, as the Buddha explains, there is neither a bridge not a boat to use for crossing over. In such a case, a person might build a raft and use it to cross over. But once one has crossed over the river, the raft would become an impediment, if it is retained while walking on land. So when the raft is no longer useful, it should be discarded. Like all parables, it attempts to communicate a concept by reference to an experience which was familiar to the audience. Since Buddhism began in Ancient India, rivers, water and ferryboats figure prominently in the mythology and stories of the era. This parable is supposed to offer a metaphor for understanding our progress on a spiritual journey.

This is a parable which appears in different forms in several Buddhist texts. The raft is a thing of value, and it has a value because it helps the man escape danger and cross the river. It ceased to have value, the implication seems to be, when that condition was no longer met: to a man not in danger and in no need of crossing a river, a raft has no value at all. The true teachings of the Buddha have a value too. They help a man to 'cross over', to leave behind the world of craving and attachment and reach the state of enlightened life. When their purpose is finished, the simile seems to imply, the Buddha's teachings are of no further use or value. If attachment in any shape or form is a cause of suffering, then so is attachment even to the truth.

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The Leadership Developments Process for Sustainable Community Forest Management in Nakhon Ratchasima Province

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Abstract— *This research, the objective of this study was to study the role of forest masters in the management of model community forests in Nakhon Ratchasima Province. And to propose a leadership development process for sustainable community forest management in Nakhon Ratchasima Province. It is qualitative research. By conducting in-depth interviews with local philosophers, community leaders, community forest committee, and villagers in the area totaling 30 persons and conducting a specific group discussion with 15 persons. The data collection tool used structured interviews. And to analyze expository data using the Samsao technique. The results of the research show that 1) Forest scholars played a role in the management of model community forests in Nakhon Ratchasima Province, as a representative role of the community. Role as a motivator Negotiator role, role as a teacher, the role of the team builder, the role of problem-solver, and the role of supervisor. Thus, enabling efficient management of the model community forest The community participated in the proper utilization of resources and the community realized the shared value of community resources through the leadership of forest masters. 2) Leadership development process for sustainable community forest management in Nakhon Ratchasima Province. It consists of 5 important processes called the "KLIPS Model": (1) The knowledge management process (K = Knowledge) (2) The leadership formation process (L = Leadership) (3) The innovation development process (I = Innovation) (4) The Participation process (P = Participation) and (5) The Networking process (S = Social Networks)*

Index Terms— ***Leadership, Scholars of The Forest, Community Forest***

I. INTRODUCTION

"Community Forests" are forest areas where people in the community participate in management in order to serve the objectives set by the community. The purpose of each community forest operation depends on the needs of the community that expects from community forests or it could be said that it is the benefits from the community forest itself. There are 3 main benefits from community forests in Thailand: 1) Environmental benefits, it is beneficial found that the community wishes to gain from the community forest operation in the early phase and continuing until now to resolve or mitigate problems that arise such as upstream water that affects agricultural occupation. 2) Social benefits, communities are benefiting from community forest in a social way in the form of co-operation and implementation of forest management activities as a result of public work, which affects love, unity, and conscience that can affect other activities together in the community including in beliefs, rituals, and traditions. 3) Economic benefits, from past studies, it was found that the community forest benefit in this area is not as high as it should be. This is because the community makes use of the forest as a fishing net, not needed in business. Also, the limitations of the relevant forest legal status, this is obtained in the form of the collection of wild and medicinal products as permitted by law for domestic consumption only. However, if carefully considered, it can be concluded that every community forest provides benefits to the communities and those involved in all 3 aspects at the same time, but each side may more or less vary. The benefits from community forests may be elevated to a higher level than what is currently adopted. If there is an activity in the management of community forest

areas, to balance the benefits of all 3 areas that will affect the sustainable development of the community forest [1].

"Community forest management" is a forest area that is managed through a process of participation from both people and community organizations, both directly and indirectly, based on local beliefs and cultures for the benefit of consistent and sustainable community needs [2]. It is forest management that people use according to the way of life of the people in that community with the family system, traditions, beliefs, and regulations in the community. Therefore, community forest management has many forms, depending on the ecological characteristics, cultures, wisdom, beliefs, and traditions of the communities in each locality. It is an activity of people in the area around the forest or in the forest area, which contributes to the benefits of forest resources, both for their benefit and the community. It is an activity that encourages and empowers people to participate in the management, preservation, protection, and utilization of forests, under the concept of sustainable natural resource management [3]. The community forest is alternative ecological resource management with a community based or community-based resource management that have a practice, a system of rights, or a shared resource system of the community. In such managing is for conservation and sustainable use of the community. Moreover, community forest is a form of land-use, forests, and various resources from the forest that the villagers in rural communities near the forest have been using for a long time. With a land use classification system, forests and their resources are territories and rules of use that are widely recognized and accepted within the community and neighboring communities. In addition, there is a form of community organization responsible for the management and proper maintenance, based on folk wisdom arising from the accumulation of experiences of adapting to the physical and social environment, local culture through the process of collecting and transmitting that wisdom for many generations. The concept of community forest as an alternative to forest resource management or as a powerful tool for empowering local communities. Community forests will help preserve and restore the environment and help alleviate poverty problems for rural people [4].

The use of community forest areas with a lack of consciousness in the conservation of resources in community forests, the large forest area in Nakhon Ratchasima tends to decrease every year. The damage was not preserved for the community to use, which resulted in the continuous deterioration of large forest resources. Since community forests are like a fence of a large forest, when the fence is destroyed, invasion and exploitation of the large forest follow. Although there are many forest management laws, they are not thoroughly enforced. One of the major problems is the encroachment of forests for exploitation through loopholes of the law. The ambiguity of the forest boundary and the encroachment of local people by inducing or having a group of extraterrestrial funds in the background because local people lack knowledge of the law. Later, there is a community forest network group called "Nakhon Ratchasima Community Forest Network Committee" at all of the community, area and, provincial levels. The key person who plays a key role in the "forest experts" is the leader in driving activities to raise consciousness in community forest management. Cooperation with government sectors that advise and provide knowledge about legal activities. Therefore, it appears to be the most empirical approach to community forest management in the area, which is to build community-conscious for conservation and balanced use. The awareness of the community's impact on living in the community and on the surrounding area of the community forest causing the integration. Joining as a network at the local level with the government sectors support such as education about the legal punishment of trespassing and occupying the forest area and as well as providing knowledge. Consistently fostering a conscious in forest resource conservation in community forest has resulted in a prototype area for the community forest management that is in line with local people's living context. Therefore, this research is the study of the forest experts in the management of prototype community forests in Nakhon Ratchasima Province. By studying the model community forest management mechanisms that were successful at the local level with the wisdom and knowledge created by the accumulation of experience. Adaptations of physical, social, and cultural through generations of spatial management processes by a key person known as the "forest experts" and to present the process of leadership development in sustainable community forest management in Nakhon Ratchasima Province. In conclusion, lessons learned from forest experts in the prototype community forest that have been successfully managed. This will be a guideline for leadership development for sustainable community forest management in other areas.

II. RESEARCH OBJECTIVES

1. To study the role of forest experts in the management of prototype community forest in Nakhon Ratchasima Province.

2. To present the process of developing leadership in sustainable community forest management in Nakhon Ratchasima Province.

III. RESERCH METHODOLOGY

A. Research scopes

1) Area boundary

This research was studied in the prototype community forest area that received the Outstanding Community Forest Award at the provincial level from the project "Kon Luk Pa Rak Community" in Nong Boon Mak District, Pak Thong Chai District, and Sung Noen District, Nakhon Ratchasima Province.

B. Scope of data source

Key contributors for in-depth interviews using a specific selection method from 30 involved people in community forest management, divided into 4 groups: 1) Government sectors are the Director of the Forest Resources Management Office 8 (Nakhon Ratchasima), the Director of Community Forest Management, and officer of promoting community forest work. 2) Community leaders are monks, chief executive of the SAO, sub-district administrative organization staff, a village chief, community forest committee, and community organization leader. 3) People in the research area and 4) Youth groups, community forest networks, or participants in community forest conservation activities in Nakhon Ratchasima Province.

Specific group participants using specific selection method from involved people in community forest management. This could be the same group with the key informants in the in-depth interview, totaling 15 people, divided into 3 groups: 1) academic group on community forest management and creating conscious 2) a group of community leaders or villagers that drive community forest management activities 3) a group of participants in community forest conservation activities in Nakhon Ratchasima Province.

C. Content scope

The researcher determined the content scope by reviewing relevant research papers, by studying only issues related to the concept of community forest management theory, concepts of Buddhist leadership study, concepts about engagement, and concepts of networking.

D. Data Collection Tools

1) Interview form on community forest management model role of community leaders, a mainstay in using wisdom, beliefs, rituals, and activities affecting community forest management. There are both formal and informal interviews.

2) Participatory and non-participatory observations on the process of creating a conscious community forest management. Performing rituals and community behaviors or groups of participants in various activities related to community forest management.

E. Information Collection

1) The interview was conducted through a formal interview, which is a structured interview. The interview was conducted according to the interview guidelines by interviewing target groups to find answers to the research objectives. An informal interview that is an unstructured interview was conducted by interviewing openness, not limited to answers to catch the points and interpreting.

2) Participatory observation, the researcher has revealed himself to be a researcher who gets involved in activities related to community forest management by participating in activities to observe, inquire about questionable information, take notes, observe activities to study events and behaviors that occurred during the event. And non-participatory observation, the researchers observed the behavior of the leaders and the participants by not participating in or participating in that activity.

F. Data analysis

It is the analysis and synthesis of information using the content analysis method. By analyzing the model of community forest management in the upper Mun River Basin. The role of the forest experts in creating a collective consciousness in the management of the prototype community forest in the upper Mun River Basin and to present the model of a process for creating a shared consciousness in the management of the prototype community forest in the upper Mun River basin by the forest experts. To see the elements according to characteristics of the empirical data by relying on qualitative data for analysis and synthesis, respectively.

IV. RESEARCH RESULTS

1. Forest experts found that there were all community leaders, leader of community organization, monks, experts, villagers, and government sectors representatives who have played a leadership role in driving the prototype community of forest management activities in Nakhon Ratchasima Province to play the role of each group of forest experts, the community forest management activities will be carried out in the manner of working as a partner to a joint action

network. The forest experts have played an important role in the development of work on prototype community forest management in 7 roles. 1) Representative role of the community in various actions as a community leader or group leader 2) The role of the communicator is to motivate people in the area to recognize the importance of forests and to take part. 3) Being a negotiator is to focus on protecting the interests of the community forest and the public. 4) The activist role is to educate members on community forest management or to lead activities. 5) The role of a team builder to create a network partner to drive strong work. 6) The role of a talent editor is a visionary that able to diagnose and deal with various problems in a timely manner. And 7) the role of supervisor of community forest management activities is to play a leadership role in driving activities related to community forest management in the area.

2. From the study of the role of the forest experts who played a leadership role in the management of the prototype community forest in Nakhon Ratchasima Province until the concrete results were found and the empirical results were seen in many areas. The research team, therefore, summarized the process of developing leadership in sustainable community forest management in Nakhon Ratchasima Province by forest experts. There are five important processes, called the "KLIPS Model". It consists of 1) Knowledge management (K = Knowledge) is a development process by promoting learning about community forest management, such as impacts education, benefits of community forest management, principles of community forest management, regulations, laws, and including local wisdom management. 2) Leadership (L = Leadership) is a process of encouraging communities to self-manage themselves in various ways by encouraging people in the community to be leaders in forest management to achieve the sustainability of their local community forests literally. 3) Innovative development of community forest management (I = Innovation) is a process to promote the development of community forest management model with new wisdom and knowledge, including the use of modern technology to support community forest management. 4) Participation creation (P = Participation) is the process of creating consciousness of local participation and finding partnerships to drive the activities in community forest management. And 5) social networks (S = Social Networks) is the process of building support networks in the implementation of activities. Public relations and dissemination of works, including finding sponsors for organizing activities, disseminate knowledge and expand the results of community forest management in other areas.

V. DISCUSSION

1. Forest experts have played a role in the development of community forest management in 7 roles. 1) Representative role of the community in various actions as a community leader or group leader 2) The role of the communicator is to motivate people in the area to recognize the importance of forests and to take part. 3) Being a negotiator is to focus on protecting the interests of the community forest and the public. 4) The activist role is to educate members on community forest management or to lead activities. 5) The role of a team builder to create a network partner to drive strong work. 6) The role of a talent editor is a visionary that able to diagnose and deal with various problems in a timely manner. And 7) the role of supervisor of activities related to community forest management. In accordance with Thawatchai Phaengphinit [5] studied the characteristics of villagers in the Northeastern New Plan Agriculture, it was found that villager experts work on new farming strategies by integrated farming through the concept of sufficiency economy, according to the new theory of the Majesty King Rama 9. The characteristics of the new agricultural scholars in the Northeast consisted of falling and thinking differently, creating alternatives, adhering to the practice to develop, presenting, and faith in a sufficiency economy.

2. The process of developing leadership in sustainable community forest management in Nakhon Ratchasima Province by forest experts. There are 5 important processes, called the "KLIPS Model". It consists of 1) Knowledge management (K = Knowledge) 2) Leadership (L = Leadership) 3) Innovative development of community forest management (I = Innovation) 4) Participation creation (P = Participation) 5) social networks (S = Social Networks). In line with Vimollak Chuchart [2], he researched the process of building a learning network for forest resource conservation. It was found that to make the learning network going on for sustainable existence, members should be arranged to meet at regular intervals, both formal and informal, support the organization of network activities, give value, morale, and encouragement to members and encourage cooperation in activities of exchanging information with each other, cultivate members to have a sense of ownership of the organization and cherish local resources[6]. As well as systematic learning and building a learning network in coordination with various agencies in communities and outside the community [7], to play a role in promoting the learning process of the community, [8] member development, develop relationships between people in the group as members of the organization to ensure continuity and to coordinate smoothly [9].

VI. CONCLUSION

The study revealed the role of forest experts in the prototype community forest management, divided into 3 groups of forest experts, the main forest experts such as the community forest committee, sub-district administrative organization, and people in the area. The secondary group of forest experts, namely the Office of Forest Resource Management 8 (Nakhon Ratchasima) and Nakhon Ratchasima provincial administrative organization. And 3) Forest experts, support groups, including educational institutions, forest fire-prevention volunteers, including the private sector. In summary, each group of forest scholars plays similar roles in community forest management, divided into 7 roles. 1) The role of an educator is to provide guidance on the management of regulations to the members, to educate members on the management of community forests, and the representation of the community. 2) The role of the building management process is to promote, support, and carry out activities of forest conservation management and control of all community forest management activities. 3) The role of wisdom leadership is to lead by belief, promote the community tradition, and being able to solve the wisdom immediately that can take action to deal with any problems in a timely manner. 4) The role of a network creator is to be a partner or network partner in collaboration and contribute to community forest management. 5) The role of the coordinator is to motivate people in the area to recognize the importance of forests and to take part in and negotiating for the benefit of the forest, including building a team. 6) The role of solving problems immediately is to be able to diagnose the action and deal with various problems in a timely manner. And 7) the role of manager of activities related to overall community forest management. In terms of leadership development or forest experts, the research team has summarized the process of developing leadership in sustainable community forest management in Nakhon Ratchasima Province, summarized in 5 points, called the "KLIPS Model" consisting of 1) Knowledge management (K = Knowledge) is a developed process by promoting learning about community forest management. 2) Leadership build-up (L = Leadership) is a process to encourage communities to become leaders in the management of community forests by themselves. 3) Innovative development for community forest management (I = Innovation) is the process of promoting innovation development with new wisdom and knowledge, including the use of modern technology for community forest management. 4) The creation of participation (P = Participation) is the process of creating consciousness of the people in the area. And 5) social networks (S = Social Networks) is a process of building support networks in the implementation of activities, publicize, disseminate the results, and expand the results of community forest management in other areas. As mentioned above can be summarized in Fig. 1.

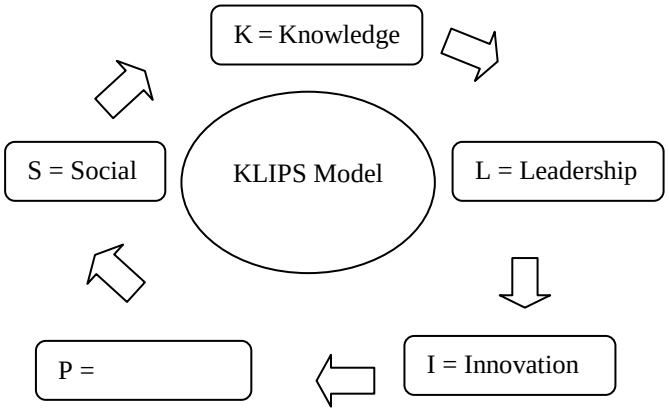


Fig. 1 KLIPS Model

VII. SUGGESTION

A. Suggestions for utilization

1) The public sector should have a code of practice, including policies to promote community forest management on the basis of coexistence of the community and fair government law enforcement in accordance with the local context.

2) There should be an action plan of network partners to build participation in community forest conservation based on the use of the community as a driving force.

B. Suggestions for the next research

1) Action research to find appropriate community forest management mechanisms according to the context, ecology, culture, and geography of each area.

2) Research to develop community forest areas for economic use and conservation for sustainable use of community forests.

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A Causal Relationship Model of the Financial Performance Affecting the Return on Equity of Listed Companies on the Stock Exchange of Thailand during COVID-19 Pandemic

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Abstract— *This research aimed to explore a causal relationship model of the financial performance affecting return on equity of listed companies on the Stock Exchange of Thailand during COVID-19 pandemic. The financial performance was used as a measure of how well the company used its assets and generate revenues as well as its overall financial health over a given period. In this study, the measures of financial performance included financial ratios, i.e., liquidity ratios, activity ratios, profitability ratios, debt ratios. Path analysis was used to evaluate causal models by examining the relationships between a dependent variable (ROE) and independent variables (CR, QR, CSR, DE, EM, TIE, IT, RT, TAT, PM, EBIT, and ROA. The study sample consisted of 200 firms listed on the Stock Exchange of Thailand in the year 2020. The research results indicated that during the period of the Coronavirus (COVID-19) pandemic which was a major event in the history and impacted businesses and economy all over the world, a causal relationship of the financial performance and return on equity was as normal situation. Financial performance ratios EM, TAT, PM, EBIT, and ROA had positive and significant direct relationship with ROE. The causal relationship model had R^2 equaled to 99%.*

Index Terms— ***Financial Performance, ROE, Causal Relationship, Listed Firms, Stock Exchange of Thailand, COVID-19***

I. INTRODUCTION

Coronavirus disease 2019 (COVID-19) was first identified an outbreak of respiratory illness cases in Wuhan City, Hubei Province, China. It was initially reported to the World Health Organization (WHO) on December 31, 2019. On January 30, 2020, the WHO declared the COVID-19 outbreak a global health emergency. On March 11, 2020, the WHO declared COVID-19 a global pandemic [1]. The economic activity was slowing as the practice social distancing to stem the spread of COVID-19. As a result, companies experienced and anticipated significant constraints on cash, working capital as well as potential liquidity shortage. Depending on the industry, the COVID-19 pandemic hurt business revenues and profits. There were uncertainties as new normal trend in the post-COVID 19 era identified by Deloitte [2] including unpredictability in financing sources, uses, and capital market; permanency of customer behavior changes. In Thailand, Krungsri Research revealed out of 473,324 companies, 143,414 companies (30.3%) experiencing tight liquidity. Another 132,980 companies (28.1%) going to be at risk of facing liquidity shortage. Only 154,318 companies (32.6%) being financial healthy [3]. In November, 2020, the Stock Exchange of Thailand (SET) announced that listed companies in the SET reported increases in their total sales and net profits in Q3/2020 from previous quarter after COVID-19 control measures had been relaxed. However, their first nine-month results reported a downturn posed by earlier pressure of the COVIS-19 spread. In addition, Among 739 listed firms' Q3 financial reports ended

September 30, 2020 (excluding NC – noncompliance, NPG – non-performing groups, property funds, and infrastructure funds) 485 firms (69.3%) recorded net profit, aggregate sales of THB 2.50 trillion (approx. USD 80.8 billion), gross profit margin of 23.5 percent and net profit margin of 5.5 percent. Overall financial performance of the listed firms was better over the last quarter of the year 2020 in line with Thailand's economic growth [4].

The financial performance of a company is an economic and financial state which the investors use to make judgements about business by reading financial statements. The ratio analysis technique is virtually universal for analyzing the financial information. The firm shareholders value depends on good investment decisions. The financial manager evaluates investment decisions based on the profitability of the investment as well as the availability of financing. Assessment of financial performance is critical to any firm. Information obtained from financial ratio analysis is important to insiders and outsiders of the company. Ratio analysis has been utilized as a standard tool for analyzing financial statements. There have been studies on relationship among financial ratios such as recently Arina, et.al. [5] found that liquidity was influential but not significant to financial distress. The activity had significant effect on financial distress. Profitability had significant effect on financial distress. Leverage was influential but not significant to the financial distress. On the other hand, Kartika's work [6] showed that asset utilization and leverage were factors affecting financial performance (ROA and ROE) of firms listed on SSE 50. Assets Utilization had positive and significant relationship with firm performance but leverage had negative and significant relationship with firm performance. It was interesting to learn if the relationship between financial ratios and firm performance (ROE) would be the same or different during the period of COVID-19 pandemic. Therefore, this study aimed to explore the causal relationship model of financial performance ratios and ROE of the firmed listed on the Stock Exchange of Thailand in order to see if there were any abnormalities of relationship among financial ratios performance during the year 2020, new normal era.

II. RESEARCH OBJECTIVE

The research aimed to explore the impacts of financial ratios had on ROE by studying a causal relationship among financial ratios in 4 groups namely short-term solvency or liquidity ratios, long-tern solvency or financial leverage ratios, asset utilization ratios, and profitability ratios, of companies listed on SET during the period of COVID-19 pandemic (year2020).

III. RESERCH METHODOLOGY

Research Design

This research was an empirical study which mainly based on secondary data. The data was collected from the financial statements of firms listed on Stock Exchange of Thailand [7] during the study period, year 2020. According to a well known researcher named Kline [8], an adequate sample size should always be 10 times the amount of the variables in path analysis. The best sample size should be 20 times the number of variables in path analysis. There were 13 variables in this research therefore the sample size should be 130 – 260. Sample size used in this study was 200 that was adequate.

Statistics Used in this Study

In statistics, Path Analysis was used to described the directed dependencies of variables including financial ratios that had direct effects on Return on Equity (ROE). Maximum likelihood was used to predict the path. Related equations were solved simultaneously to determine parameter estimates. To evaluate model fit, multiple tests including chi-square (χ^2), Comparative Fit Index (CFI), Goodness-of-Fit Index (GFI), Adjusted Goodness-of-Fit Index (AGFI), Root Mean Square Error of Approximation (RMSEA) and Standardized Root Mean Square Residual (SRMR).

Research Conceptual Framework

Existing literature has proved that financial ratios have played a primal role in understanding a firm's characteristics [9]. They have the ability to explain various dimensions of a firm from profitability to long-term solvency. Short-term solvency ratios provide information about the company's liquidity which is ability to pay bills over a short run. Liquidity ratios include Current Ratio (CR), Quick Ratio (QR), and Cash Ratio (CSR) [10]. Long-term solvency ratios address the firm's long-term ability to meet its obligations. The measures include Total Debt ratio (DE),

Equity Multiplier (EM), and Time Interest Earned (TIE). Asset management or turnover measures describe efficiency of a firm's assets utilization. Inventory Turnover (IT), Receivables Turnover (RT), and Total Asset Turnover (TAT) are ratios assets utilization ratios. Profitability ratios are Profit Margins (PM), EBIT Margin, and Return on Assets (ROA). In this study used Return on Equity as an dependent variable. Financial ratios enable management to analyze the inter-linkage that exists between dimensions of the firms. Researchers have attempted to identify the relationship that exists between a company's dimension such as capital structure, working capital, leverage, and profitability [8]. In order to study the causal relationship of the financial performance affecting return on equity, the conceptual framework (see Figure 1) was developed as follows:

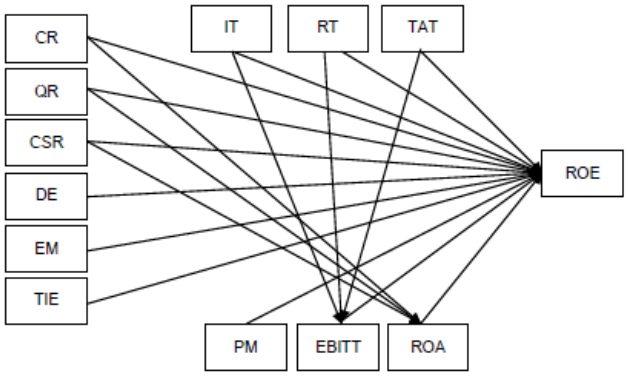


Figure 1 A causal relationship between variables according to hypotheses

Research Hypotheses

The research hypotheses are as follows:

H1 : Current ratio (CR) had direct impact on Return on Equity (ROE).

H2 : Quick ratio (QR) had direct impact on Return on Equity ROE.

H3 : Cash ratio (CSR) had direct impact on Return on Equity (ROE).

H4 : Deb-Equity ratio (DE) had direct impact on Return on Equity (ROE).

H5 : Equity Multiplier (EM) had direct impact on Return on Equity (ROE).

H6 : Times Interest Earned (TIE) had direct impact on Return on Equity (ROE).

H7 : Inventory Turnover (IT) had direct impact on Return on Equity (ROE).

H8 : Receivables Turnover (RT) had direct impact on Return on Equity (ROE).

H9 : Total Assets Turnover (TAT) had direct impact on Return on Equity (ROE).

H10 : Profit Margin (PM) has direct impact on Return on Equity (ROE).

H11 : Operating Income Margin (EBIT) had direct impact on Return on Equity (ROE).

H12 : Return on Assets (ROA) had direct impact on Return on Equity (ROE).

H13 : Current ratio (CR) had direct impact on Return on Assets (ROA).

H14 : Quick ratio (QR) had direct impact on Return on Assets (ROA).

H15 : Cash ratio (CSR) had direct impact on Return on Assets (ROA).

H16 : Inventory Turnover (IT) had direct impact on Return on Operating Income Margin. (EBIT).

H17 : Receivables Turnover (RT) had direct impact on Return on Operating Income Margin. (EBIT).

H18 : Total Assets Turnover (TAT) had direct impact on Return on Operating Income Margin. (EBIT).

IV. RESEARCH RESULTS

After analyzing by setting the model shown in Figure 1 whether the model fitted the empirical financial data collected from SET website [10], it was found that Chi-square = 308.54, probability (p-value) = 0.00, Relative *Chi-square* = 12.86, Comparative Fit Index : CFI = 0.32, Goodness of Fit Index : AGFI = 0.27, Root Mean Square Error of Approximation : RMSEA = 0.25, Standardized RMR : SRMR) = 0.14, (see Table 1 and Figure 2).

Table 1 Fit Indices for Model and the Empirical Data (before model modification)

Fit Index	Acceptable Range	Calculated Rate	Explanation
χ^2	Statistically insignificant at > 0.05	308.54	-
df	-	24	-
p-value	p > 0.05	0.00	Not supported
χ^2/df	χ^2/df < 2	12.86	Not supported
CFI	≥ 0.90	0.32	Not supported
GFI	≥ 0.90	0.81	Not supported
AGFI	≥ 0.90	0.27	Not supported
RMSEA	< 0.05	0.25	Not supported
SRMR	< 0.05	0.14	Not supported

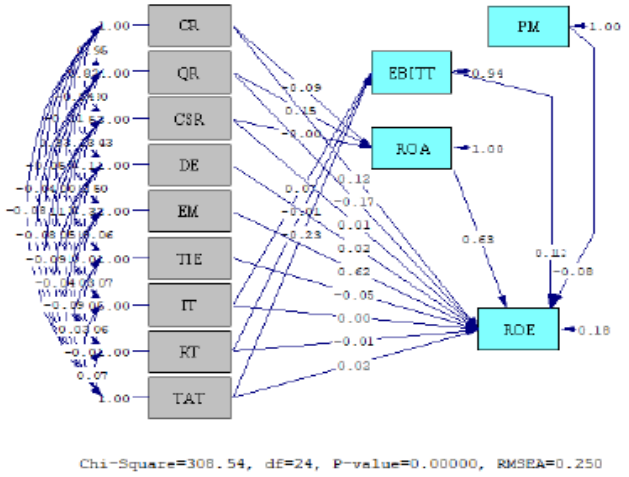


Figure 2 A causal relationship between variables (before model modification)

The fit of the model being evaluated was considered in adequate, therefore, the model was modified The modification indices (MI) that were associated with the parameters of the model were used as diagnostic statistics to capture model mis-specification [11]. The MI indicated the fixed parameters should be freed to improve model fit. Finally, model fitted data well after modification. Chi-square = 18.58, probability (p-value) = 0.29, Relative *Chi-square* = 1.16, Comparative Fit Index (CFI) = 1.00, Goodness of Fit Index (GFI) = 0.99, Adjusted Goodness of Fit Index (AGFI) = 0.92, Root Mean Square Error of Approximation (RMSEA) = 0.03, and Standardized RMR (SRMR) = 0.04. The structural equation model fitted the sample data well (see Table 2 and Figure 6).

Table 2 Fit indices for model and the empirical Data (after model modification)

Fit Index	Acceptable Range	Calculated Rate	Explanation
χ^2	Statistically insignificant at > 0.05	18.58	-
df	-	16	-
p-value	p > 0.05	0.29	Supported
χ^2/df	χ^2/df < 2	1.16	Supported
CFI	≥ 0.90	1.00	Supported
GFI	≥ 0.90	0.99	Supported
AGFI	≥ 0.90	0.92	Supported
RMSEA	< 0.05	0.03	Supported
SRMR	< 0.05	0.04	Supported

Figure 3 and Table 3 showed causal relationship between intendent variables, namely, current ratio (CR), quick ratio (QR), cash ratio (CSR), deb-equity ratio (DE), equity multiplier (EQ), times interest earned ratio (TIE), inventory turnover ratio (IT), receivables turnover ratio (AR), total assets turnover (TAT), profit margin (PM), return on assets (ROA) and dependent variable return on equity (ROE).

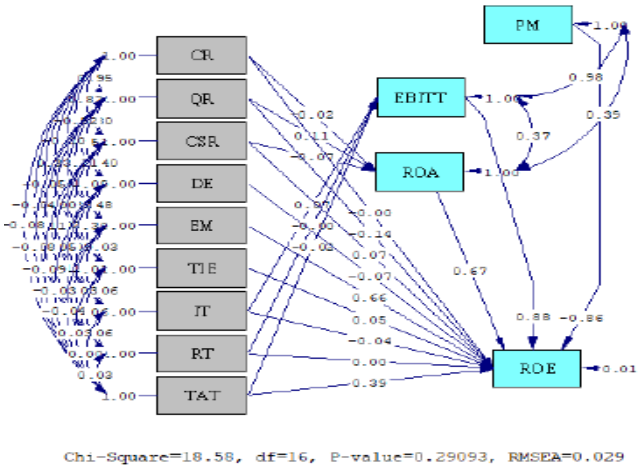


Figure 3 A causal relationship between variables (after model modification)

Table 3 The results of direct effect, indirect effect, and total effect

Independent Variables	Dependent Variables								
	EBITT (R^2 = 0.00)			ROA (R^2 = 0.00)			ROE (R^2 = 0.99)		
	DE	IE	TE	DE	IE	TE	DE	IE	TE
CR	-	-	-	-0.02	-	-0.02	0.00	-0.01	-0.01
QR	-	-	-	0.11	-	0.11	-0.17	0.08	-0.06
CSR	-	-	-	-0.07	-	-0.07	0.07	-0.05	0.02
DE	-	-	-	-	-	-	-0.07	-	-0.07
EM	-	-	-	-	-	-	0.66**	-	0.66**
TIE	-	-	-	-	-	-	0.05	-	0.05
IT	0.07**	-	0.07**	-	-	-	-0.04	0.06	0.02
RT	0.00	-	0.00	-	-	-	0.00	0.00	0.00
TAT	-0.02	-	-0.02	-	-	-	0.39**	-0.02	0.37**
PM	-	-	-	-	-	-	-0.86**	-	-0.86**
EBITT	-	-	-	-	-	-	0.88**	-	0.88**
ROA	-	-	-	-	-	-	0.67**	-	0.67**

**p<0.01, *p<0.05; TE = (Total Effect), IE = (Indirect Effect), DE= (Direct Effect)

Results of Hypothesis Testing

H1 : Current ratio (CR) had direct impact on Return on Equity (ROE). It was found that CR had statistically insignificant positive direct impact 0.00 on ROE, therefore, H1 was rejected.

H2 : Quick ratio (QR) had direct impact on Return on Equity ROE. It was found that QR had negative and statistically insignificant direct impact -0.17 on ROE, therefore, H2 was rejected.

H3 : Cash ratio (CSR) had direct impact on Return on Equity (ROE). It was found that CSR had positive and

statistically insignificant direct impact 0.07 on ROE, therefore, H3 was rejected.

H4 : Deb-Equity ratio (DE) had direct impact on Return on Equity (ROE). It was found that DE had negative and statistically insignificant direct impact -0.07 on ROE, therefore, H4 was rejected.

H5 : Equity Multiplier (EM) had direct impact on Return on Equity (ROE). It was found that EM had negative and statistically significant impact 0.66 on ROE, therefore, H5 was accepted.

H6 : Times Interest Earned (TIE) had direct impact on Return on Equity (ROE). It was found that TIE had statistically insignificant positive impact 0.05 on ROE, therefore, H6 was rejected.

H7 : Inventory Turnover (IT) had direct impact on Return on Equity (ROE). It was found that IT had negative and statistically significant direct impact -0.04 on ROE, therefore, H7 was accepted.

H8 : Receivables Turnover (RT) had direct impact on Return on Equity (ROE). It was found that RT had statistically insignificant positive direct impact 0.39 on ROE, therefore, H8 was rejected.

H9 : Total Assets Turnover (TAT) had direct impact on Return on Equity (ROE). It was found that TAT had positive and statistically significant direct impact 0.39 on ROE, therefore, H9 was accepted.

H10 : Profit Margin (PM) has direct impact on Return on Equity (ROE). It was found that PM had negative and statistically significant direct impact -0.86 on ROE, therefore, H10 was accepted.

H11 : Operating Income Margin (EBIT) had direct impact on Return on Equity (ROE). It was found that EBIT had positive and statistically significant direct impact 0.01 on ROE, therefore, H11 was accepted.

H12 : Return on Assets (ROA) had direct impact on Return on Equity (ROE). It was found that ROA had positive and statistically significant direct impact 0.01 on ROE, therefore, H12 was accepted.

H13 : Current ratio (CR) had direct impact on Return on Assets (ROA). It was found that CR had negative and statistically insignificant direct impact 0.07 on ROA, therefore, H13 was rejected.

H14 : Quick ratio (QR) had direct impact on Return on Assets (ROA). It was found that QR had positive and statistically insignificant direct impact 0.01 on ROA, therefore, H14 was rejected.

H15 : Cash ratio (CSR) had direct impact on Return on Assets (ROA). It was found that CSR had positive and statistically insignificant direct impact 0.01 on ROA, therefore, H15 was rejected.

H16 : Inventory Turnover (IT) had direct impact on Return on Operating Income Margin. (EBIT). It was found that IT had positive and statistically significant direct impact 0.01 on EBIT, therefore, H16 was accepted.

H17 : Receivables Turnover (RT) had direct impact on Return on Operating Income Margin. (EBIT). It was found that RT had positive and statistically insignificant direct impact 0.01 on EBIT, therefore, H17 was rejected.

H18 : Total Assets Turnover (TAT) had direct impact on Return on Operating Income Margin. (EBIT). It was found that TAT had negative and statistically insignificant direct impact -0.02 on EBIT, therefore, H13 was rejected.

VI. DISCUSSION

The results of H1 to HH18 testing indicated that financial ratios as independent variables which had statistically significant direct impacts on ROE were EM, TAT, PM, EBIT, and ROA with direct effect of 0.66, 0.39, -0.86, 0.88 and 0.67 respectively, at confidence interval of 0.01. Meanwhile financial ratios as independent variables which had statistically insignificant direct impacts on ROE were CR, QR, ASR, De, TIR, IT and RT with direct effect of 0.00, -0.17, 0.07, -0.07, 0.05, 0.04, and 0.00 respectively, at confidence interval of 0.01.

In terms of financial ratios as independent variables which had indirect effects on return on equity (ROE) passing through return on assets (ROA) were CR, QR, CSR which had impact power of -0.01, 0.08, and -0.05 respectively, statistically insignificant at confidence interval of 0.01. In addition, it was found that financial ratios as independent variables which had indirect effects on return on equity (ROE) passing through operating income margin (EBTT) were IT, RT, TAT which had impact power of 0.06, 0.00 and -0.02 respectively, statistically insignificant at confidence interval of 0.01.

On the other hand, the study showed that there were financial ratios as independent variables had statistically insignificant indirect impact on ROE through variable ROA. Those variables were CR, QR, CSR whose effects were -0.01, 0.08, and -0.05 respectively. Moreover, there were financial ratios as independent variables had statistically insignificant indirect impact on ROE through variable EBIT. Those variables were IT, RT, TAT whose effects were 0.06, 0.00 and -0.02 respectively.

The financial ratios as independent variables had statistically insignificant direct impact on EBIT were IT, RT, TAT with effects of 0.04, 0.00, and -0.02 respectively. Variables CR, QR and CSR had statistically insignificant impact on ROA with effect of -0.02, 0.11, and -0.07 respectively. Last but not least, this structural causal relationship model had $R^2 = 99\%$

These findings were partially consistent with previous studies such as Miswanto and Oematan [12] demonstrated

that working capital turnover as well as receivable turnover, inventory turnover and asset turnover had positive impact but the cycle of cash conversion had negative impact on performance of financial management. Xu, M., and W. Banchuenvijit [13] also supported this finding in their study saying that current ratio had a positive but insignificant impact on both ROA and ROE, liquidity positively but insignificantly affected firms' financial performance. Total assets turnover ratio had a positive and significant impact on both ROA and ROE so assets utilization positively and affected firms' financial performance. Debt ratio had a negative and significant impact on both ROA and ROE, so leverage negatively and significantly affected firms' financial performance.

A closer look at ROE which was the dependent variable in this study, ROE allows investors to see how much money they are making on their investment into a company. In 1930, the DuPont Corporation aimed to find a platform that could provide a detailed assessment of any company's profitability, The model they developed was so-called DuPont analysis. It allows investors to pinpoint the strengths of a company and also provides early warning signs to any potential weaknesses [14]. DuPont analysis breaks down ROE into its core components and allows analyst to better assess potential ROE. The DuPont identity indicates that ROE is affected by 3 components which are operating efficiency as measured by profit margin (PM), asset use efficiency as measured by total asset turnover (TAT) and financial leverage as measured by the equity multiplier (EM). The findings of this research confirmed the DuPont identity (H10, H9, H5).

VI. CONCLUSION

Ratio analysis is a useful management tool that will improve understanding of financial results and provide key indicators of organizational performance. Managers will use ratio analysis to pinpoint strengths and weaknesses from which strategies and initiatives can be formed. Financial ratio analysis is aimed to assess the financial performance and determine the financial position of an organization through its profitability, liquidity, activity, leverage and other relevant indicators. There are many groups and individuals want to know about the business performance or position with their areas of interest. They are bankers and lenders using profitability, liquidity and investment because they want to know the ability of the borrowing business in regular scheduled interest payments and repayments of principal loan amount; investors using profitability and investment because they are more interested in profitability performance of business and safety and security of their investment and growth potential of their investment; government using profitability because government may use profit as a basis for taxation, grants and subsidies; employees using profitability, liquidity and activity because employees will be concerned with job security, bonus and continuance of business and wage bargaining; customers using liquidity because customers will seek reassurance that the business can survive in the short term and continue to supply; suppliers using liquidity because suppliers are more interested in knowing the ability of the business to settle its short-term obligations as and when they are due; and management using all ratios because management is interested in all aspects i.e., both financial performance and financial condition of the business [10]. This study showed the findings that were consistent with previous research in terms of causal relationship between financial ratios and ROE even though the period of study was in the year of COVID-19 pandemic. A suggestion for further study is that as COVID-19 outbreak affected each business sector in different way, it is worthwhile to categorize the sample in groups according to their business activity sectors. The expected research outcomes should provide in-depth financial information for the financial analysts and investors for their investment and management decision making.

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A comparison forecast volume of outbound containers in case of The Bangkok port Between Exponential Smoothing and ARIMA Model

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Abstract— This research aims to compare the forecast of container consumption between Exponential Smoothing and ARIMA methods and make a forecast volume of outbound containers from Bangkok Port. Using time series data of the quantity of containers departing from Bangkok ports from January 2011 to December 2020 from Port authority of Thailand. By using the criterion of the root mean squared error (RMSE), it was found that the ARIMA forecasting method was more suitable for this set of time series data than the Exponential Smoothing method. The ARIMA forecasting method was root mean square error (RMSE) is 3310.72 and the exponential smoothing method was root mean square error (RMSE) is 3381.09 However, both methods could be used combined for forecasting to serve as an appropriate forecast model.

Index Terms— ***Quantity of containers, ARIMA, Exponential smoothing.***

I. INTRODUCTION

Container shortage is disrupting the supply chain in Thailand over the past 1-2 years (2020-2021), resulting in a shortage of 1.5 million container containers in 2020. As a result, the export of products to foreign countries has a wide impact on the industrial sector in Thailand. In an interview with Miss Ghanyapad Tantipipatpong, chair of the Thai National Shippers' Council (TNSC) said that the problem is that China, the world's largest exporter, has a demand for more than 200 million containers a year and demand for exports of Vietnam, which has experienced a high economic growth, thus make shipping lines opted to provide services to China and Vietnam earlier due to higher freight rates than Thailand [1]. [2] It also said that the impact of the shortage of container trainers for export was another major cause of the Covid-19 virus epidemic, which resulted in huge impact on global supply chains. As a result, the global export of container-packed goods, especially in China, was the most affected and this impact spread throughout the world.

Nevertheless, the growth of ocean freight through container trainers is also becoming increasingly important in shipping and economic development in Asia, whether it is the export of industrial products, agricultural products and food-related goods [3].

Therefore, the planning and management of the container empty container is an important issue for the container port, in order to balance trade and exports to the global freight routes. Container volume allocation planning is a key point of shipping business planning, whether it is container demand planning and managing market condition uncertainty. This can affect third party logistics providers, resulting in increased operating costs and lower incomes if shortage of containers occurs [4].

Thus, of great interest today is the short-term forecast of container consumption for domestic exporters (1 Year), how much the appropriate number should be to prepare and prevent any

problems that may arise in the future for third party logistics providers. It is also a guideline for relevant agencies such as the Port Authority of Thailand and the Thai National Shippers' Council (TNSC) to find a way to prevent problems that will affect the economic growth of the country that relies on the export of goods to earn income into the country.

II. RESEARCH OBJECTIVES

To compare forecasting results of container consumption between Exponential Smoothing Method and ARIMA Method and forecast container consumption for Thai exports from Bangkok Port. (Note: Container counts are compared to 20 ft container sizes and are TEU (Twenty-Equivalent Unit) units) 20 foot container = 1 TEU. 40 foot container = 2 TEU).

III. LIERATURE REVIEW

The inbound-outbound volume of the container is an indication of how important the port value is in terms of how it operates and drives the nation's economy [5]. In particular, the Maritime operators face great challenges in the Covid-19 Coronavirus (COVID-19) situation. From this situation it has had a chain effect since it caused disruption in the supply chain of the product and the effect spread throughout the world, causing international shipping to have an impact on global supply chains due to the manufacturing sector where consumption for businesses must connect goods and services worldwide through shipping via sea containers [2]. In doing business all over the world that must be connected is an important part of the results that when one country in the world has a problem, it will have an impact on different countries, for example, in the case of China's Covid-19 Coronavirus (COVID-19) crisis, China's economy slows down and production disruptions including China's global supply chain is inevitably affected. When China was unable to produce its products, it resulted in a problem with its shipments to the distributed consumer countries in the world, and ultimately a contraction in global economic activity [6].

When the transport of goods is disrupted, sea freight activities through the container are inevitably affected because if the cargo is not shipped with a container, the quantity of the container will be unbalanced. Global shipping demands empty containers to prepare for export; therefore, the forecasting plan for the container machine is especially important in this critical situation. In previous studies, there were a number of studies using different container machine forecasting schemes, for example, a comparative study of the container forecasting method at Lianyungang Port and Shanghai Port by using Gray forecasting modeling, triple exponential smoothing model, multiple linear regression model, and backpropagation neural network [7]. In the study of fulfillment, it is a shipping agent container service provider in preparing an empty container for pick-up in the container depot in order to improve the service efficiency of the ship line and increase the efficiency of the supply chain in Thailand [8], forecasting of container box against COVID-19 situation impact using Seasonal Autoregressive Integrated Moving Average (SARIMA) technique and the Exponential Smoothing State Space Model (ETS) technique to determine the appropriate method for the situation [2].

There are various forecasting models used, including the Box-Jenkins Method (ARIMA), which is commonly used in time series analysis [9], [10], [11] forecasting models or Exponential Smoothing Methods [9], [12] forecast models that are generalized forecast that are seasonal [11].

IV. RESEARCH METHODS

This research used empirical, social science and quantitative research models using time series data and the number of outbound container uses. In the case of Bangkok Port that serve monthly service from January 2011– December 2020, a total of 120 months has been used statistical data from the Port Authority of Thailand. The model used in forecasting is the exponential smoothing model [13] and ARIMA Model [14]. The program Eviews [15] is used to process and analyze data.

Validity analysis of forecast

In practice, more than one pattern of good time series analysis may be found. Therefore, if it

is necessary to select a forecast model that analyzes historical data, which format should be used, it may be determined by the value of the Root Mean Square Error (RMSE) [12], [2], [5].

$$RMSE = \sqrt{(e^2/n)}$$

where e = Error value

V. RESEARCH RESULTS

Exponential Smoothing Forecast is a monthly quantitative analysis of outbound containers in Bangkok Port from January 2011 to December 2020, total of 120 months. When using the data to create a graph, the graph will be formed as shown in Figure 1.

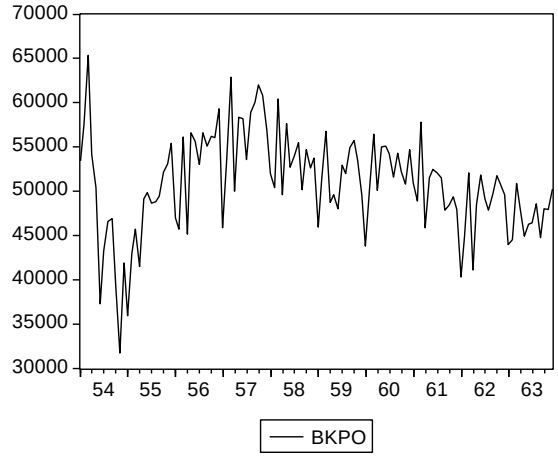


Figure 1 shows a graph of outbound container volumes from Bangkok Port from Jan 2011 to Dec 2020 (Unit: TEU.)

The nature of the data graph shows that the data is both trend and season. For forecasting using the Exponential Smoothing method, Holt-Winters-Additive and Holt-Winters-Multiplicative [16], [12] were used. One of these two methods is considered appropriate for the forecast.

Table 1 shows the results of the analysis by Exponential smoothing, Holt-Winters-Additive and Multiplicative.

Model	Parameters			Sum of Squared Residuals	Root Mean Squared Error	End of Period Levels	
	Alpha	Beta	Gamma			Mean	Trend
Holt-Winters-Additive	0.6900	0.0000	0.0000	1,390,000,000	3404.561	48623.19	-2.5949
Holt-Winters-Multiplicative	0.6700	0.0000	0.0000	1,370,000,000	3381.093	48632.50	-2.5949

When comparing Exponential Smoothing in both Holt-Winters-Additive and Holt-Winters-Multiplicative, it was found that Holt-Winters-Multiplicative gave lower statistical measure of Sum of squared Residuals and Root Mean Squared Error. Therefore, the one-year forecast from January 2021 to December 2021 will use the Holt-Winters-Multiplicative method to forecast outbound container volume from Bangkok Port. This can be determined from Figure 2, where the actual data is the BKPO line; the forecast data is the BKPOSM line.

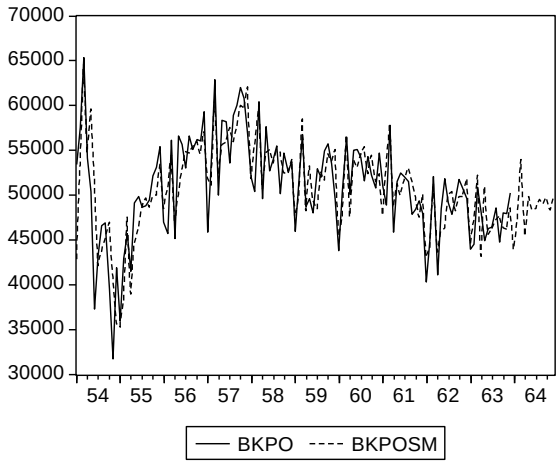


Figure 2 shows the forecast numbers for outbound containers from Bangkok Port in 2021

Table 2 shows the forecast numbers for outbound containers from Bangkok Port in 2021

Month	Number of containers, units as TEU
February 2021	46,976
March 2021	54,014
April 2021	45,456
May 2021	49,836
June 2021	48,435
July 2021	48,504
August 2021	49,487
September 2021	49,011
October 2021	49,705
November 2021	48,336
December 2021	49,643

Forecasting by ARIMA method

Since it was initially known that the nature of the analyzed data tended to be seasonal (and the variance was not constant). ARIMA computation is only necessary to stabilize the data, so it is necessary to make the time series data stationary by calculating normal difference, season difference and take log to reduce the variance, that is, Z = d (log (BKPO), 1,12), when modified, the stationary properties can be examined by considering both the graph and the Unit Root test.

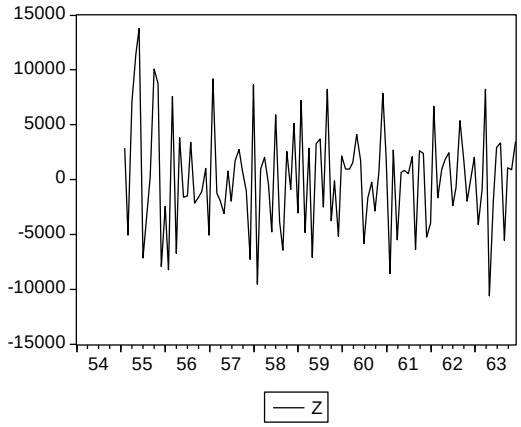


Figure 3 shows the transformation curve by finding normal and season differences in the 1st order

From observing the graph, series z has no constant (θ_0) and yet there is no trend and season, which shows that series z is already stationary. Also, when the unit root of series z is obtained, it is found that it is stationary.

Table 3 shows Augmented Dickey – Fuller Unit Root test on z

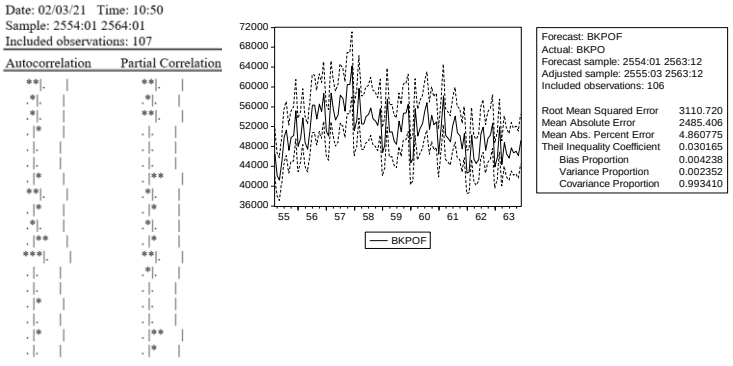
Null Hypothesis: Z has a unit root
Exogenous: None
Lag Length: 12 (Automatic based on SIC, MAXLAG=12)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.633956	0.0004
Test critical values:	1% level	-2.589795	
	5% level	-1.944286	
	10% level	-1.614487	

*MacKinnon (1996) one-sided p-values.

The ARIMA configuration from the correlogram of series z above will be taken into account of the autocorrelation (ACF) correlogram and partial autocorrelation (PACF) to define Autoregressive: AR (p) and Moving Average: MA (q). The results are as shown in Table 4 below.

Table 4 shows the correlogram of z data when transforming with normal and season variance in the 1st order



From the correlogram, possible predictors must be determined from the constant ACF and PACF curves of time series to select the most suitable model based on Akaike info criterion and Schwarz criterion, it was found that the most suitable model of series z or d (log (BKPO), 1,12) was AR(1) $SMA(1)_{12}$ model, no fixed term.

Table 5 shows the results of the models used in the ARIMA forecast

Dependent Variable: D(LOG(BKPO),1,12)
Method: Least Squares
Date: 02/03/21 Time: 15:19
Sample(adjusted): 2555:03 2562:12
Included observations: 94 after adjusting endpoints
Convergence achieved after 9 iterations
Backcast: 2554:03 2555:02

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AR (1)	-0.400124	0.094769	-4.222077	0.0001
MA (12)	-0.945468	0.011727	-80.62242	0.0000
R-squared	0.744032	Mean dependent var		0.003473
Adjusted R-squared	0.741250	S.D. dependent var		0.100303
S.E. of regression	0.051022	Akaike info criterion		-3.092089
Sum squared resid	0.239495	Schwarz criterion		-3.037976
Log likelihood	147.3282	Durbin-Watson stat		2.140440
Inverted AR Roots	-.40			
Inverted MA Roots	1.00	.86 -.50i	.86+.50i	.50+.86i
	.50 -.86i	.00+1.00i	-.00 -1.00i	-.50+.86i
	-.50 -.86i	-.86+.50i	-.86 -.50i	-1.00

From Table 5, when examining statistical significance, it was found that it was statistically significant at a 99% confidence level. In this model, the error value is prop <0.05, so the error value of the model has no Unit Root.

Table 6 shows the Augmented Dickey - Fuller Unit Root test for the error model

Null Hypothesis: RESID01 has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic based on SIC, MAXLAG=12)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-9.926011	0.0000
Test critical values:	1% level	-3.494378	
	5% level	-2.889474	
	10% level	-2.581741	

*MacKinnon (1996) one-sided p-values.

Therefore, it can be said that the AR (1) SMA (1) 12 model is an efficient and suitable forecasting model to be used for further forecasting. The following graphs of estimates and model scorecards are obtained.

Figure 4 shows the model's estimate curves and scorecards.

Note that the root means square error of the forecasting method ARIMA (3,110.72) is lower than the same value of the Holt-Winters-Multiplicative Exponential Smoothing Forecast (3,381.09).

When using the ARIMA to forecast outbound container volumes from Bangkok Port from January 2021 to December 2021, the following data were obtained:

Table 7 shows the forecast numbers for outbound containers from Bangkok Port in 2021 using the ARIMA method.

Month	Forecast Value Number of containers, units as TEU
January 2021	43,178
February 2021	45,521
March 2021	52,178
April 2021	45,656
May 2021	47,551
June 2021	47,082
July 2021	47,257
August 2021	48,596
September 2021	46,963
October 2021	48,482
November 2021	47,409
December 2021	49,154

As a result of both forecasting methods, the ARIMA forecast method yields the root mean square error: RMSE lower than the Holt-Winters-Multiplicative Exponential Smoothing forecast. It can be seen that the ARIMA forecasting method is more appropriate because it correlates with the actual data higher than that of the Holt-Winters-Multiplicative Exponential Smoothing method. However, the forecast values of both methods are considered reliable because they significantly correlate with the actual data.

Combining forecast

As there is no technique that can forecast accurately in every situation and every forecast period, several forecasting techniques were incorporated [17], [18] to represent forecast including a combination of forecasting techniques by weighting, measuring the accuracy of Average Absolute Forecast Error (AFE), data utilization of forecasting using the Holt-Winters-Multiplicative method of exponential smoothing and ARIMA method from January 2021 to December 2021, then used to create the combined forecast equation.

where $F_{et} = W_1F_{1t} + W_2F_{2t}$

F_{et} = Forecast value in the case of combined forecast

F_{1t} = Forecasting value in technique 2 (exponential smoothing – Multiplicative)

F_{2t} = Forecasting value in technique 2 (ARIMA)

W_1, W_2 = Weighted value by AFE method

$$\text{Where } W_1 = \Sigma \left| e_{F1t} \right| / \left| e_{F1t} + e_{F2t} \right|$$
$$W_2 = \Sigma \left| e_{F2t} \right| / \left| e_{F1t} + e_{F2t} \right|$$

The combined forecast equation will be obtained as follows:

$$F_{et} = 0.44F_{1t} + 0.56F_{2t}$$

Table 8 summarizes the forecast of outbound containers from Bangkok Port (TEU.)

Installment	Forecasting by exponential smoothing - Multiplicative	Forecast value by ARIMA method	Combined forecast
January 2021	43,982	43,178	43,619
February 2021	46,976	45,521	46,832
March 2021	54,014	52,178	53,124
April 2021	45,456	45,656	43,564
May 2021	49,836	47,551	50,483
June 2021	48,435	47,082	48,157
July 2021	48,504	47,257	47,892
August 2021	49,487	48,596	48,440
September 2021	49,011	46,963	48,934
October 2021	49,705	48,482	48,913
November 2021	48,336	47,409	47,979
December 2021	49,643	49,154	49,332

VI. DISCUSSIONS

This research would like to propose the construction and selection method appropriate for the time series of outbound container volumes from Bangkok Port using monthly data from January 2011 to December 2020, total of 120. There are two methods of statistical forecasting, exponential smoothing and ARIMA, using the square root criterion of the mean squared error (RMSE). It was found that ARIMA was more suitable for this set of time series than Exponential Smoothing (Holt-Winters-Multiplicative) method. It could be said that both methods have one part in common that is past valuesand error term. Both methods differ in the process of assigning weight to past lag values and determination of the weight of the discrepancy. In many studies, ARIMA forecast is generally better than exponential smoothing. This is consistent with the work of [19], [12], [9] in which the forecasting method was compared between ARIMA and exponential smoothing, indicating that the ARIMA model was able to produce better long-term forecasts in the event of limited data sources, but failed to produce better forecasts for time series with a narrow range from point to point. On the other hand, the Exponential Smoothing Method can create a better forecast for data with a narrow range from point to point, such as information about exchange rates. But it is not possible to forecast for time series data with longer forecast intervals.

In addition, the ARIMA model forecasting method is suitable and efficient in the context of supply chain and seasonal data [10], at the same time, in order to achieve more accurate forecasting, [5] it was suggested that the combination forecast method should be used.

VII. Conclusion

This research seeks to explain that the use of a time-series forecasting tool may be appropriate to select different forecasting methods. However, for forecasts that are likely to increase reliability, other relevant factors should be taken into account, such as the value of merchandise exports.

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Developing a causal relationship model in business development that affect the excellence of public business organizations

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Abstract— This research aimed to develop a causal relationship model in business development impacting the excellence of public business organizations in Thailand and to verify the consistency of the developed causal relationship model with the data. The research tool was an online questionnaire sample were 400 former business executives, public business organizations in Thailand. The statistics used for data analysis were structural equation models used to analyze causal relationships for Finding the path of the causal influence of variables consists of 5 areas:

1) Perception of safety of public business organizations in Thailand 2) Innovation in the development of public business organizations in Thailand 3) Image of public business organizations in Thailand 4) Trust in business management And 5) business development Public business organizations in Thailand The research found that the developed causal relationship model was very consistent with empirical data, the forecast coefficient of 0.98, indicating that the variables in The model can explain the variability of business development of public business organizations in Thailand 98% found that trust in the development of public business organizations in Thailand has the greatest influence on the development of public business executives. Of business operators in Thailand.

Index Terms— ***business development, public business organization, trust, corporate business development, structural equation model***

I. INTRODUCTION

Modern organizational management Management should always find methods to help all employees learn and develop themselves. Because the same methods of working may not be sufficient in today's world. Cultivating ideas for creating systems and working methods for good long-term results. It is a new organizational method that should be applied. Starting from educating Organize training to build skills that are suitable for use in various fields. And give employees the opportunity to think, present, and do projects by themselves, better than the day-to-day work By one of RS's values in organizational development Is to keep learning, to know To instill in employees the courage to think, ask and seek new things For more efficient work And more importantly, the service business is one of the core business sectors in support of economic and social development at the national and global level. As can be seen in the past 20 years, the trade-in international services have grown considerably. The value of global trade in services grew by approximately 8 percent yearly, while merchandise trade expanded approximately 6 percent. Many developed countries such as the US, UK, and Singapore were able to develop their service businesses into multinational businesses. As an incentive for many more, The country has turned to pay more attention to the service business. Thai service operators must adapt and keep pace with the driving force of globalization. To create a new economy (Patrika Wong-Anan-Non, 2014; Mohanarajan, 2016) [1].

At present, the current Thai economy Has begun to recover But there are still a number of businesses that need some time to normalize the economy. Such conditions keep current employment rates low in both the public and private sectors, and most graduate students find work difficult. Because work is still very limited compared to the number of people who graduate out, many people do not have a job. And thinking of turning into entrepreneurship in business development, In addition, now the government has the policy to promote and push more people to become entrepreneurs, making it a good opportunity for interested people. And has an idea of running his own business and has entered into a business executive The impact on the excellence of public business organizations more easily and also due to the technology disruption situation that causes many organizations to turn to adapt to suit the situation and the era. To develop the business to be able to move forward Preparedness starts from the process of organizational management and modern organizational development to be

appropriate. It is therefore important that many organizations pay more attention to each other (Shih, 2009).

Nowadays, the development of a causal relationship model in business development contributes to the excellence of public business organizations. That affects the excellence of the organization in Thailand, able to respond to the security that corresponds to the modern consumer perfectly And there are still many opportunities Because the population has a need to operate more business according to the country's prosperity. And the education level of the population tends to be higher Another breakthrough in business development that contributes to the excellence of public business organizations. That affects the excellence of the organization in Thailand More and more technology and facilities, such as the widespread management of various computer systems, all affect the quality of life. This makes consumers realize the importance of business development that affects the excellence of public business organizations. This further affects the excellence of the organization in Thailand, respectively At the same time, business development contributes to the excellence of public business organizations. It also affects the product, both form and features in the use of consumers. Encourage behavior In fashion, it has become more and more widespread in popularity. Make consumers today develop their businesses to be more stable (Savitree Surathamwit, 2015).

For the aforementioned reasons, the researcher was not so important to develop a rational relationship model in business development that influences entrepreneurship excellence that contributes to the excellence of Thailand. The researcher is able to make known developments that affect business development, affect the excellence of business entrepreneurs, affect the excellence of the people in Thailand and serve as a guideline for development. To the excellence of the business type in relation to the mechanisms and needs of today's operators.

II. Research Objectives

The objectives of this research article were

1.) Develop a causal relationship model in business development affecting the excellence of public business organizations 2.) To verify the consistency of the causal relationship model in business development that affects the excellence of the public business organization. The public business organization developed on empirical data

III. Research Methods

A. Research Design

Action research [5] This research studies, surveys. (Survey Research)

Research conceptual framework

A Study of Causal Relationship Models in Business Development Public Business Organizations in Thailand Affecting Organizational Excellence The researcher has adopted the research framework of Feng Cui et al., (2018) to improve and develop the development of public business executives. The impact on organizational excellence is 1) perception of the safety of public business organizations in Thailand (AB) 2) innovation in the development of public business organizations in Thailand (AI) 3) the image of Public Business Organization in Thailand (AU) 4) Trust in Management of Public Business Organizations in Thailand (AS) 5) Business Development Public Business Organizations in Thailand (AD

)*B. Research Process*

Population and sample

The population of this research is 168,367 people who held public business executives in Thailand, totaling 168,367 people as of July 1, 2020.

The sample group of this research was 400 former executives of public business organizations in Thailand in determining the sample of the Causal Structural- Models with Latent Variable analysis. Wiratchai (1999) proposed that the sample size was appropriate. It should be in a ratio of 10-20 to 1 variable and the minimum sample is acceptable, given the Holster statistical value greater than 250, the causal relationship model is assumed to be consistent with the empirical data. There were 20 observable variables in this study, requiring at least a sample of approximately 250 subjects. And to prevent any discrepancies of information The researcher then added a sample of 400 people, obtained by Convenience Sampling.

Tools used for data collection

Characteristics of the tools used in this research It is an online questionnaire (Online Questionnaire), number 1 issue, divided into 2 parts as follows:

Part 1 General Information of Chair Responder Characteristics of Advantages Tour Questions about General Information of Respondents Including Researcher Director of Information Have you ever held a management position in the collection business in Thailand? Educational institutions, educational level, occupation, and gross monthly income of 15 items

Part 2: Information on factors influencing business development affecting the excellence of public business organizations, in which questions are measured in 7 levels, divided into 5 areas: 1) perception of safety. Of public business organizations in Thailand 2) innovation in the development of public business organizations in Thailand 3) the image of public business organizations in Thailand 4) trust in the management of public business organizations in Thailand 5) business development 75 items of public business organizations in Thailand by qualifying tools to validate content validity by proposing three experts to check the content validity of the questionnaire as well as check the content validity of the language Then use the scores obtained to find the consistency index of the question. The objective

of the research (Index Of Congruence or IOC) was obtained with the index of consistency of all questions between 0.69-1.00. (Reliability) by trying out (Try Out) with people who hold the position of business management. Continuously And lived in Thailand, who were not a sample of 30 people, and the confidence was determined by using the alpha coefficient method using the Cronbach's Alpha method. Considering the confidence factor of 0.70 and above, indicating that the questionnaire was highly reliable (Thanin Sincharu, 2017).

Data collection

The researcher collects data by online questionnaires from people who have served as executives of public business organizations in Thailand continuously, and live in Thailand. There are 2 screening questions: 1) Do you agree to provide information to researchers? If the respondents said they did not agree, the researcher will not analyze the data, and 2) Have you ever held a position as a business executive of a public business organization in Thailand? If the respondent said never, the researcher will not analyze the data. Data is collected from the online survey URL link sharing via online questionnaire channels from July 2020 to November 2020, totaling 5 months of data collection, with 450 respondents. After that, the researcher selects a complete questionnaire, totaling 400 people, for further statistical analysis.

Data Analysis

Inferential statistics are used for causal relationship analysis to determine the path of the causal influence of variables, find the size of influence, and how the direction is. Based on the concepts and theories used by the researcher, the consistency is tested between the hypothesis model and the empirical data, the CMIN / DF statistical value less than 3.00, the GFI, AGFI, CFI of 0.96 or more, and the RMSEA, SRMR value less than 0.05, which is consistent with the statistical analysis of the structural equation model (Kris, Sung Noen, 2011)

IV. RESULTS

The researcher defines the presentation of research results by designing in 2 steps: 1. To develop a causal relationship model in business development that affects the excellence of public business organizations. 2. To verify the consistency of the causal relationship model in business development affecting the excellence of public business organizations developed with empirical data, which can be summarized as follows.

1. The results of the development of the causal relationship model in the development of public business executives that affect the excellence of the organization

The research results were found that The development of a causal relationship model in business development affecting the excellence of public business organizations consists of 5 variables classified into 2 external latent variables: 1) perception of the safety of public business organizations in Thailand (AB) 2) innovation in the development of public business organizations in Thailand (AI) and 3 internal latent variables: 1) image of public business organizations in Thailand (AU) 2) trust in the management of public business organizations in Thailand (AS) 3) business development for public business organizations in Thailand (AD). The researcher developed and drafted a model based on the concepts, theories and related research to be used as a principle for developing the causal relationship model in business development affecting the excellence of public business organizations.

2. The results of the correspondence between the causal relationship models in business development affecting the excellence of public business organizations that affect organizational excellence with empirical data

The results of the consistency verification of the causal relationship model using the linear structural equation technique to find a path of causal influence of variables by testing the consistency between the hypothesis model and the empirical data as shown in Table 1.

Table 1 Index values that indicate the consistency and harmonization of the causal relationship model in the development of the causal relationship model in business development affecting the excellence of public business organizations that affect organizational excellence with empirical data

ค่าดัชนี	เกณฑ์ที่ใช้พิจารณา	ค่าสถิติ	ผลการตรวจสอบ
1. ค่า CMIN/df	< 3.00	1.31	ผ่านเกณฑ์
2. ค่า GFI	≥ 0.90 (เข้าใกล้ 1.00)	0.97	ผ่านเกณฑ์
3. ค่า AGFI	≥ 0.90 (เข้าใกล้ 1.00)	0.92	ผ่านเกณฑ์
4. ค่า CFI	≥ 0.90 (เข้าใกล้ 1.00)	0.95	ผ่านเกณฑ์
5. ค่า TLI	≥ 0.90 (เข้าใกล้ 1.00)	0.94	ผ่านเกณฑ์
6. ค่า RMSEA	< 0.05 (เข้าใกล้ 0)	0.03	ผ่านเกณฑ์
7. ค่า SRMR	< 0.05 (เข้าใกล้ 0)	0.03	ผ่านเกณฑ์
8. ค่า HOELTER	> 200	229	ผ่านเกณฑ์

According to Table 1, it was found that the results of the correlation between the causal relationship model in the development of SME business executives affecting organizational excellence and empirical were consistent and harmonious with the empirical data. Based on the relative chi-square value (CMIN / df) is 1.31, the mean square root index of the numerical fraction (SRMR) is 0.03, the square root index of the estimation error (RMSEA).) was equal to 0.03, which satisfied the criterion where the SRMR and RMSEA values had to be less than 0.05. The GFI, AGFI, CFI, and Hoelter index values at .05 significance levels were 0.95, 0.95, 0.95, and 229, respectively, which satisfied the criteria for GFI, AGFI, CFI values from 0.90-1.00. Therefore it was a suitable and harmonious model. And the Hoelter value of .05 significance level had to be greater than or equal to 300. This

indicated that the causal relationship model in the development of the causal relationship model in business development affected the excellence of public business organizations contributing to organizational excellence and was consistent with empirical data. It was able to show statistical values from models corresponding to the empirical data

V. DISCUSSIONS

The results of this research found that the development of a causal relationship model in business development contributing to the excellence of public business organizations affect the excellence of the organization are most directly influenced by trust. This is because consumers believe that the development of the causal relationship model in business development contributes to the excellence of public business organizations, which affects the excellence of the organization and gains the credibility of product quality. Developing the causal relationship model in Business Development affects the excellence of Public Business organizations in terms of a pricing standard and clear information or specs of eyeglasses. It also creates sustainable branding. And there is always a standardized production. This is the source of trust that has a direct influence on business development. This is consistent with Kittiya Khwanjai's research (2016), which studies satisfaction, trust that affects business executive's development, and system design for online hotel booking among customers in Bangkok. The results of the study showed that trust has a positive influence on the business management development and design of the online hotel booking system of customers in Bangkok.

The trust in the management of public business organizations in Thailand that affects corporate excellence is most directly influenced by corporate safety perceptions as consumers believe that the management of public business organizations in Thailand contributing to organizational excellence. There is a perception of the safety of the organization. To protect personal information, it is safe when paying for glasses by credit card and by bank transfer methods. This is the source of safety awareness in the perception of corporate safety. This is in line with Kittiya Khwanjai's (2016) research, which studies satisfaction, trust that affects business executive's development, and system design for online hotel reservation of customers in Bangkok. The results of the study showed that trust has a positive influence on the business management development and design of the online hotel booking system of customers in Bangkok.

VI. RECOMMENDATIONS

A. Recommendations for Practices

Recommendation for applying research results

1. In terms of trust in the management of public business organizations in Thailand that affect corporate excellence, it was found that consumers believe that the development of business executives that contributes to the excellence of the organization has the credibility of the quality. There is a standard in pricing, clear information or details of the product and a sustainable branding, the production in accordance with the standards. Therefore, the development of business executives should raise awareness of building trust with the target consumers.

Recommendations for further research

Other variables that may be related to this study, such as the effectiveness of business executive development affecting organizational excellence, should be researched to determine the differences from those presented in the research whether or not, and use the results to formulate marketing strategies for the development of business executives

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Potential Development of Volunteer Monks To Heal Patient's Minds by Dharmas

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Abstract— This article discusses a research study about the potential development of Volunteer Monks group to heal patient's mind by harmonizing Buddhist principles and consistent psychological principles. From the analysis of the current situation by interviewing the president of Volunteer Monks group about the development strategy of Volunteer Monks in the healing of patient's minds in hospitals found that the selection of methods for developing strengths and the enhancement of the capacity of volunteer monks in order to weaknesses and obstacles such as time constraints and the number of volunteer monks. With the integration of Buddhist knowledge and psychology to heal patient's mind causes the healing of the patient to be more effective along with enhancing confidence of volunteer monks in the long-term as well.

Index Terms— ***Potential Development, Volunteer Monks Training, Dharma Instruction***

I. INTRODUCTION

The Volunteer Monks group arose from the concepts of a group of students monks in Master of Arts Program in Life and Death Studies, department of Psychology Faculty of Humanities, Mahachulalongkornrajavidyalaya University in 2008, which has stepped in to learn to the way of healing the patients and patient's relatives with the hope that the patients can relax from suffering and illness in the subject "Counseling Psychology of Life and Death" is a course on Buddhist psychological counseling which is a part of holistic patient care together with medical treatment which is currently growing naturally. Beginning with a visit to encourage patients and their relatives by bedside. Organizing group activities for consultation, strengthen morale suggesting an attitude towards illness by providing the correct way of living according to the dharma principles to patients and their relatives including also organizing training activities projects for medical agencies that request under the knowledge framework of volunteer group, such as training for nurses, medical students, Thai tradition medical students etc. The Volunteer Monks group has tried to find a process that is beneficial to the contemporary society, which in addition to being beneficial to others, also helps to refine one's mind and realize the dharma principles of the Buddha. The role of volunteering to heal patients and their relatives. Regarded as helping Thai Sangha clergy in opening new areas to help society, which is becoming increasingly important in Thai society.

II. LITERATURE REVIEW

According to one of the Buddhist principles in which the Lord Buddha spoke to a group of monks as a guide for the monks to support all mankind in social work that "Monks, you all go pilgrim for the happiness of all mankind, to help all living creatures for the benefit, to support for the happiness of angels and human beings but two monks shouldn't go traveling in the same route" from this quote, the volunteer work is therefore considered as one of the teachings of the Lord Buddha. **Phra Paisaan (2006)** said the mind that elevates internal intelligence and public consciousness which leads to participate in creating a fair and peaceful society if motivated by the dharma, namely faith, perseverance, patience, consciousness and wisdom which are the components of the volunteer spirit, these dharmas are a stimulus to see the benefits of the volunteer spirit and also gain experience in helping other by themselves, to feel the joy that come from giving and gain more power to help others. This is a merit that the Buddha praises. **Budhhadasa (2001)** wrote a metaphor in one of his famous books that the work of the monks should be like the work of the Lord Buddha is the one who turn face of things up, the one who shining or the one who open the door and etc. I would like to compare shortly and easily that as long as

the Buddhist monks still persist, it can be said that there are still hospital of the world to heal all mankind in a spiritual way. There are plenty of Physical therapy hospitals in common these days, but for spirit must rely on the hospital of the Lord Buddha. **P.A.Payutto (1991)** gave the view that counseling is a guide that allows people to help themselves. In general, people are not fully self-reliant or have incomplete levels of self-reliance, so they need guidance counselors, when they can't help themselves, they need helpers that can be self-reliant by using language and activities to help etc. Helping people to help themselves is a duty of a guidance counseling. **P.A. Payutto (2009)** "Volunteer Spirit" is the mind of a person consisting of kindness and conscience that sacrifice physical strength, mental strength, intellect in order to perform for the benefit of society, just like the particularities of the Lord Buddha as follows: 1) having good attitude, having 4 sublime states of mind and able to adapt oneself to others as well. 2) Being a participant, being a member of the target group to work with others. 3) Being an analyst, researching, surveying concepts and operating in accordance with the needs of the target population. 4) Being an operator according to the plan in a systematic and orderly manner. 5) Being a role in providing advice to be a guideline for formulating proactive work policies, the volunteer will have a vision, foresight, thinking about the cause and solution of that situation can link to daily life. **Prapan Supasorn. Toungpetch Somsri. Somkit Saewong. (2012)** studied the research report "The Process of Development of The Volunteer Spirit in Accordance with Buddhism", found that The process of development of the spirit of volunteering along Buddhist lines is the adaptation and integration of Buddhist principles into the process within the guidelines of society's regulatory framework, with training to instill awareness of the donor as one who sacrifices without hope of return and the contributions to the public of international aid volunteers; to reinforce the power of the spirit of volunteering during work, and teach ways to insert dhamma into activities in the line of duty, causing dhamma to be absorbed into the mind unconsciously, such as prayer, meditation and listening to religious teachings; to arrange group activity and mutual assistance which leads to increased compassion, love and unity; and, most importantly – the essential function of the spirit of volunteering – to give with a pure mind while renouncing physical strength and wealth, and spending the time to always improve the mind so that the one who gives rises towards greater moral character, focus and wisdom. **Suthathip Kaewkliang (2006)** studied the research "Development of Volunteer Spirit in Buddhism", found that Buddhism has principles that focus on people to be compassionate, helpful, help one another and sacrifice personal benefits for the common good, namely 4 bases of social solidarity, 4 sublime states of mind as well as giving alms which are in accordance with volunteer spirit. Therefore creating an opportunity for people to work for others and the public through volunteer work The results of the study showed that people who perform volunteer work will understand the importance of helping others, sacrificing their own benefits for the common good. While also receiving happiness, pride from volunteering, keep finding opportunities to help others and create benefits. In conclusion, volunteering is a form of mental refining, helping to stimulate people to realize the importance of helping others and the public. **Chonlatorn Thavornkochakorn (2014)** studied the research "A Study of the Process for Spiritual Healing of the Volunteer Spirit Group of Gilanadhamma Bhikkhus at the Faculty of Medicine Vajira Hospital, Navamindradhiraj University", found that stages of the healing process for patients by the spiritual aspect of the Volunteer Spirit Group of Gilanadhamma Bhikkhus are like: 1) Growing Faith (on the basis of trust) is primarily used in the healing process of the patients. As a first step in building a good relationship with the patients. 2) Finding the suffering. This will examines the mind of the patients to look for the crux of their life. This is a state of oppressing the patients' mind and affecting the body's illness that they already have. 3) Pursue them to share the crux. The keeper pursues the patients to share their crux, they will feel more relax, even if only for a while. By helping the patients to stay with their conscious present, they will have time to think over and prepare to face the upcoming problems. Some patients may be able to solve their problems by themselves by depending on their wisdom. 4) Elucidating The Four Noble Truths (about a cessation of sufferings). Most of the patients can see their sufferings, if the monks who treat patients pursue them to share about their sufferings first, so that the patients stay with their conscious present. Then, monks will bring in the Four Noble Truths and adapt it according to each case of patients. As a result, the patients will be able to see the path leading to the cessation of suffering by themselves. 5) Backing with Dharma. By bringing in Buddha's Dharma, it can help a lot with healing. For example, The Four Noble Truths will be covered as the overall picture. The path leading to the cessation of suffering is the Noble Eightfold, which is the Threefold Training. On other hands the seven constitutions (Bojjhanga) are the Dharma that is the cause of cessation of sufferings along with the Three Characteristics. However, the patients must have four divine states (Bhramavihara) as their virtues. 6) According to look cognizant and accept peaceful nature. For the dying patients, if their mind has been healed properly, the patients will be able to accept the reality of their own and learn to let it be and leave with peacefulness. Moreover, this will also help the relatives of the deceased patients, learn to accept and understand the nature of life more and more. **Ketmanee**

Promthuen (2011) studied the research "The Process of Comprehension on Sickness according to Theravada Buddhism", found that Buddhism explained the comprehensive process on sickness as a natural process that all animates could not avoid. Such process showed: 1) The concept of sickness according to Theravada Buddhism had two meanings, namely: physical sickness (Kayikarorogo) and mental sickness (Cetasikarogo). Besides, the meaning of those kinds of sickness included the application of Buddhism Doctrine or Dhamma to the treatment. That would enable relief to the symptom. 2) The concept of the sickness according to Theravada Buddhism led to understand and learn about the process of sickness comprehension as well as care taking and treatment methods. 3) The concept of the sickness according to Theravada Buddhism aimed to apply the comprehensive process on sickness according to Buddhism. This process could also be applied to help survival in the modern Thai society very well. In conclusion, the study was summarized in such a way that in Buddhism, any problem solution including one on sickness was done with one's wisdom developed. Buddhism Doctrine or Dhamma was recommended to be used for comprehensive sickness, for solving the problems of symptom and for releasing the pain occurred. Mindfulness was a tool to solve both physical and mental sickness. More than anything else, mindfulness was absolutely workable to relieve all types of sickness in the modern Thai society of today. **Chomphunut Srichannil (2009)** studied the research "Buddhist Psychology: The Way to Heal Suffering and Cultivate Personal Mental Health", found that Buddhist Philosophy in the remedy of human mind and the cultivation of psychological well-being. This kind of science, the so-called Buddhist Psychology, is based on the three core principles of Buddhist Philosophy, i.e. the Four Noble Truths, the Twelve Links of Conditioned Existence, and the Doctrine of Impermanence. All these principles are intended to teach a person to apprehend the reality relating to the nature of all things by encompassing the Buddha's teachings on the causes of psychological problems, the means for solving them and the cultivation of mental well-being precisely. In addition, the clear insight into the Buddhist doctrines enables a person to live his life in accordance with the truth. In other words, such knowledge can alleviate profound suffering and enhance mental quality of every human being as well. The finding from the literature review confirms that the Buddhist Psychology is efficient for both treating negative mental states and promoting positive mental states. It therefore should be studied more and its way of the application should be spread as widely as possible. **Greg Bogart (1991)** found that many of the clinical benefits claimed for meditation are attributed to the physiological state of relaxation associated with meditation. Studies have found that meditation leads to significant decreases in oxygen consumption, carbon dioxide elimination, respiration rate, cardiac output, heart rate, arterial lactate concentration, respiratory quotient, blood pressure, arterial gases, and body temperature. Meditation is also associated with increases in skin resistance and in slow alpha brain waves and a decrease of beta waves. All of these physiological correlates of meditation yield a portrait of a condition of relaxed wakefulness. This has given rise to the view that meditation is basically a relaxation technique, one which allows a calm witnessing of thoughts and reduces somatic symptoms, fears, and phobias through desensitization and reduction of anxiety. **Frankl**, **Viktor E. (1962)** proposed the theory of meaning searching therapy (Logotherapy) is a mental therapy that focuses on the meaning of life as the most basic motivation in humans, based on the principle that human attention is not based on satisfaction or avoidance of Pain is but the manifestation of the meaning in one's own life. When compared with the psychoanalysis methods, meaning searching therapy tends to look at the past and explore internal mechanism less often than psychoanalysis, but focused on the future which means destinations that patients are waiting to achieve through processes such as changing attitudes in order to see the meaning of suffering, suffering is no longer suffering when there is a meaning in itself, such as the meaning of sacrifice and if the patient has a strong belief in religious beliefs, it is possible to use the healing effects of religious beliefs and use spiritual reasoning.

III. DEVELOPING PARTNERSHIPS

We started this project based from 3 questions (a) Pros and cons, problems and obstacles, Solution of volunteer monks in the healing of the patients with Dhamma ? (b) What should the direction of the potential development process and activities of holistic patient care practice accordance to the Buddhism be ? (c) What is the result of the analysis of the potential development and practice of holistic patient care accordance to the Buddhism ? In order to work in accordance with this gold by following the researcher's strategic plan. The researcher contacted the Governor of the Ecclesiastical Province of Bangkok Metropolis for conducting the research in collaboration with Mahachulalongkornrajavidyalaya University to prepare the action plan for the potential development and healing activities of the volunteer monks group together with have coordinated with the two leading hospitals to carry out the project activities by managing guidelines and activity plans as according to significant hands-on curriculum created by the researcher.

A. Objectives and Goal for the Potential Development of Volunteer Monks Project We have set objectives and goals as follows :

*1) **Objective:** to study the principles and theories in the development of human potential and the creation of psychological healing activities of volunteer monks group.*

*2) **Objective:** to synthesize the development of human potential and the creation of healing activities with Dhamma of volunteer monks group.*

*3) **Objective:** to analyze the training outcomes for holistic patient care in accordance with the Buddhist guidelines of volunteer monks group.*

B. The Participating Hospital

This practical training was supported by two hospitals, namely Faculty of Medicine Vajira Hospital, Navamindradhiraj University and Panyanunthaphikkhu Chonprathan Medical Center, Srinakharinwirot University between December 25, 2017 – February 16, 2018, which are hospitals that operates in accordance with the project activities and have readiness to understand and support the support the purpose of the practice and allow volunteer monks group to continue activities for more than 10 years.

C. The Participating Instructor

As for the instructor, the researcher invited the 15 lecturers selected from volunteer monks group who have experienced in healing the patients with Dhammas for more than 10 years to become instructors and give practical training to volunteer monks participating in the project activities.

D. The Participating Volunteering Monks

The research project is divided into 4 periodically to analyze the suitability of the healing process and increase clarity and lead to valuable research with the following scope:

*1) **Phase 1: Open House Open Heart** This phase is a basic workshop to include information on the decision to apply for the project in the next phase 2, held from 29-30 November 2017 at the Dhamma Studies Building, Wat Hong Rattanaram Ratchaworawihan, Bangkok. There were 91 participated trainees.*

*2) **Phase 2: Psychological Healing Though Dhammas** This phase is a workshop on the principles of Buddhism and the process of consulting skills in healing patient's minds and patient's relatives to prepare before the study, observe the actual work and practice training. Participants in the phase 2 required to be trained in the phase 1 before only. Phase 2 was held from 8-14 December 2017 at Center for Promotion of Buddhism Foundation, Pathum Tani Province. There were 58 participated trainees.*

*3) **Phase 3: Gilanadhamma Way of Healing** This phase is a study visit and practice of healing the mind and their relatives holistically according to Buddhism. Participants have required to complete both trainings in phase 1 and 2 before by applying the knowledge gained from the training to benefit themselves and the society and exchange knowledge in the summary seminar for evaluation in the phase 4, which was held from 25 - December 2017 - 16 February 2018 at Faculty of Medicine Vajira Hospital, Navamindradhiraj University and Panyanunthaphikkhu Chonprathan Medical Center, Srinakharinwirot University. There were 40 participated trainees.*

*4) **Phase 4: Sharing With (The Heart of The) Awakening** This phase is s a seminar that summarizes and evaluates results from learning and practice throughout the project by participating in listening and sharing of knowledge together and then summarizing, evaluating, and applying knowledge to benefit oneself, Thai Sangha clergy and society further which was held from 24 - 26 February 2018 at the Dhamma Studies Building, Wat Hong Rattanaram Ratchaworawihan, Bangkok. There were 40 participated trainees.*

IV. DATA ANALYSIS

A. Qualitative data analysis

In the analysis of qualitative data to ensure that the researchers are confident that the data collected is correct because the quality data collection emphasizes subjective use. The researcher used the content analysis technique by applying Buddhist principles, concepts, Western psychological theories, potential development, Buddhist counseling psychology, aesthetic conversation to synthesize, descriptive analysis. And classifying and organizing the data (Typology and Taxonomy) and taking the data that has been classified and categorized into systems and analytical inductive summaries (Analytic Induction) is the analysis of data obtained from various events that occur. For data validation, the researcher uses three-way data validation. Triangulation is divided into 3 types which are (1) data triangulation (2) three-way inspection for researchers (investigator triangulation) and (3) theory triangulation

B. Quantitative data analysis

The analysis process using the ready-made program is as follows.

1) Check the accuracy and completeness of the data results as well as the number of assessments.
2) A form for assessing knowledge, understanding, and skills for healing the mind of patients with Dhammas of volunteer monks consisting of 4 elements, totaling 48 items
3) Descriptive analytical statistics were used to describe the characteristics of the data and the statistical analysis was inferential to use to analyze the study results from the groups of monks who participated in the project.

V. DESIGN OF ACTIVITIES FOR THE DEVELOPMENT OF POTENTIALS AND ACTIVITIES FOR THE HEALING OF PATIENTS WITH DHAMMAS OF VOLUNTEER MONKS GROUP

The concept of activity design is to prepare the basis for the development of the Volunteer Spirit to be a Buddhist counselor by creating motivation that encourages the development of the pursuit of truth and deep understanding. In the theory of counseling by adjusting the mind and behavior, it is found that the abnormal emotions of that person are caused by the distortion of thoughts or evaluating events with untrue thoughts and believe that the emotions and the thoughts are related and often reinforce each other But because humans are rational, have the ability to solve problems and make decisions, and want to move forward to being a perfect person. Therefore, the development of humans to reach realistic reasoning through consultation is extremely important. **Prapan Supasorn, Toungpetch Somsri, Somkit Saewong (2012)** found that the process of developing a volunteering mind in accordance with Buddhism by applying principles and integrating systematically in accordance with the rules and regulations in society by arranging training for knowledge, understanding and cultivating awareness. Being a giver of sacrifice without expecting compensation for public service by organizing volunteer orientation, strengthening volunteer mind during work and practicing how to integrate Dhammas into activities in the performance of duties bringing the Dhammas into the mind without knowing including prayers, meditate, listen to Dhammas and organizing group activities by helping each other to work resulting in sympathy, love and unity, more importantly, the heart of volunteer work is to give with a pure heart, be ready to sacrifice physical strength, wealth and time which helps elevate the mind of the doer to a higher level of precepts, concentration and wisdom. The development of the potential of the volunteer monks in the sequence of the 4 phases of the project was designed to develop the potential of the volunteer mind in 4 components which are 1) the characteristics of the volunteer monks of Dharma 2) Basic preparation for the volunteer monks 3) The guidelines for healing patients with Dhammas 4) The use of the Buddhist principles in the healing of patients. **Chonthorn Thavornkchakorn (2014)** studied the healing process of the spiritual dimension of the group of volunteer monks at Faculty of Medicine Vajira Hospital, Navamindradhiraj University, found that the steps of the healings process for spiritual patients by volunteer monks are as follows: 1) Planting faith (on the basis trust) is the basic principle used in the healing process of the patients as if the step first to build good relationships 2) Searching for suffering is to find in the mind of the patient that there is something that is a problem in the life of the patient, which is a state of stress in his mind that is hard to endure, affecting the physical condition of the illness already 3) Creating a path to happiness which is invites the stress in the mind at that time to help the patient relax for a moment by helping the patient to be present consciously, have time to think and prepare to face further problems. Some patients may be able to solve their problems by themselves depending on their individual wisdom. 4) solving suffering with the Four Noble Truths (Distress Management), most of the time, the patients will see their suffering caused by the monk who heals, convincing the patient to release the suffering first so that the patient can be conscious with the present, then the monks will apply the Four Noble Truths principles to help each patient to see the solution of the problem by themselves. 5) Enhancing prestige with wisdom by bringing the principles of Buddhism to help with healing with the Four Noble Truths principles, it is a big picture that covers the practice of cessation of suffering, namely Magga, which is threefold training. In other words, the seven enlightenment factors are Dhammas used to manage suffering. There are also the three characteristics of truth that point out to see suffering. In this regard, the healer must have the four sublime states of mind as personal principles. 6) Putting equanimity to the patient in the final phase, if healed correctly, will help the patient to accept his true condition, to let go and farewell with a calm condition, as well as helping the relatives of the lost to accept and understand the nature of life.

A. Training for learning skills in 3 stages

The mind healing activity is a process of remedying the mind of the patient through Buddhist counseling which is a process of thinking adjustment. The emotions and behaviors of a person are related to a person's internal factors, which means consciousness, intelligence, biological variables, and other environmental factors, with the counselor being the center. The counselor must be intellectual and have a state of friendliness or relationship, which is an important part of counseling and has deep experience and understanding in applying the principles, especially the Four Noble Truths. The TIR process is A Basic Model of Buddhist Counseling and Psychotherapy Process, which is a process that can understand the Buddhist psychological counseling to help

solve the suffering, which is the solution to the inner problems of people who come to consult such as disappointment, regret, anxiety, fear etc. These problems are heavy suffering which is caused by inconsistency with one's own desire to be able to solve the suffering by oneself which can be solved by using awareness of the truth of the nature of life in accordance with the Dhamma principles. The learning process is divided into 3 phases, namely 1) The learning phase, this phase is the period in which the volunteer monks try to learn and understand the skills to perform by analyzing the tasks, procedures, and methods so that the volunteers can use their thinking as a guideline for practice. 2) The skills creating phase, this phase is a process that follows the pattern of correct behavior until there is no mistake that results in the behavior of the skill and remains in itself and is the period in which the volunteer will learn how acting as a link between response to skills, sub-units into sets and patterns 3) The automatic practice phase, this phase is a stable process in the activity and improves the accuracy of the operation to the point that there is no mistake, volunteer monks can perform activities to heal the mind by integrating various skills into oneself by creating skill sets in sequence from easy to rare, using Connectional Theory by Throndike which is the connection between stimuli and the responses of learners in each step continuously, based on 3 learning rules which are 1) Law of Readiness, this law refers to the readiness of learners both physically and mentally. If the body is ready when acting, it will result in satisfaction, but if not ready to do and then forced to do will cause dissatisfaction.

2) Law of Exercise, this law refers to the stability of the connection between stimuli and the correct response by practice and repeated actions, resulting in long and lasting learning permanently which divided into (1) Law of Use, this law always refers to practice and response, resulting in a strong bond between the stimulus and the response, or it may be said that once learning has begun And use it on a regular basis, it will make the knowledge persistent and not forgetting (2) Law of Use, this law always refers to practice and response, resulting in a strong bond between the stimulus and the response, or it may be said that once learning has begun and use it on a regular basis, it will make the knowledge persistent and not forgetting. (2) Law of Disuse, this law refers to the untrained, unused, not frequently implemented, which weakens the stability between the stimuli and the response or may cause that knowledge to be forgotten. 3) Law of Effect, this law states that the result, when demonstrating learning behavior, that if you get a satisfactory result, it would make you want to learn longer, but if the result is not satisfactory, causing not wanting to continue learning or become bored.

Knowing, learning and improving oneself of volunteer monks, especially as for the volunteer work, which promotes efficient and effective growth or both internal and external. The accumulation of knowledge and experience causes the volunteers to change and develop their views towards a prosperous lifestyle to appear or change for the better. In addition, self-development is also important to other people because people have to be related to each other. Development in one person also affects other people. Self-improvement and development therefore prepares oneself to be a good environment for others.

VI. Results and Analysis: Outcomes of the Pilot Project

Developing the potential of volunteer monks requires motivation for refining and perceiving the suffering of patients and their relatives through practice of patient care. The analysis results from this research in all 4 phases are shown as 4 components which are

A. Potential development of volunteer monks characteristics

From the idea of Victor H. Vroom on the subject of volunteering, Volunteerism is a behavior that results from decisions made with conscience that result from beliefs and attitudes that affect happiness or reduce existing suffering, with a belief in generosity, sacrifice, and a tendency to prove results of actions and beliefs in line with the development of one's own potential, with the goal of Increase knowledge, experience, capability and attitude for efficient work performance. Volunteer monks have the process of strengthening the mind that leads to helpings others and adhere to the 5 Noble Growths principle, namely confidence, morality, learning, liberality, wisdom which are in accordance with the Dhamma discipline with faith in Buddhism as a guideline for the interest of volunteer monks in helping the society more and more emotionally stable, resulting in self-interest, such as learning to improve themselves to develop volunteer mind efficiently and benefit others, the effectiveness of volunteer works to other

B. knowledge development of volunteer monks

From the concept of Mallon B. Regarding spiritual influences, cultures, and religious ceremonies affecting sadness and healing, and suggesting that understanding of these beliefs will be helpful in giving counsel to those who have been thoroughly lost which is consistent with the healing process of the patients of the volunteer monks by having a role in developing the correct faith in accordance with the principles of Buddhism, without destroying beliefs that do not consist of wisdom but focus on learning to live with the current suffering

of patients by listening to and considering the suffering that appears and the cause of suffering through conversations. Volunteer monks can persuade patients to see the truth from their own suffering and then convince the patient to know the suffering that results from the mind. It can be seen how to practice appropriately for mental suffering by using the Four Noble Truths to explain to the patients to learn and accept the suffering in order to build morale and peace for themselves. Volunteer monks can learn the counseling of psychologists and apply it to connect with Buddhist principles in the practical work to heal the patients better.

C. The guidelines for healing patients with Dhammas

From the evaluation, it is found that knowledge is very important to the volunteer monks in making a difference in the dimension of the mind healing. The healing of the volunteer monks must not focus on destroying beliefs that do not contain wisdom, but rather focusing on learning to live with suffering and allowing the counselor to learn until acceptance and development of the mind and revitalize according to their own potential. Volunteer monks must understand the reality and suffering of patients that occur by learning from the Buddhist scriptures and bring Dhammas to explain the nature of the problem which is the practice of Buddhism, such as Four Bases of Sympathy, Four Sublime States of Mind, Four Bases of Accomplishment, etc. The atmosphere in conversation, communication, and interaction between the counselor and ones who come to consult must be friendly in order to be able to understand the true state of suffering in the process of suffering and the cause of suffering In order to be able to understand the true state of suffering about the process of suffering and the causes of suffering, which results in the reduction of negative thoughts and protecting oneself in order to go on a good path, after knowing the clear guidelines, the volunteer monks will develop their own ways of healing more appropriately, including the development of attitude towards various phenomena that appear better.

D. Buddhist principles in healing patients.

In each case, the volunteer monks must understand the reality that the mental and physical suffering is different. If the volunteer monks can't make the patients trust and cooperate in healing, the opportunity to find suffering will be more difficult. In the research, it is found that the Dharma healing process of the Buddhist monk group can help improve the patient's skills with the art of learning process, listening, asking, looking, not compulsion or subject to knowledge and reflecting the feeling of trust for the patient to allow the patient to review themselves until they see the truth and live with the truth.

In addition, the research also found that the coordination of psychology and the use of Buddhist principles in healing has led to the development of counseling and healing the mind of the patients which leads to the patients to have faith and trust in more counselors Including the development of positive thinking and the realization of the truth according to the Four Noble Truths easier and can be adapted for both counselors and the ones who come to consult.

Summary of the trial project training process in healing the patient's mind with dhammas. The evaluation results showed that the process of developing the potential of the volunteer monks to heal the patient's mind through the 4 components, which are 1) Potential development of volunteer monks characteristics 2) knowledge development of volunteer monks 3) The guidelines for healing patients with Dhammas 4) Buddhist principles in healing patients. After the experiment, all components had a significantly increased mean level at .05

VII. DISCUSSION

The form and process of healing the mind of patients with Dharma is a process of counseling and generosity for patients to see the suffering and truly understand their suffering through the Buddhist consultation and the healing activities of the patients with the Dharma of the volunteer monk group, resulting in the understanding that the healing process of the patients with the dharma can stimulate the change in the spiritual development of the volunteer monks. These ways of healing the mind will make more or less changes in the minds of patients. The important thing is that the volunteer monks have a way to interact with the patients who come to consult, which the skills and techniques are very important in the process of treating the mind of the patients.

From the research, it is found that both the control group and the experimental group can build trust, respect, and warmth to patients with goodwill and compassion as the basis without expecting compensation and be a good role model such as listening to unconditional acceptance, paying attention and giving value to patients, etc.

The training to educate volunteer monks to understand the healing process with Dharma is very necessary to build confidence in counseling, consistent with Dr. China Barry said, "Those who intend to be good volunteer monks will need to take a long time to practice the skills of counseling until they are effective" In addition, the integration of Western psychological theories such as human-centered theory, It is an internal driving force that will achieve the full potential of the patient and the use of behavior modification techniques in mind-based therapy. The main goal of mind healings is to help patients who seek counseling be aware of their needs and

make decisions on their own with ultimately understanding and accepting oneself as well as be able to carry out their objectives and develop themselves to the highest point, also there are also new good attitudes arising, completely self-reliant. As for the healing process of the patients with Dharma, the volunteer monks group use the TIR Process : A Basic Model of Buddhist Counseling and Psychotherapy Process as a real infrastructure, which allows patients to relieve themselves by being aware of the truth. Of the nature of life according to the Buddhist Dharma, making patients easily understand, being fresh, cheerful, seeing the purpose of life, and finally able to solve suffering and their own problems.

VIII. SUGGESTIONS

1) This research is a body of knowledge for the form and the process of healing the mind of patients with Dharma and helps to promote the spiritual practice of monks in accordance with Buddhism.

2) This research is an integration of Buddhist knowledge, psychological theory and psychological counseling in accordance with Buddhist principles in order to develop the healing process of the patients with the Dharma of the Buddhist Volunteer Monks group, which the various hospitals can apply to care for the patients.

Practical Suggestion

1) Volunteer spirits should practice to increase religious ritual skills in order to connect the intellectual learning process of patients.

2) The counselor should be cautious in giving direct solutions to the ones who come to consult because it is a direct obstacle to self-awareness, which is an important goal.

3) Volunteer monks must be mindful at all times to think and act in the right manner, including completing their duties.

4) When a volunteer monk goes to do volunteer work in various hospitals, it is necessary to learn the rules and regulations of that hospital with respect and strictness, because proper conduct will strengthen your faith, build confidence, and receive support from people in the relevant departments.

Suggestions for further research

1) Survey research should be conducted in order to understand the healing process of the volunteer monks

2) Should create a project to develop the potential of the volunteer monks by practicing Vipassana meditation

3) Should study the mental immunity for the patients after the Dharma healing by the volunteer monks

4) Should study and follow the results of the treatment of physical diseases of patients after receiving the mind healings with Dharma.

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Action research to develop mathematical learning activities by using games.

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The objectives of this research were 1) to design and develop mathematical learning activities by using games and 2) to study the results of mathematics learning activities by using games. There were two groups of population. The first group was the fourth year mathematics program with a number of 24 people who are responsible for the design and develop mathematical learning activities by using games. The second group consisted of 81 students in Mathayomsuksa 1, which were used to study the results of mathematics learning activities by using games. The research instruments were operational research processes, mathematics achievement test and the teamwork measures. The statistics used for data analysis were mean, standard deviation, t-test dependent and content analysis.

Index Terms— ***Game-based mathematical learning activities, mathematics achievement, teamwork, operational research***

I. INTRODUCTION

Mathematics plays a crucial role in the success of 21st century learning as it empowers humans to be creative, logical, systematic and structured. It can also be used to analyze a problem or a situation very carefully and thoroughly. They are used to predict, plan and make decisions, to solve problems correctly and to apply them in real life effectively. Mathematics is also a tool for the study of science, technology and other sciences, which is the foundation for the development of national human resources to be of high quality and to develop the national economy to be on par with the international community. Mathematics education needs to be developed continuously in order to be modern and in line with the economic, social conditions and scientific and technological knowledge with rapid progress in globalization [7].

Operational research is an operation that reflects self-performance in a helical path, which includes plan, action, observation and reflection. This research requires a participant in the practice feedback process to achieve its development and improvement [3]. Using games in mathematical learning plays an important role and contributes to the development of knowledge. Games are one of the methods that can be used in teaching well. The instructor has to create a scenario where the learners play under certain rules that will result in the form of losing or winning [8].Using games in teaching or using games as a means of teaching and learning will help reduce stress for students and make fun of them and create a relaxed atmosphere while developing student achievement. Therefore, the game is considered a good way that should reduce the boredom in studying and stimulate more interest in studying. Plus, the game promotes teamwork, which is an essential part of interpersonal skills and the responsibility for planning collaboration.

Therefore, the researcher is interested in action research to develop mathematical learning activities using games to develop mathematics achievement and teamwork of students, which is an important part of working with others and is a guideline for the development of the teaching and learning of mathematics to be more effective.

II. RESEARCH OBJECTIVES

1. To design and develop mathematical learning activities using games.
2. To study the results of using math learning activities using games.

III. RESEARCH METHODS

A. Populations

The population was divided into 2 groups: the first group was 24 students in the mathematics program of the 4th year, who work together to develop math learning activities using games. The second group consisted of 81 students in Grade 13 of Phikrai Witthaya School, Khlong Phikrai, Phran Kratai District, Kamphaeng Phet, a group used to study the results of math learning activities using games.

B. Research Instruments

1. Mathematics learning activities using games include course description of numbers and algebra, measurement and geometry, statistics and probability. There were 3 learning activities; each activity has 5 steps which were

Step 1 – Content Preparation: Preparation of content, games and simple questions which are subject matter questions the students have learned and how to score in games and learning materials

Step 2 – Team Building: Instructors must organize a mixed team of learners in terms of gender and ability in order to be able to learn by performing activities according to their instructions or worksheets.

Step 3 – Learning: Instructor should guide learning methods, planning teams and competitions. Each team member must work together to carry out the activities in order or worksheet, beginning with the preparation so that all group members were ready for the competition, assessing the knowledge and understanding of the content of the team members, then having the members explain further on issues that some members still do not understand.

Step 4 – Competition: Instructor must introduce the competition to learners by arranging for students or representative members of each team to attend the competition. The instructor introduced the game by explaining the purpose and rules of the game. All members or learners started the game together with the same set of questions. The instructor walked up to various tables to answer any questions or concerns. At the end of the match, each table would review the score, ranking the results and awarding bonus points. The team brought together their individual bonus points for the total team score. The team with the highest total score will be recognized as the winning and runner-up team, respectively.

Stage 5 – Team Achievement Recognition: The instructor will announce the results of the competition and publish it to the public in various ways including awarding honorable mention.

2. Form of mathematics achievement measurement was a multiple-choice exam with 30 items consisting of validity by finding the consistency between the question and the objective (IOC) was between 0.67 - 1.00, confidence factor based on the Kuder-Richardson Formula (KR-20) was 0.76, difficulty (p) was between 0.47 - 0.77 and discriminant power (r) was between 0.20 - 0.53.

3. Form for measuring teamwork uses 10 Five-Point Likert-Type Scale, which were: validity by finding the consistency between the question and the objective (IOC) was between 0.67 - 1.00 and the confidence value of the Cronbach's alpha method or the alpha coefficient. (α – Coefficient) was equal to 0.81.

C. Data collection

There were 4 steps to data collection as follows.

Planning steps were as follows

1. Meeting with students to find ways to develop mathematical learning activities using games and organizing math learning activities using games, along with assigning each group to design learning activities together

2. Students took the activities generated from Step 1 to practice using simulation scenarios and had the remaining students as the learner and assessor with the researcher

3. After the student's experimental activity had been completed, students would complete the mathematical learning activities using games based on feedback from assessors and researchers

4. Coordinating to school administrators and teachers to organize activities for determining the date, time and place of the activity

Operation steps were as follows

Perform math learning activities using games in course description of number and algebra, measurement and geometry, and statistics and probability. This would be separated by course description organized as a learning base. Students circulate to participate in activities in each base, which is mentored by the student base.

The observation steps were performed as follows.

1. Students take a form of mathematical academic achievement measurement.

2. Students take a form of measure of teamwork.

The process of reflection was performed as follows.

1. Students and researchers would meet together after organizing mathematical learning activities using games, in terms of activity, defects and important points for improvement.

2. The students' meeting results and assessment results were used to improve the math learning activities by using games to be more complete as a guideline for the next activity.

D. Data Analysis

1. Design and development of math learning activities using games in content analysis

2. Study the results of math learning activities using games:

2.1 Comparison of mathematical achievement before and after mathematical learning activities using games for t-test dependent

2.2 The study of teamwork after organizing mathematical learning activities using games was analyzed for mean (" $\bar{X}$ ") and standard deviation (S.D.), and the mean results were interpreted as follows.

4.50 - 5.00 means the highest level of teamwork.
3.50 - 4.49 means the high level of teamwork.
2.50 - 3.49 means the moderate level of teamwork.
1.50 - 2.49 means the low level of teamwork.
1.00 - 1.49 means the least level of teamwork.

IV. RESULT

1. The design and development of math learning activities using games had the following results. Mathematics learning

activities using games consisted of course description, numbers and algebra, measurement and geometry, and statistics and probability. There were 9 activities as follows:

1.1 Course description of Numbers and Algebra divided into 3 activities: Activity 1- Square puzzle game, Activity 2 - Fraction Puzzle Game and activity 3, Building Collapse Game

1.2 Course description of Measurement and Geometry divided into 3 activities: Activity 1- The Correct Game, Activity 2 - Cross-Section Matching Game and Activity 3- Let's Build Game

1.3 Course description of statistics and probability divided into 3 activities: Activity 1-Snakes and Ladders, Activity 2-Cleanup Time Game and activities 3- Mysterious Egg Game

Math learning activities using games consisted of 5 steps:



2. The study of the results of math learning activities using games found the following results.

2.1 Mathematics achievement of students before and after organizing math learning activities using games as shown in Table I

Table I showed the mathematics achievement of students before and after math learning activities using games

Math learning achievement	N	$\bar{X}$	S.D.	T	Sig.
Before game-based mathematics learning activities	81	10.93	3.34	19.849	.000
After game-based mathematics learning activities	81	16.85	2.97		

$p < .05$

From Table I, it was found that the mathematics achievement of students after game-based mathematics learning was significantly higher at the .05 level; t = 19.849 and Sig. = .000.

2.2. Teamwork of students after organizing mathematical learning activities using games as shown in Table II

Table II showed the mean and standard deviation of student teamwork after game-based mathematics learning activities

Teamwork	$\bar{X}$	S.D.	Practical level
1. The members of the group can explain the job details clearly and everyone understands.	4.32	0.67	High level
2. I accept the opinions of all members of the group.	4.46	0.59	High level
3. All group members can discuss and exchange ideas.	4.30	0.70	High level
4. I am involved in group work.	4.48	0.69	High level
5. If I don't understand how to work in a group, I will ask a group member.	4.02	0.88	High level
6. I believe that all group members can work towards their goals.	4.49	0.69	High level
7. Group members are free to express their opinions and be able to take action.	4.44	0.69	High level
8. Every member is essential to getting the job done.	4.65	0.48	Highest level
9. All group members willingly accept the results of their work.	4.46	0.67	High level
10. All group members plan to work together.	4.63	0.56	Highest level
Total	4.43	0.69	High level

From Table II, it was found that student teamwork after game-based mathematics learning activities was overall at a high level (" $\bar{X}$ " = 4.43 and S.D. = 0.69). When considered individually, it was found that all members were important to accomplish the task with the highest level mean (" $\bar{X}$ " = 4.65 and S.D. = 0.48), followed by that, all group members were planned for collaboration (" $\bar{X}$ " = 4.63 and S.D. = 0.56) and I believed that all group members could work towards their goals (" $\bar{X}$ " = 4.49 and S.D. = 0.69), respectively.

V. DISCUSSION

1. Mathematics learning activities using 9 games in the process of learning activities consists of 5 steps: Step 1- Content Preparation: Preparation of content, games and simple questions which are subject matter questions the students have learned and how to score in games and learning materials, Step 2 - Team Building: Instructors organize teams of different learners for both genders and abilities, Step 3 - Learning: Instructors guide learning methods, planning teams, and competitions to prepare all group members ready to enter the racetrack, Step 4 - Competition: All members or students start the game at the same time and Step 5 – Acceptance of team success: Awarding honorable mention in the management of mathematical learning by using math games as the implementation of games in mathematics teaching and providing opportunities for learners to learn through games along with the competition according to the rules, students are eager to study. Consistent with the concept of [2]. it was said that the use of learning games in teaching mathematics was learner-centered, while allowing the learner to learn by himself through games and able to solve problems from problems within the game. Games contributed to memory and promote better learners' development. [1]. say games were educational innovations. Most teachers agreed that a certain played activity or game could be used to motivate students. Teachers could use the game to teach in order to achieve the goal of teaching because games were activities that provide students with an environment for organized competition with specific objectives and fun activities.

2. The study of the results of math learning activities using games consisted of mathematics achievement and teamwork as follows:

2.1 The students had mathematics achievement after mathematics learning management using games were significantly higher than the .05 which was based on the assumptions made. It was shown that organizing mathematics learning activities using games is an activity that students had fun and gained knowledge without knowing it. Games were also an important medium that made students more interested in their studies. In line with the research of [5].a series of learning activities were developed using math games on addition, subtraction, multiplication and division for 10th grade students. The research results showed that mathematics achievement using post-study mathematical activity was significantly higher than before study at the .05 level.

2.2 Students had a high level of teamwork after overall game based mathematics learning management. When considered individually, it was found that all members were essential to accomplishing the task with the highest average, followed by all group members planned to work together and I believe that every member of the group can work towards the goal. Therefore, it had been shown that organizing math learning activities using games promotes teamwork, which was an essential part of interpersonal skills and collaboration planning, having a common goal of work and setting goals for the team to work successfully. According to [6]. the game was played in multiplayer or cooperative action to achieve the objectives set by the rules or was agreed upon using media or plays equipment as well as specifies the scoring or method of determining winners and losers. In line with the [4]. said the game was to learn and develop strategies for working with others. Respecting the rules of play was part of building a healthy relationship between the participants. It also promotes adaptability to others and society and fosters good leadership and follower characteristics.

VI. RECOMMENDATIONS

A. Recommendations for Practices

Before organizing a math learning activity using games, teachers should establish rules that will allow all learners within the group to participate in the game. In grouping for games, students with high, intermediate and low ability students should be grouped together.

B. Recommendations for Further Research

Development of mathematical learning activities using games for learning management should study at other levels as well.

CONCLUSION

Math learning activities using games. providing opportunities for learners to learn through games along with the competition according to the rules is an activity that had fun and gained knowledge without knowing it. Games were also an important medium that made students more interested in their studies. As a result, students have higher mathematical achievement and promote teamwork.

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Sustainability of Arts and Culture a Comparative Case Study of Cultural Village, Chiang Kham District, Phayao Province, Thailand and Luang Prabang, World Heritage City, Laos

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***Abstract*—** *Phayao University has operated the project, 1 faculty 1 model since fiscal year 2012 by assigning the Faculty of Architecture and Department of Science Responsible for Chiang Kham District, Phayao Province. Operating under 3 missions: Research, Academic service to society and the preservation of art and culture by shifting researchers to take responsibility for the project continuously for each fiscal year. Until now 2019, totaling 8 years, the first year that the faculty has adjusted the research model to integrate science. In which 5 disciplines are Architecture, Interior Design, Art and Design, Performing Arts, and Western Music to do a project together with an emphasis on working on the inheritance of Tai Lue wisdom and art and culture in conjunction with the project, together with the academic service project. To develop teachers' potential and arts and culture preservation projects in promoting student quality to drive the organization of the turbocharged, the operational area is Tai Lue Cultural Village, Yuan Subdistrict, Chiang Kham District, Phayao Province, Thailand. Comparing with Tai Lue cultural villages in a country that is culturally close to the culture is Tai Lue village, Na Yang Tai village, Nam Bak, Luang Prabang Province, Lao PDR by studying the context of the change in arts and culture among the Tai Lue ethnic groups. To analyze for good development practice Integrated Science Research Project on the changing of the world and culture including the development of research administration and develop research groups within the faculties, and to achieve co-operation networks until leading to the exchange of knowledge between researchers and students at the international cooperation level for the purposes. They are (1) to study the relationship between Tai Lue culture in Phayao Province, and Tai Lue, Luang Prabang Province, Laos, in the arts and culture that will lead to the development of design and creation. (2) To manage research projects in the form of integration of science with all disciplines involved. It is expected that there will be a way to produce creative works, designs and/or academic articles from 5 disciplines and international activities.*

Index Terms— *Sustainability, Culture relativity, Tai Lue*

I. INTRODUCTION

Data collection Field research Thai Lue weaving profession Sri Don Chai Village, Chiang Khong District, Chiang Rai 2017 shows that the collective is efficient; some weavers work at local enterprises and the network of weavers who work at home. On the opposite, there is quite a small amount of hand-woven fabric for sale at the local retail shops. It is because the collective has received orders from Xishuangbanna China where it is popular for tourism.

Thai Lue ethnic group's way of life in Xishuangbanna has significantly changed to attract tourism. For instance, the costume in Thai Lue cultural shows is more revealing to entertain tourists so fewer people wear tradition Tai Lue garments. Then the ability to produce Tai Lue tradition clothes in that area has been reduced which means the number of imports has been increased. On the contrary, Tai Lue who immigrated to the north of Thailand still inherited their culture. Group's obvious identity becomes known for cultural tourism which earns income for the community and province. That leads to 2 questions in this research; Will Tai Lue ethnic groups in other countries retain their original identity? Can the creative and design format researches promote the existence of a culture?

According to these questions, the selected fields for data collecting are Tai Lue Cultural village, Chiang Kham District, Phayao Province, Thailand and Ban Nayang Tai village, Nam Bak District, Luang Prabang, Laos. The

reasons for this selection are; Thai and Laos are neighbouring countries, the Town of Luang Prabang is on the World Heritage List by UNESCO which reflects the quality of its cultural tourism management and Ban Nayang Tai is also a site of research by the Faculty of Architecture, Souphanouvong University (a collaborator of Payao University). Both universities are members of the Thai-Laos University relationship forum including a total of 15 universities in Thailand and Laos. Ban Nayang Tai village still maintains its original culture such as traditional clothing, architecture and daily life routine and is a village for cultural tourism.

A. Tai Lue ethnic groups in northern Thailand

Thai Lue ethnic groups from Xishuangbanna immigrated to Thailand after being colonized by Burma's Toungoo dynasty in 1558 for more than 200 years. Kawila, the army leader at that time, together with the support of Siamese armies successfully rebelled against the Burmese in northern Thailand during the Burmese-Siamese War. While rebuilding the population of the city of Chiang Mai (formerly called Lanna), After the victory, he brought a great number of the war captives back from Xishuangbanna including Tai Khoen, Tai Yai, and Tai Lue ethnicities to the northern of Thailand area which formerly called 'Lanna'. Tai Lue war captives dividedly settled in areas of Phrae, Nan, Phayao, Chiang Rai and other cities along the route from Xishuangbanna, China into Lao PDR, Vietnam and Burma. In Phayao, the first Tai Lue's settlement was in Chiang Muan district then spread to Pong district, Chiang Kham district and Phu Sang district in order. Tai Lue ethnic groups in Chaing Kham district still prioritize their ethnic's history by naming their Yuan and Mang villages in Chiang Kham district, Phayao after two districts in original Banna's Pong cities including Yaun and Mang district. They also inherit their culture, way of life and still use Tai Lue language among themselves until the present. [1]

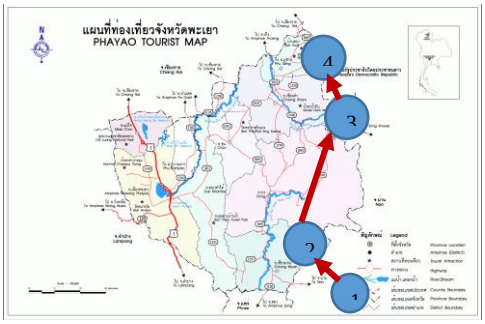


Fig.2 เส้นทางการอพยพของชาวไทลื้อ จากจังหวัดน่าน เข้าสู่จังหวัดพะเยา และตั้ง รกรากอยู่ใน 3 อำเภอ คือ อ.เชียงม่วน อ.เชียงคำ และอ. ภูซาง

B. Tai Lue ethnic groups in Lao PDR

Tai Lue ethnic groups in Ban Nayang Tai call themselves "Lue" or "Lue-Kalom" without the word "Tai". They evacuated from China due to threats of war and natural disaster in the early of Lan Xang kingdom. Their first settlement was by the river in Vieng Phouka, Luang Namtha Province. Resulting from frequent pillages and the tribute collections from both Chinese and Burmese, they retreated to Pak Beng, southern Laos and settled there for a long period. Then, this area became overpopulated which resulted in the shortage of food and agricultural land. The king of Luang Prabang at that time led Lue people to find more substantial land so they moved to Kianghon, Hongsa, Muang Nguan, Nam Ou River, Nam Bak River, Nam La River and some have settled in "Ban Nayang Tai" until today. According to 'Dwelling Houses of Lue-Kalom: Baan Nayangtai, Mueang Nambak, Luang Prabang, Lao PDR', the process of data study and result analysis leads to knowledge on architectural identity of Lue-Kalom. [2] With Souphanouvong University's collaboration in the conservation of Tai Lue tradition architecture, Lue's original houses were built to be a community's learning centre and tourist attraction. Along with Luang Prabang's popularity of tourism, the network of regional tourism was formed which makes small Tai Lue communities became well-known internationally. Because of this, Lue communities started to realize the value of their culture and preserve their cultural heritage.

C. Cultural tourism and policy-making based on sustainability

Thailand's tourism has been continuously developed and prioritized as shown in The National Economic and Social Development Plan's policy which contains the priority of cultural tourism.

During the Eleventh Plan period, the country's development will emphasize building resilience at the family, community, society, and national levels under the sustainable development concept as outlined in the Philosophy. Compared to the Tenth Plan, it features specific development factors based on human, social, physical, financial, natural resource, environmental and cultural assets. The goal is to utilize these assets (1) to create a society of quality by building the intellectual basis for generating resilience in citizens and the society, (2) to achieve a green economy where knowledge and Thai identity will be used to restructure the economy based on innovation, (3) to connect effectively with the regional and global economies, (4) to foster sustainability in the agricultural sector and prosperity in the food and energy sectors, (5) to sustainably manage natural resources and the environment, and (6) to reinforce good governance and harmony in all sectors and at every level. The

accomplishment of these objectives will lay the foundations for balanced and sustainable development and lead to a just and happy society. [3]

Oranoot Kosol and Chokchai Suttawet (2014) indicate Thailand's ability in tourism that one of its strength is the uniqueness and innovations in the service industry such as Thai boxing, spa and health and beauty services. Thai original wisdom could also be used to develop outstanding and interesting tourism products. Because of the change of tourists' behavior, alternative travelling trends and specialized tourism market expansion, it results in the increasing of health tourism, spiritual tourism, MICE (Meeting, Incentive Travel, Conferences/ Conventions and Exhibitions/Events) and sports tourism. Thailand tourism industry's readiness is the opportunity for innovation that will serve future trends of tourism well. [4]

D. Identifying creative tourism for sustainability

Crispin Raymond and Greg Richards (2000) defined creative tourism as it allows visitors to be able to develop their creative thinking abilities through learning experiences gained during their visits. Wurzburger (2009) stated that creative tourism means tourism that focuses on the learning process through cultural engagement with the community. Richards (2001) also said that cultural tourism can be inferred as a model of ethical tourism because it encourages the conservation of local cultures. [5] According to Raymond, Richards and Wurzburger, travel experience through sensing, perceiving and absorbing local cultures leads to the awareness of cultural heritage values. And that appears to be the beginning of cultural sustainability because its publicity and interpersonal reviews from the first-hand experience result in continuously returning visits. This finding is parallel with The National Economic and Social Development Plan which prioritizes tourism accessibility, consuming and thorough seeding at the grass-root community level.

II. RESEARCH OBJECTIVES

The objectives of this research article were 1) to study the relationship between Tai Lue culture in Phayao Province, and Tai Lue, Luang Prabang Province, Laos, in the arts and culture that will lead to the development of design and creation. 2) To manage research projects in the form of integration of science with all disciplines involved

III. RESEARCH METHODS

A. Research Design

To develop sustainable cultural tourism, it depends on people or ethnic groups who belong to that culture to operate and drive forward the process. The roles of the researchers are offering guidance and further inspiration based on their culture. This research is focused on the study of on-site collected data from Tai Lue village in Chiang Kham district, Phayao province, Thailand and Tai Lue village in Ban Nayang Tai, Luang Prabang, Lao PDR. The study subject is the process of both communities' cultural inheritance, whether they are related or differentiated and how. The collected data will be analyzed given the circumstance that they have moved from Xishuangbanna for centuries and have kept developing until became countries' profitable cultural tourist attractions. Researchers plan to use arts and design knowledge to facilitate Tai Lue products development to become more substantial, profitable and also represent their identity.

The collected data will be used for planning creative product designs and sustainable cultural promoting activities. This will be operated along with improving researcher groups from 5 courses including the Department of art and design, Department of Architecture, Department of interior design, department of music and dance. There will also be academic service activity in the format of lecturers' academic ability improvement workshop and arts and cultural enrichment activity in the format of students' quality improvement workshop. The purpose of this operation is to conclusively integrate the research project management with the cooperation of every course in data collecting, analyzing, evaluating, discussing and connecting the dots of both research sites. This process will be the source of product and workshop designs that lead to a sustainable cultural extension of the two communities.

B. Research Process

Findings of the collected data from Chiang Kham Tai Lue cultural village and every village that has more than 50 per cent of its population who are Tai Lue ethnic people are the following. (a)

In terms of location, there are 4 villages located together including บ้านธาตุหมู่ 1, บ้านธาตุหมู่ 2, บ้านหย่วน และบ้านมาง. In terms of transportation, they can be easily accessed by car and public bus from Phayao. In terms of facilities, each village has its temple functions as the cultural centre. The architecture of the temple still shows Tai Lue uniqueness. There are museums, learning centres and retail shops in each village as well. There are more than 4 places of accommodation. Tourist sightseeing trams are available in all 4 villages. Tai Lue crafts and culinary workshops can also be arranged. (b)

There are proofs of Chiang Kham Tai Lue cultural community's efficiency including (1) prizes such as "A tourist attraction that is outstanding in preserving cultural tourist attraction" and "A tourist attraction that transfers Lanna culture to young people" awarded at the main stage of

Chiang Mai International Exhibition and Convention Centre for LANNA EXPO, 2018. Also (1) award in the category of tourist attractions with excellent cultural tourism conservation (2) Award for the cultural tourism community of the year 2018, level "Outstanding" on July 24, 2018 from the Department of Cultural Promotion. Ministry of Culture by Deputy Minister Yok, Mr. Wisanu Kru-ngam, presented the shield. At the Queen Sirikit National Convention Center Bangkok. (C) In terms of human resource, the majority of managers are retired government officials who can verbally communicate in languages including Thai, the local dialect, Lue, Northern Thai dialect and English. They also can perform Tai Lue traditional dance, northern Thai dance and Lue singing. They play a key role in driving arts and cultural projects because they are capable of dedicating and sacrificing their financial resource and time. In all 4 villages, there are competent leaders among the group of the headman and abbot who are the mechanic of continuing social works.

Findings of the collected data from Ban Nayang Tai, Luang Prabang, Lao PDR are the following.

Since 2015 colleges and universities in Thailand have prepared for joining ASEAN Community under the motto "One Vision One Identity One Community". The ASEAN Community is comprised of three pillars, namely the ASEAN Political-Security Community, ASEAN Economic Community and ASEAN Socio-Cultural Community.

Luang Prabang, Lao PDR is on the UNESCO world heritage list because of its protected, unique juxtaposition of temples, traditional architecture, and colonial buildings. The town is built on a peninsula formed by the Mekong and the Nam Khan River surrounded by beautiful nature.

And even as the city warmly welcomes visitors from all over the world, it remains a vital political, educational, and trade hub for the diverse cultures of Northern Laos. The people of Luang Prabang are friendly and cheerful. They also have charming customs and traditions. Hence the town was the first capital of the kingdom of Lane Xang whose was in a good relationship with the kingdom of Lanna. In terms of culture, the two kingdoms influenced each other on language, clothing, cuisine, traditions, folk arts, music and performances.

As a result of being part of UNESCO world heritage, Souphanouvong University has prioritized the department of Humanities and the Department of Architecture. The knowledge of buildings conservation and Building Construction Control Law and policy-making has driven the town to keep its identity and encourage the success of its sustainable cultural tourism. (a)

Ban Nayang Tai village, Nam Bak, Luang Prabang, Lao PDR is a small village located about 100 kilometres away from the town of Luang Prabang. The name Nayang came from their settlement landscape which formerly was a large reservoir that has a great number of "Yang" birds (Bitterns) living there. There are more than 10 existing traditional Lue Kalom houses here. The houses are well-maintained to be close to their original condition and still functional. Almost every household works on natural fabric production such as weaving and indigo dyeing. (b) In terms of facilities, there is a rental van transfer service from Luang Prabang and a few places to stay in form of the homestay. Nearby hotels are located in neighbouring natural tourism town,

Nong Khiaw, which is about 21 kilometres far or 30 minutes by car. In terms of tourism activities, it is quite a lack of management as there is only a guided walk to see houses and the daily life of the villagers. This regards with the major group of visitors are lecturers and students of faculty of Architecture, Souphanuvong University as the main support emphasizing on buildings conservation study. Interestingly, another group of visitors is foreigner buyers who have seen Lue hand-woven fabric in Luang Prabang market and want to order from the source. (c) In terms of community human resource, people who drive tourism and prepare homestay accommodations are the community's leaders group. They communicate in the local dialect which is quite similar to the northern Thai dialect but not much in English. They can perform Lue singing but not traditional dance.

According to this data analysis based on finding similarities and differentials of two Lue communities, the work plan towards promoting Lue ethnic groups' cultural sustainability has been created by the collaboration of lecturers from School of Architecture and Fine Arts, Phayao University and lecturers from Faculty of Architecture, Souphanouvong University, Lao PDR.

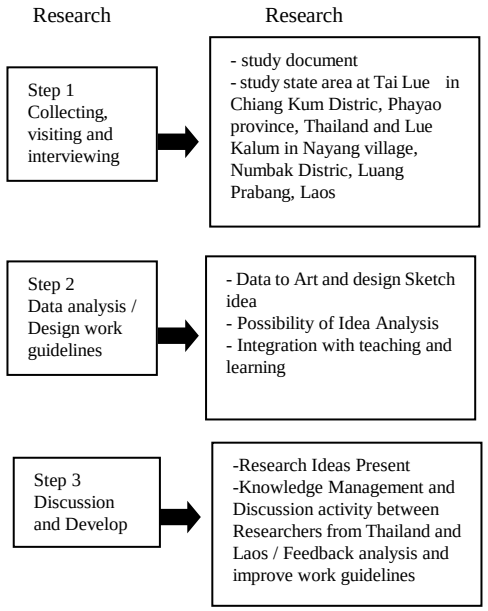


Fig.2 Research Process for Research Ideas of Sustainability of Arts and Culture

IV. RESULTS

Following the objectives, the plan to create inventions, designs and workshops from the expertise of 5 joint departments was derived and distributed. This leads to further specific research topics, connection expanding, international collaboration and signing MOU between two universities in the future.

A. Creation of inventions, designs and workshops from the expertise of 5 joint departments including the Department of art and design, Department of Architecture, Department of interior design, department of music and dance comes from the analysis of research work plans within the school to create integrated projects. According to research projects in the area of Chiang Kham district and Tai Lue ethnic groups from 2013 – 2018, it has been found that the research topic can be divided into 3 criteria which are (1) products development (2) architecture and (3) music and dance.

2019 was the year of change and human resource development plan integrated research. From then until 2020, given the financial efficiency, the format of collective integrated research projects was formed for a higher chance of collaboration. The following are the results of the projects.

Affiliation / Country	Name And Aptitude	Interesting Issues		Research Ideas of Sustainability of Arts and Culture
		Tai Lue in Chiang Kum , Thailand	Lue-Kalom in Nayangtai ,Lao	
Faculty of Architecture Souphanuvong University , Lao PDR.	Mr. Vira Anoluc (Architect)	Music and performance curriculum development To promote culture and tourism	Conservation of Tai Lue House To learning resources	Lue-Kalom: Baan Nayangtai, Mueang Nambak, Luang Prabang, Lao PDR, NAJUA: Architecture, Design and Built Environment
	Mr. Xayaphone Vongvilay (Architect)	Building Control Law Guidelines for The Couture tourist area along Kwan Phayao	Development of the Building Control Law for World Tourism	Demand for Using Urban Public Space in Louangprabang
	Mr. Chanhthanom Soukhaseum (Architect)	Characteristics of Tai Lue Traditional House in Thailand And community outreach	Tai Lue Traditional House identity in other cities in Laos	Built Environment and Vernacular Architecture of Dai Lue Ethnic Group at Ban Ngay Nue, Phongsali, Lao PDR. : Past, Existing and Its Change
School of Architecture and Fine Arts , University of Phayao , Thailand	Mr. Tawee Sareewas (Print Making)	Fine arts, golden prints, building decoration paintings, tell the story of Tai Lue ethnic history	Gold Printmaking Art / Mirror decoration in the royal palace and in the temple	"Trace of Art (Thai Lue): Relocated to the base but not in displacement For guidelines for the creation of art, souvenirs, Tai Lue identity
	Mr. Kiattisak Saisaard (Architect)	The process of constructing and assembling a Tai Lue building	Building assembly Lue klom form And the use of bamboo material as the main material in construction	A study of the use of natural materials in Ruan Tai Lue. To create an innovative building made from natural materials
	Mrs. Nilubon Puraprom (Interior)	The interior of the Tai Lue Traditional fabric.	Allocation of space in the Lue Kalom House For everyday use	Identities, ethnic values that are architectural in the Tai Lue boat. For home decoration products guidelines And guidelines for space allocation in the Tai Lue building
	Mr. Rattana Tapang (Performance)	The performance of Tai Lue and the style of Lue Vocalism .	Style in Lue Vocalism, the content of the Lue Vocalism and the style of the band	The persistence or loss of the performing arts as a result of cultural change. For ways to inherit the performing arts and to Lue Vocalism
	Mr. Santi Sirikhotchpun (Musician)	Instruments for Lue Vocalism and banding	Note For the continuation of the Tai Lue song	Old Lao Music, Luang Prabang Province For guidelines for teaching and learning of Lue Vocalism in an academic format

Fig.3 Interesting Issues for Development Research Ideas of Sustainability of Arts and Culture

It is found that 5 key factors of Tai Lue culture existence after immigration are 1.) In the first settlement, they were secluded by forbidding cross ethnic marriage so they were not cultural diverse. 2.) Inclusive community format which everyone are relatives, lives nearby and helps each other in agriculture. 3.) Communicate in Lue language until the present. 4.) Keep inheriting them believes, tradition and

culture to next generation 5.) Ritual and religious activities connect them as the main method to socialize.

These 5 factors are considered as the foundation of cultural sustainability.

VI. RECOMMENDATIONS

A. Issues for Development Research Ideas of Sustainability of Arts and Culture

Policy of cultural tourism development plan should consider 1) Encourage potential of businesses using creative innovations. 2) Expand the manufacture base and supporting special skills or expertise 3) Develop surrounding factors to attract more foriegner investors 4) Restore and develop tourist attractions that match the market trends or demands 5) Manage tourism based on the consumption of resources 6) Enhance the potential of community [4]

B. Development research ideas of researchers are paired with tourism development policy

The possibility of products and service inventing for both countries' sustainable cultural tourism comes from knowledge of fine arts and design focusing on cultural creativity.

The first objective which is 'to study the relationship between Tai Lue culture in Phayao Province, and Tai Lue, Luang Prabang Province, Laos, in the arts and culture that will lead to the development of design and creation' was achieved. This is a result of effective collaboration of the School of Architecture and Fine Arts, University of Phayao, Thailand and Faculty of Architecture Souphanuvong University, Lao PDR. Both parties have shared interest in the field of research: Tai Lue ethnic culture in their country. The second objective was also achieved by integrating knowledge of 5 departments into research projects under the same field of research.

Recommendations for the research system

According to university motto, "Knowledge for the community strength", it is important to develop all models of research.

Researching in field research format could be trials and errors which is subjected to change under current management circumstances. This could affect the continuity and directions of the collaboration with communities. During 8 years of experiences in field research, it has been found that a number of researches allow researchers to see the potential of sustainable development of the organization. The visions will be clearer with long-term strategic planned integrated projects especially in this time of changes.

Apart from those, research works support policy and funding criteria are the key to clear visions, more efficient and sustainable research projects planning whether the funding are from university or other foundations.

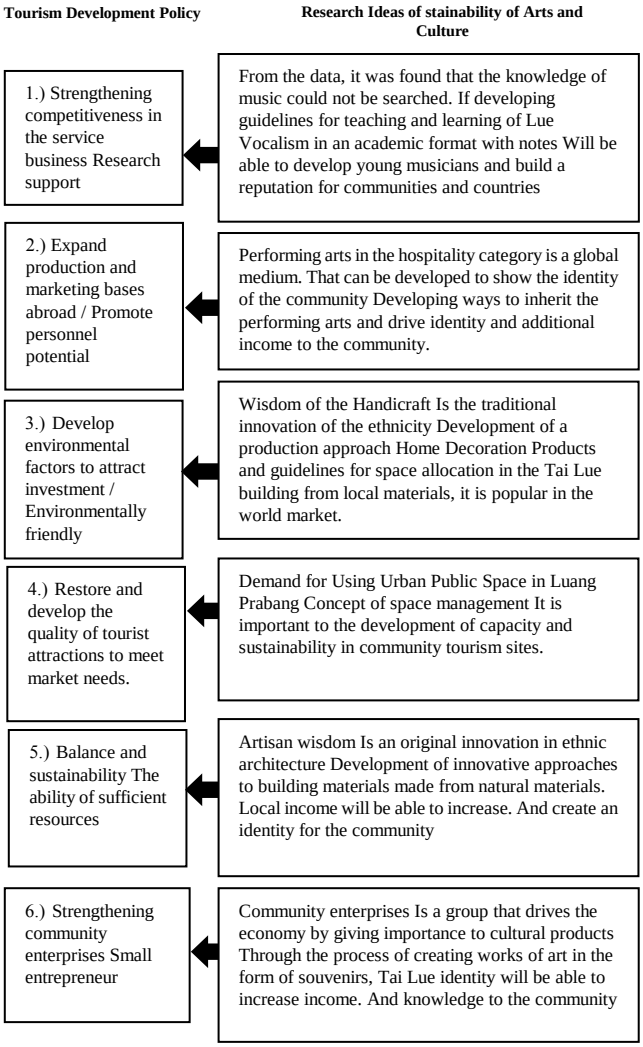


Fig.4 Tourism Development Policy and Research Ideas of stainability of Arts and Culture

CONCLUSION

Long term strategy planning is essential to integrated filed research projects to be able to include all the dimensions of research topic whether there are economic, sociology and culture.

The plan shoud continue to further research surrounding subjects including products, services, community's way of life and interaction of locals to identify culture's identity.

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Development of Analytical Thinking Ability on Mathematics by using Learning and Enjoying Model with Mind Mapping for Pre-Service Teacher in Mathematics Program

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Abstract*— The purposes of this research were to study analytical thinking ability on mathematics, to compare analytical thinking ability on mathematics with the criteria, and to study collaboration, teamwork and leadership after using Learning and Enjoying Model with Mind Mapping. The samples were pre-service teachers in Mathematics program. The instrument consists of the process of Learning and Enjoying Model with Mind Mapping, the test about analytical thinking ability on mathematics, and the collaboration, teamwork and leadership questionnaire. Data analyzed by percentage, mean, standard deviation, and t-test one group. The results found that, pre-service teachers had 74.64 percent of analytical thinking ability on mathematics and it was higher than the criteria of 70 percent at .05 level of significance, when considered in each aspect found that the analysis of element had highest percent, then the analysis of relationship, and analysis of organizational principles respectively. Moreover, pre-service teachers had collaboration, teamwork and leadership as a whole at a high level. Considering that everyone willing to accept the results of their work in highest average, followed by every member is important for work success according to goal, they believe that every members of the group can work towards their goals, and all members are involved in decision-making respectively. Pre-service teachers commented, this learning process has easy steps to implement with students. Creating a Mind Mapping is connecting a content to help understand the details and whole of the contents.

Index Terms— ***Analytical Thinking Ability on Mathematics, Mind Mapping, Leadership and Teamwork, Learning and Enjoying Model***

I. INTRODUCTION

Education in the 21st century must prepare people to be knowledgeable workers and to be able to learn. The key skills are learning and innovation as well as Information, Media and Technology Skills and Life and Career skills. The skills should be developed from kindergarten to university and throughout life is 3R x 8C [19], especially in tertiary education management. It should be learning in an interdisciplinary manner by enhancing knowledge and building on life skills and vocational skills. Learning by practice along with the practice of analytical thinking, problem solving and creativity and also practice communication skills and cooperation skills [1], especially cooperative skills including teamwork and leadership are one of the key skills for students to work with. Students will need to have the skills to collaborate and work with those involved. It is characterized by leadership which is able to lead the group members towards the set goals [21] and from the study of the high-performance teacher production system for Thailand 4.0 on the quality goals that must produce teachers to have desirable conditions of professional skills and teamwork skills are essential skills [8], to make learning a lifelong learning. Teaching design should focus on students' learning together and the assessment of teaching results should be assessed to cover the individual care of the students. Organizing activities and situations for students to express and think creatively as well as encouraging students to think, practice, and self-assessment to create knowledge by themselves as well as giving opportunities for students to exchange and learn from groups [11].

Analytical thinking is fundamental to all types of advanced thinking [21]. It is an in-depth idea that requires observational abilities, interpretation, querying, finding logical connections to find the subject matter involves distinguishing the elements and understanding what is happening, which leads to a straight resolution [5]. One method of learning management that helps to practice analytical thinking is the use of mind mapping to write an overview and a sub-picture of each related content showing omni-directional thinking in a way that expresses the potential of the human brain [15] in consistent with the research of, as in [13] found that after being trained to create mind maps, the students had higher overall analytical thinking ability than before, received statistically significant training at the .05 level, and the group of students who received mind mapping training had a statistically higher

analytical thinking ability than the untrained group at the .05 level and in consistence with the research of, as in [17] found that listening and reading abilities captured the importance of English after studying higher than before using the mind mapping with an average of 23.10% and 20.30%, respectively. The writing and speaking aspects were presented by using a concept map, including a high level, and the results of observing students' English language learning behavior using a conceptual mapping. Overall, students were very interested in learning English; moreover, the research by, as in [4] and the research by, as in, [14] found that the students had higher post-mathematical thinking skills than before using the fun-coupled learning process at the .05 level and their analytical thinking skills were higher than the percentage criterion. 70 was statistically significant at the .05 level, as well as the teamwork skills and work commitment after using Learning and Enjoying Model (5T Model) overall at a high level and attitudes towards mathematics were at the highest level.

Given this importance, therefore, researchers are interested in developing analytical thinking capabilities for pre-service teacher. The 5T Model is a learning management that have competitive activities between groups for fun and cognitive assessment tests, as well as the opportunity to examine knowledge, which will help learners gain a better understanding [23], together with the use of a mind mapping focused on allowing students to link the overview and details of the sub-images in the study material. In addition, students can use the group process from the beginning, namely study and research, presentation design and giving presentations by using mind mapping including learning from other groups into a learning base and organizing a group competition to give everyone the opportunity to represent the group to compete with other groups. The members of each group help one another to prepare themselves so they can score the most. In these processes, the researcher, as the teacher, believes that it improves analytical thinking abilities, cooperation, teamwork and leadership for students. These skills and traits are characteristic of 21st century people and students can use them to apply to their studies and work further.

II. RESEARCH OBJECTIVES

1. To study of analytical thinking ability on mathematics after using Learning and Enjoying Model with Mind Mapping for pre-service teachers in Mathematics program.
2. To compare the analytical thinking ability on mathematics after using Learning and Enjoying Model with Mind Mapping for pre-service teachers in Mathematics program with criteria.
3. To study collaboration, teamwork and leadership after using Learning and Enjoying Model with Mind Mapping for pre-service teachers in Mathematics program.

III. RESEARCH HYPOTHESIS

Pre-service teachers in Mathematics program had analytical thinking ability on mathematics after using Learning and Enjoying Model with Mind Mapping for pre-service teachers in Mathematics program higher than 70 percent of criteria.

IV. LITERATURE REVIEW

A. Analytical thinking

Analytical thinking is the basis of all types of advanced thinking [21], which is the ability to consider details , categorize information Into smaller parts and organized into categories to find the truth, importance, essence, element or principle of the matter [9]. The analytical thinking consists of 3 parts [2] as follows:

1. The analysis of elements is to distinguish what is necessary, what is important and what is most important, such as type analysis , important things analysis or equivocal findings analysis.
2. The analysis of relationships is a relationship of things that are related to each other. How are they connected? How much are they related to each other? Are they Consistent or contradictory? , including analyzing types of relationships , analyzing the size of the relationship , analyzing the relationship procedures , analyzing the purpose and method , analyzing cause and effect or analyzing a relationship in a figurative form.
3. The analysis of organizational principles is the search for structures, systems, stories, things, and functions that they exist in such conditions due to some reason; for example, what's the core? How does it work? What technique or what motto? What is the link? The analysis of organizational principles is analysis that is considered the most important.

B. Learning and Enjoying Model (5T Model)

The Learning and Enjoying Model (5T Model) is a learning management model that focuses on group processes in building knowledge. There are competitive activities between groups for fun and knowledge assessment tests Including having the opportunity to examine the knowledge will help learners gain more understanding [23]. Teaching CIPPA (CIPPA Model) is a concept that focuses on the learners themselves including interaction with friends, other people and surroundings Including skills and processes to be used to create knowledge and appropriate physical movement [16] together with the concept of student teams achievement divisions (STAD) that focuses on motivating learners to help fellow group members learn and recognize the importance of learning and have fun learning. This is because a group will succeed only when all members learn. The group score is derived from the development score of all group members for each exam. The learner's responsibility is to explain the

knowledge to peers [10], and teaching and learning in a competitive group (Team Game Tournament: TGT) that focuses on learning for students to help friends in the group to learn to give students an equal chance of success. The group score will be derived from individual scores. This will increase the excitement and interest in learning as all group members have to prepare for the competition by helping explain to friends [10]. This process of Learning and Enjoying Model (5T Model) consisting of 5 steps as follows:

T: Teach means teaching is a review of knowledge and may be content that has been studied before or other related content which is the basis for learning new material. The teacher is the instructor.

T: Team means organizing learning activities as a group by dividing the students into groups of 3-4 people, each group together to study the new content from the teacher prepared or from various knowledge sources until everyone has a common understanding.

T: Tournament means competition is a competition between groups by having each group send a representative to answer questions and the teacher prepares questions equal to the number of groups to give every representative group the opportunity to answer first.

T: Test means to test each learner to do a test prepared by the teacher.

T: To build confident, means building confidence. Let the students alternate as exam examiners by teachers and students together to answer the test including providing points for correct answers along with ways to find wrong answers. After that, total points will be combined and compliment will be given to learners with the highest scores together with encouraging students with lower grades.

C. Mind Mapping

A mind map is a diagram that shows omni-directional thinking which is the natural behavior of the human brain and powerful visual expression which leads to the universal key to unlocking the potential of the brain. Mind mappings apply to all aspects of life. This enables improved learning and clearer thinking for the development of human actions [15]. The mind mapping also has four main characteristics as follows:

1. Subject of interest which will be built in the middle of the diagram.

2. The main topic of the subject is centered out in all directions, as if a branch of a tree branched out.

3. Branches branching out include an image or a word written on a line that links together. The other words that are important are written down on a limb that broke out in the order in the next order.

4. Branches will be linked in different ways depending on the location and importance of the issues.

D. Cooperation, teamwork, and leadership

The 21st century skills that everyone will learn throughout their lives are 3R x 8C [19] and cooperation skills, collaboration, teamwork and leadership are the fourth skill of the 8C, the essential skills required for study, work and life by cooperation skills as a joint action and expressing enthusiasm, helping each other [22]. Teamwork means that people come together to work together with determination with the same goal: the success of the work [6] that members of the team have roles and feelings together. Within the group, roles and responsibilities are divided according to the knowledge, abilities and skills of the members [20]. Relationships with each other are interdependent traits for the success of the work as a member of the team has the same goal of doing the job that makes everyone willing to work together and ready to face any problems. Together, this results in the production of high-quality work [18] and leadership is the ability to persuade the followers to follow in order to achieve the desired goals [3].

V. RESEARCH METHODS

A. Populations and Samples

The population was for pre-service teachers in Mathematics program during the first semester of the academic year 2018 in 3 groups of 82 students, the sample consisted of 29 people that were obtained by cluster random sampling.

B. Research Instruments

The research instruments included:

1. The processes of Learning and Enjoying Model with Mind Mapping is learning activities that focused on the group process of organizing knowledge systems and linked knowledge of ideas and then conveyed them on paper using lines, colors, or images as links and learning all content using the learning base, and then have competitive activities between groups and knowledge monitoring to help students gain a better understanding. It was divided into 6 stages as follows:

Step 1: Organizing a team: students were divided into 5 groups and they were given draws to learn mathematics such as numbers and operations, measurements, algebra, geometry, probability and statistics. Each group jointly plans and divides their duties and responsibilities.

Step 2: Education and research: each group studied mathematical vocabulary and meaning of English vocabulary which was divided into primary and secondary levels in the subject of learning that was assigned and designed a presentation of vocabulary, mathematics and meaning by using mind maps separated by level.

Step 3: Presentation: each group presented vocabulary according to the designed mind map at the elementary level

and secondary by requiring everyone in the group to participate as presenters.

Step 4: Group learning: each group learned mathematical vocabulary and meaning of English vocabulary by finding ways or methods to allow all members of the group to learn as much vocabulary as possible and circulate in every subject to learn the vocabulary of every group, which was a learning base. Entering the learning base could begin to learn in any subject matter.

Step 5: Competition: organize exams on mathematical vocabulary and the meaning of English vocabulary. Each group clearly defined the order of representation to answer the member's questions in order for everyone to have the opportunity to take the highest score test for the group, as the number of points in each verse was not the same but the sum of all scores was the same. The competition was held in two rounds: elementary and secondary.

Step 6: Appreciation: students were asked to share exams and scores for the right answer groups, given some compliments to the highest-scoring groups, and encourage lower-scoring groups.

2. The analytical thinking ability on mathematics test: it was a 45-items with 3 parts as follows: analysis of elements, analysis of relationships, and analysis of organizational principles. The validity analyzed by index of item – objective congruence (IOC) between 0.67 to 1.00, reliability analyzed by Kuder-Richardson 20 (KR-20) was 0.89, difficulty value (p) between 0.39 to 0.79, and discrimination value (r) between 0.21 to 0.57.

3. The collaboration, teamwork and leadership questionnaire which was validity analyzed by index of item – objective congruence (IOC) between 0.67 to 1.00, and reliability analyzed by Conbach's Alpha was 0.87.

C. Data collection

1. Organize learning by Learning and Enjoying Model with Mind Mapping in 6 steps which was conducted 2 rounds for the Mathematics content in elementary and secondary education levels.

2. The pre-service teachers did the analytical thinking ability on mathematics test, and collaboration, teamwork and leadership questionnaire.

3. The pre-service teachers participated in exchanging, learning and discussing the learning process and apply it to the management of learning with the students in the future.

D. Data Analysis

1. The study of analytical thinking ability on mathematics, and collaboration, teamwork and leadership after using Learning and Enjoying Model with Mind Mapping for pre-service teachers in Mathematics program. The analysis was done by percentage, mean and standard deviation.

2.The comparison of analytical thinking ability on mathematics after using Learning and Enjoying Model with Mind Mapping for pre-service teachers in Mathematics program with criteria analyzed by t-test one group.

Table I Mean ($\bar{X}$), standard deviation (S.D.), and percentage of analytical thinking ability on mathematics after using Learning and Enjoying Model with Mind Mapping for pre-service teachers in Mathematics program.

The analytical thinking ability on mathematics	score	$\bar{X}$	S.D.	percent
analysis of elements	15	12.10	2.06	80.67
analysis of relationships	15	11.14	2.56	74.27
analysis of organizational principles	15	10.34	2.14	68.93
Total	45	33.59	5.26	74.64

Table II The results of comparing the analytical thinking ability on mathematics after using Learning and Enjoying Model with Mind Mapping for pre-service teachers in Mathematics program with a 70 percent criterion

	μ	$\bar{X}$	S.D.	t	Sig.
the ability of mathematics analytical thinking	31.50	33.59	5.26	2.135	.042

$p < .05$

Table III show the mean ($\bar{X}$) standard deviation (S.D.) of the collaboration, teamwork and leadership after using Learning and Enjoying Model with Mind Mapping for pre-service teachers in Mathematics program.

Collaboration, teamwork and leadership	$\bar{X}$	S.D.	Meaning
1. All members planned to work.	4.34	0.55	High
2. The division of duties and responsibilities in the group was clear.	4.17	0.71	High
3. All members cooperated in the work.	4.21	0.68	High
4. Students accepted the opinions of the members of the group.	4.41	0.50	High
5. While working together, there was talk, exchange ideas with members.	4.24	0.83	High
6. Students could make suggestions to group members.	4.17	0.76	High
7. Students were assigned to work in full capacity.	4.10	0.67	High
8. Students believed that group members can achieve their goals.	4.48	0.69	High
9. Students accepted opinions or suggestions from the group.	4.38	0.73	High
10. Every member is the key to achieve the goal.	4.52	0.83	Highest
11. All the students took part in the decision.	4.48	0.63	High
12. Everyone willingly accepted the results of their work.	4.55	0.57	Highest
Total	4.34	0.69	High

VI. RESULT

1. Pre-service teachers had analytical thinking ability on mathematics overall accounted for 74.64 percent. When considering each aspect, it was found that they had analysis of elements at the highest level accounted for 80.67 percent, followed by the analysis of relationships accounted for 74.27 percent and the ability to analysis of organizational principles representing 68.93%, respectively, found the results as in Table I.

2. Pre-service teachers had analytical thinking ability on mathematics after using Learning and Enjoying Model with Mind Mapping was significantly higher than the criterion of 70% at the .05 level as shown in Table II.

3. The study of collaboration, teamwork and leadership of pre-service teachers in Mathematics program found that for pre-service teachers had cooperation, teamwork and leadership. The overall was at a high level. When considered individually, it was found that everyone willingly accepted the results of their work. There was the highest average, followed by every member was essential to accomplish the goal and students believed that all group members could work towards their goals. The group members discussed each other using the reasons for achieving their goals in order of results as shown in Table III.

VII. DISCUSSION

The discussion of the research results is divided into 2 issues: development of analytical thinking ability on mathematics, and collaboration, teamwork and leadership are as follows:

1. The pre-service teachers in Mathematics program had analytical thinking ability on mathematics after using Learning and Enjoying Model with Mind Mapping, accounted for 74.64 percent and 70 percent higher than the threshold, statistically significant at the .05. The results were due to learning management by using a fun paired learning process combined with mind mapping, starting from organizing a team, sharing responsibility to study, research and bring results to exchange and learn in the group and

jointly design a presentation using a mind mapping. Then, it was a presentation to share and learn with friends. Also, in the learning process as a group, each group needed to find a way to learn and understand all of the content in order to prepare knowledge for the next stage of the competition and at the competition stage, there were not equal ratings for each item. All members of the group had the opportunity to represent the group in competing with the most points, so everyone would be determined so as not to upset the group. The results were consistent with the research of, as in [13] found that after being trained to create a mind map, students had higher analytical ability both side and overall than before, having been statistically significantly trained at .05 and the research of, as in [12] found that the latter was managed to learn using problems as a base for combining concept mapping techniques. The pre-service teachers achieved statistically significantly higher academic achievements at .05 and research on the concept of a fun coupling with learning management process [23]. Research found by as in [4], [14] found that students had higher mathematical critical skills before using the fun learning process statistically significant at .05 and with post-use critical thinking skills, the fun coupling with learning process was above the threshold. It was statistically significant at .05 and also included research by, as in [7] that studied the results of using mind mapping to develop mathematical and scientific skills by studying with students aged 4-5 years, mathematical skills were grouping, matching, comparison and sorting including counting thinking about geometry measurement and presentation of information forms and relationships and problem solving through deductive reasoning and the use of basic scientific instruments. The research results were found that students prepared and connected knowledge using higher levels of skills and also found that the use of mind maps could be applied in daily life. It also promoted development in childhood, which was an important method for children to adopt.

2. The pre-service teachers in Mathematics program had high collaboration, teamwork and leadership overall due to the stages of Learning and Enjoying Model with Mind Mapping. It was a learning activity that focused on the group process of organizing knowledge systems. Everyone was responsible for the group's assignment to study and exchange knowledge in the group as well as organizing knowledge systems together. Each person had to explain the tasks they had been assigned, participated in group presentations in the presentation stage, and found ways for group members to learn as much from other groups as possible. It also played an important part in representing the competition between the groups which had to take the most points for the group, so everyone was eager to cooperate with each other [22] to get the job done [6]. Listening to and commenting with the group resulted in the production of high-quality works [18], in line with which the concept of learning management process was applied to the fun couple [23]. The results were in line with research by, as in [4] and [14] found that after using the learning process coupling with fun, teamwork skills of students were very high.

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VIII. RECOMMENDATIONS

A. Recommendations for Practices

The processes of Learning and Enjoying Model with Mind Mapping should be prepare the period of time for each step are difference according to the contents.

B. Recommendations for Further Research

From the advantages of this learning model, interested person should study the analytical thinking ability on mathematics with the mathematics skills such as: communication and presentation in mathematics, and connecting mathematical ideas to other concepts and to other disciplines.

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Development of Mathematical Learning Model Using Activity-Based Learning

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Abstract*— The purposes of this research were to 1) develop the mathematical learning model using activity-based learning, 2) study learning outcomes after using mathematical learning model using activity-based learning. The samples were 28 pre-service teachers in mathematics program who participated in creating and developing the model, and 29 seventh grade who learned mathematics with the mathematical learning model using activity-based learning. The research instruments were the process of action research, the mathematics achievement test, the work commitment questionnaire, and the attitude toward mathematics questionnaire. The data were analyzed by mean, standard deviation, t-test dependent (p<.05), and content analysis. The results found that: 1) the mathematical learning model using activity-based learning was a process of learning management focusing on allowing students to practice individually and in groups in order to be able to create ones' own knowledge from the practice. Competition activities between groups were organized to encourage joyfulness which everyone had an opportunity to present knowledge. Students were also given compliments and encouragement which helped boost their self-esteem. The five steps of the mathematical learning model using activity-based learning included preparation, learning, group activities, competition, and summarization and compliment; 2) the seventh graders' mathematics achievement after receiving the mathematical learning model using activity-based learning was higher than the criteria of 60 percent at .05 level of significance. Overall, their level of work commitment and attitudes toward mathematics were considered high. Moreover, it was found that the pre-service teachers had abilities to manage learning in terms of designing learning management, developing lesson plans, developing materials and equipment, constructing a learning behavior questionnaire for learners, and learning the role of teachers from teaching practice and observing classroom teaching.

Index Terms— ***mathematical learning using activity-based learning, mathematics achievement, attitudes toward mathematics, work commitment, action research***.

I. INTRODUCTION

Mathematics plays a key role in the success of 21st century learning as it empowers humans to be creative, be able to think logically and systematically, be able to analyze problems or situations carefully and thoroughly, be able to predict and make a decision when solving problems appropriately, and be able to apply knowledge in real life effectively. In addition, it is also a tool for studying science, technology, as well as other sciences which lays foundations for the quality human resource development of the nation [4]. In order to initiate learner development in learning mathematics as planned, teacher quality in terms of knowledge and ability in learning management should correspondingly be developed [1]. Accordingly, these are to support students to learn and develop to reach their full potential. The guidelines for developing teachers to be able to provide various quality learning management includes Teachers and Educational Personnel Enhancement Based on Mission and Functional Areas as Majors (TEPE Online), Professional Learning Community (PLC) and Active Learning [2]. The cooperation focuses on the process of planning (Plan), practice (Act), observation of results from practice (Observe) and reflection (Reflect) [12]. which emphasizes on improving work performance that relies on the participation of researchers and coresearchers to put the process into practice [6].

From the aforementioned reasons, the development of learning management model deriving from cooperation in learning design, implementation, observation and reflection for further improvement leads to learning management methods that allow learner development toward the expected learning behaviors. Reflection enables teachers to understand the learning management process and be able to adjust to suit learners accordingly.

II. RESEARCH OBJECTIVES

1. To construct the mathematical learning model using activity-based learning.
2. To study learning outcomes after implementing mathematical learning model using activity-based learning.
3. To develop the mathematical learning model using activity-based learning.

III. RESEARCH METHODS

A. Populations and Samples

The population is divided into 2 groups were:

1. Pre-service teachers in mathematics program, Faculty of Education, Kamphaeng Phet Rajabhat University from

the first to fourth year who participated in constructing and developing the learning model using activity-based learning and being studied on the ability to manage learning after developing the learning model using activity-based learning. The sample was 28 third-year students in the second semester of the academic year 2018 who were selected by purposive sampling from students who enrolled in Teaching and Learning Algebra in School course. The course was instructed by integrating teaching and learning with research and academic service.

2. The seventh graders from three classrooms of Chakungrao Wittaya School who received the learning model using activity-based learning. The sample was 29 of them selected by cluster random sampling.

B. Research Instruments

The research instruments included:

1. The action research process used to construct and develop the learning model using activity-based learning with four steps as follows:

Step 1: Planning (Plan: P) which was finding the mathematical learning model using activity-based learning with four steps as follows:

1.1 Planning (Plan: P) which was designing the mathematical learning model using activity-based learning, determining its suitability, developing lesson plans and developing materials and equipment.

1.2 Practice (Act: A) and observation (Observe: O) which was the application of the learning model in a simulated situation with the sample group of university students by dividing the students' roles as teachers, students and observers.

1.3 Reflection (Reflect: R) which was proceeded after teaching and learning with the simulation of each lesson plan.

Step 2: Practice (Act: A) which was an implementation of the mathematical learning model by using activity-based learning to arrange teaching and learning activities for seventh graders who were the sample group, conducted five times, each time with 3 steps as follows:

2.1 Planning (Plan: P) which included preparing lesson plans and materials and equipment for students, and assigning instructors and observers of each class.

2.2 Practice (Act: A) and observation (Observe: O) which included implementing the mathematical learning model by using activity-based learning with seventh graders, each class with one teacher and three observers.

2.3 Reflection (Reflect: R) which proceeded after the teaching and learning of each lesson plan by students as instructors assessed their teaching and students as observers assessed the teaching, following by the improvement of the lesson plans.

Step 3: Observation (Observe: O) which was proceeded after implementing every lesson plan including the distribution of mathematics learning achievement test, work commitment questionnaire, and attitude towards mathematics questionnaire.

Step 4: Reflection (Reflect: R) which was the analysis of results from Step 3 to determine students' learning and reflect strengths and weaknesses of the mathematical learning model by using activity-based learning.

2. The instruments for studying the learning outcomes after the implementation of the mathematical learning model by using activity-based learning including:

2.1 The mathematics achievement test which was validity analyzed by index of item – objective congruence (IOC) between 0.67 to 1.00, reliability analyzed by Kuder-Richardson 20 (KR-20) was 0.67, difficulty value (p) between 0.30 to 0.73, and discrimination value (r) between 0.20 to 0.60.

2.2 The work commitment questionnaire which was validity analyzed by index of item – objective congruence (IOC) between 0.67 to 1.00, and reliability analyzed by Conbach's Alpha was 0.85.

2.3 The attitude toward mathematics questionnaire which was validity analyzed by index of item – objective congruence (IOC) between 0.67 to 1.00, and reliability analyzed by Conbach's Alpha was 0.81.

3. The ability in conducting learning activities which was a questionnaire about learning management, development of lesson plans, development of materials and equipment, development of learners' behavior evaluation instruments, and classroom learning management which was evaluated of the validity and reliability by experts and adjusted accordingly, also piloted with pre-service teachers in mathematics program which shown to have clarity.

C. Data collection

The data collection applied the action research practice as follows:

Step 1: Planning (Plan: P), finding a mathematical learning model using activity-based learning by:

1.1 Planning (Plan: P) included organizing a meeting to find an activity-based learning model, evaluating and improving the model, constructing lesson plans, and developing materials and equipment as follows:

1) Organize a workshop for researchers and pre-service teachers in mathematics program to find a mathematical learning model using activity-based learning.

2) Have the mathematical learning model using activity-based learning evaluated by three experts of teaching mathematics.

3) Improve the activity-based learning model as suggested by experts.

4) Develop lesson plans based on the activity-based learning model and prepare materials and equipment for each lesson.

1.2 Practice (Act: A) and observation (Observe: O) included providing teaching and learning activities according to the activity-based learning model by using

simulations, each lesson was with one instructor, three observers and 15 students.

1.3 Reflection (Reflect: R) included organizing a workshop after each lesson for the lesson to be evaluate by the instructor, observers and students, following by improving the learning management model, lesson plans and materials and equipment.

Step 2: Practice (Act: A) was the implementation of the mathematical learning model using activity-based learning on the sample group, the seventh graders, for five times, each time with the following procedures.

2.1 Planning (Plan: P) included organizing a meeting to check understanding among the pre-service teachers who was instructor and observers of each lesson, rechecking and preparing lesson plans, materials and equipment for learners, and making an appointment to travel to the school.

2.2 Practice (Act: A) and observation (Observe: O) included conducting teaching and learning activities according to the mathematical learning model using activity-based learning on seventh graders with one instructor and three observers for each lesson.

2.3 Reflection (Reflect: R) was conducted after each session of the implementation as a meeting to exchange knowledge by having the pre-service teacher as instructor reflecting themselves and the pre-service teachers as observers reflecting the teaching. Thereafter, the lesson plans were being revised.

Step 3: Observation (Observe: O) after implementing every lesson plan, the mathematics achievement test, the work commitment questionnaire and the attitude towards mathematics questionnaire were distributed to students.

Step 4: Reflection (Reflect: R) a workshop was arranged to analyze the learning outcomes and reflect strengths and weaknesses of the mathematical learning model using activity-based learning. Then the pre-service teachers did the questionnaire about the ability in conducting learning activities.

D.Data Analysis

1. The mathematical learning model using activity-based learning and the ability in conducting learning activities were analyzed by using content analysis.

2. The learning outcomes were analyzed as follows:

2.1 The results of mathematics learning achievement test were analyzed by comparing the average score with the criteria of 60 percent by using t-test one sample.

2.2 The results of attitude towards mathematics questionnaire and work commitment questionnaire were analyzed by using mean and standard deviation.

IV. RESULT

1. The steps of the mathematical learning model using activity-based learning construction were as follow:

1.1 Planning (P): The activity-based learning model composed of features of mathematics instruction by using activity-based learning. Learners constructed their knowledge from practicing throughout the learning process from individual and group activities. The competition between groups created joyful learning atmosphere. The steps of mathematical learning model using activity-based learning composed of five steps: preparation, learning, group activities, competition and summarization and compliment. The approval of the experts, it was found that the mathematical learning model using activity-based learning was appropriate for further application. Suggestions for writing lesson plans and preparation before teaching were as follows:

1) There should be a variety of warm-up activities in each. The activities should be emphasized on having fun in order to encourage students to be interested in and be ready for the lesson.

2) Teaching and learning materials in the learning step should be big enough for everyone, or every student should get to practice. It is suggested that questions should be used to encourage students and every student should have a chance to answer. When posing a question, it is suggested that teachers should wait for answers from learners before providing answers. If it is found that students misunderstand, the teachers should provide further instruction until they clearly understand the content.

3) When dividing learners into groups, it is suggested that they should be divided to be mixed in terms of gender and ability.

4) During group activities, teachers should design learning activities that involve every student in each group and encourage participation from everyone in the group.

5) During competition session, teachers should allow students' work to be displayed around the classroom, not just on the board so students are able to visit the work as they prefer. The board is recommended to be used for writing additional explanation.

6) Mind maps which present a summary of each group and each kind of content should have a display spot in the classroom or be collected in a portfolio in order for students to be able to revisit the content of their group and other groups.

1.2 Act (A) and Observe (O): The results of the employing five lessons of instructional activities using activity-based learning and stimulations with one instructor, three observers, and 15 students were being reviewed after each lesson.

1.3 Reflect: Meetings were arranged to review and improve instructional activities in each step as follows:

1) Preparation: In this step, learners were prepared by doing mindful activities following by reviewing background knowledge. They also participated in presenting how to find the answers.

2) Learning: Learners learned content accompanying by materials, questions and activities to develop knowledge which they took part in presenting how to find the answers.

3) Group activities: Learners were divided into a group of 3-4 by mixed genders and ability. Each group participated in finding answers which was the way to implement knowledge in new situations. Instructors prepared materials and equipment for every group and encouraged learners in each group to participate in finding answers.

4) Competition: Instructors prepared questions equal to the number of group members. Then, each member was responsible for each item and cooperated to find the answers within the time limit. After that, they displayed their work in the allocated area. The first group then explained the answers and other groups with different methods shared their answers.

5) Summarization and compliment: Learners summarized the content learned and presented through mind maps by displaying in the allocated area. Instructors gave compliments to the group with highest score and encouraged groups with lower scores.

2. Results of using the mathematical learning model using activity-based learning were as follows:

2.1 The seventh graders' mathematics learning achievement after receiving the instruction of the mathematical learning model using activity-based learning was significantly higher than the criteria of 60 percent at the significance level of .05. The results were presented in Table I.

2.2 The seventh graders, overall, had highly positive attitudes towards mathematics. When investigated by items, it was found that students viewed that "mathematics can be used in everyday life" highest, following by "mathematics is a useful subject". The results were presented in Table II.

2.3 The seventh graders had high work commitment. When investigated by items, it was found that "students pay attention to their assignments" and "students are proud of their work" had the highest average score, following by "students are determined to work on their assignments", "students try to solve problems in order to complete tasks", "students study and try to understand the content before starting working" and "students try to improve and develop their work by themselves" respectively. The results were presented in Table III.

Additionally, it was found that the pre-service teacher had ability in designing instructional activities, developing lesson plans, developing materials and equipment, constructing learner's learning behavior evaluation form, and they more understand teacher role.Table I Results of mathematics learning achievement of seventh graders after implementing the mathematical learning model using activity-based learning.

	μ	$\bar{X}$	S.D.	t	Sig.
Mathematics Learning Achievement	15.00	16.41	2.83	2.69	.01

$p < .05$

Table II Mean ($\bar{X}$) and standard deviation (S.D.) of seventh graders' attitudes towards mathematics after providing instruction by using the mathematical learning model using activity-based learning.

Attitudes towards Mathematics	$\bar{X}$	S.D.	Meaning
1. Mathematics is a useful subject.	3.83	0.80	highly positive
2. Students love to solve problems related to mathematics.	3.59	0.68	highly positive
3. Students do mathematics exercises by themselves.	3.52	0.63	highly positive
4. Students can explain the content or mathematics exercises to their friends.	3.66	0.61	highly positive
5. Mathematics is a subject that helps us to be reasonable.	3.69	0.76	highly positive
6. Students feel that learning mathematics is fun.	3.66	0.72	highly positive
7. Students check the correctness of mathematics exercises.	3.59	0.68	highly positive
8. Students answer teacher's questions during mathematics class.	3.66	0.61	highly positive
9. Mathematics is a subject that helps us to think systematically.	3.66	0.77	highly positive
10. Students love to study mathematics.	3.79	0.68	highly positive
11. Students learn more about mathematics.	3.66	0.72	highly positive
12. Students participate in mathematics-related activities.	3.72	0.70	highly positive
13. Mathematics can be used in everyday life.	3.86	0.83	highly positive
total	3.65	0.72	highly positive

Table III Mean ($\bar{X}$) and standard deviation (S.D.) of seventh graders' work commitment after providing instruction by using themathematical learning model using activity-based learning.

Work Commitment	$\bar{X}$	S.D.	Meaning
1. Students pay attention to their assignments.	4.41	0.50	high

2. Students are determined to work on their assignments.	3.72	0.59	high
3. Students are responsible for their work.	3.59	0.68	high
4. Students study and try to understand the content before starting working.	3.69	0.66	high
5. Students try to complete the task in time.	3.55	0.63	high
6. Students are dedicated to doing their assignments.	3.52	0.63	high
7. Students are patient and do not give up on any problems.	3.55	0.63	high
8. Students try to solve problems in order to complete tasks.	3.72	0.65	high
9. Students try to improve and develop their work by themselves.	3.69	0.76	high
10. Students are proud of their work.	4.41	0.50	high
total	3.79	0.70	high

3. Development of the mathematical learning model using activity-based learning consisted of processes as shown in Figure 1.

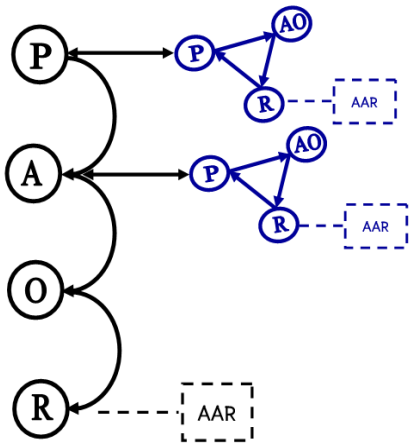


Figure 1 Process of development of mathematical learning model using activity-based learning

The mathematical learning model using activity-based learning was resulted from action research process. In step 4 Reflect (R), it was found that:

1. The mathematical learning model using activity-based learning was resulted from action research process. In step 4 Reflect (R), it was found that: The mathematical learning model using activity-based learning was an instructional process which emphasized on allowing learners to practice individually and in groups in order to develop the knowledge. The competition between groups created joyfulness. Everybody had an opportunity to present their knowledge. Compliments from the instructors encouraged them to be proud of themselves. The five steps of the instructional activities included:

Preparation stage: In this step, learners were prepared by doing activities with movements which emphasized on mindfulness following by reviewing background knowledge. They also participated in presenting how to find the answers. It was suggested that instructors should prepare different kinds of activities for each lesson.

Learning stage: In this step, learners learned new content individually. The explanation was presented with materials, questions and activities to present the method and answer. Learners were able to develop knowledge by themselves. It was suggested that instructors should check whether every learner understood the content.

Group activities stage: Learners were divided into a group of 3-4 by mixed genders and ability. Each group participated in learning and finding answers which was the way to implement the knowledge in new situations. Instructors prepared materials and equipment for every group and encouraged learners in each group to participate in presenting methods and finding answers.

Competition stage: Members of each group shared responsibility in presenting methods and finding answers within the time limit. Then, the responsible person displayed the work as specified by the instructor. The answer of the first group that finished was explained by the responsible person. Other groups with different methods also shared the answers. It was suggested that the instructor clearly state the score for the group that finished first and other following groups. Additionally, exercise should be prepared enough for the members of each group.

Summarization and compliment stage: Learners summarized the content learned and presented the concept of the group through mind maps and displayed in the allocated spot. The instructor then concluded scores and provided compliments to the group with highest score and encouraged groups with lower scores.

2. Teachers' roles.

2.1 Prepare activities that focus on practicing mindfulness for Preparation stage.

2.2 Prepare media for learning management.

2.3 Prepare tests for competing activities.

2.4 Encourage students to participate in group activities.

2.5 Advice and explain further for the learners to complete learning.

2.6 Examine the students' concepts while they present and teacher should pay attention to every concept in order to find the answer.

2.7 Appreciate and encourage learners who do well and who have not.

3. Students' roles.

3.1 Punctual of attend class in order to continue doing activities.

3.2 Responsible for the assigned work.

3.3 Cooperate and help each other in the group.

3.4 Present a way of thinking in finding answer.

3.5 Summarize knowledge creatively and present it with a mind map.

4. Advantages.

4.1 Promote punctuality because the activity prepares students to study by allowing the students to move their bodies, express their gestures by using the music or rhythm. The learners feel fun and want to participate and complete activities.

4.2 Learners' understanding can be checked by the competition. Everyone was responsible for taking the test and helped each other in the group complete the test with in the time limit. They want their group to get the highest score possible.

4.3 Promote responsibility for learners because they have to complete the tasks assigned to them.

4.4 Promote teamwork because everyone has to help each other complete activities on time.

4.5 Promote mathematical communication skills because everyone has to explain their assignments.

4.6 Encourage an enthusiasm for learning because the score is different points for the correct answer but it takes the same time. The learners will be willing to work.

4.8 Summarizing of group concepts using mind map helps learner better understand the process of creating knowledge.

4.9 The work in each group which is shown at different area in the classroom. Learners are able to review as often as they like.

5. Restrictions.

The activities used in the preparation stage that emphasize on mindfulness must be unique. Because it will not stimulate the interest of learner.

6. Suggestions.

6.1 Teachers should control the time of learning activities in each stage. Because each learning stage may take a lot of time especially in the competition stage.

6.2 Setting points in competition stage should be clear and informed the learner beforehand, which may different scores for each item by consider the difficulty of the content in the item test.

6.3 Rules should be established so that everyone in the group can represent equally easy and difficult items test.

V. DISCUSSION

1. The construction and development of the mathematical learning model using activity-based learning by applying the action research process was a continual process composed of planning, practice, observation and data collection, and reflection. As action researchers are educators who involved with continual research problems, there is a need for them to construct more knowledge. Action research as the lessons learned are used to develop new questions for better practice. Therefore, action researchers are involved in practice, data collection, reflection and implementation to increase or improve the practice [3]. Educationally, action research objectives are to develop teaching and learning and finding solutions to the problem. Research methodology involves the process of searching for knowledge with reflection of the results. It also allows stakeholders to comment the practice and results. The process is being run in cycle and becomes part of the practice. The results then lead to the improvement of the practice [10]. When applied to education, the focus has become increasing the academic results and improving learners' learning behaviors [7].

2. The results after the implementation of the mathematical learning model using activity-based learning found that the seventh graders had mathematics achievement higher than the criteria of 60 percent at the significance level of .05. Their overall work commitment and attitudes towards learning mathematics was high. The results were considered deriving from steps of research-based instruction starting from preparing learners, reviewing content, allowing individual learning, leading group learning, allowing students to present and compete, to letting learners summarize learned concept using mind maps. These considered greatly enhance learners' understanding of mathematics content. When each learner was responsible for their work and collaborated with group members to achieve the tasks as fast as possible in order to gain highest score enhanced learners' work commitment and attitudes towards mathematics. The results were consistent with characteristics of activity-based learning. To illustrate, learners were active and enthusiastic in developing their cognitive domain which they were encouraged to develop their own knowledge rather than relying on their teachers [11]. As in [9] found that after implementing flipped classroom by using activity-based learning, students' posttest score was significantly higher than their pretest score at the significance level of .01. Their determination was considered high. As in [8], also found that bachelor's students academic results after implementing activity-based instruction was significantly higher at the level of .01 comparing to before the implementation by using the 60 percent criteria. In terms of attitudes and satisfaction, students were satisfied and eager to learn. The learning enhanced their skills and provided practical knowledge. They also had opportunities to exchange knowledge with their classmates. Moreover, As in [5] found that students' attitudes towards mathematics, achievement motivation and mathematics learning behaviors after the implementation of activity-based instruction was significantly higher than before the implementation. The scores were also higher than students who received regular instruction at the significance level of .05.

Additionally, it was found that the teacher students were able to provide instruction in terms of designing instructional activities, developing lesson plans, developing materials and equipment, constructing learner's learning behaviors evaluation form, learning teacher roles from teaching practice and observation in classrooms. As the students had had full participation in the development of the instruction, from constructing and validating the instructional practice to developing the lesson plans which were piloted using simulations and were reflected before the implementation. Throughout the process, students learned from practice and observation in authentic situations allowing them to understand teacher's roles and classroom situations which can be applied to their future career.

VI. RECOMMENDATIONS

A. Recommendations for Practices

1. For mindful activities during the introduction of the lesson, instructors should practice to become skillful. The pace of the activity should start from slower to faster in order for learners to be focused on the activity.

2. Materials accompanying the lessons should be prepared as worksheet in order for learners to review later.

3. Quizzes given to each group should be printed in different colors and the presentation of the answers should be identified clearly, for example, arranging from top to bottom or left to right according to the order of completion.

4. Provide scores to everyone who are able to present the correct methods, but with different weight, to motivate students to work together as a group.

5. Mind maps of the summary of each group should be posted up in different sections of the classrooms for a certain period of time so students are able to learn and review accordingly.

B. Recommendations for Further Research

From the advantages of this learning model, interested person should study the mathematical skills and processes and other desirable attributes such as responsibility, team work, or self-esteem by apply mathematical learning model using activity-based learning.

CONCLUSION

The mathematical learning model using activity-based learning is the learning model which encourages the learner enthusiastic, fun, and ready to help each other. This learning model provides learning process, teachers' roles, students' roles, advantages, restrictions, and suggestions which are support learning management to the most benefit with the learner.

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Best Practice in Small School Management Under the Office of the Basic Education Commission, Kamphaengphet Province

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Abstract*— The purpose of this research was to study best practices in small school management under the office of the Basic Education Commission. The sample acquired by selecting a specific type was a group of small schools under the Office of the Basic Education Commission, Kamphaengphet Province with the results of the National Basic Education Test (O-NET) in Mathematics and Science were higher than the national average in the academic year 2018, namely the mathematics course with a higher average of 37.50 points and science courses with a higher average of 39.93 points. The data were collected by interviews from school directors, teachers and school performance report, including data analysis by analyzing the content. The results showed that 1) for the management namely (1.1) the personnel aspect: the school directors followed-up and encouraged teachers to develop themselves to create a happy learning environment and build morale at work. In addition, teachers always dedicated their time to students and develop themselves. Students had to read and write fluently (1.2) for the support, there was a distance learning system with a teaching manual as well as an internet system to help study and research (1.3) the management, the goals were set for student development and the timetables were arranged for core subjects, secondary subjects and 2) learning management consisted of (2.1) curriculum activities. The teacher analyzed the learners individually , studied indicators and studied the content that had to be taught as well as finding teaching techniques and teaching materials that help learners' interest and fun (2.2) Extracurricular activities, there was an additional teaching after the content was completed by drilling the exam questions that were used for the authentic examination in the past year and took part in the projects with school groups to review together.

Index Terms— ***Best practices in school management, Small schools, Small school management, Learning management in small schools***

I. INTRODUCTION

The second decade of education reform (2009-2018) focuses on giving Thais a lifetime of quality learning. There are 3 main goals which are to improve the quality and standards of education and learning of Thai people, increase educational and learning opportunities in a thorough and quality way, and promote the participation of all sectors of society in the administration and management of education. Some of the key indicators and target values are academic achievement in core subjects from Ordinary National Education Test (O-NET) that the average score is more than 50 percent. From the past evaluation of educational reform, it was found that the problems that needed to accelerate development, improvement and extension were quality of learners, teachers, lecturers, educational personnel, management efficiency including increasing educational opportunities [4]. From the report of the National Institute of Educational Testing Service (Public Organization) (NIETS) that serves the O-NET test, it found that in the 2018, primary school; grade 6 students in all affiliation had a national average O-NET test score of 37.50 in mathematics and 39.93 in science, and in a small school; a school with no more than 120 students, the average O-NET score in mathematics was 34.11 and science was 37.99 [3]. The results reflect that learner quality needs to be developed urgently.

The report of the committee of the National Reform steering Assembly in Education regarding the management of education, it was found that small schools had relatively low problems with the quality of educational provision. From the second round of quality assessment outside of basic education (2006-2010), it was found that 2% of small schools were in the improvement level, 67.91% were at the fair level and 29.99% were in the good level. When considering the learning achievement, it was found that students of all grades in all areas had lower learning achievement mean than students in other schools. The main problems include being allocated a small budget per capita resulting in the lack of equipment educational technology causing the efficiency of teaching and learning to decline the shortage of teachers with specialized expertise and the number of teachers not completing their classes. Since the Office of the Basic Education Commission has set a proportion of 1 teacher per 20 students. This causes teacher allocation problems in schools with a small number of students. And most of the small schools are in small

communities, where the population is poor and they do not have the potential to mobilize resources to support the provision of education for schools. From the aforementioned problems, this resulted in the efficiency of management, including 1) the problem of management, it was found that the small schools were in remote areas teachers and students have travel problems causing the lack of school administrators and will open for recruitment and appointment of new school administrators. This caused most of the small school administrators to lack the school management skills. And another problem is the migration of the school-age population who are following their parents to be employed abroad. This creates problems and obstacles for effective teaching and learning management and school management. And 2) The problem of teaching and learning was found that when teachers did not complete a class and most teachers lack the skills in organizing teaching and learning activities that integrated multi-class teaching. Teachers are unable to teach full-time or competent due to the mission of promoting education equivalent to a medium or large school. There is also a lack of media, technology for teaching and learning and learning resources because there is a limited budget according to the number of students [5].

From the above, researchers interested in finding best practice from small schools with O-NET test results higher than the national average by studying the lessons learned from the success of the work in the administration and the organization of learning activities. The result will guide small schools in the same context. So that both administrators can adjust their work processes and teachers have changed the teaching and learning process, and take the school to the next standard.

II. RESEARCH OBJECTIVES

To study best practices in small school management affiliate Office of the Basic Education Commission (OBEC), Kamphaengphet province.

III. RESEARCH SCOPE

A. Informants and Source of data

1. The informants were divided into 2 groups:

1.1 School directors, representatives or math and science teachers who perform work in a small school under the Office of the Basic Education Commission, Kamphaengphet province that have a mean score of O-NET test results in mathematics or science higher than the national average in the academic year 2018. The school director or representative provides information about the administration and teachers of math and science provide information about learning management.

1.2 Directors of Primary Educational Service Area Office (PEASO), Deputy directors of Primary Educational Service Area Office (PEASO), Supervisors in charge of small schools, Supervisors who supervise teachers in the subject group of mathematics and science, school directors and math and science teachers in the school that had an average O-NET math or science score higher than the national average serve to provide feedback and confirm best practices in the management of small schools.

2. Sources of information are school self-report documents, programs, activities related to teacher development, the development of teaching and learning processes, and the development of learners of school that are administrative informants.

B. Contents

Best practice in small school management in administrative efficiency for the development of learners in math and science learning topics consists of:

1. Management aspects consist of personnel, support and management.

2. Learning management consists of curriculum activities and extracurricular activities.

C. Time period

1. Data collection; take action during June - September 2019

2. O-NET test results in the academic year 2018 of primary school, the 6th grade students were used as a basis for selecting the schools that administrators and teachers provided information for the lesson transcription, best practice in small school management. The average score of O-NET test results from all subjects in mathematics was 37.50 and science subjects was 39.93, and in small schools, which were not more than 120 students, the average score of O-NET test in mathematics was 34.11 and science was 37.99.

IV. RESEARCH METHODS

A study of best practices in small school management Under the Office of the Basic Education Commission Kamphaengphet province; It is a qualitative research. Proceed as follows;

A. Informants

Informants are divided into 2 groups as follow:

1. A group of informants for taking lessons, best practice in the management of small schools; informants were school directors or representatives and teachers working in small schools affiliate Office of the Basic Education Commission (OBEC), Kamphaengphet province with O-NET test results in the academic year 2018. Mathematics or science was higher than the national average of 2 schools per subject by purposive sampling where the school is willing to be a sample which were:

Mathematics subject: Nong Chang Ngam School, 5 students taking the exam and Thung Sai Kindergarten

School (Ban Nong Nok Chum) 9 students, taking the exam with an average O-NET score of 77.00 and 50.33, respectively.

Science subjects include Thairath Wittaya School 16 with a total of 4 students taking the exam and Thung Sai Kindergarten (Ban Nong Nok Chum) with 9 students taking the exam with an average O-NET score of 49.13 and 52.78, respectively.

2. The groups of informants who provide feedback and confirm best practice in the management of small schools include Directors of Primary Educational Service Area Office (PEASO), Deputy directors of Primary Educational Service Area Office (PEASO), Supervisors in charge of small schools, Supervisors who supervise teachers in the subject group of mathematics and science, school directors and math and science teachers in the school that had an average O-NET math or science score higher than the national average, 11 people.

B. Data source

Sources of information used in document analysis are school self-reports, projects, activities related to teacher development, the development of teaching and learning processes and the development of learners.

C. Research instruments

The research instruments were executive interviews form, teacher interview form and the school performance report form. The detail as follow;

1. Executive interview form; it is a structured interview with covering operations in the areas of personnel, materials, and management.

2. Teacher interview form; it is a structured interview covering about personal development, teaching preparation, teaching and learning management, assignment and inspection, measuring and evaluating learners, and providing assistance to students who do not understand the content.

3. Record form of school performance report; it is the record information about the organization of the project, activities related to teacher development, development of teaching and learning processes, and the development of learners.

4. Focus group recording form; uses for collecting data from group discussions to provide feedback and contribute to feedback and confirm best practice information.

D. Data collection

1. Coordinate to the school director to request a favor, self-report documents of the school, projects activities related to teacher development, development of teaching and learning processes, learner development, and appointments for interviews with the school director and teachers of the 3 schools.

2. Interview the school director or representative. (In case of that the school waits for the administrators to take the position) and the teachers of the 3 schools.

3. Analyze documents such as projects, activities related to teacher development, the development of teaching and learning processes, and the development of learners.

4. Summarize information from the interview then return the information to each school for further examination and further completion.

5. Summarize the information and formulate the best practices in the management of small schools.

6. Group discussion (focus group); Director of the Primary Education Area Office, Deputy Director of the Primary Education Service Area, Office Supervisor at School directors, and math and science teachers in schools that have a higher score than the national average for O-NET score of math or science and contribute to feedback and confirm best practices in small school management.

E. Data analysis

Analyze the data from the interview with the instructor, executives together with the documents, then grouped them up to create best practices in small school management by using content analysis.

V. RESULT

The best practices in small school management are as follows:

1. For administration, consisting of personnel, teaching support and the management found the following results:

1.1 Personnel, which are persons involved in learner development activities, consists of;

1) Executives, act to take care, consult, supervise and follow up the work, encourage teachers and students, encourage teachers to develop themselves, assign tasks to accountability according to aptitude and suitability, create a happy learning atmosphere, and build confidence and morale in work.

2) Teachers, have an important behavior that is devoted to students, responsible for teaching and other duties as appropriate, develop themselves by learning from DLTV and studying further from the Internet.

3) Students, should have key characteristics: literacy, fluency, computer skills, discipline and responsibility.

1.2 Two aspects of teaching support: Distance Learning Management System (DLTV), computers and Internet access for information searching, and teacher manuals since teachers do not meet the courses taught.

1.3 For the administrative, the academic affairs department arranges class schedules according to the DLTV teaching schedule, and additional arrangements with an emphasis on core subjects and sub-subjects that the core

subjects are subjects that must do O-NET exam by completing the content according to the curriculum. After the O-NET exam, study the secondary subjects or the subjects that must be completed classroom arrangement of either 2 or 3 classrooms depends on the number of teachers. Assign homeroom teachers to promote the class according to the primary students Grade 1-3 and Grade 4-6 or Grade 1-2, Grade 3-4 and Grade 5-6 to continuously monitor the student's development. Administrators or teachers set goals for student development. (Rewards students with O-NET exam results higher than the national average).

2. Learning management consists of activities according to the curriculum. And extra-curricular activities found the results as follows;

2.1 Activities according to the curriculum, include individual learner analysis, adjusting the basis of prior knowledge, teachers study indicators, content to be taught, analyze exams for teaching information, and find teaching techniques and materials that help learners' interest and enjoyment such as using games and using technology in teaching. Before starting new content, ensure that all learners understand the original content. Assign 2 questions of math as homework per day. For science, complete exercises in an hour and the teacher has to check homework and work every time. In the case of students who make mistakes, they are asked to teach more individually. Measurement and evaluation section consider from worksheets, exams, assignment behavior, and study interests.

2.2 Extra curriculum activities include teaching after the content has been completed by doing exemplary exercises in the past year and taking place on Saturday or Sunday, joined the project with the school group to send students to review their knowledge and practice doing problem solving.

All the factors are driven simultaneously as in Figure 1.

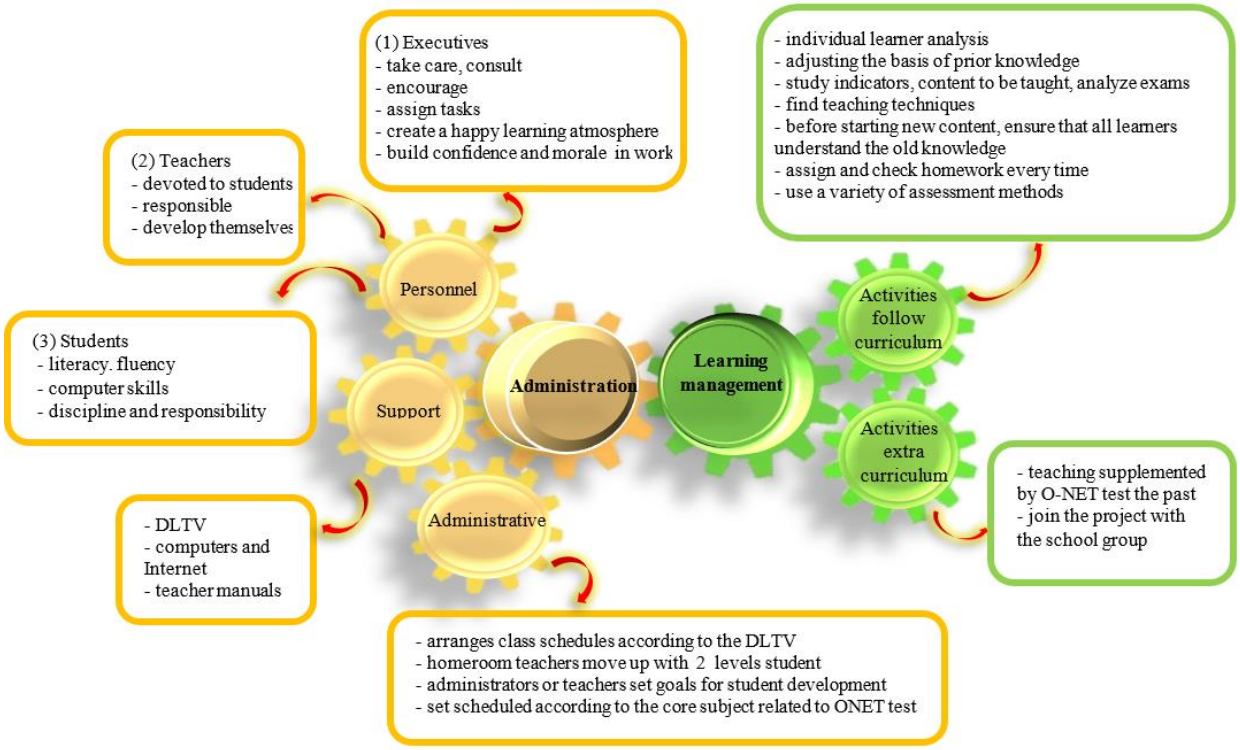


Figure 1. Factors of Best Practices in Small School Management

VI. DISCUSSION

Best practice in managing small schools, discuss the results of each sub-issue as follows;

1. Administration, consists of personels; executives and teachers, teaching support and administration. Executives act to take care, give advice, supervise and follow up, stimulate teachers and students, encourage teachers to develop themselves and give an assignment to be responsible according to aptitude and suitability, provide a happy learning atmosphere and build morale for their works. Teachers devote time to students, responsible for teaching and other duties as appropriate, develop themselves by learning from Distance Learning Television (DLTV), learn

more from the internet to assets students to be proficient in literacy, computer skills, discipline and responsibility. Teaching support consisits of the system of Distance Learning Television (DLTV), computer and teacher handbook- because the teachers do not meet the courses taught. Administration consists of the arrangement of the class schedule according to the teaching schedule of Distance Learning Television (DLTV), additional arrangement more subjects by emphasizing on core subjects and secondary subjects, combined class arrangement, homeroom teacher requirement follows learners to continuously monitor student development. The results reflect school management that leads to the success of the goals should cover both personnel management wheather it is an executive or teachers are very important to lead the organization to success. That is consistent with the research of, as in [7]. That is best practice for developing the quality of small schools about management consists the personnel and budgets management, perform duties efficiently and provide the necessary resources to support them. Especially for distance learning because the teachers do not meet the educational background. This is corresponding to the results of the small school quality development guidelines under the Office of Khon Kaen Primary Educational Service Area 4. That is the use of resources should be promoted to teachers and students in systematic research and teaching activities, improving the system of distance learning devices via satellite to make them available, supporting, promoting the adoption of modern media and technology. In teaching and learning to be effective [6]. This is in line with the small school development strategy that sets the factors and conditions for school success. One factor is the promotion of distance education via satellite as a tool for improving the quality of education (Office of the Basic Education Commission, 2015). A study by [1] found that the strategy for the management of future small schools (2013-2022) should be used for ICT in the systematic teaching and learning management.

2. Learning management consists of curriculum activities and co-curricular activities. Curriculum activities involve analyzing the individual learners, adjusting the background knowledge, studying indicators, teaching content, analyzing the exam for teaching information, finding techniques and teaching materials that help learners' interest. Before starting a new content, make sure all learners understand the original content. Assigning the homework, teachers must individually monitor students. Measurement and evaluation are based on assignments, submission behavior and study interests. C o-curricular activities involve teaching supplementary lessons after completing the content, and join the project with the school group to send students to review their knowledge and practice doing problem solving. These results reflect that in teaching and learning that teachers are well prepared to teach and look after each student thoroughly in appropriate knowledge and behavior. Which is in line with the principles of learning management according to the core curriculum of basic education 2008 which adhere to the principle that the learner is the most important. Learner-centered learning management requires a variety of learning processes. Therefore, the instructor must study the school curriculum to understand the learning standards, indicators, the key competencies of the learners, prepare and choose the appropriate materials for the activities, as well as assess the progress of the learners in a variety of ways [2]. And the research of, as in [7] found that best practice in developing the quality of small schools for learner development activities, educational institutions should organize activities that encourage learners to think, do, and organize activities to promote learning achievement. Corresponding to the results of the small school quality development guidelines under the Office of Khon Kaen Primary Educational Service Area 4, the learning management found that literacy should be accelerated, focus on analytical thinking, the curriculum should be adjusted by focusing on processes rather than subject matter include with training and development according to learner's needs in order to have a real determination in teaching and learning [6]..

VII. RECOMMENDATIONS

A. Recommendations for Practices

Small schools should adopt the following guidelines:

1. Administrators should pay attention to mentoring, supervise and follow up work, encourage teachers and students, encourage teachers to develop themselves, assign tasks to responsibility according to aptitudes and suitability, create a happy learning atmosphere and encouragement.

2. Teachers should devote time to students, pay attention to and analyze learners individually, find techniques and teaching materials that will help learners' interest and enjoyment in their studies before starting a new content make sure learners understand the original content. Provide supplementary teaching after completing the course of study. If the educational background does not match the subject, responsible for self-improvement by learning from DLTV along with the learner and study further from the Internet.

3. Administration; academic departments are required to organize class schedules according to the DLTV teaching schedule and with additional emphasis on the core subjects. The core subjects are subjects that must do O-NET test. it must complete the content according to the curriculum. After the O-NET exam, complete the secondary course or the subjects you need to study. Two or three classrooms must be organized together depending on the number of teachers. Homeroom teachers are required to promote primary student classes in Grade 1-3 and Grade 4-6 or

Grade 1-2, Grade 3-4 and Grade 5-6 in order to continuously monitor the student's development. And administrators or tutors set goals for learner development, such as rewarding students with high results on O-NET exams.

B. Recommendations for Further Research

This study focuses only on the study of best practice in the management and teaching and management of mathematics and science. Further studies should be conducted on the following areas.

1. Best practice management and teaching and learning in language subjects; English and Thai are imperative for learners in small schools in remote areas with tribal dialects.

2. Best teaching and learning management practices emphasize desirable traits because they are good for social life.

CONCLUSION

Best practices in the management of small school have to perform simultaneously between administration and learning management, where the key practice for administrators are supervising, monitoring, and facilitating the teachers and students. Teachers are determined to develop learners and learners are diligent and responsible, and consistent and continuous action leads to success.

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Design and Construction of Air Temperature and Relative Humidity Measurement System in Solar Dryer Using Android Operating System

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Abstract— This research aims to design and create air temperature and relative humidity measurement system for solar dryer. Solar dryer used in this research created by Physics Program, Faculty Science and Technology, Thepsatri Rajabhat University. After creating the measurement system, the measurement system was installed inside solar dryer and temperature and relative humidity were measured by using this system. Blynk application which is a mobile application on Android operating system. The measurement system can be opearated real time and the data can be exported in Excel file. To do this, ESP8266 and DHT22 were connected with Blynk application. The measurement system was used to measured temperature and relative humidity inside solar dryer. The temperature value inside solar dryer is between 51.517 to 56.22 ◦C, relative humidity value is between 6.143 to 12.154 % For the outside solar dryer, temperature is between 44.949 to 42.1 ◦C and relative humidity is between 9.891 to 12.382 %

Using a microcontroller form Blynk application compared with a standard measuring instrument that is used is Data Loggers of HIOKI form Japan. Where when comparing, there is an error of 0.5%

Index Terms— ***Solar dryer, ESP8266, DHT22, Application Blynk, The system measures the temperature and humidity***

I. INTRODUCTION

Thailand is an agricultural country ; as a result, there is a lot of agricultural products. In the past, there was a way to preserve food to extend the food expiration dates for eating or using, such as fermentation, sugar syrup, stirring and smoking, etc., which natural drying has become very popular due to the potential of Thailand in terms of solar energy which is relatively high because it is located near the equator, resulting in an average daily radiation exposure of 17.4 megajoules per square meter. [1]. It also helps in the use of clean and economical energy. Natural drying is also an easy process. Most of the production processes are fruits, herbs, meat, but natural drying often suffers from pest infestation or dust contamination. So far, many researches related to drying technology have been invented to help reduce this problem.

In the physics program , faculty of science and technology, Thepsatri Rajabhat University has conducted research on the study and development of household solar dryers to help accumulate heat energy, The dryer also consists of a polycarbonate sheet covering a parabolic shape to assist in the accumulation of thermal energy. There is an open-close front door and a fan that uses 10 watts of DC power direct power directly to the solar cells to help drain moisture from household-grade solar dryers [3]

As a result of the research of solar dryers, temperature and humidity are measured through data loggers, collecting data through an SD card, making it unknown to temperature changes, humidity at that time, as temperatures change over time. Therefore, the researcher realized that building and designing a temperature sensing system including the humidity inside the solar dryer transmitted through the Android operating system is convenient to monitor the temperature data. In creating this measurement system, it will have a positive effect on maintaining the product being baked to see if the temperature conditions are appropriate. If it baked further, it could damage agricultural crops. Therefore, the creation of a real-time measurement tool,

which measures its temperature and humidity, is essential for measuring inside a solar dryer and transmitting it through the Android operating system through the Blynk app, allowing timely data analysis.

II. PRINCIPLE AND THEORY

Most solar dryers have been developed for drying agricultural products as substitutions for natural sun exposure or replace the drying with mechanical equipment (mechanical dryer) to solve the problem of damage and contamination caused by natural sun exposure or to reduce energy costs. The drying researchers specializing in the drying will design a solar-powered dryer to be more efficient than natural sun exposure and can solve the problems by placing the products to be dried in a cabinet, box, room or air tunnel. Generally, a solar dryer consists of two parts: one for solar radiation and the parts for placing the product, both of which may be in the same structure or separately. In operation, solar radiation is converted into heat energy and the resulting thermal energy is used to evaporate water from the product.

This greenhouse drying system uses polycarbonate sheets after covering. When the sun's rays pass through the polycarbonate sheet, Some of them will fall on the floor, and inside the drying system, the temperature is higher. This causes the moisture in the product to evaporate and is driven by an exhaust fan attached to the rear of the drying system to drain the moisture to the outside environment. The ambient air then flows through the front vent to replace it. The humidity of the product will gradually decrease as shown in figure 1.



Figure 1 household solar dryers

Solar Dryer Principles

The operation of the solar dryer will use the energy from the sunlight to collect it. Used inside the dryer, which is a greenhouse dryer, it causes heat accumulation from the exposure of the solar radiation that passes through the transparent plastic sheet of the solar dryer and the exposure to the solar panels inside the dryer and emits a lot of long wave rays inside the drying machine causing drying heats that accumulates for a longer period of time. As a result, the temperature inside the solar dryer increases and the temperature is higher than the outside or ambient temperature. The drying of the product can be dried faster, but we will have to study the drying of the product in various types to be suitable for the dryer. It also prevents dust in the air and rain that can make products in higher quality. Solar dryers also rely on solar heating energy, saving energy and releasing a lot of carbon dioxide.

Measurement systems

Micro controller (Microcontroller) comes from two words, micro means small and the term controller means controller or control device. Therefore, the microcontroller means small control device. However, in this small controller it packs the ability to work as a computer system that most people are familiar with, that is, within the microcontroller it integrates the CPU, memory, and ports, which are the core components of a computer system. The program can be programmed to define working patterns and control them independently according to the needs [9]

DHT Sensor Air temperature and humidity sensor DHT is derived from the term Digital Humidity and Temperature Sensor, literally translated as a digital humidity and temperature sensor. It has the ability to detect air humidity and temperature. There are 3 types of values:

1. Humidity whereby absolute humidity is defined as the mass ratio of water vapor contained in air per 1 unit of volume of air in grams / cubic meter. Absolute humidity is altered as the air pressure changes.
2. Temperature , the average value of the kinetic energy of any particle in matter which corresponds to the heat or cold of that substance. (Here is the air)
3. Heat index is the actual measurement of the heat that we feel as a result of effect of humidity in high temperature and high humidity conditions, the human body will feel hotter than the temperature measured by a thermometer.

Arduino ESP8266 (NodeMCU) NodeMCU is a platform used to build Internet of Things (IoT) projects that include an open source Development Kit (Board) and Firmware (On Board Software). Lau has made it easier to use. It comes with a WiFi module (ESP8266) which is the

key to connect to the internet. The IoT device control can be programmed without having to go through other devices. Recently, there have been developers who have been able to make the Arduino IDE compatible with the Node MCU, making it possible to use C / C ++ for programming. This allows us to use it in a wide variety of applications. This NodeMCU can do a lot of things, especially related to IoT, whether it is a small web server, controlling the lights via WiFi, and many more. [11]

Blynk application

Blynk is a ready-made application for IOT work, interestingly, it is easy to write programs, no need to write an App and can be used in Real time, able to easily connect various devices to the Internet, whether it is Arduino, Esp8266, Esp32, Nodemcu, Rasberry pi, can be displayed on Application easily and most importantly, Application Blynk is also free and supported on IOS and Android systems.

The way Blynk works starts with an Arduino esp8266 Esp32 Rasberry Pi device connecting directly to Blynk's server and will be able to send and receive data to each other. Smartphone computers are connected directly to Blynk's Server which is a bridge to connect to each other.

III. EXPERIMENT ANALYSES

The humidity and temperature monitoring system has been used in experiments with household dryers developed by the Faculty of Physics, Science and Technology. Thepsatri Rajabhat University, Lopburi Province, and installed a temperature sensor. The humidity inside the solar dryer and outside the solar dryer as shown in Figure 4 is compared to the data logger value every 15 minutes and transmitted via the Blynk application on the Android system via mobile phone, which makes it convenient to store the product in real time

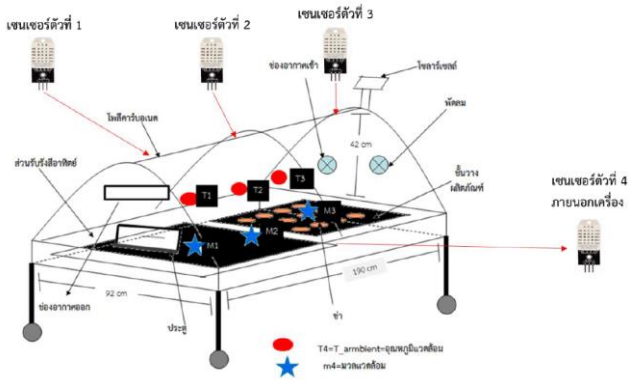


Figure 2 DHT22 sensor mounting position

Effects of the system on the Blynk application by designing the system on the Blynk application through the Android operating system for recording data and storing temperature, humidity, The research process obtained data from analytical studies to create and design Blynk apps for temperature measurements and moisture in numerical form and graphs on the pages of the application.

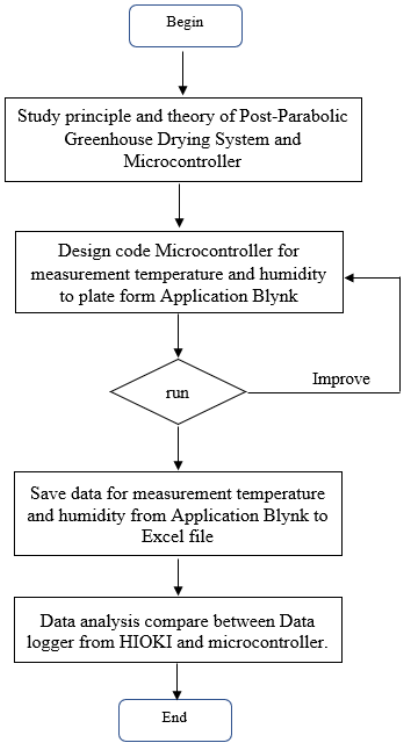


Figure 3 Flow Charge system measurement

Data Analysis

1) Analytical Induction: measurement humidity and temperature monitoring system and to plate form Application Blynk.

2) Data analysis was used to temperature and humidity from Application Blynk to Excel file. By compare between Data logger from HIOKI and microcontroller

IV. RESULT

From Data analysis was used to temperature and humidity from Application Blynk to Excel file. By compare between Data logger from HIOKI and microcontroller

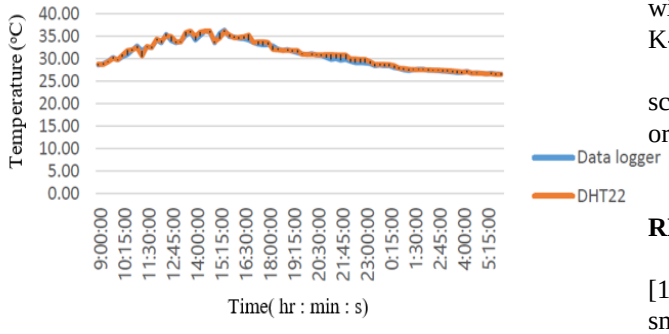


Figure 4 result temperature from Application Blynk to Excel file. By compare between Data logger from HIOKI and microcontroller

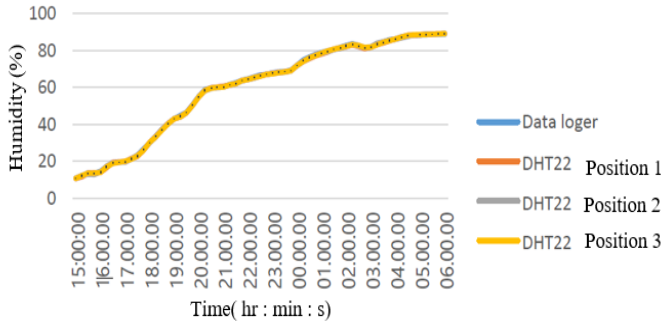


Figure 5 result humidity from Application Blynk to Excel file. By compare between Data logger from HIOKI and microcontroller

V. CONCLUSION

Design and construction of temperature measurement systems including the humidity in a solar dryer through the Android operating system. It has the purpose of real-time data monitoring and storage. The design and construction of temperature measurement systems can be applied and began to study the temperature measurement system and humidity to be collected and monitored at any time for further troubleshooting of solar dryers.

From the study of the design and construction of the temperature and humidity measurement system , the procedures and methods were studied to develop a temperature and humidity measurement system in order to implement a system designed for data collection and can also send, transmit and store data through Blynk for analysis as well. From the experiment, the measurement system in the solar dryer for the temperature measured inside the solar dryer is in the range. 51.517-56.220 degrees Celsius, the humidity ranges from 6.143 to 12.154 percent, and for the temperature measured outside, the solar dryer is in the range. 44.949-42.1 degrees Celsius. Humidity also ranges from 9.891 to 12.382 percent. This measurement is compared with the temperature probe and the relative humidity of the K-type probe in all four positions, the error is 0-2 percent.

The researcher-built measurement kits can be scaled up and added to sensors to suit the size of the dryer, or can be applied to smart farm measurements.

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Abstract— Agri-voltaic system is the combination between solar photovoltaic power generation and plant cultivation. A 480 Wp ground-mounted solar panel system was designed and constructed. After that, a plant plot sizing 1 x 7 m under this solar panel was design as well as 175 vegetations of bok choy were then grown. The potential of agri-voltaic system consisting of efficiency of solar power generation, the bok choy yield and the land equivalent ratio of system were monitored and evaluated. The system could generate power at around 1.05 kW/day (31.00 kW/month). In addition, 8.00 kg/plot of bok choy yield was obtained. The total value of both systems could make up to $6.34 a month ($3.73 and $2.61 from solar power generation and plant production, respectively). The land equivalent ratio (LER) of system was 1.80 which was indicated that the agri-voltaic system could increase the land value up to 80%.

Index Terms— ***Solar power generation efficiency, Agri-voltaic system and Solar cell***

I. INTRODUCTION

Currently, Thailand has photovoltaic (PV) power generation capacity of 2,819 MW. There are covered an area of 9,020 hectare (Chimres, & Wongwises, 2016) but the area under the solar panel has not been utilized. In 2015, the government of Thailand has a policy to generate 6,000 of photovoltaic (PV) power generation. (Achawangkul, & Blueprint, 2015) which needed more area for install solar panels to generate electricity. The photovoltaic (PV) power generation capacity of 1 MW covered an area of 3.2 hectare (Ong, Campbell, Denholm, Margolis, & Heath, 2013). Increasing of solar power generation will inevitably require more land area for installation which may affect not only the land use competition, but also food security in the future.

Asian Development College for Community Economy and Technology (adiCET), Chiang Mai Rajabhat University is concerned about energy conservation, higher efficiencies, and use of renewable energies in the integration to the local community. adiCET aims to be the learning center for green technologies to showcase real applications for sustainable living. adiCET is education institution that offers graduate education. Community Energy and Environment Program. adiCET has energy and environment experts and ready in terms of personnel, tools and place for conducting solar research projects. The researcher of adiCET was to investigate a suitable configuration for space utilization under the PV panels for 3 configurations: a water pond, a chili cultivation and a grass plantation and the PV reference cell, temperature sensor and DC meter was installed. The Results indicated that water pond and a chili cultivation were suitable configuration for promoting the power production (Kumpanalaisatit, Jankasorn, Setthapun, Sintuya, and Jansri, 2019). Therefore, in order to solve the problem of the aforementioned areas, the concept of solar power generation is combined with agriculture known as Agri-voltaic systems which is the most useful of the land to generate electricity from solar energy in the same land at the same time. However, the combination of solar power generation and agriculture requires to experiments in order to obtain a prototype that is suitable for each area. Therefore, this research focuses on design and construct the ground-mounted solar panel system, evaluate the efficiency of solar power generation and analyze growth and yield of Bok choy under solar panels.

II. RESEARCH OBJECTIVES

The objectives of this research article were 1) to design the Agri-Voltaic System, and 2) to evaluate the efficiency of photovoltaic (PV) power generation and the growth and yield of bok choy was analyzed.

III. RESEARCH METHODS

A. Design of Agri-Voltaic System

The design of Agri-Voltaic System is planning to installation of the ground-mounted photovoltaic (PV) power generation and setting the plant cultivation system for Co-production following steps:

1. Design and installation of the ground-mounted photovoltaic (PV) power generation

The ground-mounted photovoltaic (PV) power generation capacity of 480 Wp was designed and installed in the purpose of generating electricity. There are 4 polycrystalline PV modules installed with a solar charge controller, 1 battery and an inverter in order to distribute the power to the load (45 W electric fan). The structure is tilted at an angle of 18 degrees to the earth.

2. Setting the plant plot for crop cultivation

The soil under PV panels was prepared and ploughed with raised beds of 7 cm^2 (7 x 1 m), as seen in Fig. 1.

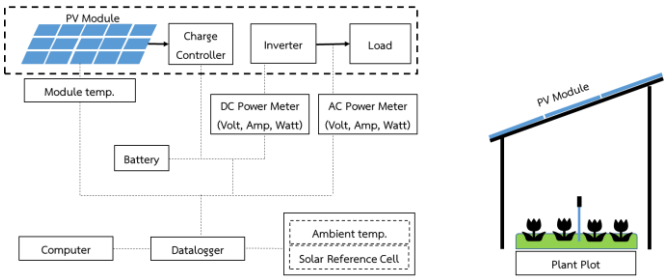


Fig.1 Design of Agri-Voltaic System

B. Evaluate the evaluate the efficiency of photovoltaic (PV) power generation

The Method for evaluate the performance of solar power generation systems reference to standard International Electrotechnical Commission: IEC 61724, which contains important parameters for evaluating the performance of photovoltaic power generation systems (Pirawut Chinnaworanganyang et al, 2015) as equation 1 - 4.

$$Y_a = \frac{E_{pv(DC)}}{P_{o(installed)}} \quad (1)$$

$$Y_f = \frac{E_{pv(AC)}}{P_{o(installed)}} \quad (2)$$

$$Y_r = \frac{H_i}{G_{STC}} \quad (3)$$

$$PR = \frac{Y_f}{Y_r} \times 100 \quad (4)$$

When

1) Ya is array Yield (kWh/kWp)
2) Yf is final Yield (kWh/kWp)
3) Yr is reference Yield (kWh/kWp)
4) PR is Performance Ratio (%)
5) $E_{pv(DC)}$ daily energy contributed to the load by PV plant (kWh)
6) $E_{grid(AC)}$ daily energy consumed by the load (kWh)
7) Po (installed) is capacity (kWp)
8) H_i is solar radiation (kWh/m^2)
9) G_{STC} is solar radiation standard test condition: STC (1 kW/m^2)

C. Evaluate the evaluate the growth and yield of bokchoy

1. The height of plants, the number of leaves, the size of leaves and the weight of plants were measured 35 plant per plot. All of the parameter were recorded every 7 days, starting from the 7th day after transplanting to the harvest date.

2. At 35 days after transplanting, thirty-five plants per plot were harvested, weighed, and recorded.

IV. Installation of PV System

1. Installation of ground-mounted solar power generation

1.1 Structure

The size of structure ground-mounted solar power generation is 5,000 × 4,000 mm. The pole is galvanized steel box, size 101.6 x 50.8 mm. There are 4 poles, the spacing between the poles is 3,000 x 2,500 mm. The steel for fixing the solar panels is galvanized steel box, size 2,000 x 2,000 mm, 4,000 mm, 8 steel as seen in Fig. 2.



Fig.2 INSTALLATION OF PV SYSTEM STRUCTURE

1.2 Installation of solar panels and smart boards

Solar panel installation of solar power system by installing solar panels, 120 watts 18.7 volts, 6.42 amperes, 4 panels each to be connected in parallel to the power of 480 watts. Installation characteristics will be installed in the middle of the structure. The smart board was installing in other area of structure as seen in Fig. 3.



Fig.3 Installation of PV panel and smart board

1.3 Installation of the control box

The connecting of PV power generation is using an MC4 connector and a 2.5 mm2 PV1-F solar cable is connected from the solar panel to the electric control box. Which the electric control box of the solar power system consists of Charge controller and inverter as seen in Fig. 4.



Fig.4 Installation of the control box and cable connection

1.4 Installation of battery

The battery installation is connect from the charge controller, to the battery, and connected to the inverter to convert the direct current into AC electricity as seen in Fig.5.



Fig.5 Installation of the battery

1.5 Installation of PV reference cell

The PV reference cell was installed for measure solar radiation as seen in Fig.6. There are record the data by data recorder as seen in Fig.7.



Fig.6 Installation of PV reference cell

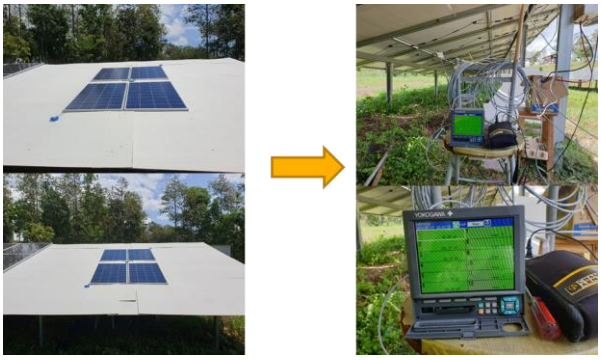


Fig.7 Collection data from PV reference cell

1.6 Installation of power meter

Power meter was installed for measure electricity production of the solar power system that is produced in conjunction with agriculture. To compare the efficiency of electricity as seen in Fig.8.



Fig.8 Installation of the meter

V. SETTING UP OF THE PLANT PLOT

2.1 Plant plot preparation for yield evaluation of plants grown under solar panels.

a plant plot sizing 1 x 7 m under this solar panel was design as well as 175 vegetations of bok choy were then grown as seen in Fig.9.



Fig.8 Setting up of the plant plot

2.2 Installation of a water system

Installing a water system by using a 6-inch PCV water pipe, then installed a water filter system. Then installed a PE pipe for drip system as seen in Fig.9.



Fig.9 Installation of irrigation system

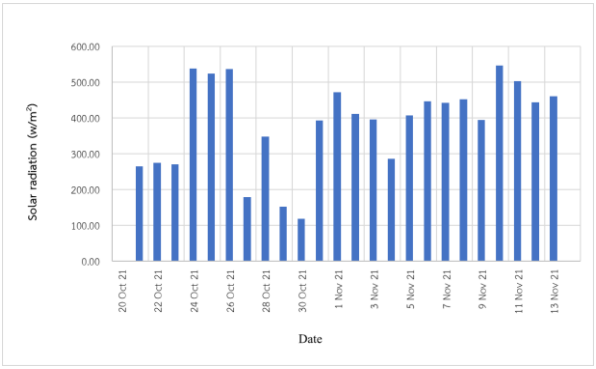


Fig.10 Average solar radiation from October 21 - November 13, 2021

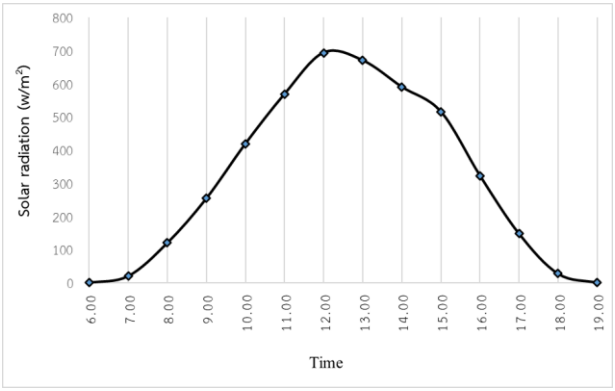


Fig.11 Average solar radiation from perday October 21 - November 13, 2021

V. RESULTS

2. Solar power generation

Solar power generation data collection includes information Current (amperes) and voltage obtained from solar panels (volts). The data was evaluating the power produced from the system. In addition, it also collects the factors that affect solar power generation by collecting solar radiation intensity and solar panel temperature data. As the following details:

2.1 solar radiation

The collecting solar radiation data was conducted during plant growing under solar panels from October 21 - November 13, 2021, a total of 24 days. It was found that on November 10, 2021 the mean solar radiation was the highest of 546 watts per square meter. On October 30, 2021, the mean solar radiation was the lowest at 118 watts per square meter. And an average of 24 days of solar radiation is 385 watts per square meter as seen in Fig.10. From Figure 11, it can be seen that the mean of solar radiation for this period varies with weather conditions. That is to explan, the data collection period is the end of the rainy season, so there will be some days of rain and the solar radiation values of each day are different. The daily average of the solar radiation intensity showed that the solar radiation was high during 11.00 - 15.00 hrs. Between 500 - 790 watts per square meter. This shows that this is the period when the solar power system can generate the highest amount of electricity.

1.2 Solar panel temperature

The collecting data of solar panel temperature and ambient temperature during the time of from October 21 - November 13, 2021, a total of 24 days. It was found that the solar panel temperature and the ambient temperature were related, that is, when the air temperature rises, the solar panel temperature increases. The maximum temperature of solar panels and ambient temperatures were 46.19 and 30.00 degrees Celsius, respectively, the lowest temperatures were 24.78 and 24.00 degrees Celsius, and the 24-day mean temperatures were 38.33 and 27.21, respectively. The data shows that the average temperature is relatively consistent. The temperature of the solar panel varies with the solar radiation intensity. Therefore, the temperature of the solar panels on rainy or less sunny days is a little higher than the air temperature as seen in Fig.9.

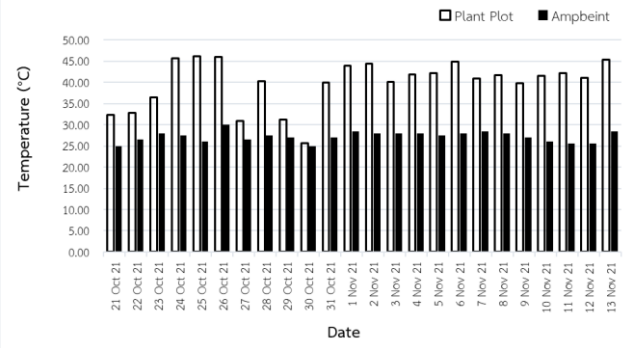


Fig.12 Temperature

1.3 Solar power generation

The collecting data of Current (amperes) and voltage from solar panels (volts) to calculate the power generated by the system during October 21 - November 13, 2021, a total of 24 days. It was found that the Agrivoltaic system, size 480 Wp, can produce a total of 25,000 watts or 25 units of electricity, an average of 1,052 watts per day which November 10, 2021 it can generate electricity as high as 1,839 watts, and October 21, 2021 it can produce as low as 356 watts. The average solar power was found that the solar power system produced in Agrivoltaic system can produce high electricity at 12.00 hours.

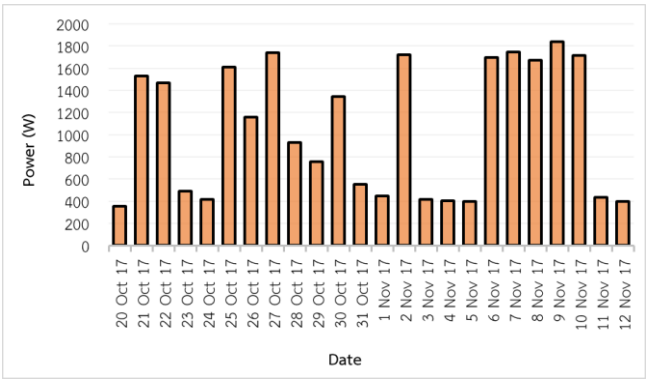


Fig.13 Solar power generation

2. Growth and yield of plant

The height of vegetables grown under solar panels in the 5th week was 3.6 centimeters higher than that of normal light conditions. The graph shows that the height of the vegetables grown under solar panels tends to increase steadily due to insufficient light intensity factor as seen Fig. 14.

Number of leaves: 8 leaves of vegetables that were planted under the solar panel at the 5th week. as seen Fig. 15. It was concluded that growing plants under solar panels had no effect on leaf growth.

The width and leaf length of the plants were found that the width and leaf length of the vegetables grown under the solar panel were 4.53 cm and 11.12 cm respectively.

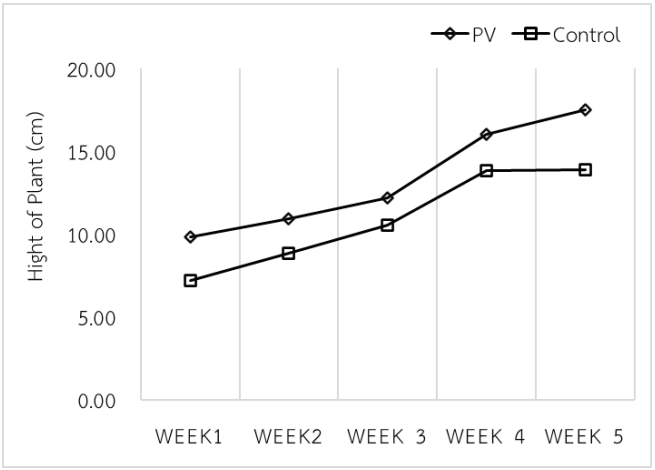


Fig.14 Hight of plant

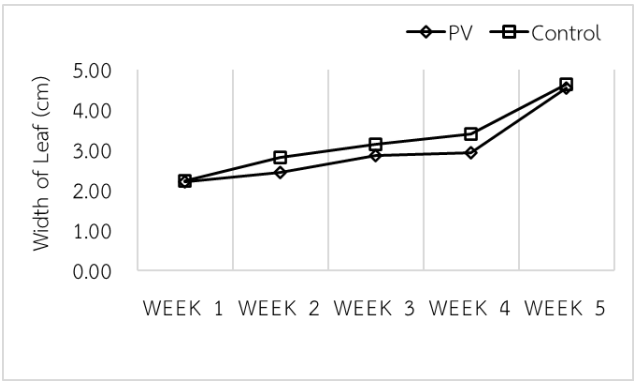


Fig.16 Width of Leaf

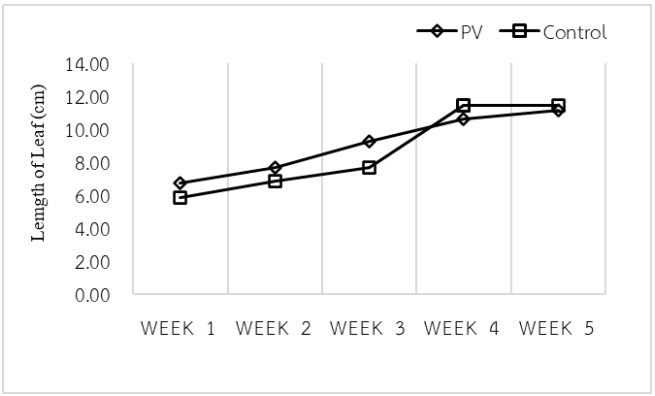


Fig.17 Length of Leaf

The data collection of plant weights and root weights of bok choy that grown under solar panels was found that growing under solar panels had an average of 48.61 grams per plant. The total yield was 1.8 kg.

Table 1 Fresh weight and total yield of bok choy that cultivation under the PV panel

Plant	Fresh Weight (gram/plat)							total (g)	yield (kg)
	1	2	3	4	5	6	7		
Shoot	6.7	18.4	8.1	5.9	2.7	3.1	3.7	48.6	8.5
Root	0.8	1.4	2.0	0.4	0.30	0.6	1.7	7.3	

VI. Discussions

The ground-mounted Solar power generation that combine with agriculture could generate electricity similar to or more than a solar power system that is not co-produced with agriculture because such a power system is designed for the purpose of generating electricity. The crop cultivation under the photovoltaic panels may result in lower panel temperatures. The voltage increases and there are results in more electricity, Rajvikram and Leoponraj (2018) confirmed that the efficiency of solar panels can increase to 14% when the solar panel's temperature drops around 5 ° C. Peng, Herfatmanesh, & Liu (2017) also concluded that the thermal cooling technique of solar panels can increase solar panel efficiency. This is consistent with the results of Anucha Dee Phang and Promchaisuphan (2018) said that Solar panels installed as a solar tracking system in combination with a water-cooling system produced approximately 16.9 W more than fixed and non-cooled solar panels, or approximately 28.36 percent. The potential yield of boy choy that grown under solar power generation system is 20 percent less than the general cultivation. However, the considering of land equivalent ratio was showed that the agrivoltaic system could added value of the land (LER = 1.8) Which increase added value of the land by 80 percentage. The results of this land use efficiency assessment are consistent with the Valle et al., 2017 and Dupraz et al., 2011. They are assess of land use efficiency and found that the values of LER is 1.67 and 1.73, respectively, which show that the cost-effectiveness and feasibility of installing a solar power system with agriculture.

VII. Recommendations

A. Recommendations for Practices

This research is test of agrivoltaic system by evaluate photovoltaic output and yield of crop that grown under the PV panel which there are without Control for comparison. Therefore, the researcher recommends that the testing of agrivoltaic system should be conducted with control for comparison the result.

CONCLUSION

The 480 Wp ground-mounted solar power generation system could generate power at around 1.05 kW/day (31.00 kW/month). In addition, 8.00 kg/plot of bok choy yield was obtained. The total value of both systems could make up to $6.34 a month ($3.73 and $2.61 from solar power generation and plant production, respectively). The land equivalent ratio (LER) of system was 1.80 which was indicated that the agri-voltaic system could increase the land value up to 80%.

Acknowledgements

The researchers would like to present our deep gratitude to Asian Development College for Community Economy and Technology (adiCET), Chiang Mai Rajabhat University for research implementation support; and to the Office of Naval Research (ONR), USA and Institute of Research and Development (IRD) Chiang Mai Rajabhat University for supporting this research grant.

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Study of causal factors in the use of MIS to design wooden furniture of small and medium industries in Thailand

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Abstract - This integrative research aimed to study and develop a causal model of MIS-assisted wooden furniture design of small and medium industries in terms of designer competence, management, innovation and technology and cost. The operating procedure consisted of quantitative research and using stratified sampling methods from 2,898 populations. Informants were operators, owners, managers, or assignees of 240 locations. Qualitative research would select 7 target groups using the specific method of selection. Confirmation of research results was done using a focus group, with ten management experts and related experts in wood furniture design participating in the focus group. The results of the study revealed that the key factors affecting the use of MIS in the design of the wood furniture industry were designer competence factors, management factors, innovation and technology, and cost factors. These three factors directly and indirectly influenced MIS-assisted wooden furniture design for small and medium industries in Thailand. Goodness of Fit Index values: χ^2=54.80, df = 44, χ^2/df = 1.24, p-value = 0.13, CFI = 0.99, GFI = 0.96, AGFI = 0.93, SRMR = 0.04, RMSEA = 0.032

Keywords— ***MIS-assisted wooden furniture design, innovation and technology, cost, designer competency***

I. INTRODUCTION

From a survey and interview with small and medium wood furniture entrepreneurs in Thailand, it was found that the gross income of the furniture industry from 2016-2019 tends to increase steadily. Data obtained from the Trade Statistics Center, Department of Business Economics [1] presented the export data from 2016-2019 with the following export values: 1,096.60, 1,145.30, US $ 1,185.20 million, respectively. When considering the list, it was found that the wood furniture tended to decline steadily. The export value of 2016-2019 was 348.25, 331.50, 313.10 million US dollars, respectively.

Value : Million USD

	2016	2017	2018	2019 Jan. - Feb.	2019 Jan. - Jan.
1. Furniture & Parts	1,096.60	1,145.30	1,185.20	180.60	87.50
1.1 Wooden Furniture	348.25	331.50	313.10	51.00	24.90
1.2 Metal Furniture	105.51	80.30	84.30	13.70	7.00
1.3 Mattresses	84.56	112.00	131.70	15.40	7.30
1.4 Other types of furniture	174.83	178.60	205.10	30.80	14.80
1.5 Furniture Parts	383.44	442.80	451.00	69.60	33.40

Figure in Table 1 shows furniture exports [1]

From the study of the research team by studying related research papers and from in-depth interviews about the export of wooden furniture in Thailand in terms of the proportion of furniture entrepreneurs classified by business size in 2018, it was found that in the furniture industry, there were a large number of micro-entrepreneurs, accounting for 95 percent. Figure 2 shows the proportion of entrepreneurs in the furniture industry [2], it was found that furniture industry competition required databases, technologies and innovations to help wood furniture industry designs meet customer needs.

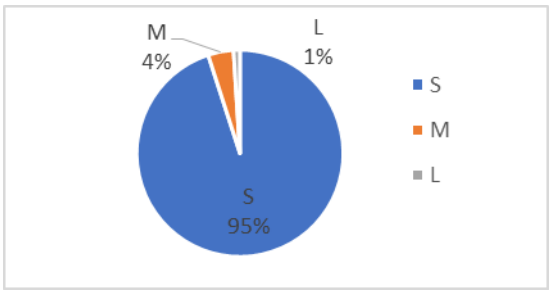


Figure 2 shows the proportion of the furniture industry in Thailand [1]

II. RESEARCH OBJECTIVES

1 To study the causal relationship of MIS-assisted wooden furniture design of small and medium industries in terms of designer competency, innovation and technology management and cost

2. To develop a causal model of MIS-assisted wooden furniture design of small and medium industries in terms of designer competency, innovative management, and technological and cost

III. LITERATURE REVIEW

From in-depth interviews with entrepreneurs, it was found that the small and medium wood furniture industry in Thailand found that there was still a lack of support system to help design. As a result, the style of wooden furniture in Thailand was still not suitable for foreign consumers. This may be one of the reasons for the drop in export of wooden furniture. In addition, the information or design of each furniture company in the industry was company-specific, but had not been widely collected or exchanged. The style of wooden furniture in Thailand still follows foreign countries such as countries from Europe and USA. As a result of information sharing problems in the medium and small furniture industry in Thailand, it was another problem that results in the development of wooden furniture design in Thailand not able to compete with foreign countries. The research team was therefore interested in the causal factors of the introduction of information management systems to assist in the furniture design of small and medium industries. According to the study of the research team, there are three main factors affecting the application of information management system to help the development of wooden furniture: designer competence, management of innovation and technology and cost. These 3 factors were the main factors affecting the application of information management system to help design. Details for such factors can be described as follows.

Designer Competency: In interviewing 10 entrepreneurs, the researchers discovered that the main factor affecting the development of furniture design was competent designer. This was consistent with [3] - [5] with the results of the study that design personnel were the key parameters for furniture layout development and impact on marketing. Therefore, the research team had studied and found that the furniture design personnel in Thailand will use the design data based on the needs of the consumers in the market together with the current design direction. However, the design data was kept as a person and the knowledge is exchanged through [6]. The researchers also discovered that most design personnel need the ability to keep up with design innovation. This included access to technology in order to increase the design capability to compete with overseas models. The study also found that designers had expertise in information systems management in finding information to help them design. Therefore, in order to develop the design using Thailand's information management system, it was essential to develop design personnel to have additional knowledge in the area of information management system. The researcher therefore emphasized the designer competency and is the main factor in this study.

Innovation and Technology Management: The research team found that the furniture design development in Thailand by using the information management system to help design had a very important factor, namely innovation and the use of technology. This was consistent with the findings of Marques C., João, F [10], TIDD, J., Bessant, J., Pavitt, K. [16],. As the introduction of information systems to help design companies, each company in the industry needs to adapt to support innovation and technology accordingly. Moreover, from the survey and interview with entrepreneurs, it was found that SMEs in the industry had to invest and rebuild their information systems in order to support the rapidly changing innovation and technology in the past 4-5 years. Therefore, entrepreneurs must focus on innovation and technology accessibility.

Cost: The study found that for an organization to develop an information management system to help design, it was necessary to invest in various systems such as investing in software, hardware, and implementing information systems. This was consistent with the research [7] [8] that studies the cost of management to enable the development of organizations and personnel. The researchers studied the factors of investment in a study [9] [10] and found that investment factors greatly affected innovation and technology management. The research team can conclude that investment factors influence innovation and technology management and affect the introduction of information management systems to help design as well.

IV. Research scope

The researcher collected qualitative data through in-depth interviews with entrepreneurs and reviewed the concepts, theories and related research of many researchers to develop a research framework and expand the framework according to the current research results. The concept of designer competency, innovation management and technology and cost was the causal factor affecting MIS-assisted wooden furniture design of the SMEs industry. The researcher conducted the study: 1. Designer competency, based on the concept of [3], [4], [11], [12], [13], [14], [15]. 2. Innovation and technology management, based on the

concept of [16], [17], [6], [10], [18], [19]. 3. Cost, according to the concept of [20], [12], [21], [8], [22], [23], [24]. 4. MIS-assisted wooden furniture design of small and medium industry according to the concept of [25], [26], [27], [28], [29].

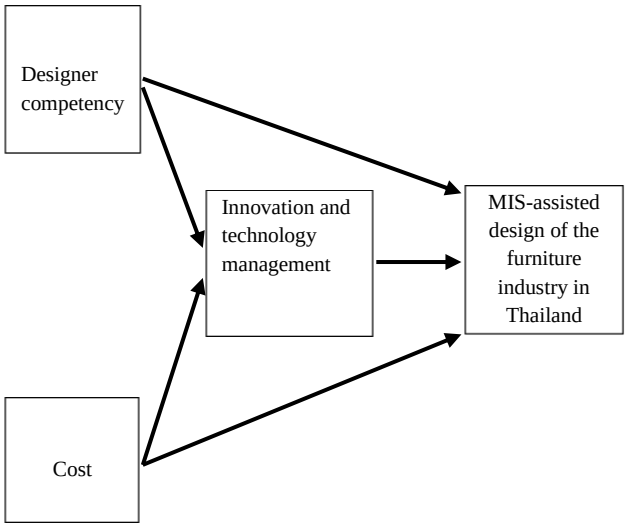


Figure 3 shows the conceptual framework of the research

V. RESEARCH METHODS

This research focused on quantitative research to find answers to research using cross-sectional data collection with the details as follows:

Population and sampling

The population used in this research was business owners or business representatives who could provide information for 2,898 small and medium companies in the furniture industry in Thailand. The sample group was 240 business owners or business representatives. The sample size was determined according to the Hare et al. [30] criterion to select a sample and select it individually based on the given criteria, and then the quota sampling was randomly selected.

This research was a quantitative research using questionnaires. There were procedures for creating and examining a causal model of MIS-assisted wooden furniture design for small and medium industries in Thailand as follows:

1. In-depth interviews with entrepreneurs and studies of documents and research related to the causal relationship in order to obtain the conceptual framework of a hypothesis, the hypothesis was examined and adjusted by in-depth interviews with 7 experts using purposive sampling.

2. Examination of the consistency of the hypothetical model with the empirical data to study direct, indirect and overall influences, the researcher created a 5-level questionnaire to collect the data of the sample.

Research Tools

The research instrument was a 5-level and 5-part test: general information of respondents, 5 items, designer competency, 9 items, cost of 9 items, innovation and technology management, 9 items and MIS-assisted design of the furniture industry in Thailand, 9 items, totaling 41 questions. The questionnaire was examined for the content validity by the IOC technique by 5 experts, and it was then tested and used to determine the classification between 0.60-1.00 [32]. The reliability of the tool was determined using the Cronbach's alpha coefficient, the reliability of the designer competency = 0.90, cost = 0.85, innovation and technology = 0.90, MIS-assisted design of the furniture industry in Thailand = 0.90, totaling 0.93.

Data collection

Researcher conducted the data manually collected during July - September 2020.

VI. Data analysis

Quantitative data analysis consists of analysis, congruence checking of theoretical causal relationship models obtained from empirical data using statistical programs.

VII. RESEARCH RESULTS

1. According to the study of the causal relationship of MIS-assisted wooden furniture design of the furniture industry in Thailand, in terms of designer competency, cost and innovation and technology, there are 2 external and 2 internal latent variables and 12 observable variables. The study found that the designer competency and innovation and technology were causal factors with direct influence.

In Thailand, MIS-assisted wooden furniture design was the most used and followed by cost. Also designer competency indirectly influenced MIS-assisted design of the furniture industry in Thailand through mediator variable, that is, innovation and technology.

2. The MIS-assisted wooden furniture design causal relationship research model of the furniture industry in Thailand was consistent with the empirical data based on Chi-Square (x2) = 54.80, Degrees of Freedom (df) = 44, Population (p) = 0.127, Goodness of Fit (GFI) = 0.96, Adjusted Goodness of Fit Index (AGFI) = 0.93, Root Mean Square Residual (RMR) = 0.0091 and Root Mean Square Error of Approximation (RMSEA) = 0.032, where the relative chi-square value (/ df) = 1.6, which is less than 2. Size analysis of direct and indirect influence of components within the model revealed that designer competency had

direct influence on innovation and technology and MIS-assisted design of the furniture industry in Thailand had influence size = 0.72 and 0.55 respectively. In addition, cost had a direct influence on innovation and technology and MIS-assisted wooden furniture design of the furniture industry in Thailand had influence size = 0.29 and 0.24 respectively. This designer Competency and cost also had a significant indirect influence on MIS-assisted design of the furniture industry in Thailand and influence size = 0.72 and 0.29 respectively. All of them were statistically significant at the .01 level. In addition, the predictive coefficient (R2) of the internal latent variable structure equation was found to be = 0.97, indicating that the variance in the model can describe the variability of MIS-assisted design of the furniture industry in Thailand at 97% as shown in Figure 4 and Table 1.

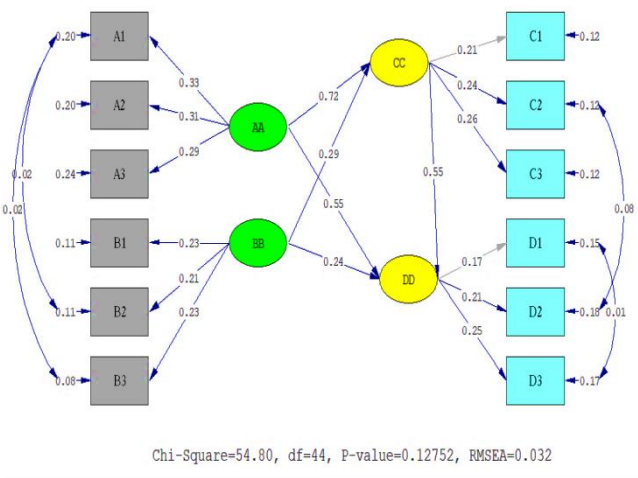


Figure 4 shows the MIS-assisted design factor model of small and medium industry in Thailand.

Symbols and acronyms used in data analysis.

1. Exogenous Latent Variable

AA represents designer competency measured from 3 observable variables: A1 = experience, A2 = learning and practicing and A3 = design skills and techniques.

BB represents cost, measured from 3 observable variables: B1 software = Cost, B = Hardware Cost and B3 = Information system cost.

2. Endogenous Latent Variable

CC represents innovation management and technology, measured from three observable variables: C1 = Process Innovation, C2 = Technology Acceptance, C3 = Technology Access.

DD represents the use of MIS to assist in the design of the furniture industry in Thailand, measured from 3 observable variables: D1 = furniture model is internationally accepted, D2 = upgrading furniture design in Thailand and D3 exchange of design information.

Table 1 shows the results of the analysis of the influence of MIS-assisted wooden factors of the furniture industry in Thailand.

Cause factor							
Effect factor	R^2	Innovation and technology management			MIS-assisted design of the furniture industry in Thailand		
		0.57			0.97		
		DE	IE	TE	DE	IE	TE
designer competency		0.72	0.00	0.72	0.55	0.396	0.946
Cost		0.29	0.00	0.29	0.24	0.159	0.399
Innovation and technology management		N/A	N/A	N/A	0.55	0.00	0.55

VIII. Conclusion

From the MIS-assisted design study of the causal factors of the SMEs industry in Thailand, it was found that the designer competency and management, innovation and technology are the causal factors that have the most direct influence on MIS-assisted design of the furniture industry in Thailand, and followed by the cost. Also a designer competency and cost also indirectly influenced MIS-assisted design of the furniture industry in Thailand through mediator variable that is innovative and technological management. The details could be summarized as follows.

1. Designer competency was a factor that positively influences MIS-assisted design of the furniture industry in Thailand with a coefficient of influence = 0.55. For this factor, the research team found that most of the designer competency in Thailand was from self-learning, either through talking to others, reading books or studying via the internet. These methods were thought to build on experience, learning and practice, as well as design skills and techniques. Designers needed to use their knowledge to develop unique and unique products and services. As a result, the furniture designs were more focused on responding to the needs of the market and customers. The nature of the design by the designer required an orderly management, storage and dissemination system because information was vital to the designer's design. Therefore, studies of researchers could indicate that designer competency has a significant direct influence on MIS-assisted design of the furniture industry in Thailand. Moreover, designer competency had the idea that every

piece of furniture in Thailand had to be designed with craftsmanship that were refined, beautiful and unique in Thailand along with the modern design combined with the integration of local wisdom to create a unique identity. In addition, there was also self-learning in furniture development such as mixing paints for wood painting or extending the life of raw materials in production, then continue to develop to make the product more attractive and create demand for customers continuously. Moreover, the transfer of knowledge received to the members of the organization was the creation of knowledge to last forever, which was consistent with the results of a study [32] [33] that found, designer competency had direct influence on the development of products and services.

2. The management, innovation and technology factors were a direct positive influence on MIS-assisted design of the furniture industry in Thailand with a coefficient of influence = 0.55. The concept of management, innovation and technology contributed to the implementation, emphasizing the form of management of production and delivery of products to the hands of the customer and make a difference in the production of unique products. In addition, new production techniques were introduced into the production process, which could produce furniture at a low cost but still maintain the quality according to customer requirements. The innovation and technology management of the furniture business consisted of: 1) Process innovation was driven by competency in creating diversity and increasing the usability of the product, for example, designs that combine several types of materials to extend their lifespan longer than those made from a single material. In addition to extending the product's life, it could also add beauty to the product or use innovation to increase distribution channels by selling products online. In addition, innovation and technology management improved production quality in order to build more trust among customers. 2) Process innovation was an important tool for creating a competitive advantage for entrepreneurs, at the same time, entrepreneurship was a key mechanism for creating innovation. Process innovation was carried out by using various design techniques and assisting in production to enable rapid production or to be able to manufacture products that meet customer needs, for example, the introduction of Quality Function Deployment (QFD) techniques to help develop product models by focusing on customer needs and tailoring them to meet those needs [15]. It was also necessary to manage innovation and technology for entrepreneurs to become innovators [34]. This would contribute to economic growth. In addition, the study found that creating innovation in products, both in the design and development of new products, required innovation and technology, as they were both extremely important factors in the performance of an organization. Managing innovation and technology meant not only new product technology, but also the shift of traditional operating technologies to new ones. Organizations must always strive to create opportunities and conditions that lead to innovation by bringing them together in response to complex market demands by constantly establishing the rules of quality at the highest level.

3. The study found that cost was a direct positive influence on MIS-assisted design of the small and medium furniture industry in Thailand with a coefficient of influence = 0.24, which found that cost had the least influence. Most furniture industry entrepreneurs needed to invest in software hardware and information systems, which were fundamental and must-have companies. Designers need to use such factors in order to design furniture to meet customer needs. Therefore, it made entrepreneurs view that such factors had the least influence in MIS-assisted design. Instead, they focused on designer competency and management, innovation and technology. But from an in-depth study by interviewing entrepreneurs, it was found that focusing on the cost factor that was less but could not be ruled out because it was an essential element Because if they were absent they will not be able to compete with their competitors, which was consistent with the results of studies [5] [7].

From the study of relations between the parties, it was a study that emphasizes the nature of giving importance to all parties in the organization. The function of MIS-assisted wooden furniture design was a manner of sharing assistance and knowledge transfer between them. In addition, furniture entrepreneurs in Thailand should provide designers with opportunities to develop their skills and expertise and to participate in trainings with government and private sectors. This was consistent with the results of the study [7] found that organizations that focus on bringing innovation into the production of products and services improve competitiveness and could be regarded as responding to the ever-changing needs of customers. The push for MIS-assisted design of the furniture industry in Thailand was a preparation for the competition that may arise. Focusing on innovation and technology management would generate new ideas in product design, innovation or new manufacturing techniques that will affect sales generation and innovation development. Therefore, it could be concluded that the form of the structural equation of the research was consistent with the empirical data and it is knowledge that can be practically significant.

IX. SUGGESTIONS

1. Entrepreneurs and small and medium furniture businesses in Thailand must develop themselves competency in knowledge, creativity, skills and practice to be proficient in management and technology to be used in the development of new innovations.

2. Small and medium-sized furniture entrepreneurs in Thailand should focus on market research to find ways to develop and design products that are suitable for the market such as beauty, contemporaryism, uniqueness and quality.

3. Government agencies should promote the protection of intellectual property in furniture and home decoration businesses.

4. The government should support private individuals to invest in the furniture manufacturing industry for export in accordance with the industrial development policy for export. Moreover, the state should create incentives to invest in the furniture manufacturing industry, support the development of modern machinery into the production process and promote joint investment with foreign countries for large-scale production units.

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Factors Affecting Effectiveness of the Operation in the Internal Quality Assurance for Rajamanagala University of Technology Thanyaburi

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Abstract*— The purposes of this survey research were 1) to study the level of factors affecting the effectiveness of the operation in the internal quality assurance for Rajamangala University of Technology Thanyaburi (RMUTT), and 2) to propose the development guidelines for the effective operation of the internal quality assurance for RMUTT. The samples were 400 RMUTT personnel. The instruments used in this research were a questionnaire. The data were analyzed by percentage, mean, standard deviation, Pearson's correlation coefficient, and multiple regression. The research results found that factors affecting the effectiveness of the operation in the internal quality assurance for RMUTT was at a high level, and were ordered as follows: organizational leaders, organizational culture, management, personnel, resources, and ICT. The results of the overall effectiveness of the operation in the internal quality assurance for RMUTT was also at a high level, and could be ordered as follows: Action, Plan, Check and Do (the PDCA cycle). The hypothesis testing with multiple regression revealed that the regression coefficient of the overall effectiveness of the operation in the internal quality assurance for RMUTT was 0.892. For the development guidelines for the effective operation of the internal quality assurance for RMUTT, it is suggested that there should be getting related personnel on the same page, everyone takes full responsibility to fulfil criteria and indicators, and understands the assessment process. Moreover, the university personnel should be continuously trained on internal quality assurance.

***Index Terms*— Effectiveness, Internal Quality Assurance, Higher Education**

I. INTRODUCTION

Education is fundamental to the development in human resources and economy in Thailand and has been formed for Thai people to have access to education. The National Education Act of B.E. 2542 (1999) was proclaimed as the first education law in Thailand that initiated the learning society by reorganizing the educational structures, decentralizing the power in educational administration. Later on, there was the National Education Act of B.E. 2542 (1999) and Amendments (Second National Education Act B.E. 2545 (2002) that designated three types of Education: formal, non-formal, and informal. The educational institutions could provide any one or all of these three types of education. Educational institutions in cooperation with individuals, families, communities, community organizations, local administration organizations, private persons, private organizations, professional bodies, religious institutions, enterprises, and other social institutions could provide any appropriate forms of education. Moreover, this Act aimed at educational quality and standards by enacting Chapter 6 of Educational Standards and Quality Assurance that consisted of internal and external quality assurance. The internal quality assurance is a quality system to monitor and assess the operation of higher education institutions under policies, goals, and levels of educational quality standards designated by the institutions. The internal quality assurance is stipulated in ministerial regulations and has to be annually reported to parent organizations, or agencies concerned. The report will be considered and provided in public in order to improve the educational quality and standards, and prepare for external education quality assurance. In order to produce the qualified graduates, Office of the Higher Education Commission (OHEC) established criteria and guidelines for internal educational quality assurance in higher education taking into consideration of Framework of the Second 15-Year Long Range Plan on Higher Education of Thailand B.E. 2551 - 2565 (2008-2022), the 11th Higher Education Development Plan B.E. 2555 – 2559 (2012-2016), Higher Education Standards B.E. 2548 (2005), and Thai Qualifications Framework for Higher Education B.E.2552 (2009) that suggested the internal education quality assurance should comprise of the four steps of PDCA cycle: planning (Plan), carrying out operations and collecting data (Do), assessing quality (Check/Study), and making suggestions for improvements (Act). The institutions had to be self-assessed at the program, faculty, and institutional levels with quality assurance indicators and

standards every academic year [1]. Rajamangala University of Technology Thanyaburi (RMUTT) is one of higher education institutions implementing the educational quality assurance at the program, faculty, and institutional levels. Each department provides general information and results of the operations of the university for self assessment report (SAR) including systematically collecting data to oversee the operations and using the information for external quality assurance.

There are 4 missions of higher education institutions, namely, teaching, research, public services, and art and culture conservation. These missions are the key to develop the country both in the short term and in the long term. Because the missions are affected by internal and external factors, these missions need to be proceeded under the PDCA cycle to maintain the education at the standard level [2]. However, many higher education institutions had problems in the operations in the quality assurance, for example, lack of monitoring, lack of understanding the systems and mechanisms of quality assurance, lack of participation, lack of continuous improvement, and so on. Furthermore, there were some limitations of personnel, areas, budgets, and procedures [3]. Most problems and obstacles in the educational quality assurance were that the institutions did not implement the educational quality assurance in the institutions in an ongoing and sustainable manner, and the instructors and faculty staff did not work under the educational quality assurance; so these led to the impractical operations in quality assurance. [4]. In addition, there were some misunderstandings of the quality assurance, for example, increasing workload, disadvantages, waste of budgets and resources [5]. For these reasons, RMUTT intends to raise ongoing effectiveness in the educational quality by implementing the educational quality assurance in routine work. The researchers were interested to study the factors affecting the effectiveness of the operation in the internal quality assurance for RMUTT so that the research results could be used for future development and for guidelines for staff relating to the quality assurance

.II. RESEARCH OBJECTIVES

The purposes of this survey research were 1) to study the level of factors affecting the effectiveness of the operation in the internal quality assurance for Rajamangala University of Technology Thanyaburi (RMUTT), and 2) to propose the development guidelines for the effective operation of the internal quality assurance for RMUTT.

III. RESEARCH METHODS

A. Research Design

This survey research was conducted on 400 RMUTT personnel comprising the university administrators, instructors, and faculty staff. The sample size was calculated by using Taro Yamane formula [6] with 95% confidence level, and the samples were randomized by multi-stage sampling as follows: Stage 1 - The samples segmented by the faculties were selected by quota sampling, then the ratio of samples in each faculty was calculated as shown in Table 1.

Table 1 Population and Sampling

No.	Name	N of Population	n of Questionnaires
1	Faculty of Science and Technology (ST)	167	40
2	Faculty of Bussiness Administration (BA)	152	40
3	Faculty of Fine and Applied Arts (FA)	110	30
4	Faculty of Liberal Arts (LA)	144	40
5	Faculty of Technical Education (TE)	189	50
6	Faculty of Engineering (EN)	322	80
7	Faculty of Architecture (AR)	76	20
8	Faculty of Home Economics Technology (HT)	94	25
9	Faculty of Agricultural Technology (AT)	124	30
10	Faculty of Mass Communication Technology (MT)	76	20
11	Faculty of Nurse	35	10
12	Thai Traditional Medicine College (TC)	55	15
	Total	1,544	400

Stage 2 - The samples of each faculties were randomized by convenience sampling. The research instrument was a 5 rating scale questionnaire with IOC = 1.00 and α = 0.977 with open-ended questionnaire. The data were analyzed by descriptive statistics, namely, percentage, mean, standard deviation, Pearson's product moment correlation coefficient, and multiple regression; and the qualitative data from opened-ended questionnaire were analyzed by content analysis based on related theory and experience.

B. Research Process

Research process of this research was divided into 6 steps consisted of define research problem, review the literature, formulate hypotheses, research design & methodology, data collection & analysis and Interpret and report. The research steps could be shown in Fig 1.

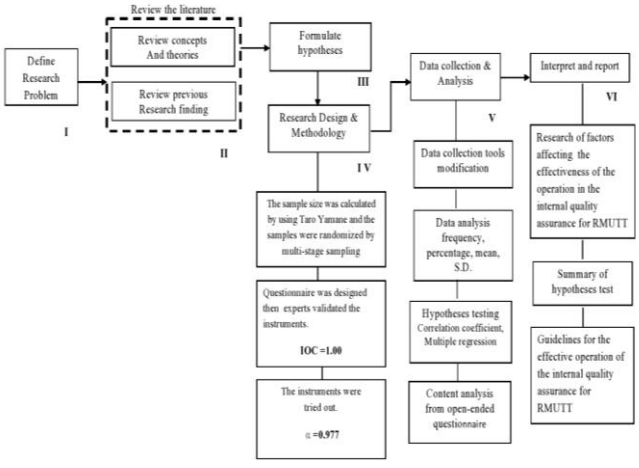


Fig.1 Research process

IV. RESULTS

The research results showed that factors affecting the overall effectiveness of the operation in the internal quality assurance for RMUTT was at a high level (**μ** = 4.00, **σ** = 0.522). Considering each aspect, the organizational leaders was at the highest rank (**μ** = 4.05, **σ**. = 0.623) followed by organizational culture (**μ** = 4.04, **σ** = 0.617) while the ICT was at the lowest rank (**μ** = 3.96, **σ** = 0.667) as shown in Table 2.

Table 2 Factors affecting the overall effectiveness of the operation in the internal quality assurance for RMUTT

Factors	μ	σ	Levels	Ranking
organizational leaders	4.05	.623	High	1
management	4.01	.573	High	3
personnel	3.98	.598	High	4
resources	3.96	.598	High	5
organizational culture	4.04	.617	High	2
ICT	3.96	.667	High	6
Total	**4.00**	**.522**	**High**	

Moreover, the overall effectiveness of the operation in the internal quality assurance for RMUTT was at a high level (**μ** = 4.06, **σ** = 0.574). Focusing each component of the operation, it found that the Action stage was at the highest rank (**μ** = 4.11, **σ** = 0.627) followed by the Plan stage (**μ** = 4.07, **σ** = 0.612), and the Check stage (**μ** = 4.06, **σ** = 0.650) while the Do stage was at the lowest rank (**μ** = 4.00, **σ** = 0.569) as shown in Table 3.

Table 3 The overall effectiveness of the operation in the internal quality assurance for RMUTT

effectiveness of the operation in the internal quality assurance	μ	σ	Levels	Ranking
Plan stage	4.07	.612	High	2
Do stage	4.00	.569	High	4
Check stage	4.06	.650	High	3
Action stage	4.11	.627	High	1
Total	**4.06**	**.574**	**High**	

The hypothesis testing on factors affecting the effectiveness of the operation in the internal quality assurance for RMUTT with correlation efficient and multiple regression could be summarized as follows: all six factors (organizational leaders, organizational culture, management, personnel, resources, and ICT) were highly related to the effectiveness of the operation in the internal quality assurance for RMUTT (r = 0.811). The organizational leaders, resources, and ICT were moderately correlated with the effectiveness of the operation in the internal quality assurance for RMUTT (r = 0.632, r = 0.656, r = 0.685 respectively), but the management, personnel, and organizational culture were highly correlated with the effectiveness of the operation in the internal quality assurance for RMUTT (r = 0.744, r = 0.728, r = 0.704 respectively). The results from testing the hypothesis indicated the statistical significant level of .05 with the positive relationship as shown in Table 4.

Table 4 The correlation and predictability of factors affecting the effectiveness of the operation in the internal quality assurance for RMUTT

Variables	X1	X2	X3	X4	X5	X6	Y1	Y2
X1 organizational leaders	1							
X2 management	.761**	1						
X3 personnel	.645**	.770**	1					
X4 resources	.517**	.668**	.764**	1				
X5 organizational culture	.587**	.678**	.767**	.632**	1			
X6 ICT	.565**	.622**	.708**	.719**	.686**	1		
Y1 factors affecting the effectiveness	.810**	.886**	.915**	.825**	.849**	.828**	1	
Y2 effectiveness	.632**	.744**	.728**	.656**	.704**	.685**	.811**	1

**p < .05

The correlation and predictability of factors affecting the effectiveness of the operation in the internal quality assurance for RMUTT (organizational leaders, organizational culture, management, personnel, resources, and ICT) were used to predict the effectiveness of the operation in the internal quality assurance for RMUTT at the statistical significant level of .05 (F = 131.381, p< .05). The six predictors were able to account for 66.70% (R=.817, R^2 = .667) of the variance. In addition, the regression coefficient of those factors was .811; management (β=3.14), organizational culture (β=1.96), and ICT (β=1.96) as shown in Table 5.

Table 5 The results of analyzing the factors affecting the effectiveness of the operation in the internal quality assurance for RMUTT with multiple regression with the enter method

Factors	The effectiveness of the operation in the internal quality assurance				
	B	**S.E.**	**ß**	**t**	**P**
(Constant)	.495	.132		3.762	.000
organizational leaders	.060	.043	.065	1.412	.159
management	.315	.056	.314	5.630	.000*
personnel	.097	.058	.101	1.684	.093
resources	.067	.048	.070	1.408	.160
organizational culture	.182	.045	.196	4.029	.000*
ICT	.169	.041	.196	4.139	.000*
Total	.892	.032	.811	27.630	.000*
R = 0.817 R^2 = 0.667, Std. Error of the Estimate = 0.333 F = 131.381, P = 0.000					

There were 30 respondents answering the open-ended questions, and the answers analyzed by content analysis found that the high recommendations were getting related personnel on the same page (93%), taking everyone full responsibility to fulfill criteria and indicators (83%) and getting everyone to understand the assessment process (83%). Moreover, the university personnel should be continuously trained on internal quality assurance (73%) as shown in Table 6.

Table 6 Recommendations

Recommendations	Amount (n = 30 people)	Percent
getting related personnel on the same page	28	93.00
getting everyone to understand the assessment process	25	83.00
taking everyone full responsibility to fulfil criteria and indicators	25	83.00
the university personnel should be continuously trained on internal quality assurance	22	73.00

V. DISCUSSIONS

The results of this survey research could be discussed as follows:

1. The factors (organizational leaders, organizational culture, management, personnel, resources, and ICT) affected the effectiveness of the operation in the internal quality assurance for RMUTT at a high level. The factor of organizational leaders was at the highest rank because the university administrators placed importance on quality assurance, and made commitment on quality assurance. The quality assurance policies were clearly determined to be consistent with the university visions and policies, so this led the faculty personnel working effectively. This is related to [7], [8] that the indicators could show the effectiveness of the organization, visions, leadership, work procedures, administration. It is also consistent with [9], [10], [5] that the factor affecting the effectiveness of the quality assurance was administrators characteristics.

2. The overall effectiveness of the operation (the PDCA cycle) in the internal quality assurance for RMUTT was at a high level, and when it found that the Action stage (A) was the highest rank. This is because in the Action stage the working flaws or mistakes during the operation in the internal quality assurance were realized to use as a guideline for systematically improving the next year plan including making a self assessment report and the announcing the results to the university administrators and the related personnel. This is consistent with [11] that the importance and the usefulness of inspection should be raised for university personnel and the results should be used for work process improvement leading to effectiveness at work.

3. The factors (organizational leaders, organizational culture, management, personnel, resources, and ICT) correlated the effectiveness of the operation in the internal quality assurance for RMUTT at a high level (r=.011). The results of analyzing each factor indicated that the management had the strongest relationship to the effectiveness of the operation in the internal quality assurance for RMUTT at a high level (r=.744) with the positive relationship at the statistical significant level of .05. This may be because the roles and responsibilities of the personnel were clearly assigned. [12] noted the clear imposition of structures, roles, and responsibilities brought about the success of the operation in the internal quality assurance including placing the importance of the administrators and getting insights of each indicator. It is consistent with [13] that the management positively related to the internal quality assurance.

4. The relationship and the predictive power of factors, namely, organizational leaders, organizational culture, management, personnel, resources, and ICT, were used for predicting the effectiveness of the operation in the internal quality assurance at the statistical significant level of .05 and the predictive power was 66.70 % ($R = .817$, $R^2 = .667$). From the multiple regression analysis, it found that the factors affecting the effectiveness of the operation in the internal quality assurance for RMUTT had a regression coefficient of .811. Considering each factor, regression coefficients of the management, organizational culture, and ICT affecting the effectiveness of the operation in the internal quality assurance were .314, .196, and .196 respectively being consistent with the researches of [4],[10], and [13].

VI. RECOMMENDATIONS

A. Recommendations for Practices

1. The university administrators might support using the innovation to develop the quality assurance and reinforce the personnel to propel the system and working mechanism by organizing the information with ICT.
2. In terms of the management, it was recommended to improve atmosphere and location supporting the operation in the internal quality assurance, so there should be fully equipped rooms supporting the operation in the internal quality assurance.
3. According to the results from the questionnaire, more personnel should be recruited and assigned for the operation in the quality assurance, or the roles and responsibilities should be allocated to enhance the participation and contribution.
4. The proper location should be provided for the operation and activities involving the quality assurance, for example, the meeting rooms, workspaces, document storage room, and so on.
5. About the organizational culture, the personnel should realize the collaboration and teamwork. The success of quality assurance depends on everyone in terms of collaboration, information sharing, expressing opinions, and PDCA. When everyone participates in every step of the operation, he or she will feel a mutual responsibility and show teamwork, then move the organization forward.
6. Regarding ICT, the information on ICT should be updated, precise, and easy to use. Everyone should participate in entering data into the system, processing the data, making use of the system, and maintaining and inspecting the system.
7. The effectiveness of the operation in the internal quality assurance should start with setting the effective plans, for example, efficient budget allocation. Auditing and assessment guidelines should be knowledgeable. Work progress should be systematically tracked by collecting information in order and well organized documents. The assessment results should be recorded in the information system for the future database.
8. The RMUTT personnel should be enhanced in knowledge and understanding of the operation in the internal quality

assurance on the same page by continuous training and updating the information.

B. Recommendations for Further Research

The qualitative methods should be applied to study the operation in the internal quality assurance in order to analyze the related problem in depth and use the results to improve the effectiveness of the operation.

CONCLUSION

The internal quality assurance is a part of the operation in educational administration that should be continuously carried out. The educational institutions should develop the quality assurance system consistent with the development of the institutions with PDCA cycle: initiating strategic plans with the explicit indicators, operating and collecting data by plans, comparing the assessment results to plans, and systematically improving the assessment results. In order to achieve the goals, there should be the effective system and mechanisms reinforcing the operation. According to research results, the factors affecting the operation in educational internal quality assurance were the management, the organizational culture, and ICT; so the working environment with facilities should be provided. The quality assurance system should be developed and can be accessed by every level of the organization, namely, personnel, departments, faculties, and university. The personnel should realize the importance of the internal quality assurance as well as fully participate and cooperate in the internal quality assurance.

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Mechanical Properties of Translucent Cement under the Action of Sodium Sulfate and Magnesium Sulfate

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Abstract — This study is a study of Mechanical properties of translucent cement under the action of sodium sulfate and magnesium sulfate. The objectives of the study are: 1. to find the appropriate ratio to obtain a cement substitute for high compressive strength welding. The ratio of epoxy resin (translucent material) can be obtained at the lowest cost. 2. To study the influence of the electric oven energy curing condition on the compressive strength properties and physical properties corrosion resistance, both acid and base. 3. To study the feasibility of capping gypsum and resin that qualifies for construction work. From the property analysis and to estimate the duration of using capping gypsum and epoxy resin (Translucent material) cured by electric oven and room temperature conditions, it was found that the optimal ratio for obtaining the highest compressive strength cement replacement material was the by-weight ratio of epoxy resin of substance A and substance B is 100/60, baked at 80 degrees, soaked in water for 56 days to obtain a cement substitute for high compressive strength welding. The amount of water to be used mixed with high strength gypsum powder was 21%, duration 7 days, baked at 90 degrees and soaked in air. When considering the angle of use in construction instead of concrete, it was found that the most common ready-mixed concrete in the design of compressive strength ranging from 180-400 ksc and the most commonly used is 240 ksc cylinder. Therefore, when considered and found that Translucent cement under the action of sodium sulfate and magnesium sulfate. The compressive strength is between 200-800 ksc. General concrete work is mainly tested for the compressive strength. This is used to control the quality of work and can also be used as an indicator of other aspects as well. This is because the resistance to other forces is directly proportional to the compressive strength.

Index Terms — ***Mechanical properties, capping gypsum, epoxy resin, sulfate***

I. INTRODUCTION

At present, Thailand has researched to bring cement substitutes for bonding materials together which has researchers to research various types of materials, for example, limestone powder, silica powder, fly ash, etc. In concrete, the best known cement substitute for bonding is fly ash. The use of cement substitutes for bonding is deserving of support because it not only reduces the production cost in terms of material prices but also can reduce energy consumption in production especially. Using fuel to burn raw materials to produce cement directly in the displacement ratio, which has the effect of reducing the emission caused by combustion, for example, Carbon Dioxide (CO_2). Therefore, the use of renewable materials has the advantage of reducing production costs, save energy and reduces pollution. However, the problem encountered in cement bonding with the disadvantage is that when it hardens, it shrinks. Including the edge or corner will have less strength making it impossible to fully weld materials. Therefore, it can find alternative materials for bonding that are more efficient than cement.

Capping Gypsum is a gypsum powder with special properties. That is, when mixed with water, it can solidify within 30 minutes, and it can also give strength. It has compressive strength in the range of 5,000 ~ 9,000 psi (350 ~ 630 kgf / cm^2) in accordance with ASTM C617 / ASTM C39 / AASHTO T231. Nowadays, it is used to coat the surface of the ball for strength testing in the test chamber because it can harden within 30 minutes after mixing and have a smooth surface, therefore used to test as a bonding material instead of cement.

There are many types of epoxy resins (translucent material) available in Thailand. All of which are in the family of unsaturated polyester or is a type of plastic that is different from general plastics that come as pellets and then come melt into the mold into the bag into a trash bin, a chair that we use every day but resin is a liquid plastic. If it hardens into hard plastic then we cannot liquefy it to form a new plastic. Academics called resin a thermoset plastic and called general plastic that "thermoplastic". The subspecies of

resins that are available for sale will also have normal grades and stands for orthophthalic. It is the main resin that is widely used both in ordinary casting, transparent castings, glazes, water tanks, treatment tanks, bumper cars, clear sheets roof. Resins can be done in various forms, such as hand lay up, spray up, filament winding or infusion. There are many grades on the market next to ortho grades are iso grades, stands for isopthalic, they are more acid-resistant. Used in tank coating work or floor coating. That must be corrosion resistant and also used to make a non-fiberglass template to be more durable but if acid- and alkali-resistant resins that are even more thick and corrosive are needed, vinyl grades are abbreviated as vinlyester resin, which is both acid and alkali resistance. Highest among resins and has a higher strength than both ortho grades and iso grades too. In addition to being used to make tanks, pipes, floor coatings and wells that have to withstand high corrosion, it is also popular to make fiberglass templates for durability in use as well. The last one in use is epoxy grade epoxy resin, which is a grade that has a wide range of applications and formulas of various uses ranging from clear focus such as carbon bonnet, sticker coating, work about the strength used in fiberglass applications in the high-load areas, Such as pressure pipes, gas cylinders to focus on the bonding force For making glue as the resin with the highest strength but it's still inferior to vinyl grades in terms of corrosion resistance. Therefore, the idea is to use this Capping Gypsum as a substitute for cement that has a very high energy production process. It produces up to 0.5 ton of carbon dioxide (CO_2) for every tonne of cement produced. It is the cause of emissions that affect the greenhouse effect (Global warming) as much as 13,500 million tons per year, or about 7 percent of the total gas emitted in the atmosphere.

For this reason, it is the source of materials to replace the use of cement and nowadays, various materials have been invented to be used in the construction of home decoration to be beautiful with strength in itself. These materials have production processes that are least polluted to the environment. Therefore, an experiment was made to find a replacement material with the properties mentioned above. As well as can be utilized as well where epoxy grade resin that is strong and translucent, used to decorate construction such as translucent bathroom walls or translucent bedroom ceiling which can be welded into larger parts by using Capping Gypsum.

So, it is foreseeable that using capping Gypsum in bonding and resin (translucent material) by studying the compressive strength, which is an important property derived from the mixing ratio calculations including the curing conditions and resistance to corrosion, both acid and alkali. This is something that should be developed continuously in order to be used in the decoration in the construction work properly, beautifully and creates confidence in the construction industry.

II. Epoxy Resins

Epoxy resins are polymers with triangular circles. It consists of two carbon atoms and one oxygen atom attached to the end of the chain as shown in picture 1. This epoxy group is a location that is sensitive to link reactions. Epoxy has a wide range of properties. Depending on the molecular structure have good adhesion to various fibers such as glass fibers aramid fiber carbon fibers, etc., have a low shrinkage compared with other thermosets. Such as unsaturated ester and vinyl ester. It also has high strength, chemical resistance, high dimension stability, easy to form, although the production cost of epoxy composite is higher. Unsaturated polyester and vinyl ester and its applications at high temperatures were not as good as polyamide, but overall properties of excellent epoxies (Idthipol Jangchud, 2001: 33).

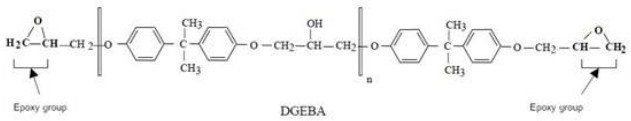


Figure 1: Chemical structural formula of epoxy (Diglycidyl Ether of Bisphenol A, DGEBA).
Source: Ellis, 1993: 3.

Curing Reaction of Epoxy Resins

The epoxy resin is converted into a thermoset by the reaction of epoxy groups which may react with itself to become a homopolymer or may react with substances link molecules (Hardening agent) in which the reaction may be either or both two things are fine.

Linking agent of epoxy resin

Epoxy linkers are generally divided into three groups: amine group, lewis acid group, and acid anhydride group.

Properties of Crosslinked Epoxy

Epoxy resins have groups that show specific properties. (Characteristic group) so large it is difficult to the synthesis to obtain the desired properties but epoxy has many curing agents to choose from. In order to obtain the product with the desired properties, it was also found that time, temperature and filler had an effect on product properties. Epoxy reactions involve molecular orientation in the absence of volatile substances from the system. The resulting product will have no problems with shrinkage or less shrinkage. The epoxy main skeleton has good thermal stability but the thermal stability also depends on the association. Therefore, the anhydride-linked system is thermally stable to approximately 200 ° c while the amine-linked system is

thermally stable to approximately 150 ° c. will have treasure is a good insulator. It has a dielectric constant and high polarity resulting in good adhesion.

III. GYPSUM ($CaSO_4$ $2H_2O$)

$CaSO_4 \cdot 2H_2O$), also known as Gypsum. It is a very brittle non-metallic mineral with a white color. Colorless or gray often have yellow, red, or brown color. It has a pearl-like luster or silk, Hardness 2, specific gravity 2.7, texture transparent to translucent. Different names are called according to the nature of the mineral content. Satinspar is a gypsum mineral with a burr. Alabaster type has a compact pellet mass and selenite (selenite), clear, colorless, mineral flesh, thin and transparent. It is caused by minerals that are precipitated in basins with very high and continuous evaporation causing the rest of the water to have a higher concentration. There is a point where the minerals called "evaporites" are able to precipitate in order of solubility. It generally starts with carbonates, sulfates, and halides. Thai gypsum ore formation has a small, tightly hermetic texture known as "alabaster", which is not caused by coagulation in the primary conditions of water evaporation but caused by adding water (rehydration) to the upper range of the anhydrite mass until change occurred. The gypsum species in Thailand has a rather complex history and the study of mineral deposits found that has been through changes in mineral types back and forth between gypsum and anhydrite (CaSO4) several times before the present condition.

IV. SODIUM SULPHITE

Sodium sulfite may write sodium sulphite. Sodium Sulfite is water soluble sodium salt of sulfurous acid. The molecular formula is Na_2SO_3 to prevent the dried fruit from discolor and set aside rotten meat and use the same benefits as Sodium thiosulfate to replace halogen elements to hydrohalic acid to take pictures and reduce the chlorine level in the swimming pool. The sulfite group when heated, it decomposes to sulfur dioxide (SO_2) or sulfurous anhydride or sulfurous oxide. SO_2 is an acidic non-flammable gas and strong pungent smell suffocates. It is 2.264 times heavier than air, soluble in water and dissolved in water to sulfurous acid.

V. MAGNESIUM SULFATE

Sodium sulfate compounds and magnesium Sodium sulfate salt also known as "Sodium Sulfate" is a white powder. Magnesium sulfate salts also known as "Magnesium Sulfate" ($MgSO_4$) is a clear white crystal like MSG but larger particles.

Corrosion by sulfates

Sulfate salts in solution form can harm cement paste, mortar and concrete. Naturally, each type of sulfate has different water solubility. (CPAC Ready Mixed Concrete, 1993), that is:

1. Calcium sulfate ($CaSO_4$) dissolves only 1.2 g / l in water.
2. Sodium sulfate (Na_2SO_4) dissolves water 240 g / l.
3. Magnesium sulphate ($MgSO_4$) water dissolved 300 g / l.

Since calcium sulphate ($CaSO_4$) has very little water solubility, in the sulfate tolerance study, sodium sulfate (Na_2SO_4) and magnesium sulfate ($MgSO_4$) were used.

The mechanism of sulphate corrosion is due to the sulfate ions interact with calcium hydroxide ($Ca(OH)_2$) and tricium aluminate (C_3A) remaining by hydration action. This causes expansion in the hardened concrete until it cracks.

Corrosion mechanism by magnesium sulfate ($MgSO_4$)

Beginning with the reaction of magnesium sulfate ($MgSO_4$) with calcium hydroxide (($Ca(OH)_2$) obtained by hydration, gypsum and magnesium hydroxide ($Mg(OH)_2$) as equation (1)

$$Ca(OH)_2 + MgSO_4 \rightarrow \text{Gypsum} + Mg(OH)_2 \quad (1)$$

This reaction causes a decrease in the pH of the solution, which results in the absence of calcium silicate hydrate (CSH) by decomposition to increase the pH is higher as equation (2)

$$C\text{-}S\text{-}H_{(aq)} \rightarrow SiO2 + Ca(OH)_2 \quad (2)$$

It was found that this calcium hydroxide ($Ca(OH)_2$) reacts with magnesium sulfate ($MgSO_4$), causing the decomposition of calcium silicate hydrate (CSH). The hydroxide ($Mg(OH)_2$) comes from when magnesium hydroxide ($Mg(OH)_2$) reacts with SiO_2 in solution form magnesium silicate hydrate (MSH) which is not capable in bridging. Therefore, in this magnesium sulphate ($MgSO_4$) solution, the damage is more severe than in the sodium sulfate solution (Na_2SO_4).

VI. RESEARCH METHOD

This section describes the details related to conducting research. Contains materials research implementation plan and research methods which show the details as follows:

1. Material

1.1 Epoxy Resins. General use model (General Use) No. SB2B: suitable for needing about 2 hours of working time.

1.2 Capping Gypsum. In this research, type S-420 was used as a popular product of Capstone. Series S-420 features a high quality and high strength test material. It is the best and most reliable product made by many professional testing laboratories. The water to gypsum ratio for S-420 is 21 ~ 22%. After mixing with water for 30 minutes, the gypsum is fully solidified and its strength is greater than 420 kg / cm2 (6000psi).

1.3 Sulfate solution. Using a 5% sodium sulphate (Na2SO4) solution with a weight of 50 g / l and a 5% solution of magnesium sulphate ($MgSO_4$) with a weight of 42.36 g / l in accordance with ASTM C1012.

1.4 Water. Tap water with pH equal to 7.0 is used to prepare sulfate solution and mix Capping Gypsum.

Preliminary testing of the properties of epoxy resin and high strength gypsum

The physical properties of high-strength epoxy resins and gypsum studied in this study consisted of a normal test for solidity and testing the formation time. These properties are the basic properties used to test the properties of cement paste.

The mix proportions of high-strength epoxy resin and gypsum used to test physical properties in fresh conditions are described below.

1) The ratio by weight of epoxy resin of substance A and substance B is 100/40, 100/50, 100/60, 100/70 and 100/80.

2) The water content to be mixed with high strength gypsum powder is 20%, 21%, 22%, 23% and 24% by weight of gypsum powder.

The process for mixing epoxy resins used to test physical properties is described below.

1) Mix A and B according to the designed ratio together in the container.

2) Stir both substances together for 2 minutes to combine.

3) After that, put it into the module to test for the time of formation.

The process of mixing high strength gypsum used to test the physical properties is described below.

1) Mix gypsum powder with water. With a paddle speed 285 ± 10 rpm for 5 minutes.

2) The ready mix which was in the fresh state was tested for the time of formation.

Formation time test

To find out the time of formation using the vicat needle. Refers to the time period (Since when the sample is finished) that when the standard 1 mm diameter vicat needle is released into epoxy resin and high-power gypsum. The needle will sink 25 millimeters after 30 seconds of releasing the needle. If released without interference, high-strength epoxy resins and gypsum will lose their irreversibility and reach their immutable state without fracture. This transition is called the formation and hardening of high-strength epoxy resins and gypsum.

5. Study of the Influence of mix Proportions and curing conditions that affect the properties of epoxy resin and high strength gypsum.

Study the compressive properties and physical properties of the geopolymer paste mixed with dust. Refractory insulating bricks at various mix proportions which undergoes curing in an electric oven and at room temperature. To study the influence of mix proportions and curing conditions and to determine at what mix proportions and curing conditions make the samples both compressive and physical properties suitable for further study.

Mix Proportion

The mix proportions of epoxy resins and capping gypsum used in examining the influence of mix proportion and curing condition are detailed below.

Table 1: Mix proportions of epoxy resins for testing formation time

Sample set	Ratio by weight		Weight (g)	
	Substance A	Substance B	Substance A	Substance B
1) A40B	100	40	350	140
2) A50B	100	50	350	175
3) A60B	100	60	350	210
4) A70B	100	70	350	245
5) A80B	100	80	350	280

Table 2: Mix proportions of capping gypsum for testing formation time

Sample set	Ratio by weight		Weight (g)	
	Gypsum powder	Water	Gypsum powder	Water
1) G20W	100	20	650	167
2) G21W	100	21	650	250
3) G22W	100	22	650	333
4) G23W	100	23	650	133
5) G24W	100	24	650	200

Mixing and Casting

The mixing and casting procedures of epoxy resins and capping gypsum used in testing physical properties are detailed below.

Epoxy resins

1) Mix substance A and B together according to the determined ratios in the container.

2) Stir both substances together for 2 minutes so the matter combine as one.

3) After that, pour it into a mold shaped as a 5 cm cube.

Capping gypsum

4) Mix gypsum powder with water and left it for 1 minute, then stir with mixer blade speed at 285 10 rpm for 5 minutes.

5) Pour the mixed capping gypsum into a cylindrical mold that is 5 cm in diameter and 10 cm high. Separate the mixture into two layers, each jabbed with a steel pushrod according to the ASTM C109 standard.

6) Bring it into a shaker for 10 seconds to remove air bubble or pores inside.

7) Cover the sample surface by wrapping the mold with a clear plastic sheet to prevent evaporation of water during the reaction

5.3 Curing

When finish sample casting, samples are further cured via various methods. Moreover, curing epoxy resin and capping gypsum studied in this research is dry curing. This can be divided into two methods: (1) room-temperature curing and (2) curing in electric oven.

5.3.1 Curing at room temperature

When finished casting samples of epoxy resin and high-strength gypsum. The sample is incubated in atmospheric conditions at room temperature; samples are placed in a mold and covered with a plastic sheet, left at room temperature.

5.3.2 Curing in the oven

Samples placed in the formwork and covered with plastic wrap were left at room temperature for a period of 24 hours and then unpack the design. The curing was then cured in an electric oven at 50 ° C, 60 ° C, 70 ° C, 80 ° C and 90 ° C to study the influence of the pre-curing time and the appropriate heat to develop compressive strength.

5.4 Immersion in sulfate solution

The sulphate solution was prepared using 5% sodium sulphate (Na_2SO_4) solution by weight 50 g / l and 5% solution of magnesium sulphate ($MgSO_4$) by weight 42.36 g / l according to ASTM C1012 standard of epoxy resin and high-strength gypsum cured, yes, in such a solution. It was left for periods of 0, 7, 14, 28 and 56 days and weighed lost by the corrosion of the sulfate solution.

5.5 compressive strength tests

When curing samples of high-strength epoxy resins and gypsum and maturing in sulfate immersion. The samples were then taken to test for compressive strength according to ASTM C 109 (ASTM V.04.01, 2001) with Universal Testing Machine (UTM). 5.6 Other relevant features explore other properties of high-strength epoxy resin and gypsum cured at various conditions including Scanning Electron Microscope and Fourier Transform Infrared Spectroscopy.

VII. RESULTS

Results of the study of epoxy resin weight ratio of substance A and substance B

- At a period of 7 days that the maximum compression power is bake at 0 degrees, soak in sodium sulfate solution.

Example	wide (cm)	lengthy (cm)	height (cm)	Cross-sectional area (cm^2)	before (g)	After (g)	Compressive strength (kg)	Compression (ksc)
60%	4.71	4.75	5.10	22.37	135.4	136.7	18910	845.23

Found that the right ratio o obtain a cement substitute for high compressive strength welding. The ratio by weight of epoxy resin of substance A and substance B is 100/60.

- At a period of 14 days that gave the maximum compression power were bake at 90 degrees and soak in water

Example	wide (cm)	lengthy (cm)	height (cm)	Cross-sectional area (cm^2)	before (g)	After (g)	Compressive strength (kg)	Compression (ksc)
60%	4.78	5.07	5.00	24.23	139.2	140.8	21220	875.61

Found that the right ratio to obtain a cement substitute for high compressive strength welding. The ratio by weight of epoxy resin of substance A and substance B is 100/60.

- At a period of 14 days that gave the maximum compression power, including bake at 70 degrees, soak in sodium sulfate solution.

Example	wide (cm)	lengthy (cm)	height (cm)	Cross-sectional area (cm^2)	before (g)	After (g)	Compressive strength (kg)	Compression (ksc)
50%	4.78	4.94	4.80	23.61	124.0	124.3	17790	753.39

Found that the right ratio to obtain a cement substitute for high compressive strength welding. The ratio by weight of epoxy resin of substance A and substance B is 100/50.

- At a period of 56 days that gave the maximum compression strength, namely bake at 80 degrees in water.

Example	wide (cm)	lengthy (cm)	height (cm)	Cross-sectional area (cm^2)	before (g)	After (g)	Compressive strength (kg)	Compression (ksc)
60%	4.87	5.06	5.00	24.64	114.3	115.7	21600	876.55

Found that the right ratio to obtain a cement substitute for

high compressive strength welding. The ratio by weight of epoxy resin of substance A and substance B is 100/60.

From the above study, it was found that the ratio was appropriate to obtain the highest compressive strength of cement replacement materials, ie, the ratio by weight of epoxy resin of substance A and substance B is 100/60, baked at 80 degrees, soaked in water for 56 days.

The results of the study of the amount of water mixed with high-strength gypsum powder

- At a period of 7 days that the maximum compression power is Bake at 90 degrees in air

Example	wide (cm)	lengthy (cm)	Cross-sectional area (cm^2)	before (g)	After (g)	Compressive strength (kg)	ksc
21%	5.33	10.59	22.32	486.5	487.2	16290	729.80

Found that the right ratio to obtain a cement substitute for high compressive strength welding. The amount of water to be mixed with high strength gypsum powder is 21%.

- At a period of 14 days that the maximum compression power is Bake at 70 degrees in air

Example	wide (cm)	lengthy (cm)	Cross-sectional area (cm^2)	before (g)	After (g)	Compressive strength (kg)	ksc
20%	5.30	10.73	22.07	497.4	496.1	13480	610.76

Found that the right ratio to obtain a cement substitute for high compressive strength welding. The amount of water to be mixed with high power gypsum powder is 20%.

- At a period of 28 days that the maximum compression power is Bake at 70 degrees in air

Example	wide (cm)	lengthy (cm)	Cross-sectional area (cm^2)	before (g)	After (g)	Compressive strength (kg)	ksc
22%	5.26	10.63	21.74	474.8	473.5	13220	608.13

Found that the right ratio to obtain a cement substitute for high compressive strength welding. The amount of water to be mixed with high power gypsum powder is 22%.

- At a period of 56 days that the maximum compression power is Bake at 70 degrees in air

Example	wide (cm)	lengthy (cm)	Cross-sectional area (cm^2)	before (g)	After (g)	Compressive strength (kg)	ksc
21%	5.32	10.15	22.24	455.7	454.1	13830	621.92

Found that the right ratio to obtain a cement substitute for high compressive strength welding. The amount of water to be mixed with high power gypsum powder is 21%.

From the above study, it was found that the ratio was appropriate to obtain the cement replacement material for high compressive strength welding. The amount of water to be used mixed with high strength gypsum powder was 21%, duration about 7 days, baked at 90 degrees and soaked in air.

The possibility of using capping gypsum and resin as the material of construction properties. The property analysis and estimation of the duration of using capping gypsum and epoxy resin (translucent material) can be cured in an electric oven at room temperature conditions.

Resin, also known as "polyester resin" is a type of plastic made from natural wood latex and chemically synthesized. The typical nature of the resin is a slurry that is yellowish, oil-like color or a fuchsia pink. However, it will depend on the chemicals used to mix it. Therefore, the resin has outstanding properties, namely toughness, high elasticity, heat resistance, weather resistance, weather resistance and gives beautiful colors .Therefore, resin is often used to make glue, perfume, jewelry ,the house number letters ,spare parts ,science photo frame coating ,production of fiberglass including casting into various shapes, such as casting monks, casting souvenirs, casting dolls, etc.

Generally, Capping Gypsum is a white, matt powdery that It has a strength of up to 5,000-9,000 psi (350-630 kgf / cm2) after 30 minutes of mixing with water. This type of gypsum is used as a capping material for concrete compression test according to ASTM C617 and AASHTO T231 standards. It is faster, safe and more economical as well as provides more accurate values compared to using sulfur or rubber pads. The purpose of cap cylinder sample is considered the angle of usage in construction as a substitute for concrete. It is found that ready-mixed concrete that is commonly used in the design of compressive strength ranging from 180-400 ksc and the most commonly used is 240 ksc cylinder in order to develop fully which it takes 28 days as a standard since the date of manufacture. Therefore, it was found that translucent cement under the action of sodium sulfate and magnesium sulfate. The compressive strength is between 200-800 ksc strength or strong resistance which is the most important property of concrete. There are many reasons, such as compressive strength, etc. General concrete works can be tested the bond strength and resistance to

compression, etc. General concrete works mainly to test for compressive strength. This is used to control the quality of work and can also be used as an indicator of other aspects as well. This is because the resistance to other forces Is directly proportional to the compressive strength.

VIII. CONCLUSION

From the above study, it was found that the ratio was appropriate to obtain the highest compressive strength of cement replacement materials, ie, the ratio by weight of epoxy resin of substance A and substance B is 100/60, baked at a temperature of 80 degrees, soaked in water for 56 days. That's right To obtain a cement substitute for high compressive strength welding. The water content was mixed with high-strength gypsum powder was 21% for 7 days and baked at 90 degrees air, consistent with the study of Jacob, etal., 1995. The speed of the reaction speed of Microwave oven-treated methyl methacrylate (MMA) versus heat treatment that using a microwave at 2.45 GHz at a power level of 200, 300, 500 watts at different times as well as measuring the sample temperature. It was found that the microwave reaction rates of 200, 300 and 500 watts were similar to those of the heat treatment at 69, 78 and 88 ° c, respectively. The three temperatures of the heat treatment will have a higher reaction rate than that of a microwave oven at 200 and 300 watts because the temperature T of the epoxy is higher than the reaction temperature which caused the reactions that occur to be limited but the higher the wattage (500 watts), the higher the reaction temperature is equivalent to the heat treated temperature, thus the higher the reaction volume. In addition, it will increase with the same curing time as cement concrete. The compressive strength at 28 days of aging was higher than that at 7 days at every mixing ratio because the binder will separate before solidification. It also creates a water permeable gap and a small hole. All of these reasons lead to a decrease in compressive strength.

When considering the angle of usage in construction as a substitute for concrete, it was found that ready-mixed concrete that is commonly used in the design of compressive strength ranging from 180-400 ksc and the most commonly used is 240 ksc cylinder in order to develop fully , it takes 28 days as a standard since the date of manufacture. Therefore, when considered and found that translucent cement under the action of sodium sulfate and magnesium sulfate. The compressive strength is between 200-800 ksc strength or strong resistance. It was the most important property of concrete. There were many things as well, such as compressive strength and were tested for the bond strength and resistance to compression, including test for compressive strength. This was used to control the quality of work and can also be used as an indicator of other aspects as well. This is because the resistance to other forces Is directly proportional to the compressive strength.

IX. RECOMMENDATIONS

In this research, the mechanical properties of translucent cement were studied under the action of sodium sulfate and magnesium sulfate, which, if further studies were carried out, the following interesting points could be considered as follow:

1. The infusion curing characteristics may be added to the incubation solution mixed with sodium sulfate and magnesium sulfate

2. The heat activation characteristics may be experimented with microwave oven curing or combined curing between electric oven and microwave oven.

3.May further research on the resistance of sulfate solution and apply from geopolymer mortar to concrete geopolymer and further to be reinforced concrete geopolymer, etc.

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Multidirectional analysis, causal relationship influencing the Effectiveness of support personnel Ramkhamhaeng University

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Abstract- ***The objectives of this study were to: 1) analyze the causal relationship pathway having influence on effectiveness of supporting personnel at Ramkhamhaeng University, and 2) verify the causal factor hypothesis having influence on the supporting personnel. The sample group consisted of 300 supporting personnel at Ramkhamhaeng University. The researchers gained 30 causal variables having influence on the supporting personnel and the sample group size was ten times of the variable. A set of questionnaires was used for data collection and analyzed by using frequency, percentage, mean, and standard deviation. Besides, path analysis was conducted by using the AMOS program.***

Results of the study revealed that he conceptual framework of causal factor relationship having influence on effectiveness of the supporting personnel comprised 2 variables having direct influence: nature of work and quality of work life and 7 variables having both direct and indirect influence : 1) safe and health promotion environment, 2) an individual capability development, 3) social integration, 4) statue in the organization, 5) relationship with society, 6) uniqueness of the work, and 7) reflection from work. The hypothetical model was work consistent with the empirical data based on the CMIN/df was equivalent to 1.465; p-value = .913; GFI = .960; RMSCA = 0.000; NFI = .957; TLI = .968; and CFI = .984. The total influence of the causal variable having influence on effectiveness of the supporting personnel most was nature of work and followed by quality of work life. All of the components could explain variance effectiveness of the supporting staff for 88.30 percent.

Index Terms—effectiveness, commitment to the organization, supporting personnel

I. INTRODUCTION

Vision leaders must have the capability to convince their followers to attempt to do their assigned tasks more than ever which derives from a level of confidence towards assigned tasks. Also, they must have a rather high level of the earnestness towards success leading to a better transformation. This is under the elevation of awareness and consciousness of the importance and value of needed achievement. It also includes guidelines for success which personal interest must be overlooked. [1]and [2] claimed that characteristics of a vision leader comprise 3 components: vision creating, vision dissemination, and vision practice. An administrator having vision can adopt the vision and create reliability for subordinates to continually follow the vision leading to be a desired organization. A vision leader is someone who can create vision in the future and make the dream comes true. Besides, the vision must be made to be reliable and attractive for progress and better transformation particularly on the 21st century. [3] explained that the vision leader condition has four basic factors: communication, organization atmosphere, creative thinking and emotional intelligence. In fact, communication is a key element for making understanding among people in the society. This can be done through knowledge transfer, and opinion/experience exchange in order to achieve the goal and gain a harmonious/happy life. [7] stated that good communication within an organization has an

effect on good work atmosphere which can be created by the supervisor who is broad minded. This will result in good practice and attitude towards co-workers, a high level of satisfaction and enthusiasm leading to achieve the goal of vision.

[8] proposed immaturity-maturity theory related to impacts of organization atmosphere on staff personality. An organization determining structure and tasks which are lower than staff capability surely causes disappointment, refusal of responsibility and corporate resistance. [9] stated that an organization having good relationship atmosphere among its members has an effect on their satisfaction with their assigned tasks and good attitude towards the organization. This conforms to an idea of [10] which showed that the organization atmosphere supporting an individual to work will lead to the responsiveness to his work motivation and happiness. cited that the factor on emotional intelligence has an effect on smooth interpersonal communication, creative thinking and close coordination of many parties. [4] had conducted a study on a relationship between emotional intelligence of the school administrator and leadership of supporting staff. It was found that emotional intelligence has a positive effect on the vision leader and school atmosphere. Besides, the school atmosphere has a positive effect on the vision leader condition.

The university is an educational organization which play roles in the production of graduates in different levels for the country development in both public and private sectors. These important tasks and roles must prepare readiness to cope with social change. In addition, the university must set a policy on research, teaching & learning, arts and culture maintenance and academic service to the society.During 2012-2020, higher education in Thailand has leaping development so as to be an effective knowledge source which is responsive to problem crisis solving and sustainable development of the country. For this reason, it must rely on proactive higher education management and the Higher Education Act is an important tool for driving the 2020 vision (Office of the Higher Education Committee, 2018). The university direction in the 21st century consists of 3 main aspects: 1) consideration of needs of the current world under the economy of globalization knowledge base and the body of knowledge must truly be built as an innovation; 2) the university must adapt itself to be a learning source area and convince students to build a body of knowledge which is beneficial to the society; and 3) students will change themselves to be modern more than ever. Importantly, individuals in the university lack of commitment to the university will have a negative effect on organizations of various aspects. An example is an increased efficiency of yields due to lack of personnel motivation and understanding that the organization does not perceive their value [5] (Meyer et al., 1993). The results in continual impact such as difficulties and damages on normal operation due to provision of replaced workforce, increased expenses, and recruitment of new staff and training expenses [6]. In addition, Ramkhamhaeng University has prepared a study project on guidelines for developing the personnel resource system development of the university. This is because the university realizes that the personnel resource management system is an important factor strengthening the organization and its success among the community transformation current. It aims to conduct a survey on problems encountered and suggestions for the development of personnel resource of the university.

According to review of related theoretical concepts and researches, it explains about some factors having relationships and an effect on effectiveness of an organization. However, there is no study on factors having relationship and effect on effectiveness of supporting personnel at Ramkhamhaeng University. Also, there is no construction of a causal relationship of factors effecting the effectiveness of the supporting personnel. Therefore, it is essential that there is the development to gain a model of causal relationships of the effectiveness. In this respect, the researchers have constructed a model of causal relationships between emotional intelligence, communication, creative thinking, visual leader condition, organization culture commitment to the organization, and effectiveness of the supporting personnel. When the model is verified it will be used as a guideline for sustainable development the supporting personnel at Ramkhamhaeng University.

II. RESEARCH OBJECTIVES

Specifically, this study aimed to:

1. Analyze the causal relationship pathway having an effect on effectiveness of supporting personnel at Ramkhamhaeng University and
2. Verify the causal factor hypothesis having an effect on the supporting personnel

III. RESERCH METHODOLOGY

1. The constructed pathway model prepared under the theory was consistent with the empirical data or not
2. The causal variables having an effect on effectiveness of the supporting staff included three variables having direct effect: vision leadership, organizational, culture and commitment to the organization. Besides, there were three

variables having indirect effect: emotional intelligence, communication, and creative thinking. In this respect, six hypotheses were set:

2.1 Vision leadership comprised culture focusing on self-adaptation, culture focusing on mission on structure and rules/regulations. All of these had direct influence on effectiveness of the supporting staff.

2.2 Organizational culture comprised culture focusing on self-adaptation, culture focusing on mission, and culture focusing on participation, culture focusing on structure and rules/regulations. All of these had direct influence on effectiveness of the supporting staff.

2.3 Commitment to the organization comprised acceptance of goals of the organization, task concentration, and need for being a member of the organization. All of these had direct influence on effectiveness of the supporting staff.

2.4 Emotional intelligence comprised awareness of self-emotion, self-motivation and understanding emotion of other. These had direct influence on vision leadership and effectiveness of the supporting personnel.

2.5 Communication comprised communicative skill and communicative channel using. These had a direct effect on the vision leader condition and effectiveness of the supporting personnel.

2.6 Creative thinking comprised initiative, flexible thinking and thoughtfulness. All of these had a direct effect on the vision leadership and effectiveness of the supporting personnel.

Population and Sample group

The population in the study consisted of 2,861 supporting personnel at Ramkhamhaeng University (Division of Staff, Ramkhamhaeng University, 2020). The sample group consisted of 300 supporting staff. The sample group size was ten times of the variables (30 variables) [11] . Stratified random sampling was employed for field data collection and it was on the basis of proportional stratified random sampling.

Research Instrument

A set of questionnaires was used for data collection. It consisted of 8 parts as follows:

Part 1. Socio-economic attributes of the respondents (sex, age, educational attainment, marital status, monthly income and year of service) 15 items.

Part 2. Vision leadership of the supporting personnel at Ramkhamhaeng University (15 items).

Part 3. Organizational culture of the supporting personnel at Ramkhamhaeng University (20 items).

Part 4. Commitment to the organization of the supporting personnel at Ramkhamhaeng University (15 items).

Part 5. Emotional intelligence of the supporting personnel at Ramkhamhaeng University (15 items).

Part 6. Communication of the supporting personnel at Ramkhamhaeng University (1- items).

Part 7. Creative thinking of the supporting personnel at Ramkhamhaeng University (20 items).

Part 8. Effectiveness of the supporting personnel at Ramkhamheang University (20 items).

Part 2-8 were in the form of close ended question (5 rating scale of Likert). Content validity was checked and improved based on suggestions of the specialists. Then, the questionnaire was tried out and reliability was analyzed based on α-Coefficient value computation (Cronbach, 1990). Content validity, was found at 0.79 (IOC > .50) and Alpha Coefficient was found at .95.

Data Analysis

Descriptive statistics (percentage, mean and standard deviation) was used for analyzing causal relationship pathway having an effect on effectiveness of the supporting personnel. This was done by synthesizing research issues individually with content analysis technique. Method for analyzing structural equations (Structural Equation Modeling (SEM) by way of path analysis) using approximation technique. Maximum likelihood (ML) was employed for the estimation of pathway coefficient to investigate direct and indirect influence of independent variables on the dependent variable and Amos Version 21 was employed.

Expected Outcome

1. Results of the study would provide information about a model of causal relationship of factors having an effect on vision leader condition which would be used for policy setting and planning. This could promote effectiveness of the supporting personnel.
2. Findings could be used as a guideline for university administrators to develop the management system focusing on the development of personnel administration system.
3. The university administrators could adopt findings of this study to set a policy for effective development of the university.

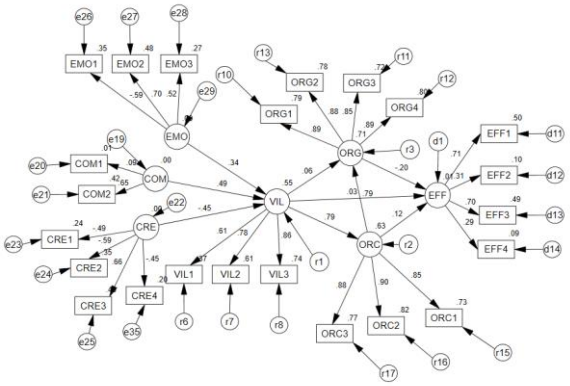
IV. RESEARCH RESULTS

Results of the study showed that an analysis of the causal relationship structure having an effect on effectiveness of the supporting personnel as well as the verification of consistency between the hypothesis model and the empirical data (an analysis of direct/indirect effect and total effect of variables

having influence on effectiveness of supporting personnel was done by using the Maxium Likelihood Estimates (ML) for analyzing the following:

1. Over identified model or model specification
2. Measure of the model fit
3. Parameter estimation of model
4. Direct effect, indirect effect and total effect

4.1 The researchers set an over identified model of analysis of causal relationship pathway as shown in Figure 1.



Chi-square = 1106.185 Chi-square / df = 4.895 df = 226 p-value =. 000
GFI =. 6 30 NFI =. 6 73 TLI =. 7 13 CFI =. 7 26 RMSEA =. 298

Figure 1 Structure of a model of causal relationship before improvement

Source: Adapted from Thanin Sinjaru (2012).

According to an analysis of the coefficient value of the over identified model of causal relationship pathway, it was found that the relationship between variables used for the analysis was still inappropriate. There was one pathway which its coefficient value was no statistical significance (Figure 1). Hence, it needed to reconfigure to obtain the best correlation model. This could be done by deleting the pathway having no statistical significance (Figure 1).

4.2 Measures of the model fit

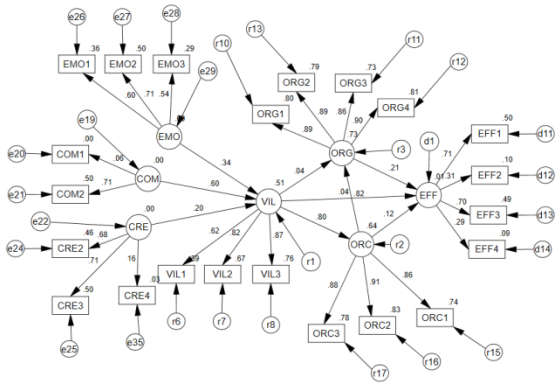
Hypothesis 1 was the model hypothesis testing to check whether the constructed model was consistent with the empirical real data or not

H_o : Theoretical path model = model based on actual data

H_1 : Theoretical path model ≠ model based on actual data

The consistency between the hypothetical model and the empirical data was verified by using the AMOS package. The researchers collected data based on various variables in the real model. It was found that the hypothetical model was consistent with the empirical data. This was considered from CMIN/df = 1.465, P-value = .931, GFT =.960, RMSEA = .000, NFI = .957, TLI = .968 and CFI = .984. The total effect of the causal variables having an effect on effectiveness of the supporting personnel most was nature of work and it was followed by quality of work life. All components could explain variance of effectiveness of the supporting personnel for 88.30 percent. P-value was used to verify consistency of the empirical model and the theoretical model. However, it must have statistical significance ($p > .05$) which implied that there was consistency with the empirical data. In other words, there was no difference but consistency. In this study, $p > 1.465$ (Figure 2 and Table 1).

Relationship variables		between	Estimate	SE	CR	P-Value	Sig
VIL	<---	EMO	.707	.204	1.509	***	have
VIL	<---	COM	.937	.180	2.985	***	Have
VIL	<---	CRE	.665	.163	-1.114	***	have
ORC	<---	VIL	.936	.215	4.350	***	have
ORG	<---	VIL	.758	.242	1.240	***	have
ORG	<---	ORC	.941	.219	4.288	***	have
EFF	<---	VIL	.932	.386	4.086	***	have
EFF	<---	ORC	.881	.297	2.150	***	have
EFF	<---	ORG	.782	.154	1.277	***	have
EFF1	<---	EFF	.932	.186	4.486	***	have
EFF2	<---	EFF	.823	.246	1.913	***	have
EFF3	<---	EFF	.975	.264	3.690	***	have
EFF4	<---	EFF	.905	.170	4.795	***	have
ORG4	<---	ORG	.962	.124	8.564	***	have
ORG3	<---	ORG	.857	.113	7.586	***	have
ORG2	<---	ORG	.973	.265	8.676	***	have
ORG1	<---	ORG	.929	.125	8.214	***	have
VIL3	<---	VIL	.940	.214	5.792	***	have
VIL2	<---	VIL	.812	.244	3.322	***	have
VIL1	<---	VIL	.651	.164	3.366	***	have



Chi-square = 331.191 Chi-square / df = 1.465 df = 226 p -value = .913
GFI =. 9 6 0 NFI = .957 TLI = .968 CFI = .984 RMSEA = .000

Figure 2 Structure of the causal relationship model, final model, improved.

Source: Adapted from Thanin Sinjaru (2012).

Table 1 shows the verification of the harmony of the causal model with the empirical data. Factors affecting effectiveness of the supporting personnel

contract Appearance	Statistics	criterion	Subject before adjustment		Subject after adjustment	
CMIN-p	Chi-square Probability Level	p > .05	. 000	×	.913	✓
CMIN / df	Relative Chi-square	< 2	4.895	×	1.465	✓
GFI	The goodness of Fit index	> .90	. 6 30	×	.9 60	✓
NFI	Normal Fit Index	> .90	.673	×	.957	✓
TLI	Tucker- Lewis Index	> .90	.713	×	.9 68	✓
CFI	Comparative Fit Index	> .90	.726	×	.9 84	✓
RMSEA	Root Mean Square Error of Approximation	<.08	.298	×	.000	✓

Source: Adapted from Thanin Sinjaru (2012).
Note: × means not meeting the test criteria.

✓ means to pass the index test result criteria used to verify conformity and harmony. of the model and the empirical data

4.3 The results of parameter estimation of the model or the results of the various estimation of coefficients

Hypothesis 2: Causal variable influencing the Effectiveness of supporting personnel was divided into two causes; three variables had direct influence, namely vision leadership (VIL), organizational culture (ORG), and organizational commitment (ORC) with indirect influencing variables through leadership variables. Vision had three variables: emotional intelligence (EMO), communication (COM), and creativity (CRE).

Table 2 shows results of the estimation of Standardized Regression Weights after modulation.

Note: Significant * p <. 05 , ** p <. 01 , *** p <. 001

Table 2 showed that causal variables had influence on the effectiveness of supporting personnel was divided into two causes; there were three variables with direct influence, namely vision leadership (VIL), organizational culture (ORG), and organizational affinity (ORC) with indirect influencing variables through the leadership variables. Vision had three variables: emotional intelligence (EMO), communication (COM), and Creativity (CRE).

Vision leadership (VIL) consisted of vision creating (VIL1). Publishing of Vision (VIL2) and Implementation of the Vision (VIL3) some caused direct influence on the support personnel's effectiveness.

Organizational culture (ORG) consisted of a culture of adaptation (ORG 1). Mission-oriented culture (ORG2) Culture focusing on participation (ORG3) and cultured focusing on structure and regulations (ORG4). Some caused directly influence on the effectiveness of the supporting personnel.

Organizational Engagement (ORC) consisted of the acceptance of the organization's goals (ORC1). Endeavor to work (ORC2) and the requirements for membership of the Organization (ORC3) some caused direct influence on the supporting personnel's effectiveness.

Emotional intelligence (EMO) consisted of the awareness of emotions of other (EMO1). Self-motivation (EMO2) and understanding other people's emotions (EMO3) There were causes of direct influence on vision leadership (VIL) and direct influence on the effectiveness of the support personnel passing.

Communication (COM) consisted of communication skills (COM1) .and the use of a communication channel (COM2). There were causes of direct influence on vision leadership (VIL) and supporting personnel's effectiveness passing.

Creativity (CRE) consisted of thinking fluency (CRE2) the flexibility of thinking (CRE3) and refinement of thinking (CRE4) There were causes of direct influence on vision leadership (VIL) and direct influence on the effectiveness of the supporting personnel passing.

4.4 Calculation of direct effect, indirect effect, and total effect.

Table 3 showed results of the analysis of direct influence. Indirect influence and the total of influence between variables and prediction variable

Dependent variable	Influence (Effects)	Prediction variable					
		EMO	COM	CRE	VIL	ORC	ORG
EFF	DE.	.000	.000	.000	.821	.881	.782
	IE.	.034	.064	.013	.111	.000	.000
	TE.	.034	.064	.013	.932	.881	.782
VIL	DE.	.707	.937	.665	.000	.000	.000
	IE.	.000	.000	.000	.000	.000	.000
	TE.	.707	.937	.665	.000	.000	.000
ORC	DE.	.000	.000	.000	.627	.000	.000
	IE.	.052	.087	.170	.309	.000	.000
	TE.	.287	.502	.170	.936	.000	.000
ORG	DE.	.000	.000	.000	.571	.941	.000
	IE.	.028	.088	.071	.187	.000	.000
	TE.	.028	.088	.071	.758	.941	.000

According to Table 3, it was found that the independent variables having an effect on the supporting staff consisted of three variables: vision leadership - VIL (Total effect = .932), commitment to the organization – ORC (Total effect = .881) and organizational culture – ORG (Total effect =.782). The variable having a direct effect most was commitment to the organization –ORC (Total effect = .881) and followed by organizational culture – ORG (Total effect = .982). Thus, this implied that acceptance of the organization's – ORC1 goals, task devotion – ORC2, and need for being a member of the organization – ORC3 had effect most.

Conclusion and Recommendation

The conceptual framework of the model of causal relationship factors having an effect on effectiveness of the supporting personnel at Ramkhamhaeng University comprised 3 variables having a direct effect: vision leadership (VIL), organizational culture (ORG) and commitment to the organization (ORC) and 3 variables having an indirect effect : emotional intelligence (EMO), communication (COM) and creative thinking (CRE).

The hypothetical model having consistency with the empirical data based on CMIN/df (1.465), p-value (.913), GEF (.960), RMSEA (.000), NFI (.957), TLI (.968) and CFI (.984). The total effect of the causal variable having an effect on followed by quality of work life. All of these components could explain variance of effectiveness of the supporting personnel for 88.30 percent.

Therefore, the construction of a causal model led to the construction of a structural equation modeling (SEM) as shown below.

EFF = .013 + 0.932 VIL + 0.881 ORC + 0.782 ORG
VIL = .512 + 0.707 EMO + 0.937 COM + 0.665 CRE
EMO = .002 + 0.748 EMO1 + 0.727 EMO2 + 0.641 EMO3
COM = .004 + 0.887 COM1 + 0.781 COM2
CRE = .003 + 0.921 CRE2 + 0.65 CRE3 + 0.767 CRE4
ORG =. 731 + 0.929 ORG1 + 0.973 ORG2 + 0.857 ORG3 + 0.962 ORG4
ORC = .644 + 0.953 ORC1 + 0.916 ORC2 + 0.922 ORC3
Cmin/df = 1.465 p-VALUE = .913 GFI = .960 AGFI = .934 RMR RMSEA = .001 = .003, NFI = .957 TLI = .968 CFI = .984.

VI. DISCUSSION

1. Vision leadership (VIL) has a total effect at .932. That is, the administrator still be one factor in effectiveness of the organization leading to be successful. The administrator will play roles as the leader of transformation having vision. Besides, he is able to create the strong feeling of mission, reliability, trustworthiness, and promote personnel commitment to mission and goals. This conforms to an idea of [12] and [13] that the leader can transfer data or information from subordinates to the executive well. He can work well due to need of his supervisor so it makes the organization be effective like the promotion of an agency to produce some valuable things.[14] made conclusions in a study on effective leadership of Michigan University. It was found that an effective leader has a tendency to create relationships with his subordinates rather than less effective leaders. Moreover, an effective leader prefers to supervise work performance of subordinates by group rather than an individual.

1. Commitment to the organization had a total effect at .881. That is practitioners having a high level of commitment to his organization usually devote their body and mind to do best their assigned task. It is an important factor to achieve the goals of the organization due to effective work performance of the practitioners. This conforms to an idea of [15] and[16] that commitment to the organization is an importance variable to make the organization be successful or not.

Recommendations

VI. CONCLUSION

1. Regarding the factors on nature of work and work diversity, it should have the determination of workload and responsibility of personnel on the basis of their capability, educational attainment and work experience
2. On the basis of the factor on work independence it should have the determination of responsibility scope of each position based on appropriateness and full authorization.
3. For the factor on reflection from work, it should have the construction of work culture which opens an opportunity for personnel to express their opinions and put it into practice. For example, preparing a meeting for operational development of each section then a minute on suggestion for problem is prepared.

Recommendation for Next Study

1. This study employed quantitative research which a set of questionnaires was used for data collection so there was a limitation on in-depth data. Hence, qualitative research should be added in next stud to gain various in-depth data.
2. In order to be clear in results of the study, longitudinal study should be conducted to investigate occurred behaviors whether it is consistent with research data or not (Recheck)

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Strategy Management of Thai Kite Art and Cultural Revitalization and Preservation By the participation of the Laksi Communities, Bangkok, Thailand

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Abstract— The objectives of this research were to 1) investigate the body of knowledge of Thai kite art and culture , 2) investigate the community participation of Thai kite art and culture restoration and preservation, and 3) analyze strategy management of Thai kite art and cultural revitalization and preservation by the participation of community people Laksi District, Bangkok. This research was a community-based research (CBR). The research methodology was mixed methods approach: qualitative and quantitative research design. The results showed that Laksi Thai kites had distinctive identity. Regarding the community participation, they did not participate in any Thai kite art and culture programs. The wisdom owners of the local Thai kite art and culture preserved their art and culture themselves without any support from the public sectors in Laksi District. The art of kite-making was gradually disappearing, despite the fact that its identity had been in the community for a long time. Besides, the majority of the community people intended to participate in the restoration and preservation of Laksi Thai kite art and culture programs. Moreover, the results of the analysis of the strategy management revealed that there were attempts of having the cooperative learning with the community in all phases: initiation, sharing ideas, controlling, operating, evaluating, and receiving benefits. In order to establish the community participation, it was necessary to have well-accepted leader in the community; public sectors to facilitate activities, and networks in all sectors.

Index Terms— ***Strategy Management; Revitalization and Preservation; Thai kites; Participation***

I. INTRODUCTION

"Kite" is one of the works of art resulted from the wisdom of Thai craftsman who uses the natural resources to create the playthings for children or the recreational equipment for people in all region. It also shows the identity of the Thai arts and culture that is passed on from generation to generation. The kite from each community and region has each own distinctive identity. Laksi Thai kites, for example, has its own features. At present, the art of Laksi kite-making is gradually disappearing since the kite-flying is less popular, and the lack of kite-making inheritors, therefore, the community members and the youth in the area lack opportunity to participate in the preservation project. Despite the fact that its identity has been in the community for a long time, as it is stated in the slogan of Laksi District that "Beautiful Laksi Temple, Thai Kite-Making site, Favorite Khon Masks, Good Looking Laksi District." However, the historical background of Laksi Thai art and culture, especially Laksi Thai kites which has distinctive identity is disappearing because it lacks the inheritor. Besides, the community members and the youth in the area have no opportunity to learn. Thus, Laksi Thai kite art and culture remains only in the slogan of Laksi District. This research aims to find out the strategy management model of Thai kite art and cultural revitalization and preservation by the participation of Laksi District communities, Bangkok, Thailand, and to enable Laksi Thai kite art and culture in creating the community sustainable worthiness and economic value in various dimensions.

II. RESEARCH OBJECTIVES

The objectives of this research article were to 1) investigate the body of knowledge of Thai kite art and culture, 2) investigate the community participation of Thai kite art and culture restoration and preservation, and 3) analyze strategy management of Thai kite art and cultural revitalization and preservation by the participation of community people Laksi District, Bangkok.

III. RESEARCH METHOD

A. Research Design

This research was a community-based research (CBR). The research methodology was mixed methods approach: qualitative and quantitative research design. The research design was as follows:

1) Project participatory conference. It helped the planners to build up an understanding of the context in which the involved people, these were: the cultural networks, Laksi District officers, other involved agencies, and the research team participated in the conference. The conference provided suggestion, and support from the community members, and the stakeholders. It also served as the arena for exchanging ideas, revising, analyzing data and planning for the operation.

2) Monthly research team meeting. It helped the team to build up an understanding to achieve goals periodically. Besides, the meeting served as the place for exchanging ideas, reviewing, and analyzing the activities consecutively.

3) Focus group discussion. It enabled the community to find out the community body of knowledge and the kite-making art and culture from different points of view apart from the wisdom owner.

4) Survey. The survey was conducted to receive the background data of the community and the kite-making art and culture. The data included the history, attractions and art and culture of Laksi community.

5) Interview guides. The interviews were conducted to key informants, casual informants, and community sector informants to find out the community body of knowledge, Laksi kite art and culture, the present condition of the Laksi kite art and culture revitalization and preservation by Laksi community participation. The in-depth interviews used the divergent interviewing method of the wisdom owner for the details of the body of knowledge of Laksi kite art and culture and for the participation of the community members in revitalization and preservation of Laksi kite art and culture.

6) Questionnaire. The closed-ended form of questionnaire was used. The population of 105,588 people [7]. The research population determined by the Taro Yamane's sample size and accidental sampling method were 400 people. The questionnaire was constructed to acquire the need of participation in the strategy management of Thai kite art and cultural revitalization and preservation in six phases, starting from initiation, sharing ideas, controlling, operating, evaluating and receiving benefits. Then the interval scale was used and the data was analyzed by arithmetic mean and standard diviation.

7) Observation. The participatory observation and the non-participatory observation were used to observe and the data were collected and recorded in the Observation Record Form.

8) Data collection. The data of the Laksi kite art and cultural sites, including the meeting with the people in the area about the problems and the strategy management approach for art and cultural revitalization and preservation were collected.

9) Study tours. The research team had made study tours to the area accomplishing in the similar issues of the art and cultural revitalization and preservation. This created better understanding in the operation and received the lesson learned from these study tours to use in the research site.

B. Research Process

This research used a participatory study process to analyze the strategy management of Thai kite art and cultural revitalization and preservation by the participation of the Laksi community, Bangkok, Thailand. The steps of this participatory research process were shown in Fig. 1

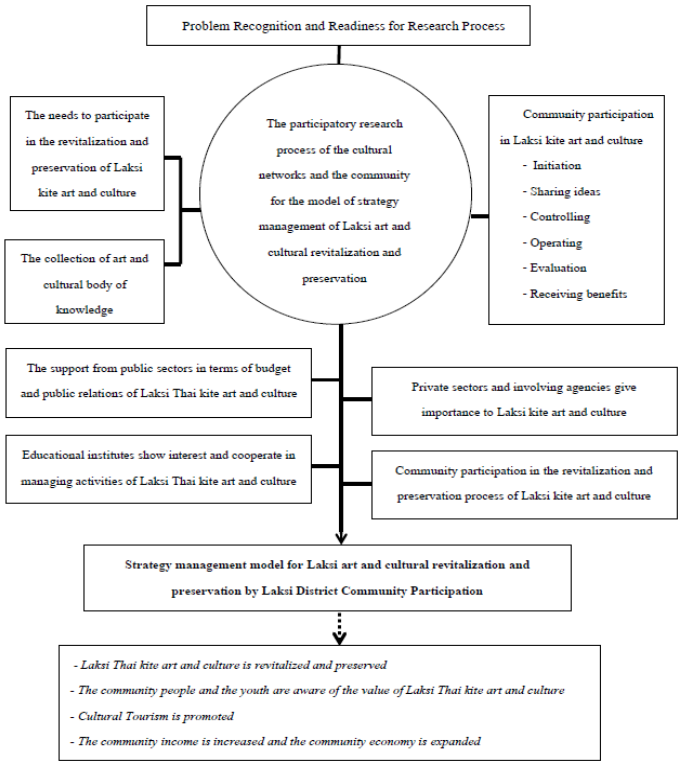


Fig.1 Research process for strategy management of Thai kite art and cultural revitalization and preservation by the participation of community people Laksi District, Bangkok.

From Fig.1 can be explained to the strategy management of Thai kite art and cultural revitalization and preservation by

the community of Laksi District that it should start from mutual recognition of the problems in order to enter the participatory study process of the cultural networks and the community. This is to come up with the strategy management for art and cultural revitalization and preservation by conducting the research on the community needs for Laksi Thai kite art and culture, on the community participation in Laksi Thai kite art and cultural revitalization and preservation, including on the collection of Thai kite art and culture body of knowledge, and on the community participation in Laksi Thai kite art and cultural revitalization and preservation in the opinion of the wisdom owner and of the community people. This research process started from the initiation, sharing ideas, controlling, operating, evaluating and receiving benefits participated by the public sector, educational institutes, private sector, and the community. The result was a strategy management for Laksi Thai kite art and cultural revitalization and preservation. Besides, the community members and the youth in the area were proud of Laksi Thai kite art and cultural values. In addition, Laksi District became the cultural tourist attraction. The community members earned income resulted in sustainable community economy.

IV. RESULTS

1. The collection of the body of knowledge for Laksi Thai kite art and culture, the results showed that Laksi Thai kite-making was established by Mr. Kun Bun-nok who is skillful in making all kinds of kites. His work in revitalization and preservation helps revitalize and preserve the local wisdom and is well-accepted at the national and international levels. He was honored Thai Wisdom Teacher, Year 4 in the field of Fine Arts in B.E. 2548 (2005) from the Office of Education Council, Ministry of Education. Moreover, Mr. Kun Bun-Nok received the signboard of "Kite-Making Community" from the public office as the name of the community where one of its residents was the kite-making craftsman. The importance of Mr. Kun Bun-nok's kite-making has been stated in Laksi District slogan that " Beautiful Laksi Temple, Thai Kite-Making Site, Favorite Khon Masks, Good-Looking Laksi District." Laksi Thai kites had distinctive features in using good quality, durable and water resistant mulberry paper. Another prominent point of Mr. Kun Bun-nok's kites was the emphasis on Thai arts and the images of literary characters, for example the images of characters in Phra Aphai Mani, Hanuman in various positures, the Tuk-Tuk kites, the kites of 12 zodiacs, etc. Such distinctive features of Mr. Kun Bun-nok's kites attracted various business company owners to purchase his works of arts to decorate the booths or their shops.

2. The community participation in the opinion of the wisdom owner showed that there was only one successor of Laksi Thai kite-making. Although he wanted to revitalize and preserve the art of Laksi Thai kite-making , however, he did not have time to do so. Since he had to work full-time. Besides, the revitalization and preservation project lacked support from the public office. In terms of the community members, they showed interest in learning and preserving Laksi Thai kite-making at high level ($\overline{X}$ = 4.00, S.D. = 0.727)

3. The strategy management approach for Laksi Thai kite art and cultural revitalization and preservation by the participation of the community members of Laksi District revealed that in order to promote the efficient community participation to preserve Laksi District art and cultural identity, it was necessary to have: 1) a well-acquainted and well-accepted leader as the initiator, 2) the participation from the public sector, 3) the networking from all involving sectors, to provide knowledge on the community art and culture to its members, to arrange educational activities to revitalize and to pass on the wisdom to the community members by the wisdom inheritors, and to teach them how to do kite-making. For this reason, the community members were motivated to realize and be aware of the community art and cultural values and worthiness. Besides, the educational institutes were used as the place to install the conscious mind and to cherish Thai art and culture, with the support from the school administrators and teachers. As a result, the youth in the area became skillful and able to create their works for extra income. On the other hand, the partnership with the company expert in marketing could educate the community members of product development for marketing and on-line sales. Moreover, the arrangement of activities for Thai kite revitalization as annual activities to sustain Laksi Thai kite art and culture, these activities included the kite contests and the kite-flying competition. In addition, the community could participate for Laksi Thai kite art and cultural revitalization and preservation starting from initiation, sharing ideas, controlling, operating, evaluation and receive benefits. 1) The community initiation that recognized Laksi art and culture and participated in the meeting could come up with the solution to set up the conscious mind to cherish the art and culture of the area. The data received should transmit to the community leader, educational institutes, and the public sector to participate in providing solution and sharing ideas. 2) Sharing ideas. When Laksi District community members, the educational administrators, and the administrators of the involving offices recognized and comprehended the values of the art and culture in the area, the results led to sharing ideas, arranging learning, testing, operating, and analyzing the conclusion in doing activities. 3) Controlling. It was the process of decision to be the partnership of the community, public offices, educational institutes and the wisdom owner to achieve the goals by cooperating in the analysis of the data to

set the activities format. 4) Operating. It was the phase to manage the activities follow the plan that had been cooperated. The partnership of all concerned sectors in order to achieve goals, according to the responsibility of each sector, for example, the cooperation of the public relations section in order to publicize the activities. The community leader encouraged the community members to participate in the activities by transmitting the activity information via line groups and the Facebook page of the community. Besides, the schools encouraged the students to participate in the art and cultural activities. Moreover, the public enterprise and the private sector participated in the activities by the coordinating from the community. 5) Evaluation. Each activity should be evaluated by all sectors participated. The results showed that the project participants were satisfied with the overall project/activity management and called for arranging more project/activity of this kind in the future. At the same time, the evaluation for the cooperation of the project/activity brought about the data for developing and managing further project/activity. 6) Receiving benefits. The project/activity which had been cooperated and found successful created pride and worthiness of the art and culture in the area, for example, on the occasion of the 22nd. Anniversary Celebration of Laksi District Office, the picture of Laksi Thai kite-flying art and culture was used as the backdrop and screened on the cloth-bags as souvenirs distribute to the guests. At the same time, the community and the youth could make use of the skill derived from kite-making to create the works of art of their own and earn extra income in the future.

V. DISCUSSIONS

The process of the transmission of the local wisdom included within and outside the community. The knowledge is transmitted to the local youth or the interested people in the area. The knowledge transmission passed on to the groups of people, those who live in the area and those who were sent to attend the training. In terms of the learning factors, the learners were the young people who were willing to attend the training from the wisdom owner. The instructional methods included explanation, demonstration, and training. In terms of the social relationship, the learners and those who were interested in the activities participated in study tours and visiting the community. Besides, the neighboring communities gave the importance of the wisdom of Thai art and culture and agreed to revitalize and preserve Laksi Thai kite art and culture by circulating the knowledge through media. As a result, the youth and the community members showed more enthusiasm and participate in Laksi Thai kite art and culture. The result was in accordance with the research result of [12]. In terms of learning and transmission knowledge of the Nang Yai shadow puppet drama within the community, social adjustment in the form which was compatible with the present circumstances and the needs of the viewing participants. The interaction within the community had resulted in the realization of the value of the local folk arts and culture. This was conformed to the research findings [9]. The results of this research revealed that there were five factors concerning the wisdom of Likay performance, these were: language, dance, song and music, costumes, stages, setting, and light and sound. These wisdom initiated by learning, training, collecting knowledge, and transforming while sustaining old wisdom that was considered valuable, correct and suitable. At the same time, the wisdom could be adjust, changed, and developed according to the social circumstances at that time in order to attract the interest of the audience. The conservation of Likay performance could be achieved by the support in terms of budget and promoting Likay's troupe performances from public and private agencies and the educational institutes. This create opportunities for exchanging attitudes and knowledge building for local wisdom networking to cooperate in preserving and transferring the local Thai art and culture. This was consistent to the approach for preservation consideration [8] that the operation through the consecutive applying process, the learners were able to recite the what, the how and the why of the operation. The result was consistent to the standard set by the instructor. The practice method was able to indicate the important factors which results in doing things consecutively and sustainably. After learning about the creating and preserving, the learners could recite fluently what had happened. Thus, this was important for revitalization and preservation. Besides, by supporting the wisdom owner to receive honoring awards could serve the cultural preservation and development approach. This was in accordance with [9] that the preservation and transmission model was managed through media, educational institutes, Likay contest and award giving.

As for the transmission approach for Laksi art and cultural wisdom, first of all there should have strategic plan for preserving and developing the body of knowledge, collecting the body of knowledge and the values of such art and culture and integrated into classroom teaching and learning course, for example, the course of Thai Kite Wisdom. Besides, they should provide the knowledge exchange regionally. The support from the educational institutes in the area encouraged to bring the learning of local art and culture into school. This was consistent to [3] that the researcher used the information received from the research in arranging the subjects in Thai Language and Social Sciences Sections in local school. As a result, students could learn and were installed the spirits of preserving the local art and culture. This was comply to [10] which stated that the school subject about local crafts should

be set in the school curriculum at each level to educate and train students about local arts and culture. Moreover, there should have the arena for exchanging ideas in developing arts and culture, increasing public relations to promote arts and culture contests, such as Laksi Thai kite-flying contest. In addition, the local people should be aware of the need to revitalize and to preserve Laksi Thai kite art and culture. At present, it was necessary to focus educational management on building national wisdom to the human resource of the country and extending to the future as it was shown in [11] about the concept of culture and social development that it was necessary to have correct understanding of the wisdom which was vital strategy for the country development. Good execution, therefore, occurred regularly in exchanging ideas, supporting local cultural arena, knowledge collection, research support on creating various media, meeting, seminar and conference, supporting community organization and community learning process, improving the educational system to relate to Thai culture, supporting the cultural management activities to generate extra income for the youth and the community members.

In terms of the revitalization and preservation of art and culture by the participation of Laksi communities, the managing activities were performed in steps. Thus, the activities achieved the goals which were consistent to [2] which stated that the successful project should have well plan, regular consultation meeting and coordinating with relevant authorities. On the other hand, the participation in problem-solving of the cultural networks led by Laksi Cultural Council, public agencies, educational institutes and community members helped direct the activity achievement. This was in accordance with [13] which stated that the participation in project initiation by searching for the community problems and their causes, followed by participating in planning revealed that the arranging of activities using the school and the community activity center and participating and coordinating in planning and setting the transmission method, training with the wisdom owner including kite-flying contest project. These activities enabled the community members to participate and have responsibility in order to achieve goals. For this reason, the community members received information and participated in idea sharing for revitalizing and preserving Laksi art and culture. This was in accordance to [10] which mentioned that the participation of the community members in planning for integrated tourism attractions was achieved by coordinating and grouping. This was in accordance with [5] that the success of the community participation in local tourism management depended on the cooperation of the concerning public and private sectors, and non-government organization to provide knowledge, information and other assistance. In terms of the community participation, the community members had to participate in all phases, starting from initiation, sharing ideas, controlling, operating, evaluating, and receiving benefits. In terms of the participating in controlling and decision-making, the result was that in controlling the operation from the starting to the end of the activity, including providing knowledge, monitoring for public relations, the community members appreciated to participate. This was comply to [4] which showed that by participating in decision-making, the people participated in initiating the project by stating the problems, the need to prioritize the problem, the decision to do the project and the activities, and monitoring the activity management. As for the participation in operating the activities for revitalization and preservation the art and culture, the result showed that the cultural network and the community participated in the operation, they had the opportunity to be the kite-flying managing committee or the kite-flying competition committee to work along with all District Cultural Council, District Officers, educational institutes, private agencies and the wisdom owner. This reflected the full support from all related sectors and was consistent to [6] which mentioned that the participation in management could allocate investment, the cooperation and coordination in the community activities. In terms of monitoring and evaluating the revitalizing and preserving activities, the cultural networks and the community members could participate in each step, starting from providing knowledge in arts and culture, training to observe the participants' interest and the satisfaction of the youth and the community members who participated in the project, including the use of evaluation form for the satisfaction of the project participation survey. This was consistent to [1] that the follow-up of the project affected the community economy. In terms of allocating benefits, the revitalization and preservation activities could generate benefits to the community. This was in accordance with [14] which mentioned that the community should derive benefits from participating the local tourism project. This, of course, was consistent to [6] that the community participation in management of the tourist attractions of the In-Buri District, Sing Buri Province resulted from the fact that the community members received benefits from the project, for example, the extra income receiving from selling souvenirs.

VI. RECOMMENDATIONS

A. Recommendations for Practices

1. There should have the process to build strong community and to create networks with various sectors in setting priority for the proposition of the cultural revitalization, when budget was considered the vital energy to move the process.

2. There should have an administrative committee in the form of the organization to officially manage the art and cultural preservation. The committee might be elected or be the concerning community representatives. The committee should be consisted of a president, the committee members and a secretary to coordinate, give advice and set the plan for Laksi District art and cultural development systematically, such as setting the systems for preservation and transmission, marketing, and public relations. This should be set as the organization whose objectives is to preserve arts and culture. As for Laksi District art and culture, the District Cultural Council which is serve as the exchanging center for knowledge experience and ideas in managing the cultural mission, promoting and coordinating the activities of the member organization and managing other cultural activities that the Ministry of Culture or other offices asked for cooperation. The District Cultural Council is not responsible for the specific art and culture of the District. Besides, the Council received limited budget, therefore, the management of various activities of Laksi District lacked agility. This was because the District Cultural Council committee members were volunteers and worked without receiving payment. Therefore, it is necessary to have the establishment of the official administrative committee in the form of organization for specific art and cultural preservation. Besides, the public sector may need to provide enough budget to achieve effective revitalization and preservation project.

3. There should have the collection of art and cultural body of knowledge systematically, for example, handbook of Khon mask-making, and handbook of puppetry- making as the learning resources. These collections helped preserve the wisdom by integrated operation with the participation of Laksi District Cultural Council, public offices, community and educational institutes.

4. The community should realize the values and worthiness of Laksi art and culture. Besides, the community members should have knowledge about the history of art and culture in the area and participate in preserving Laksi art and culture. The community members especially the youth, should have awareness of the values of the importance of the local Thai art and cultural wisdom. Moreover, they should support, promote and inherit Laksi District Thai kite art and cultural wisdom by participating in the kite-making contests to build the awareness of being local.

5. The community of Laksi District art and cultural center should be established as the place where the District art and cultural body of knowledge is collected. The center could be established in Wat or in schools in the district as the community data-base and should be participated with the community members as the vital learning places and could lead to the building of integrated community courses or the community center. Besides, this could bring the body of knowledge to integrate to the learning activities in schools by arranging the local art and cultural subjects, such as the history and background of Thai-kite making, the practice of Thai-kite making, etc. Moreover, there should have the innovation of Thai kite-making method to attract the youth to participate the learning activities, such as to create the kites into different shapes, to have the workshop for exchanging ideas and come up with the information for improving and developing Thai kite art and culture, and to encourage people to show more interest in the District art and culture.

6. There should have the concrete and sustainable activities for cultural tourism in Laksi District by coordinating with the wisdom owner to arrange the cultural tourism program, watching performance, practicing in Thai kite-making, selling souvenirs, and the return on sales will go back to the community.

7. There should have the initiation in creating the art and cultural products appreciated for the period and be useful for living by using the local wisdom and bringing the scientific method and technology to top-up the production and the administration, including the protection and environmental preservation with the coordination of the educational institutes, the public offices, and the public enterprises.

8. The knowledge on local art and culture or the historical background of Laksi Thai kite should be put in the educational curriculum for students to study in Laksi District schools, or they could be added to the subjects available in schools.

9. The local art and cultural activities should be promoted and publicized. The exchanging of local art and cultural wisdom from study tours, and visiting of art and cultural sites in other provinces helped broaden the horizon and bring back the ideas to use in the project.

10. The wisdom owner should receive praise and recognition for morale support as the inheritor of Laksi art and culture.

11. There should have dissemination and public relations with various media, for example circulating book for tourism that includes the historical background of Laksi Thai kite-making via internet or producing the DVD documentary about the valuable cultural heritage of Laksi District community for distribution or on sales. The interested people, thus, could retrieve the information by themselves. This was to motivate interested people to learn, to visit and watch the community art and culture in order to disseminate and publicize Laksi art and cultural information to the public. As a result, the people in the area have pride of their own art and culture and the community members could earn extra income.

12. There should have coordination of the offices and involving organization in both public and private sectors to invite Laksi Thai kite art and culture to be participated in the festivities and to promote Laksi Thai kite art and culture to

display and to sell their kites at the booth. This is to disseminate and publicize Laksi Thai kite art and culture and to generate income to the community.

B. Recommendations for Further Research

1.The study on the strategy management of other Laksi art and cultural revitalization and preservation by the participation of the Laksi communities in puppetry, marionettes,and Khonmasks.

2. The study on the integrated knowledge between Thai kite and scientific knowledge, and new technology should expand the capacity of Thai kites to other interesting topics to catch up with the modern period.

3. The study of marketing strategy to increase value-added for the typical local cultural products.

CONCLUSION

Despite the fact that Laksi Thai kites had distinctive features, the community member did not show much enthusiasm. The results of the research could be used as the strategy management approach of Thai arts and cultural revitalization and preservation by the participation of the community members of Laksi District. The community members should participate in all phases starting from initiation, sharing ideas, controlling, operating, evaluating and receiving benefits. The cultural network and the community had selected Laksi Thai kites as the pilot project for arts and cultural revitalization and preservation by arranging activities participated by all sectors. As a result, the activities were successful and satisfying and could be used as the model for strategy management of Laksi Thai kite art and culture by the participation of the Laksi communities, Bangkok, Thailand.

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The Dissemination of Thai Drama's MADANABADHA of King Vajiravudh

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Abstract— This paper has an objective to study the drama of His Majesty King Vajiravudh in the subject of MADANABADHA which publicly appeared in the Basic Education Core Curriculum and performance in schools. The scope of the study emphasized on teaching management, drama staging on the MADANABADHA and royal writings that appeared in the Basic Education Core Curriculum. The results show that the drama of MADANABADHA is a teaching and learning tool for teachers to disseminate information, knowledge, news, ideas, practices through demonstration, viewing of performances and practices for students to learn democracy, see rights and equality in finding woman's partners to be assertive, good leadership and a good follower. It is to develop one's own skill for both body and mind, intelligence, knowledge and morality with ethics and culture of living and to be able to live happily with others consistent with strategy of the National Education Management Plan and the development of learner's quality to have competency and desirable characteristics. In addition, the royal writing "MADANABADHA" is regarded by the club literature as a well-written book proposed as the selective literature according to the announcement of Ministry of Education which contains contemporary contents. By using rose as a symbol that most people understand in the meaning of love, it represents the right and equality of women that is an important part of the development of Thailand towards becoming a concrete democracy. It plays an important role in the royal drama "MADANABADHA" in King Vajiravudh to be appeared in the basic education system and became popular in educational institutions from the past to present.

Index Terms— ***King Vajiravudh, The performance of MADANABADHA, Royal Writings, Learning Activities***

I. INTRODUCTION

Educational institution is a learning management resource that uses dramas as a tool to disseminate knowledge through plays by acting as stories in various forms. His Majesty King Vajiravudh has seen the importance and special features in access. Therefore, he has written royal writings to present the concepts, practices, and stories to people. Currently, the royal writings by His Majesty King Vajiravudh titled "MADANABADHA" is included in the Basic Education Core Curriculum and has been popular for being exhibited continuously until the present.

The educational institution is a teaching and learning place for students at least 12 years which is basic education [1] having a teaching and learning process using dramas as a tool of teachers to disseminate information, knowledge, news, ideas, practices to students using motions and gestures developed from human instinctive body language [3] to role-playing in real life and fictional characters.

His Majesty King Vajiravudh has focused a special feature of drama that can convince the mind to create fun and enjoyment through various forms of performances, thus writing the royal writings for both in Thai, English and French as many as 120 stories to disseminate knowledge to the people in various fields, resulting in the diversity of His Majesty's writing to access people with different tastes to be accepted widely and to be introduced into the education system.

Currently, the royal plays of His Majesty the King Vajiravudh has been included in the Basic Education Core Curriculum and being popular performances. There is a current reference which is the dialogue play of MADANABADHA appeared in the Thai language Grade 11 with the contemporary content showing the pain is caused by love. By using the rose as a symbol where people of all nations and languages understand the meaning of love [4] together with ideas, mottos and royalty reflecting the rights in finding a partner through the teaching and learning that focuses on learning by doing, participation in theatrical performances, online publication. It corresponds to the age group [7] who need confidence, interest from the opposite sex including preparing for marriage and family life [8] encouraging students to develop democracy, leadership, followers and assertiveness [9] correspond with learner development to thrive as good citizens for national development including promoting and developing the quality of students to be competent and desirable characteristics

according to the objectives of the Basic Education Core Curriculum, B.E. 2551.

In the paper, the researchers aimed to study the dissemination of the drama titled "MADANABADHA" from the royal writings of King Vajiravudh by studying the historical document, government documents, basic education core curriculum, play performances, photos, movies, interviews and observations. The aforementioned study will serve as references in academy and interested people as well as used to study as a guideline for teaching and learning through dramas and to disseminate educational information in future.

II. Research Objectives

To study the drama of His Majesty the King Vajiravudh titled "MADANABADHA" which appeared to be published in the Basic Education Core Curriculum and performances in educational institutions.

III. Research Methods

This research was a qualitative research. The researchers have conducted the research in 4 stages, consisting of study of major historical subjects, photo study, animation related to the staging of the drama "MADANABADHA", media evidences published online in 2020, interviews and observations of teachers and students involved in teaching and staging. Then, the researchers took the information obtained and investigate the relationship of the royal writings of King Vajiravudh titled "MADANABADHA" in the Basic Education Core Curriculum, teaching and learning management and publishing the performance online. In analysis, the researchers sorted the data and arranged according to the issues of the study: meanings, forms, contents, roles in the staging to process it through the relationship of royal plays of His Majesty King Vajiravudh as shown in Fig. 1.

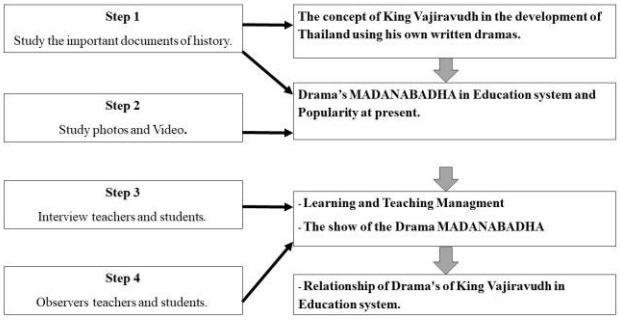


Fig.1 Methods of Study

IV. Results

The data obtained from the study can be summarized by the following points of explanation

1.The dialogue play titled of "MADANABADHA"

The dialogue play titled of "MADANABADHA" is a royal writing of King Vajiravudh in 1923. There are 5 acts of MADANABADHA in total which are the acts of pain or suffering due to love [10], which is a valuable Thai literature in both speech and linguistic aesthetics hailed from the club literature as a well-written book in the genre of dialogue drama [11] and it received the announcement of the Ministry of Education to propose as the dialogue play in the story of MADANABADHA as the selection of literature due to the value suitable for ages and potential of students [5]. The act appears in the Basic Education Core Curriculum in the group of learning Thai language for the grade 11 which is the act no.1. It is about the story of the Suthet God who falls in love with the goddess named Mattana but she does not accept his love. Suthet then asked "Maya Win" to use a magic spell to summon her to receive his love. It appeared that Mattana responded in a fuss-free way. Suthet therefore cancelled the magic. When Mattana was conscious, she denied his love. Suthet was so angry and cursed her to be born in the human world. She asked to be born as a rose. Suthet cursed her to be a human only on the full moon, one day night. When she is in love, she will become a real human [12]. There is a style of showing the characters to speak their own lines, sing, play music and have music scenes for the performance. It results in the students to gain knowledge and understanding from practice as the real experience. It can be seen the suffering caused by love according to Buddha doctrines "Where there is love, there is suffering" and "No beloved, No suffering of the people there"[2], including the women's right to choose a spouse under the age of students appropriately.

2.Learning and Teaching Management

The study management of dramas of "MADANABADHA" emphasizes on the learning by doing to allow students to participate in theatrical performances through demonstrated teaching, watching performances, and practicing in both learning subjects and learner development activities. It can arrange the teaching in a variety of ways, such as lecturing, demonstrating, role-playing, using of theatrical methods, using of situation simulations, practicing, team teaching, using of senses, project-based teaching, project teaching, unit-based learning, using audio-visual aids, activity-style teaching, play-on-lessons teaching, etc. It have been drama staged in classroom in schools and published on-line medias. In addition, the students will gain knowledge, understanding, concepts and practices for themselves in love, preservation of right benefit of choosing their own

partners. Then, the students are also given freedom to create, imagine, learn to have democracy [9], able to adapt, solve problems, work in groups with others according to the age of students in adolescence. They can find their own potentials to prove their abilities on becoming the success to be the perfect adults with confidence. [8] It is in line with John Dewey's view that education is the learning by action for prosperity. It grows physically, emotionally, socially, and intellectually including by the framework aim of the Basic Education Core Curriculum, B.E. 2551. It is to develop students to have competencies and desirable characteristics. They can apply the experience gained from learning and apply it in real life in accordance with the state of Thai society governed by Democracy with the King as the head of state and be able to coexist with others in society appropriately and happily.



Fig. 2 Example The results of the students of the MADANABADHA drama disseminating on the online media. [14]



Fig.3 Example The results of the students of the MADANABADHA drama disseminating on the online media. [14]

3. Results of teaching and learning management.

3.1 LearningCompetencies of learner

From teaching and learning management, there is the online publishing performance using the play of MADANABADHA from the chapter of His Majesty King Vajiravudh as a teaching tool of teachers. It results in students being able to learn or perform tasks or create good work according to the quality development of students to have five important competencies [13] as follows:

1.Communication Capacit. Students can convey their own feelings and thoughts in the performance and intents on the right to freedom of negotiation and choose their own partners freely with the best their own benefits as the main.

2.Thinking Capacity. Students can think, analyze and synthesize creatively with discretion in choosing their own partners according to preferences, voluntary, appropriate, beneficial to themself.

3.Problem–Solving Capacity. Students can solve their own love problems through analyzing, planning, implementing corrective actions in accordance with the rationality of one's rights and freedoms that are beneficial in a constructive way, both directly and indirectly.

4.Capacity for Applying Life Skills. Students can use their knowledge, skills and processes to prevent and avoid risky behaviors, sexual abuse, violence, dealing with the problems and the conflicts arising from love situation by exercising their rights and freedoms appropriately.

5.Capacity for Technological Application. Students can choose and use technologies in a creative way to obtain information, chat and exchange on selecting an identifiable partner from reliable and verifiable sources including the expression of rights on their own love freely.

3.2 Desirable characteristic

Desirable characteristics are characteristics that will occur to students after learning a dialogue play of the story of MADANABADHA from the royal play of King Vajiravudh The Basic Education Core Curriculum, BE 2551, has defined eight desirable characteristics [14] as follows:

1.Love Nation, religion and King is the characteristic which expresses good citizenship reflecting the Thai students' social conditions abide by in respect, admiration, uplifting, loyalty to benefactors, seniors and people with authority greater than themselves or the King.

2.Honesty and integrity is the characteristic of those who act according to the truth of both physically and verbally, to be ashamed, and afraid of wrongdoing, which reflects of King Rama VI's efforts to honor the rights and equality of women in their discretion as self-esteem and courage to express their feelings including acceptance of choices and decisions.

3.Self-discipline is the characteristic of those who act in accordance with agreements, rules and regulations that reflect supports that the people have discipline, democracy self-control, not violating the rights of others and not force others to act according to their own desire as a result of those that have suffered and damaged.

4.Avidity for learning is the characteristics of those who express an intention assiduously, seek knowledge from learning sources, summarize as cognitive knowledge, transfer, publish and use in daily life. It reflects the direction of national development towards civilization starting with the development of Thai people to be knowledgeable equally and thoroughly to know learning throughout life. When needed to know something, they shall know it deeply and carefully put it as the input for the development of progress in their own life and the country.

5.Observance of principles of Sufficiency Economy Philosophy in one's way of life is the characteristic of those who lead a life sufficiently in what they have earned, without reason to persecute, take advantage of others by acting both directly and indirectly, to be aware of changes in social and environmental conditions and adapt happily. It reflects the perspective on accepting the changes that will take place in the country. The adoption of western culture to be in line with the Thai culture.

6.Dedication and commitment to work is the characteristic of those who express intention to perform the duties assigned by the efforts and devote in both mind and in practice to achieve the goals assigned with responsibility. It reflects the guidelines for people to follow.

7.Cherishing Thai-ness is the characteristic of those who show pride, see value, participate in conservation and inheritance, and disseminate Thai wisdom, traditions, art and Thai culture, Thai language usage, Thai dress, and manners of self-reserved love. It reflects the promotion of women to always have the rights to choose men they love.

8.Public-mindedness is the characteristic of those who share their own happiness for common interests, understand, see sympathy, volunteer to help society, conserve environment, take action to solve problems or co-create something good to happen in the community without expecting anything in return. It reflects the value of humanity in the birth and the cessation in the world. It shall create benefits and good things to appear.

4. Guidelines for teaching and learning

Guidelines for teaching and learning by using the dialogue play in the concept of MADANABADHA as a tool for teaching and learning of teachers. It should be organized into learning by doing, because it will help the students to gain knowledge, understand and remember what is being learned longer and better. It will be able to manage integrated teaching and learning between subject groups or as a part of learner development activities such as scout activities, fire camping, club activities, community activities, and block course activities to allow students to develop their own potentials thoroughly.

5.Guidelines for play staging.

Guidelines for play staging may be organized in classes or performed at academy events. In this way, students show together in the whole class, separate into groups, plan, divide duties, conduct, practice, exhibit and evaluate the performance such as Thai language day activities, Rama VI day activities, king's birthday, history week corresponding to the context of the educational institution by emphasizing on students' knowledge, understanding, fun and enjoyment. It is to learn how to have democracy in the work If they are working with their classmates. They can express their skills on the drama. It can be applied to their life appropriately

V. Discussion

In this study, the researcher discovered the key findings of this research as follows

Dissemination of a play on MADANABADHA is from the royal writing of King Vajiravudh in the Basic Education Core Curriculum, BE 2551, the Thai language learning subject, subject no. 5, local literature and literature, grade 11 corresponding to the learning age of the students in adolescence who are interested in love and care of opposite sex. Learning of drama exhibition is about learning how to have democracy. It affects the development of students to have competency in communication, thinking, problem solving, using life skills, using of technology, and giving rise to desirable characteristics. As a result, students are aware of the pain caused by love, applying to solve problems in life, using their own right to choose partners, and to be able to work with others in society appropriately and happily.

VI. Recommendations

The relation study between royal plays by King Vajiravudh titled of MADANABADHA inserted into the Basic Education Core Curriculum, teaching and learning management, online publishing is a complex study. The researchers must consider it in two dimensions to demonstrate the effects and reflects including factors that are involved. It starts with the origin of the drama to bring the drama into the education system. Dramas are popular today. The use of drama as a teaching tool for teachers. The role of drama effects on the performance and desirable characteristics of the students by separating the data and sorting by the themes of the study: which are meaning, form, content, role in the performance to process the relationship between the plays of His Majesty King Vajiravudh in education. In this regard, there are still many dimensions that the interested people can study in other issues such as the staging of royal theaters in basic

educational institutions, the use of dramas to learn about democracy, cultivating Thai values through drama, etc.

CONCLUSION

The dissemination of the drama titled of "MADANABADHA" from the royal writing of King Vajiravudh appears in the Basic Education Core Curriculum. The play of MADANABADHA is used as a tool for teaching and learning of teachers to disseminate information, knowledge, news, ideas, practices to students who are different in natural learning to learn by doing, see the right and equality in choosing partners, learn how to have democracy from staging dramas, have the skills to develop potentials thoroughly corresponding to the age range, age of the learner, John Dewey's theory of learning and to develop the quality of students to be competent and desirable characteristics according to the objectives of the Basic Education Core Curriculum, BE 2551. It results in the drama royal writing of the story of MADANABADHA in King Vajiravudh appears in the basic education system and popular in educational exhibition from past to present.

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Influence of Ethnicities in Thai Drama

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Abstract*— This article aims to study the influence of ethnicities in Thai drama. The scope of the study focuses on ethnic groups that appeared in the Three Seals Law. The study method is a mixed method, and the results are presented by descriptive analysis. The study revealed that, Thai drama was recorded in the official legal document and performed for rituals, ceremonies, entertainment, education, occupations, publication of government policies, and in community identity. The early stories of Thai drama were about the local people, combined with ethnic cultures that had played an important role in the Kingdom of Thailand, as appeared in the Three Seals Law, namely, Mon, Lao, Vietnamese, Cham, Chinese, Khaek, Javanese, Malay, Khmer, Dawei, Burmese, Japanese, and Farang. The influence of the ethnic groups found in Thai drama is shown in the stories, characters, formats, contents, lyrics, musical instruments, musical accents, costumes, postures, stage, props, role performance, acting methods, and performance opportunities. The drama was used as a communication tool for leaders, symbol of honor for royalties, and the presentation of the kingdom's image. The influence of the ethnic groups that appear in Thai drama has been passed on and developed continually and finally created their own identity as evidenced in the present educational curriculum and performances.

Index Terms— *Influence of Ethnicities ,Thai Drama ,Thai Performing arts*

I. INTRODUCTION

Generally, people recorded and presented events, experiences, stories, oneself and society with various fields of art including painting, literature, music and movement. Performing Arts is a type of art that acts as a recording and presenting events of persons experience can be materialized because the drama can mirror human beings and present. It's showed realistically, clearly the identity, image of a person, group of people, and society.

In Thailand, there are many different types of dramatic dances. In which a drama is a type of performance that tells a story that focuses on the content of love between the male and the female, the performances can be categorized according to the way of acting, such as Lakhon Chartee, Lakhon Nai, Lakhon Nok, and Lakhon Ork Pasa (Lakhon Pantang), etc.

Type of Thai drama as mentioned above is the show going on and developed from the individual Ethnic groups to relation to Thailand. It's shown in Tree Seals Laws which refer regulations of the Siamese Kingdom. It also describes a population that includes both indigenous and foreigners including: Mon, Lao, Vietnamese, Cham, Chinese, India, Java, Malay, Khmer, Dawei, Burma, Japan and Vilanda [1] ect. These groups bring beliefs, rituals, cultures and dramas into the country. The later, the population became close to each other, creating a selection of compositions and incorporating their own identity called "Thai".

However, it was originally believed that Thai dramas had their roots in India [2] because the stories that show the characters and the opportunity to act are related to the Ramayana. It also appears that some of the shows do not appear in traditional Indian literature. In addition, evidence has been found that Thai theater has evolved from indigenous peoples in this region. [3]

As mentioned, there are many differences in the concept of origin of Thai dramas due to the scattered information. It's lack of consideration of factors that are involved especially, the population that plays a role in Thai society which those people appeared in the name of the nation in the law of the Tree Seals Laws which brings to the interest of this research.

Accordingly, researchers are interested in studying the influence of ethnicities on Thai dramas. The scope of the study focuses on the ethnicities that appear in the Three Star law. To lead to the discovery of the history of Thai drama to be clear Can be evidence of academic references and continue to integrate with other science

II. RESEARCH OBJECTIVES

The objectives of this research article were 1) to study the Ethnic appearances in the Law of the Three Seals, and 2) to study the Ethnic influences appearing in Thai dramas

III. Research Methods

Research Design and Process

This research is qualitative research, conducting by gathering information form primary and secondary historical document; Tree Seals Laws, Thai Classical Dance Drama Program, and Thai Classical Dance Drama Texts books., formal and informal interview 2 groups of experts in performing arts: national actors in Thai Tradition performing arts and others are lecturer in Thai Tradition performing arts, and observing live performances, teaching performance skill and studying Video and Social media including YOUTUBE and Facebook. This study also applied historical methods to criticize information and interpreting information for evaluating the reliability, as well as paraphrasing the information by synthesizing and analyzing the Influence of the Ethnic in Thai Dance Drama. Steps were shown in Fig. 1.

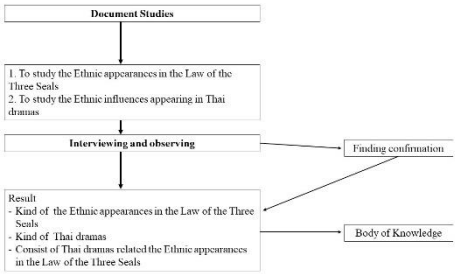


Fig.1 Research process for Influence of Ethnicities in Thai Drama

IV. Results

The results of the study showed that 1) Tree Seals Laws is an official document of Thailand. It's describing the state of society, population, beliefs, traditions and rituals of the royal court. Including, the rules and relations with different races which brings to the roots of Thai culture and Thai drama 2) The names and the population of the peoples appearing in the Three Seals Law was of great importance to the performance which is an important material for the development of Thai dramas 3) The dominant ethnic influences are India, China, Javanese, Malay, Mon, Lao, Japanese, Vietnamese, Cham Khmer (Khmer), and Vilanda (Farang), which appear to be in the Tree Seals Laws. It's showed that the Thai dance drama and Thai culture. It was developed from indigenous peoples by choose to develop and integrate various ethnicities until creating a new identity. However, the development that has occurred has the factors that affect the development, namely population, power of government. Relationship frequency and ethnic groups. 4) The ethnic influence that appears in Thai dramas is reflected in the composition of the show. The method of acting and the opportunity for the performance:

Story played: The storyline and character name are used in the writing of the script. Content relate to the experience's author. The events of the country that took place at that time.

Style of performance: It is used as an integral part of a drama such as the opening ceremony, and blessing of the show that appears in the story.

Performance content: home events the author's experiences, thoughts, feelings, and needs of the author.

Lyric: Borrowing an ethnic vocabulary and transliteration. Music: songs of ethnicity And Thai songs, but imitated the accent of ethnic songs.

Musical instruments: ethnic instruments And Thai musical instruments, but mixed with some ethnic instruments. To mirror the accents of ethnic songs that were mixed in the ensemble.

Costumes: ethnic wear and Thai costumes or borrow a few pieces of ethnic costumes

Posture: imitation posture That ethnic movement.

Scene: There are ethnic similarities except West nation because small amount at that time.

Performance equipment: Depends on the title and episode.

Performer: The concept of a universal actor is the use of male actors. Women are often limited by their beliefs and regulations at that time.



Fig. 2 Lakorn Chatree: Chala Chatree Troupe (Old Thai Actor performed Lakorn Chatree in Thai Fork Dance Drama. [4]



Fig. 3 Lakorn Chatree: Thai Classical Dance Drama by Kromsilpakorn. [5]



Fig. 6 Lakorn Nai: Thai Classical Dance Drama by Kromsilpakorn. [8]



Fig. 4 Lakorn Nok: Thai Classical Dance Drama by Kromsilpakorn. [6]



Fig. 7 Lakorn Pantang: Thai Classical Dance Drama in Mon and Chinese by Kromsilpakorn. [9]

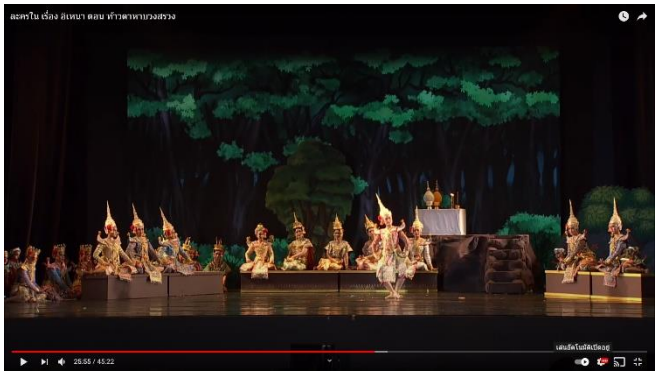


Fig. 5 Lakorn Nai: Thai Classical Dance Drama by Kromsilpakorn. [7]



Fig. 8 Lakorn Pantang: Thai Classical Dance Drama in Mon and Bermese by Suan Sunandha Rajabhat University. [10]



Fig. 9 Lakorn: Thai Classical Dance Drama in Java by Kromsilpakorn. [11]



Fig. 10 Lakorn Pantang: Thai Classical Dance Drama in Khmer by Kromsilpakorn. [12]



Fig. 11 Lakorn Pantang: Thai Classical Dance Lao by Kromsilpakorn. [13]



Fig. 12 Ram Mon (Mon Dance) by Mon in Pathumtani Province, Thailand. [14]



Fig. 13 Yon Ram Katang (Vietnameae Lighting Dance): Thai Classical Dance by Kromsilpakorn. [15]

V. DISCUSSIONS

Ethnic influences appearing in Thai dramas as listed in the Law of the Three Stars. It shows the relationship of important people's cultures, both local and foreign, as well as the selection, integration and development of cultures until the new identity of society. The adoption of a new social identity leads to inheritance of both conservation and development.

Ethnic influences appearing in Thai dramas can be seen that the races that play an important role in the culture recorded in the show are those with large numbers of people. The relationship of Ethnic's between the cultures of the villagers and the royal court continued to happen. The most importantly power of country administration because leaders are the people who make the right choice. Then conceptualization Practice of individuals, groups, and society at one time affect birth, development, stopping development and the loss of a culture that may occur for a short time or forever.

The ethnic influence that appears in Thai dramas is related to the traditional ethnic culture. New arrivals each time because each ethnicity has its own cultural

development. To give rise to a specific subculture which is complicated difficult to clearly distinguish to along with the entry of ethnic groups in different periods. To affect the variables that cause the development of Thai dramas at different times.

VI. RECOMMENDATIONS

A. Recommendations for Practices

1. Maintaining the social identity is in the community drama. Therefore, the exhibition of social identity at regular times and special occasions is the inheritance of cultural identity to remain to promote publicity to those who are interested.

2. Influence of ethnicities in Thai dramas as a guideline for the creation of Thai dramas. The key material is cultural capital that comes from ethnic influences at different times or the relationships that arise at different times.

3. Leaders play an important role in choosing a culture. Cultural adoption and a blend of cultures as it appears, ethnic influence in Thai theater performances, therefore, leaders play an important role in the preservation of art and culture. Thai Dance Drama's conserved and developed because drama is a recorded national art and culture and presenting the cultural heritage can be seen in a concrete and realistic way as well as in the person who has a continuous inheritance.

B. Recommendations for Further Research

1. Selection of samples used in this study. Emphasize on the Law of the Three Seals which should be extended to the law Governing policies that relate to drama or may formulate other types of performances such as pantomime, puppets and ethnic performances, etc.

2. This research study specifies the specific period when the law of the three stars enacted which can expand the study as a consequence of the use of the Law of the Three Seals To expand the study results of the inheritance of ethnic influences that appear in Thai dramas.

3. Ethnic culture is complex and difficult to separate clearly. There is a variety in both and abroad which should have a clearer study of ethnic cultures.

4. The results of this study were a qualitative research study which emphasizes the study of historical documents. There should be other forms of study such as fieldwork and acting creative experiments, which will lead to the use of the concept. Theories of education in a new dimension.

CONCLUSION

Research studies on ethnic influences in Thai dramas Define the scope of the study, focus on the law of the Three Seals. Moreover, ethnicity found in Thai dramas was found, which was originally believed to have the main influence from India. In addition, the influence that appears in Thai dramas is a structural introduction. Selected show components Tailored according to the tastes of the creator's work, the audience of the show presents the show's content as their own story. Important events of the country at that time until the identity of the show was born and new forms of presentation to identity's Image of society. The results of the study show that Thai society is influenced by various ethnic groups that interact. Choosing to improve and integrate existing cultures. As a result, the development of their own identity was evident in the form of Thai drama, which later had a way of developing performance elements, ways of showing opportunities for acting, resulting in the development of Thai dramas. There is more variety.

ACKNOWLEADGEMENT

This research was conducted under the policy of Suan Sunandra Rajabhat University in promoting and enhancing the faculty member's potential in term of research. The budget was allocated through the Research and development Institute and granted to researcher qualified. The researcher wished to thank all bodies concerned for your kind consideration.

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Rajabhat University Education Policy and Image of Suan Sunandha Rajabhat University's Thai dance and theatre

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Abstract*— *This article aims to study the relations between Rajabhat university education policy and the image of Thai Classical Dances Program of Suan Sunandha Rajabhat University. The scope of the study focuses on the policy of Suan Sunandha Rajabhat University, located in Bangkok, between 2004 - 2021, by studying from document, interview, observation, and small group discussion. The results showed that, the prominent policy of Suan Sunandha Rajabhat University is to be the smart archetypal university of the society in education, research, academic service, and preservation of art and culture. With the mission to become the university for community, this emphasizes the image of the Faculty of Fine and Applied Arts, Department of Performing Arts (Thai Classical Dances). The faculty has various personnel with outstanding identity, who are academic practitioners, proficient in communication, skillful in thinking, and full of public mind. The contribution to the public can be divided into 4 categories; teaching and practice service, performing arts documentary research, field study, and experimental service; academic service with innovative teaching methods; performance arrangement service, academic seminar, research, and activities for the community; preservation service for art and culture, conservation, succession, and development according to the royal initiative of King Rama X. With the variation in image and organization culture that support for self-development of the personnel and organization as a whole, the Thai Classical Dances Program of Suan Sunandha is well known in both national and international level.

Index Terms— *Rajabhat University Policy, Image of Thai Classical Dances Program, Suan Sunandha, Image of Thai Classical Dances Program of Suan Sunandha*

I. INTRODUCTION

Dance can be used as a communication tool of a person and organization to show the identity of the person or the image of the organization. Rajabhat University's educational policy has an important mission to provide education to both urban and provincial communities. The Thai Classical Dances Program of Suan Sunandha is an institution under the supervision of Suan Sunandha Rajabhat University. The institution implements the educational policy in accordance with the policy of Rajabhat University along with the palace-related identity of Suan Sunandha, by applying the policy in courses, curriculum, researches, art and culture preservation, knowledge development, and community service. As a result, the image of Thai Classical Dances Program of Suan Sunandha has been passed down continuously until the present.

Suan Sunandha Rajabhat University has developed from being a royal residential school in Suan Sunandha Palace to become a teachers college, Rajabhat Institute, and Rajabhat University, respectively. Since the establishment of the university, Thai classical dances have been the medium for teaching and promoting the university's contribution continually on a regular basis as well as on special occasions.

The contribution that has been published is the teaching of performing arts in Thai classical dances, both in theory and practice, which covers the knowledge of both Thai and international approaches. For the research of students and faculty staff, it can be categorized in 3 formats: documentary, quantitative research, and experimental research. For knowledge development, there are publications of research, academic works, and creative works. For the academic service, there is Thai Classical Dances for Community Project, which offers an opportunity for interested people from age 5 years to study and practice Thai dance skills and be able to acquire educational achievement. In addition, for the preservation of art and culture, Thai Classical Dances Program of Suan Sunandha

has been accepted by various organizations to perform on important occasions at both national and international level continuously.

Rajabhat University's educational policy and the image of Thai Classical Dances Program of Suan Sunandha are found to be corresponded in format, content, meaning, and role. The significance of such a relationship is still limited, with scattered information and lack of analysis of important factors.

For this reason, the researcher was interested in studying the educational policy of Rajabhat University and the image of Thai Classical Dances Program of Suan Sunandha during 2004-2021, by studying from documents, interviews, and observation, in order to create a guideline for developing the image of Thai Classical Dances Program of Suan Sunandha to be in accordance with the policy of Rajabhat University, maintaining its identity, as well as being a guideline for creating the image of Thai classical dances program of the institutions affiliated with Rajabhat University in the future.

II. Research Objectives

The objective of this research article was to study the relationship between educational policy of Rajabhat University and the image of Thai Classical Dances Program of Suan Sunandha.

III. Research Methods

A. Research Design and Process

This research is qualitative research. The data was collected from document archives of Thai Classical Dances Program of Suan Sunandha, which were researches, photograph, teaching materials, performing video, and academic works, as well as from the interview of faculty staff and students of the Performing Arts Program (Thai Classical Dances), participants in the Thai Dancing Art for Community Project, and people who have invited staff and requested for performances to be published on various occasions. The data included observations from live and recorded performances. The obtained data was processed and presented in descriptive analytics format.

The research process began with determining research objectives by studying the educational policy of Rajabhat University, which has the common ideal to be the university for the community. Then the identity concept was explored, by studying the identity of 'the palace' of Suan Sunandha Rajabhat University, as well as the identity of the Faculty of Fine and Applied Arts, which are academic practitioners, proficient in communication, skillful in thinking, and full of public mind. The 5 aspects of faculty staff's responsibilities were also explored, which are teaching, research, knowledge development, academic service, and preservation of art and culture. By categorizing the works of students and faculty staff in the Performing Arts Program (Thai Classical Dances), Faculty of Fine and Applied Arts, Suan Sunandha Rajabhat University, the result showed the identity and image of Thai Classical Dances Program of Suan Sunandha that also reflected the image and potential of its personnel and organization. Steps were shown in Fig. 1.

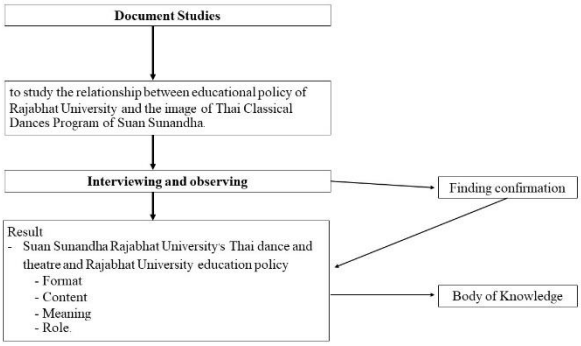


Fig.1 Research process for Rajabhat University Education Policy and Image of Suan Sunandha Rajabhat University's Thai dance and theatre

IV. Results

The study of educational policy of Rajabhat University and the image of Thai Classical Dances Program of Suan Sunandha were related in 4 aspects: format, content, meaning, and role.

For the format of Thai Classical Dances Program of Suan Sunandha, there is the curriculum in performing arts in both theory and practice, which presented the expertise in both Thai classical dances and drama, as well as being comprehensive in related subjects that makes students interested in studying this area and wish to utilize this knowledge upon graduation. The research and knowledge development of the faculty staff has been implemented continuously and showed potential in specific areas, such as documentary research, field research, and experimental research. It is also evidently demonstrated in the presentation of creative works, the presentation of articles in academic conferences, and publication in both national and international level. For academic service, the faculty staff and students disseminate performing arts knowledge to people who are interested in this field, and develop the community by using performing arts as a tool. For the preservation of art and culture, the creative works of the faculty staff and students were published on behalf of Suan Sunandha

Rajabhat University, which was welcomed by both national and international organizations.

The content of Thai Classical Dances Program of Suan Sunandha is diverse due to various potential of the faculty staff and students from all regions of the country, which is an important element for the creation and development of academic knowledge and performances. The content of the performance depicts all classes and styles, including royal, local, and folk stories. In addition, the content can be divided into 3 characteristics: conservative, contemporary, and creative.

The definition of meaning in this research is how to convey the meaning of the performances, which can be divided in 5 dimensions: teaching, research, knowledge development, academic service, and preservation of art and culture. It is found that the image or identity presentation in various dimensions is diverse in all areas. This is the result of the potential of the faculty staff and students. Though the students rotate according to academic semesters, it appears that the major characteristic is still the same, that is, the students come from all regions. This makes the primary element of the creation, an important variable, remain unchanged from the past. With the same processes and goals, it will produce the same results with the same quality.

The role of Thai Classical Dances Program of Suan Sunandha is corresponded to the educational policy of Rajabhat University, especially the knowledge creation and development, as well as dissemination of knowledge to the community through various projects, such as Thai Dancing Art for Community, Nawattawithee, and course activities, which is also in conjunction with the preservation of art and culture.





Fig 2. Thai Dancing Art for Community Project [1]



Fig 3. Innovative Movement Project (Nawattawithee) [2]



Fig 4. Presentation of research project [3]

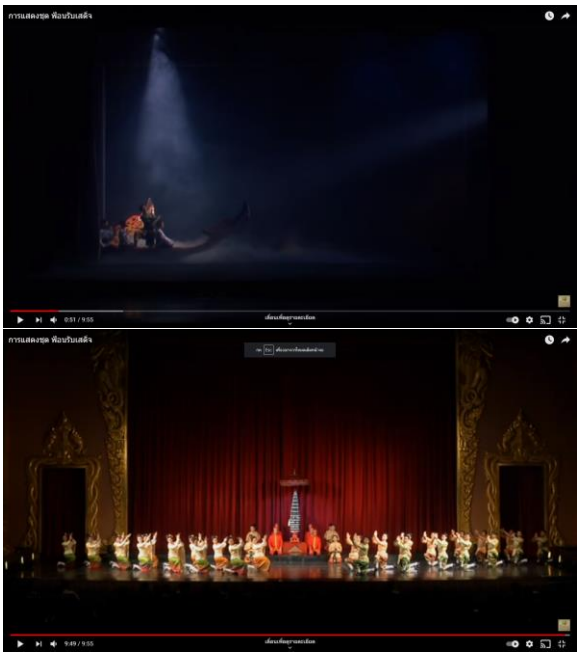


Fig 5. Creative work: Fon Rub Sadead [4]



Fig 6.Creative work: Le Laweng (Trick of Laweng) [5]

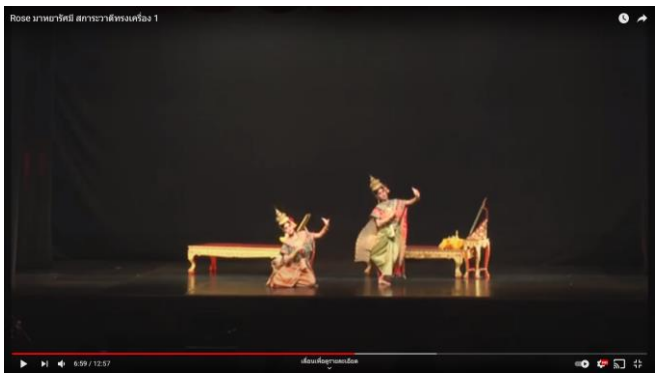


Fig 7 Creative work: Maya Rasmi and Sakara Wati Dress Up [6]



Fig 8. Lakhon Nok: Nang Sibsong [7]



Fig 9. Musical drama: Chan Chao Kha by Phranbun [8]



Fig 10. Pratheep Buranamee Tara (Full Moon Bath Dance) [9]



Fig 11. Culture Exchang [10]

V. DISCUSSIONS

Educational policy of Rajabhat University and image of Thai Classical Dances Program of Suan Sunandha is correspondence in 4 aspects: format, content, meaning, and role. It also corresponded to the concept of university for community. The main identity of Suan Sunandha Rajabhat University is the "palace" characteristic, which can be seen as a concept of Thai traditional practice, "*bowon*," or the combination of residence, religious institution, and palace. Combining with the identity of the Faculty of Fine and Applied Art, which is academic practitioners, proficient in communication, skillful in thinking, and full of public mind, the Thai Classical Dances Program of Suan Sunandha has a distinct image of the comprehensive and versatile institute, which can be seen from the teaching and learning, performances, researches, and creative works in 5 responsibilities: teaching, research, knowledge development, academic service, and the preservation of art and culture.

Educational policy of Rajabhat University and the image of Thai Classical Dances Program of Suan Sunandha is a reflection of an important aspect, the stability of the core administrators. The faculty staff, students, and support personnel, all represent the concept of university for the community. With the emphasis on the "palace" identity and academic excellence in both national and international level, Thai Classical Dances Program of Suan Sunandha became an educational institution for performing arts (Thai classical dances) that has been accepted from various organizations from all over the country and abroad. At the same time, it also presents the image of Suan Sunandha Rajabhat University in different dimensions that can be clearly seen in the creative works.

VI. RECOMMENDATIONS

A. Recommendations for Practices

1. The educational policy of Rajabhat University is related to the image of the organization. Therefore, the guidelines or policies for the selection of personnel, which is an important element, is required for the personnel development process, creative work production, and publication to the public.

2. The image of Thai Classical Dances Program of Suan Sunandha is diverse due to the potential of the personnel. With the mutual goal and systematical management in 5 aspects of responsibilities, namely, teaching, research, knowledge development, academic service, and the preservation of art and culture, the creation produced by the personnel can be utilized effectively.

B. Recommendations for Further Research

1. Rajabhat universities or other educational institutions can apply this study for research purposes and to create guidelines for their own image and identity development.

2. The research results can be developed to be more in-depth by studying only one aspect of the responsibilities, or by comparing them with other Rajabhat universities that use Thai classical dance as a tool to present the image of the organization.

CONCLUSION

The findings from this qualitative research show the relationship between the education policy of Rajabhat University and the image of Thai Classical Dances Program of Suan Sunandha, which corresponded to each other. The key factors are personnel, work processes, goals, and human resource management, which affect the quality and effectiveness that can be utilized in all aspects, namely, teaching, research, knowledge development, academic service, and the preservation of art and culture. The application is systematic and comprehensive, in accordance with the policy of Rajabhat University in becoming the university of the community. The "palace" identity of Suan

Sunandha also supports the dissemination of knowledge and development of communities, along with the identity of the Faculty of Fine and Applied Arts, Suan Sunandha Rajabhat University, which is academic practitioners, proficient in communication, skillful in thinking, and full of public mind. This relationship accentuates human resource and organization development to be more distinct and widely accepted by the society, as can be seen from excellence concrete achievement.

ACKNOWLEADGEMENT

This research was conducted under the policy of Suan Sunandra Rajabhat University in promoting and enhancing the faculty member's potential in term of research. The budget was allocated through the Research and development Institute and granted to researcher qualified. The researcher wished to thank all bodies concerned for your kind consideration.

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Succession of Ethnic Beliefs : *Mae Bot Nora Dance* to *Mae Bot Yai Dance*

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Abstract*— *This article aims to study the succession of ethnic beliefs : the case study of Mae Bot Nora Dance and Mae Bot Yai Dance. The scope of the study focuses on the Three Seals Law by studying from documentation, interviews, and observations. The results showed that, the dance was a tool for spreading beliefs, religion, and showing ethnic identity, which can be seen in the literature and performing arts. It is found that Mae Bot Nora Dance is influent by beliefs in spirits, Buddhism, and Brahman, which were the major beliefs among local people of Thailand. It's developed continue in Thonburi Era and Rattanakosin Era by recording in poem's Posture of Thai Classical Dance text for practice and performance. until 1944 that Luang Wichitwatakan of the Fine Arts Department has restored the poem on the dance and applied it in the performance of Suriyagupta, which later became the basic practice dance in the Thai dance course. The lyric presents the succession of beliefs in spirits, Buddhism, and Brahman, which rooted deep in Thai society and culture, along with the combination of ethnic cultures that were recorded in the Three Seals Law. In summary, the Mae Bot dance can be seen as a record of the history, beliefs, and ethnicities of Thai society in a form of performing arts and in the persons who keep this practice in the education system and in performances that are still ongoing today.

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Index Terms— *Succession of Ethnic Beliefs ,Mae Bot Nora Dance ,Mae Bot Yai Dance, Thai Performing arts*

I. INTRODUCTION

Generally, we find recordings of beliefs, events, individuals, groups of important people in various types of art: painting, sculpture, literature, music, and drama, etc. Dance is an art that can be portrayed as concrete and realistic with human presentation.

In Thailand, beliefs, ethnicities, events are recorded in the master dance which is the basis of training and performances of Thai dramas appeared in the poem of the show, including Nora, the royal drama, and the exercises of the curriculum of the current Thai dance classes.

The poem of Thai dance that is believed to be the oldest is the chapter of Wai Khru Nora.[1] It contains gestures showing the characters' names in the Ramayana story and the Lord Buddha made the instructor, the learners, the audience and the exhibitors It is believed that this appearance was inherited from the gods. The exhibit therefore relates to the beliefs of individuals and society because they believe that both supernatural phenomena are created as well and bad to happen to individuals and society.

Later, it was found that there was a poem for the dance that was later believed to be used as a practice of the royal women's drama. [2] It is assumed that this occurred in the Ayutthaya period. Contents of the poem Contains gestures showing the characters' names in the Ramayana story but the meaning of the poem has both a direct meaning and implicit meaning. It appears that the local identity is Brahmin Buddhism, as well as the name of the ethnic group that played an important role in those days. The important historical events such as King Naresuan made Yuttahatti with the His Royal Highness Prince of Burma, etc.

In addition, it was found that there were poems of dance texts that were used in the women's troupe of Royal to practice and exhibits the Ramayana episode Na Rai Prab Non Tuk called "Mae Bot Nang Narai" later found that there was a practice in the royal drama in the Thonburi period. and Rattanakosin [3], which King Mongkut's writing, who added that The dance in the lyrics is the pose of Vishnu. When considering the meaning, it is found that there are important matters related to the beliefs of Brahmin Buddhism in Thailand.

After that, King Vajiravudh celebrates the prelude to the prelude. The content discusses the legend of the dance according to dances. Where Lord Shiva dances and let Phra Bharat Muni record dance moves to convey to humans. It is a further development of the practice and exhibits. In addition, at the same time, Thai dance texts were created by Prince Damrong Rajanupab. In order to gather knowledge and recorded as a national heritage [4]

In the year 1935, Luang Wichitwathakan Director-General of the Fine Arts Department Compose a

chapter on Suriyagupta to display and disseminate to the people. In which he brought the poetry of dance texts to revive in order to exhibit the story after the show is completed, the director and teachers who played a role in teaching and learning, commented that the revived performance of the poetry of dance texts should be educated It is contained in the teaching for Preliminary practice of Thai dance. [5]

The study of the development of the aforementioned master dance only the elements of the show were studied. Making the essence of the show unclear Because of lack of studies and links.

Accordingly, the researcher was interested in studying the inheritance of ethnic beliefs: a case study of the Nora Dance to the Great Master Dance. The scope of the study focuses on beliefs. The ethnicity appearing in the Tree Seals Laws. To lead to the discovery of the history of Thai drama to be clear Can be evidence of academic references and continue to integrate with other science.

II. Research Objectives

The objectives of this research article were 1) to study the history of Mae Bot Nora Dance to Mae Bot Yai Dance, and 2) to study Succession of Ethnic Beliefs: Mae Bot Nora Dance to Mae Bot Yai Dance.

III. Research Methods

Research Design and Process

This research is qualitative research, conducting by gathering information form primary and secondary historical document; Tree Seals Laws, Public Policies, Thai Classical Dance Drama Program, and Thai Classical Dance Drama Texts books, Mea Bot Nara poem, Mea Bot Nang narai poem, Mea Bot Natarat poem, Mea Bot Yai poem (Thai Dance Text poem), formal and informal interview 2 groups of experts in performing arts: national actors in Thai Tradition performing arts and others are lecturer in Thai Tradition performing arts, and observing live performances, teaching performance skill and studying Video and Social media including YOUTUBE and Facebook. This study also applied historical methods to criticize information and interpreting information for evaluating the reliability, as well as paraphrasing the information by synthesizing and analyzing Succession of Ethnic Beliefs : Mae Bot Nora Dance to Mae Bot Yai Dance. Steps were shown in Fig. 1.

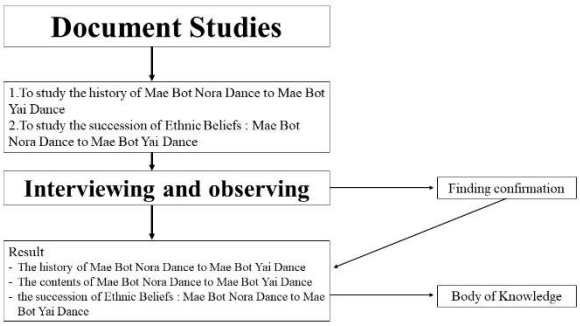


Fig.1 Research process for Succession of Ethnic Beliefs: Mae Bot Nora Dance to Mae Bot Yai Dance

IV. Results

The results of the study showed that 1) The Mea Bot Dance is a communication tool for leaders. To show myself identity image and society. There are 4 styles of the show: the prelude show acting in the story and performances. The content of the show describes the master posture of Thai dance that has evolved from Nora to the royal drama and official dances, comprising beliefs, ethnicities, historical events, concepts and practices of society. To appeared in a series of performances with a continuous succession for the practice of being in the person and published on important occasions such as educational demonstrations, entertainment, social identity demonstrations. 2) The Development of the Master Posture, this shows the development of Thai beliefs, namely the Brahmin Buddhism, which is the main root of the concept. Guidelines for Thai society Even though the name of the character may such as Vishnu, Brahma, Rama, Lakh, Hanuman, Buddha, or appear in the connotation, such as deity means to invite worship, worship, sacred things, including: spirits, gods, and Buddha, Or Chang Phra Sangha, referring to King Naresuan doing Yuttahattee or some Chinese repelling the behavior of Chinese workers in the shipyard of Ayutthaya when telling secrets to Westerners, etc. 3)The inheritance of the main beliefs from the Wai Kru Nora chapter to the master showed the relationship between the beliefs of the people and the royal court This shows that Thailand has the belief that it has led to the concept, practice, as well as the rule of the Thai monarchy since the past: Spirital, The Brahmin Vishnap sect (Lord Vishnu) and Buddhism because Vishnu was an incarnation of Lord Buddha (Phutthavatara) as well as the Triiphum Phra Ruang which shows the image of the heaven, the underground man, as mentioned by the name Himmapan animals such as Kinnaree, Kinnarraen, Naga, deer, peacock and elephant, etc. [5] and Phuttachatok (Bhudda Myth) [6] The consumption of the Buddha It shows the reign of the Thai

king, who assumed the deity was Devaraja and Dharma, as appeared to stir up the amarit water. In the name of the Maamom Tha Dance "Glad Sumen Kruawan Phan Mai". 4) Composition of the Master's Dramas In King Rama Vajiravudh shows the relationship of faith between Lord Vishnu and Shiva. According to the beliefs of Brahmin, the trimurati are Vishnu, Shiva, and Brahma. Such beliefs are present in Thai society. It is another of the origin of the dance which is related to the inheritance of the existing dance 6) Success of the Succession The ethnicity that appears in the master dance is the recording of knowledge within the person by filling in an educational curriculum that is traditionally practiced. It is also an important tool for self-expression. Leadership image and the government by disseminating education. The display is only 15-20 minutes, the audience can know the story from the whole content.



Fig.2 "Kan Ram Sib Song Tae of Nora" [6]



Fig.3 "Ram Mae Bot Nang Na Rai: Jao Pra Ya Nakornsrithammarad and Kromsillapakorn" [7]



Fig.4 "Na Rai Prab Non Tuk" [8]



Fig.5 "Mae Bot Lek" [9]



Fig.6 "Mae Bot Nattarad" [10]



Fig.7 "Mae Bot Yai" [11]



Fig.10 "Hae Ra Lean Nam" [14]



Fig.8 "Mae Bot Yai" [12]



Fig.11 "Chang Pra San Nga" [15]



Fig.9 "Jean Sae Sai (Chainese tell secret)" [13]



Fig.12 "Pra Na Rai [16]



Fig.13 "Pra But Tha Jao Prab Man" (The Buddha stop Devils [17]



Fig.14 "Pra But Tha Jao Prab Man" (The Buddha stop Devild in Nora Dance [18]

V. DISCUSSIONS

The inheritance of ethnic beliefs, a case of studying the Nora master dances to the great master dances is the inheritance of the roots of the main beliefs in Thailand, consisting of Buddhist Brahmin spirits affecting the concept. Social practice as well as the rulership with the King as head of state, both as a god and Dharma.

The development of the Nora Dance to the Mea Bot Yai dance shows the creation of the dances from historical data, including beliefs, ethnicities, milestones of individuals, groups, individuals, and countries, as well as concepts and practices rooted in belief over a period of time.

The creation of the opus for the performance from the Mae Bot Nora to the Mae Bot Yai. Showing the development of art. In the particular, literature that has both direct and implicit communication is based on the compositions of the "Kon La Bot" method (Technique of writing poem) which is unique in Thai poetry Interpolation of meaning in the poem Show the relationship between art and creator. That is to say, Nora is a traditional performance of the southern people, using words and texts that convey directness, clarity, and uncomplicated, while the poem, songbook, or the main master contains euphemisms. Communication of complexity Both mean and implicit meaning.

The inheritance of the Mea Bot Dance Nora to the Mea Bot Yai. Showing two cultural routes: from India to Thailand and from folk to royal court, that is, from India to Thailand. It appears to spread the beliefs of the 2 sect of Brahmin: the Vishnap sect and the Shiva sect, There are 3 sects of Buddhism: Theravada, Mahayana, and Vachirayan (sometimes Wachirayan with Mahayana). Give rise to a new identity. At the same time, the culture from the folk to the royal court It is a journey from the south to the top because historical data appears that "Mea Bot Nora or Wai Khru Nora" is the oldest dance in Thailand. In addition to the relationship between the Ayutthaya period races that appeared in the Tree Seals Laws and the female theater troupe of Chao Phraya Nakhon Si Thammarat plays an important role in the revival of the royal women's drama in Thonburi period. As well as ethnic relationships that appear in Rattanakosin Making the resulting cultural path clear.

The collective beliefs didn't show that Thai society inherits the culture from India. It has great power in Thai society is China, as the river in Posture or Mae Bot Yai dance this boat. and there are also important historical principles, often with different beliefs and practices.

Considering the inheritance and development of the performance, it was found that the performance of the Nora dance to the Mea Bot Yai. It's reverse of Social Pendulum's theoretical cycle, because that distance The social situation has changed drastically. Until the birth of a new leader which uses a large master dance as an important tool for expressing one's self The image of a country with a civilized national cultural heritage which inherited from the past, able to show wisdom from common people to the royal court supervised by the government.

VI. RECOMMENDATIONS

A. Recommendations for Practices

1. The inheritance of ethnic beliefs: a case of studying the Mea Bot Nora to the Mea Bot Yai. They can be used to

compose chapters and exhibit them for therapeutic purposes. And disseminate the identity of the community.

2. The Mea Bot Yai. is the master position used in the practice of the educational curriculum and exhibit on special occasions. However, it can be seen that the master dance is created and constantly evolving the show which can be used as a guideline for the creation of various local master dances Including inserting ideas Local practices in the script.

3. Leaders play an important role in setting up education. The preservation of art and culture. Therefore, a study of the essence should be encouraged of drama to be used for the development of human resources and society.

B. Recommendations for Further Research

1. This study sets a specific example of the Mea Bot Nora dances to the Mea Bot Yai. dances. Giving an overview of inheritance able to modify the scope of the study such as pantomime, drama, folk performance Shows that are included in the course of study, etc.

2. The design of this research, It is a qualitative research study that focuses on a documented study. There should be a field study or acting creative experiment. In order to extend knowledge and new works of the show.

3. This research shows how to inherit cultural heritage through the use of dramatic drama. Both containment in the educational curriculum and exhibits Therefore, such activities should be organized for conservation purposes. and develop a cultural heritage which is local wisdom.

4. The results of this research are related to the theory of social change and communication of the government. Therefore, other issues such as migration theory should be studied. Social structure theory and the theory of evolution, etc.

CONCLUSION

This research study on the inheritance of ethnic beliefs, a case study of the Mea Bot Nora to the Mea Bot Yai. Determine the scope of the study in which the Tree Seals Laws found that the master dance was a communication tool for leaders to disseminate ideas. Practices according to one's own beliefs and the beliefs that appear in Thai society are Buddhism Brahmin spirits, which are born from local people. To be culturally influenced by other races that have been friendly since the past, including Mon Khmer, India, Java, Malay Cham and Persia. It also found insertions of the history of the national hero. Causing succession to happen continuously. In spite of change of rule But also found that the grand master dance had been restored and inherited in the course of study and exhibits because the leaders saw that it was the root of Thai culture, it should be conserved for the society to remain in pairs.

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A Comparative Good Governance Experiences on Local Governments Cope with COVID-19: A Case Studies between Indonesia and Thailand

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Abstract - This article aimed to analyzed and compared good governance experiences on local government cope with Covid-19 between Indonesia and Thailand. The methodology of this article was a qualitative approach based on the secondary data from case of local government of Indonesia in Tegal City and Thailand in Chang Puak Sub-district. The finding of this article was in Indonesia case could argued that the effectiveness, openness, and transparency of the government in coping with Covid-19 are the keys to improve the people economy in Tegal City. Also, the administrators Government of Tegal should be responsive to evaluate ineffective methods in preventing the spread of Covid-19 and switch to more effective and efficient ways. In the meantime, in Thailand case, sorely local government could not cope with Covid-19 pandemic, but the cooperated between Thailand Village Health Volunteer and local government were the best operation to stop the Covid-19 outbreak. Moreover, the most foremost hinder in both Thailand and Indonesia were the central government that centralize authority. In Indonesia, the central policy was the obstacle to allow local government acted, while in Thailand the emergency decree was the main hinder for local government management. Finally, both local government in Thailand and Indonesia were struggled and tried to cope with Covid-19 in a right way of good governance track even though they had a limited authority and willing to support their community.

Keywords: Good Governance, Local Governments, COVID-19, Indonesia, Thailand

I. INTRODUCTION

The novel coronavirus disease (COVID-19) has become the main concern for the international community after the first case was reported by the World Health Organization (WHO) Office in Wuhan City, China[1]. Since then, at the end of January 2020, this disease continues to grow and spread rapidly to various countries around the globe, such as Thailand, Japan, South Korea, the United States, and France, which earlier reported the first case of COVID-19 outside China. Therefore, the emergence of COVID-19 as a new coronavirus that can infect humans has caused many countries to be overwhelmed in preventing this virus transmission. Even countries that are known for having an advanced health system are also made desperate to deal with this virus. For instance, in Europe, Italy, which is famous for having an excellent health system, was reported as the number one country with the most COVID-19 victims[2]. Likewise, the United States, as a developed country, similarly experienced the problem with Italy in dealing with this virus[3].

Table 1. Data of confirmed Covid-19 Cases and Deaths in Southeast Asia as per June 22, 2020

Reporting Country	Confirmed Case	Confirmed New Case	Total Deaths
Indonesia	45891	862	2465
Singapore	42095	262	26
Malaysia	8572	16	121
Thailand	3151	3	58
Brunei Darussalam	141	0	3
Vietnam	349	0	0
Philippines	30052	652	1169
Cambodia	129	0	0
Myanmar	290	4	6
Laos	19	0	0
Timor-Leste	24	0	0

Source: WHO (2020a) [4].

Moreover, in Southeast Asia, the COVID-19 has also stretched out to all countries in the region. According to a report from WHO on January 13, 2020, Thailand's Ministry of Health reported the first case of COVID-19 transmission [5].With that, Thailand is confirmed as the first country in Southeast Asia that infected by this new coronavirus. Shortly after Thailand reported its first coronavirus case, Singapore, Vietnam, Malaysia, Cambodia, and the Philippines, were announced their first COVID-19 case at the end of January 2020. Meanwhile, other countries in Southeast Asia; Lao People's Democratic Republic, Indonesia, Myanmar, Brunei Darussalam, and Timor-Leste, were conclusively reported their first COVID-19 case in March 2020. From this point, none of the countries in Southeast Asia is free from the COVID-19 infection, and the number of confirmed cases keep increasing day by day. As reported by WHO on June 22, 2020, positive cases of COVID-19 in Southeast Asia have reached 130,713 and caused the death toll to 3,848 (see table. 1).

Furthermore, the widespread of COVID-19 in various countries quickly led the World Health Organization to enforce this coronavirus as a Pandemic on March 11, 2020 [6]. This situation obviously requires all states to prepare the best strategy for dealing with this pandemic. In Southeast Asia itself, a variety of different policies are taken by the Government. For instance, Thailand and Indonesia which will be the focus of local government cases in this study, take a different approach in dealing with the COVID-19.

At the same time, in Thailand, the Thai Government prefers to implement a partial lockdown policy since March 26, 2020. The partial lockdown regulation is a follow-up to the emergency status experienced by Thailand after experiencing an increase in COVID-19 cases [7]. The purpose of this partial lockdown policy is to limit the movement of the community, including the closure of public places, tourism, and entertainment. Also, the Thai Government has imposed a curfew with police custody which aims to reduce community activities at night. Therefore, Thailand also closed the border with surrounding countries and tightened inspection protocols at airports for tourists who want to enter Thailand.

However, the role of local governments in handling COVID-19 is also vital to discuss in this study. For this reason, it is exciting and essential to look further on the strategy of local governments in Thailand and Indonesia in dealing with the emergence of the Covid-19 virus. By choosing one city in Indonesia and Thailand as a case study in coping with Covid-19, this study aims to explain good governance of Local Governments in Indonesia and Thailand to deal with COVID-19.

II. METHODOLOGY OF THE STUDY

This paper applies the qualitative studies method [8]. Among five kinds of qualitative studies, namely narrative, phenomenological, grounded theory, ethnographic, and case study, this paper prefers to adopt the case study studies approach due to its relevance [9]-[10]-[11]-[12]. Therefore, this study selects two different cities in two different countries of Southeast Asia. In Indonesia, Tegal City (Central Java) was selected due to its achievement as the one and the only city in Java which decided by the central government as so-called "green zone" or the free zone from COVID-19. Also, For Thailand, the case took on the provincial level (PAO), Chiang Mai Provincial Administrative Organization and Chang Puak Sub-district (TAO level).

In this context, the strategies of local governments in Thailand and Indonesia are coping with COVID-19 will be assessed by good governance indicators. This study applies six indicators developed by World Bank [13], UNDP and Tim Indonesia Governance Index which the most suitable in terms of this case: Participation, Fairness, Accountability, Transparency, Efficiency, and Effectiveness [14]-[15].

For data gathering, this paper collected them from a variety of sources in News channels. Such news is in English, Indonesian, and Thai languages. This paper will select relevant news which are suitable with good governance (GG) indicators. Thus, in the analysis, the paper does not include all news. After that content analysis used for analysed and interpreted on both cases.

III. A CASE STUDY ON INDONESIA

1. Participation

In the case of Tegal City, the participation is reflected in at least two policies: the existence of a strict prohibition against *mudik* (going back home) and the provision of rapid tests and spraying of mass disinfectants. By responding to the arrival of the Ramadhan Month amid the Covid-19 pandemic in Indonesia, the central government is calling for a ban on going home as regulated in *Permenhub* No. 25 of 2020 concerning the Transportation Control during the *Idhul Fitri* 1441 H to prevent the broader spread of Covid-19. This prohibition has led to many deceptions of *mudik* such as hiding in trucks, using agent services, and other type of deceptions. Therefore, the Municipal Government of Tegal responded to this problem by implementing the large-scale social restrictions (PSBB) earlier to prevent a large number of travellers from outside (Jakarta) and considering that Tegal City has an influence on the surrounding areas [16].

2. Fairness

In the City of Tegal and several areas, local lockdown or quarantine policies are implemented on different scales

and are applied to all communities. Since the isolation of the area in Tegal took effect, access to the entrance and exit of the city was closed with a movable concrete barrier (MCB) [17]. However, for the communities who want to enter Tegal City, must strictly be checked for their health by the guard officers on *Proklamasi* road. Therefore, to ensure that no discrimination has occurred in dealing with the Covid-19 Pandemic during the implementation of PSBB, the Tegal City Government held mass rapid test for the people of Tegal City.

Conversely, this mass rapid test procedure has drawn protests; this problem occurs because the process of determining the patient's condition is inaccurate. Many people who refuse burial of the bodies of their families who have died with PDP status are carried out with the procedures for handling Covid-19 prevention. It is feared that the process of managing the corpse until the funeral is not carried out using rituals, culture, and religion concerned. The number of cases infected with Covid-19 is large, but they are not detected due to low testing capacity.

3. Accountability

The Municipal Government of Tegal in facing the Covid-19. As the widespread of Covid-19 in Indonesia since March 11, 2020, the Mayor of Tegal, Dedy Yon Supriyono, took the initiative to implement a local lockdown policy starting from March 30, 2020, to July 30, 2020, to prevent more extensive transmission of Covid-19 in Tegal City. This action has been implemented since the first Covid-19 appeared at the end of March 2020 in Tegal City. With that, the Tegal City was then declared in the red zone category for the Covid-19 emergency in Indonesia. To implement this policy, technically, the Government of Tegal City closed the entire border of the City by using Movable Concrete Barrier (MBC) at 49 city access points except for national roads and provincial roads [18].

Furthermore, to implement this local lockdown policy, the Municipal Government of Tegal only opens one emergency route, namely the *proklamasi* road to facilitate access to logistics and medical equipment that will be distributed in Tegal City. Also, residents who work outside the City of Tegal and want to get access to the city, must meet several requirements set by the local government and must be examined by the Covid-19 task force [19].

4. Transparency

From this point, The City of Tegal also tries to implement its policy and improve transparency principle in handling the Covid-19. Apart from the previous strategies, the Municipal Government of Tegal ensured that at least 60 per cent of the 61,285 heads of families in Tegal City would receive social assistance in the form of necessities and cash. Moreover, this refocusing and budget reallocation is under the regulation of the Minister of Home Affairs Instruction No. 1 of 2020 which regulates a social safety net for the community amid the Covid-19 pandemic [20]. Likewise, programmatically, social assistance for Tegal City itself is divided into support from the Municipal Government of Tegal, Central Java Provincial Government, and the Central Government of which 61,285 people from Tegal City will receive compensation. The following table below is a list of the names of the Covid-19 assistance programs and their distribution in the City of Tegal.

Then, to ensure the transparency of data on recipients of social assistance for the Covid-19 community, the Municipal Government of Tegal coordinates with 27 urban villages in Tegal City to provide data access to social support to the community. This transparency aims to make the community also take part in overseeing the implementation of aid programs from the Central Government, Central Java Provincial Government, and the Municipal Government of Tegal.

5. Efficiency

The Municipal Government of Tegal in conducting efficiency method, the Municipal Government of Tegal, together with the Health Office was held a random mass rapid test in the community, especially in shopping centers. The Tegal City Government also reminded the public not to travel to the Covid-19 red zone. These strategies were taken to ensure that the easing of the PSBB by the Municipal Government of Tegal would not cause new problems [21]. Therefore, the Municipal Government of Tegal will also spray disinfectants to end PSBB. Technically, the spraying of disinfectants will be carried out by dozens of water cannons along the streets of Tegal City. However, in term of budget efficiency, in general, cannot be concluded quickly; however, this point must also be seen in terms of funding effectiveness in handling Covid-19.

6. Effectivity

The Municipal Government of Tegal in preventing the transmission of Covid-19 is maximizing public communication and socialization of Covid-19. Since the stipulation of Tegal City as the Covid-19 red zone, the Municipal Government and parliament in Tegal have agreed to conduct massive prevention of Covid-19. Reporting from the Central Java Provincial Government website. The Municipal Government of Tegal believes that despite massive socialization and education related to Covid-19, the government's role to communicate directly with the people

will significantly help Tegal City to break the chain of the Covid-19 virus.

It can be argued that the effectiveness, openness, and transparency of the government in coping with Covid-19 are the keys to improve the people economy in Tegal City. The effective handling is the optimal way to reduce the rate of spread of this pandemic immediately. In addition to that, the rules that have been implemented need to be obeyed by all societies. Therefore, protocols must be continuously reminded, such as social or physical distancing as well as maintaining personal and environmental hygiene. The Municipal Government of Tegal should be responsive to evaluate ineffective methods in preventing the spread of Covid-19 and switch to more effective and efficient ways.

IV. A CASE STUDY ON THAILAND

1. Participation

In the case of Chiang Mai Province, Provincial Administrative Organization (PAO) municipality and Tambon Administrative Organization (TAO) were played the main role in early stages in the beginning of pandemic. PAO is the upper-tier which operates large-scale administrative duties and public services, while the municipally and TAO are the lower-tier which is responsible for small-scale duties [22]. Moreover, according to Local Performance Assessment (LPA) Annual Report 2019 from Department of Local Administration reported that good governance in local administration in Thailand the average was outstanding at 90-100 percentage[23]-[24].

For participation criteria, participation between local government and local people in Thailand were disappointed because, the central government declared the emergency decree which was the power in country has been in prime minister hand only. All the solution just came direct from the government and this degree continues without the end. However, the local government (PAO) in Chiang Mai, Tambon Administrative Organization (TAO), local community, and private sectors in Chiang Mai area were gathered for participate in many activities during the state of emergency decree. The vvillagers in Chang Puak Sub-district (TAO level) have come together to make masks to give out for free to other members of the community. These masks will be handed out to people who need them in the Chang Puak community. The group is currently producing 200 masks per day including normal cloth masks and a higher-grade mask which will be handed out to officials and personnel with higher risk of infection [25]. Moreover, on the provincial level (PAO), Chiang Mai Provincial Administrative Organization have gathered to distributed to people provided food. they shall give out lunch boxes to the public for 15 days. In addition, it would be greater than currently situation if the central government do not continue the emergency decree and the central government should have to decentralize their power and budget to local government which will helps local community and local people more effective and more efficiency rather than central government control and policy and budget.

2. Fairness

Since the central government in Thailand declared the emergency decree. It completed turned a local government unfairness to mitigate the pandemic for their local community. The limited of power and budgeting to help and support local community in pandemic time were late and shortage. Many local people suffered from this decree and lockdown policy. In this case, it obviously that both Provincial Administrative Organization (PAO) municipality and Tambon Administrative Organization (TAO) were insufficient budget to helps their local people. The equal distribution to local people turned into the central government hand. Without any asking for local information and arrange the priority who needs help first or last.

Suffered people such as labour, senior, disability, and homeless people have no opportunity to get a better condition since their jobless in covid-19 pandemic across nationwide and defamed by the emergency decree. The only urgent solution while the whole country was locked down was 5,000-baht handouts over three months for 10 million households affected by the economic impact of Covid-19. The handout is worth 150 billion baht and it will come from the one-trillion-baht loan the government is seeks to acquire to finance its Covid-19 economic relief programs. In this case, it is crystal clear that the local government (PAO) in Chiang Mai, Tambon Administrative Organization (TAO) did not have any power and budget to categories people who should support first or last in early pandemic period. On the other hand, private sector played a crucial role to support and help local community as well as local government for organized places as good as them could done. There are some people cooperate with the provincial level and sub-district level which needs to the civil servants take an action to distribute aids for community such as the governor of Chiang Mai received numerous donations in front of the provincial hall this afternoon with dried food donated by the Consular Corps of Chiang Mai and rice and other food donated by the Royal Project as well as masks and survival packs donated by the Lanna Thai Women Association[26]. Also, normally people offer food to monks to make merit, but during this time of crisis some temples have started giving food to people who have lost their jobs[27].

Figures of the Mental Health Department released on Thursday showed 2,551 people had killed themselves in the first half of this year, up 22% from the same period of last

year, when 2,092 cases were reported[28]. According to a study by Chiang Mai University in March showed 38 suicide attempts were linked to stress associated with the lockdown and 28 of them ended up in deaths. The research was conducted weeks after the government implemented the lockdown to prevent the spread of the virus, which subsequently led factories and companies to temporarily close or permanently shut down. Moreover, a rise in the suicide rate has set alarming bells ringing among health officials as they were certain that the increase was related to the outbreak of the coronavirus that makes lives stressful [29].

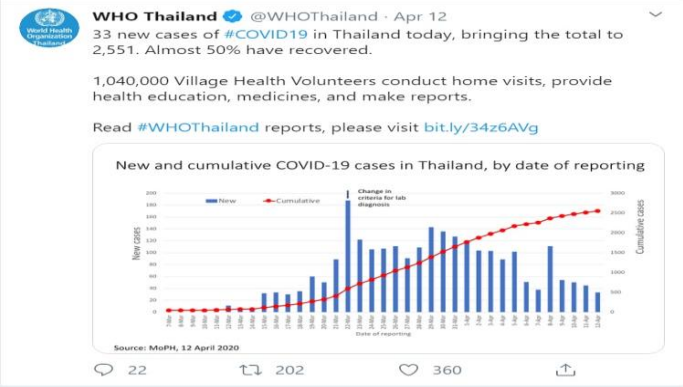
3. Accountability

Since the lockdown policy activated many local governments in Thailand initiated to follow the central government policy which is trying to stop the outbreak and the infection. Local governments started to be closed the small road and then set up a check point which was integrated local government officers and Village Health Volunteer to monitor and prevent outsider into the community. This credited must honor to Thailand Village Health Volunteer. The Village Health Volunteer network was set up in 1977, after the Thai Ministry of Health partnered with the Japanese government to develop a primary health care system in all regions nationwide.

The concept was also an embodiment of Thailand's pragmatism. In a column, former deputy PM Wiraphong Ramangkun said the *Aor Sor Mor* was inspired by the Thai Communist Party's local version of the rural "barefoot doctors" in mainland China – despite the widespread anti-Communism sentiment in Cold War Thailand.

Each of the 1.04 million Aor Sor Mor volunteers is expected to provide basic health information to residents, and coordinate doctors'visits to 15 to 25 households. Emblem of the Village Health Volunteer, or Aor Sor Mor. The project's foot soldiers are ordinary senior citizens in rural communities. The volunteers act as middlemen between rural residents and health officials, conveying medical facts and doctors' orders to neighbors they have known all their lives. Their job is to knock on doors to check temperatures, as well as educating locals about hand-washing and social distancing[30]. Moreover, a big thank you to the Village Health Volunteer for provide health education, medicines, and make reports. from WHO Thailand on Tweeter as follow figure.

Figure 1 shown WHO Thailand congratulated them for their work.



Source: https://www.khaosodenglish.com/ (2020) [31].

4. Transparency

In this criterion, Provincial Administrative Organization (PAO) municipality and Tambon Administrative Organization (TAO) in Chiang Mai was allowed from ministry of interior to spent annual fiscal in public hazard section no.11, no12, no13, no14, and no.15. Thus, to prevent and protect the pandemic in local community, local government in Chiang Mai spent their annual fiscal in public hazard for promoted law and order under the state of emergency decree. According to the national strategy on the prevention and suppression of corruption, The Nation of Prevention and Suppression Corruption Phase 3 (2017-2021) and Evaluation of Moral and Transparency in Operations of Government agencies (ITA) of the year 2019 have set government agencies to have measures to disseminate information to the public. They had to provide a basic information for dissemination of information and services of the organization for example, information about organization, Press release, Web Link, Rules and Regulations relevant to agency, Rules and Regulations relevant to private sector, Service information, and Communication Channels. For Chiang Mai Provincial their set up centre of public information to report, distribution updated news, demonstrated their activities, and expenditure in covid-19 pandemic especially publicized on their website such as www.chiangmaipao.go.th or www.oic.go.th /infocenter12 /1249/ (Chiang Mai Provincial Administrative Organization, 2020). This allows people both local and nationwide updated news and accessed their information to monitor their activities and expenditure.

On the other hand, Village Health Volunteer focus on educating and informing. They help people to understand both the causes and the most effective ways to prevent and treat diseases like dengue, rabies, and malaria. They are knocking on doors of all households to give advice on COVID-19 prevention, symptoms, and self-observation, while handing out cloth masks that they have hand-sewn as

well as alcohol-based gel, health flyers, and reported to their head quarter[33].

5. Efficiency

In Thailand, there are many government agencies cooperated each other to do the best for stop the pandemic. The provincial and Tambon Administrative Organization (TAO) are more empirical efficiency since the pandemic occurred in domestic area. According to CityNews (2020) reported that Charoen Sanguansat, Governor of Chiang Mai, along with various authorities, visited three checkpoints on the three major roads into Chiang Mai. The first checkpoint is set up at Baan Pa Kong on the Old Chiang Mai-Lamphun Road and the second at Baab Umong Ngam in Saraphee and the third is on the Superhighway. These checkpoints right now still allow for through traffic with heavy screening, but authorities say that they will close them completely soon. [34].

Moreover, TOA and village health care were cooperated to block the local road. According to Kelly (2020) reported that a sub-district of the northern Chiang Mai province is taking matters into its own hands by locking down residents and setting up checkpoints to screen people entering the area in the fight against the Covid-19 coronavirus. Volunteers at each checkpoint are taking the body temperature and travel histories of people entering, as well as handing out surgical masks, face shields, and hand wash gels.

Therefore, it was obvious that the efficiency in Thailand case not only the local government but also many governments agencies must cooperate each other to handle the serious outbreak and tackle the problem with cooperate with local people as well.

6. Effectivity

The most effectivity and succeed to stop the Covid-19 pandemic in domestic which was the TOA and village health volunteer was provocation search in their area. Regarding COVID-19 outbreak, village health volunteers' proactive surveillance and control operations have been tangible since late February or even before a significant spread by a boxing guru. Village health volunteers' preparedness and solid operations, as well as their close collaboration with district health promotion hospitals and local officials. Therefore, it evident that the development of village health volunteers' roles in medicine and health service can certainly be regarded as an essential process in enhancing the competency of Thai public health system and strengthening the participation in Thai society[35].

CONCLUSION

The widespread of COVID-19 created a challenged on good governance in both central and local government. However, this paper aimed to focused on local government because the local government is the fundamental and closer to community. Moreover, good governance is the management of the economy, politics, resources, and power which suit for fastest mitigate this phenomenon. Thus, the good governance on Tegal city in Indonesia shown that the effectiveness, openness, and transparency of the government in coping with Covid-19 are the keys to improve the people economy in Tegal City. Also, this paper suggested to Tegal city administrators should be responsive to evaluate ineffective methods in preventing the spread of Covid-19 and switch to more effective and efficient ways. While, in Thailand case, sorely local government could not cope with Covid-19 pandemic, but the cooperated between Thailand Village Health Volunteer and local government were the best operation to stop the Covid-19 outbreak. Moreover, the most bedrock hinder in both Thailand and Indonesia were the central government that centralize authority. In Indonesia, the central policy was the obstacle to allow local government acted, while in Thailand the emergency decree was the main hinder for local government management. Finally, both local government in Thailand and Indonesia were struggled and tried to cope with Covid-19 in a right way of good governance track even though they had a limited authority and willing to support their community. Finally, the contribution of this paper would like to promote and focus on local government as fundamental institution to assist and support the local people in tackle the pandemic crisis of COVID-19.

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An Analysis on Fragile People of a Local Government Strategic Between Malaysia and Thailand in Time of Covid-19 Pandemic

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Abstract— This article aimed to analyzed and compared on fragile people of a local government strategics between Malaysia and Thailand in time of Covid-19 pandemic. The methodology of this article was a qualitative approach based on the secondary data from case of Malaysia and Thailand. The finding of this article was Malaysia's local government has more independent and design different business and social strategies to help fragile people consist of community care initiative, homeless people assistance and business scheme opportunity for petty traders and hawkers rather than Thai's government that local government did not have fully autonomous authorities and independent from Thai government. Therefore, the contribution of this article up to enlighten the roles and functions of the local government as fundamental institution to assist and support the local fragile and vulnerable people in facing the pandemic crisis of COVID-19.

Keywords—Sustainability, fragile people, local government s, COVID-19, Malaysia, Thailand.

INTRODUCTION

Fragile contexts are starting to be hit through the COVID-19 pandemic crisis. Most of these countries are insufficiently prepared to cope with the spread of the pandemic crisis and its consequences during the multiple dimensions of fragility. As with all disasters and crisis, COVID-19 is revealing the present day of socio-economic inequalities. The impact of the crisis is greater at the poorest, and poverty is increasingly more targeted on fragile and struggle-affected contexts. These days, the fragile people had been the most prone group to be tormented by the pandemic COVID-19. This group is closely relying on the day-to-day basis earnings with the aid of running a self-small business strategics to keep hold sustaining with their daily life routine.

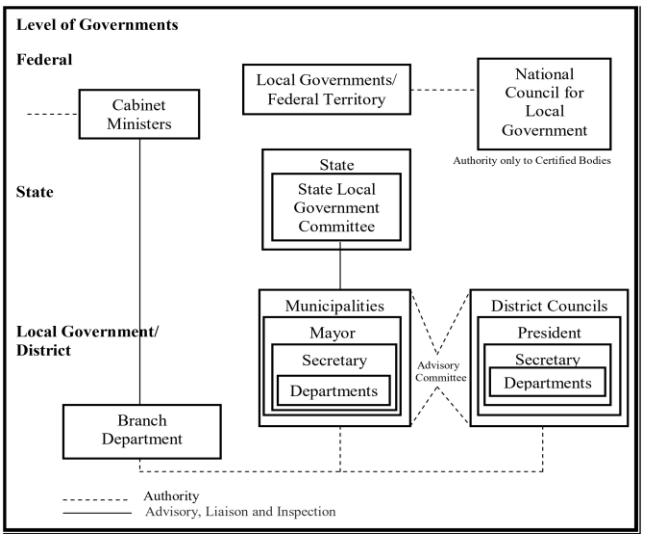
As this crisis has erupted all the global, the South East Asian countries additionally not able to slip faraway from this pandemic disaster especially in Malaysia and Thailand which one of the much-affected nations in South-East Asian regions. The respective fragile people are undeniable that greatly have been affected which they powerless to preserve operating their day-by-day small business due to the curfew and movement control order strategics that has been carried out recently by the government. Both central and local government in those two respective countries has taken a high preventive measure in attempts of combatting the pandemic disaster by limiting the movement of their people on the out of the doors. That is; however, this study will be present process through narrowing the topic of the study by overviewing at micro-stage of local government in Malaysia and Thailand in their intervention of handling the disaster of pandemic COVID-19. Therefore, the purpose of accomplishing this study is to deliberately analyse the strategy that has been taken by the local government in Malaysia and Thailand to keep sustaining the fragile people keep ahead with their life throughout the pandemic COVID-19 crisis.

THE CONCEPT OF LOCAL GOVERNMENT.

Sady (1962) referred local government as a small part of the political system in a nation-state or the federal system that is governed by the law and has considerable control of local affairs, including the powers to raise tax or labour. Later, [1] Hill (1974) described the local government as a unit system specified by the border region, legitimate identity, institutional structures, functions, and powers specified in general and specific positions, financial and other important autonomy[2]. In addition to that, Ayub (1978) describes local government as being run through a board or council in an area for the welfare and well-being of the citizen and acting

responsibilities for a citizen residing within the place [3]. OECD (2001) later described local government organization as an organizational group unit whose monetary, legislative, and executive authority extends over to the smallest geographical regions that prominent for administrative and political functions [4].

From the given definitions above, Halimah (2012) and (Hussain, 2002) described local government may be the notion of as the local government' units or establishments of governance on the lowest tiers of authority in an area or a small vicinity, with a certain political and administration powers [5]-[6]. In Sady's (1962), Hill's (1974) and OECD (2001) definitions, extra emphasis is located on power, at the same time as the definition is given through [7]-[8]-[9], Ayub (1978) focuses greater on components of the services supplied through the local government. It implies that during local authorities, there are key critical factors, jurisdiction and services [10].



Source: Hussain (2002) [17].

THE FUNCTIONS OF THE LOCAL GOVERNMENT

In Malaysia, the local government is the third degree of government after state and federal government, referred to as Pihak Berkuasa Tempatan (PBT) [11]-[12]-[13]-[14]. As stated inside the Federal constitution in 1957, the local governments are beneath the jurisdiction of the state government and the federal government. Underneath this constitution, the local government is one of the subjects reserved for the state government, and Clause 76 (4) of the constitution highlighted that the federal government has the authority to make legal guidelines to obtain equality in policy and regulation [15]. Because of this any policies and objectives decided via the federal government and the state ought to be generic and applied through all the local governments, except for the Federal territory issue to the minister in charge of the affairs of the Ministry of Housing and Local Government [16]. The below Figure 1 illustrated the Malaysian Local Government System that currently had been carried out in Malaysia.

Figure 1: Malaysian Local Government System

Underneath the local government Act 171, the local governments in Malaysia have the strength to impose restricted taxes which include a tax assessment that may be a predominant source of organization earnings. The local government may additionally put into effect and implement via-laws for citizens local in the administrative place. With the aid, of-laws are as a solution to the issues that arise among the population neighbourhood. The Federal constitution of Malaysia restricts the exceptional power of governing the government local to the state government. Further to the constitutional provisions, a few parliamentary acts were formulated to regulate local government strategicss in Malaysia together with the Local Authorities Act (Act 171), Town and Country Planning Act 1976 (Act 172) and Street, Drainage and Building Act 1974 (Act 133) [18].

In line with Suhaiza, Suzei and Zarina (2017), the fundamental reference for local government legal guidelines in Malaysia is Local Government Act 171, at that is most influential in outlining forms, organizational structures, duties, and the obligation of the local government as an entire. On the same time, this act additionally outlines local governmental authority in three major areas, specifically, administration, finance, and function. Underneath Section 127, the Local Government Act of 1976 states that local government might also impose an assessment tax rate on their holdings beneath his administration. Tax revenues could be used to cover government spending locals which include acting duties, functions, and services to the locals. Tax assessments are a primary contributor to local revenue. The tax could be used to provide public utilities, to preserve the region management and additionally paid personnel emoluments. So, it truly is tax management assessment efficiency is an essential component in making sure that the

respective local government agency is carried out a balanced annual budget for the incoming distribution of powers [19].

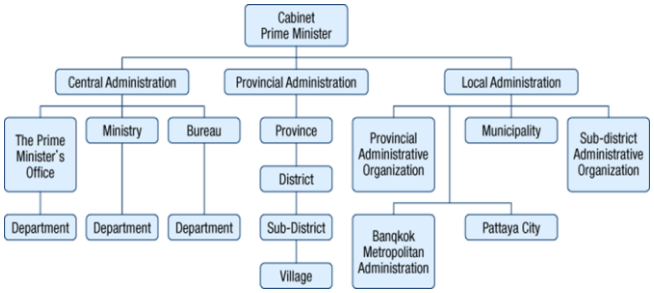
From this angle, the function of local government is within from the grassroots level of civil society to be overseeing the fragile and risk group to be affected of socio-economic downfall for the duration of this COVID-19 pandemic disaster in Malaysia for. Local government might be the most significant governmental organizations which can be the closest to the local community and knew what the local community needs and seeks from the authorities. As for this, the function of the local government is to bridge the connectivity in between the local stage and the higher authorities of government, neither the federal nor the state. The local government is also accountable to inform to the federal and the state government in the needs of local people that need to be paying attention for.

Meanwhile, The Kingdom of Thailand is a constitutional monarchy under which the king considerable as a head of the state. However, the government is divided into three branches which are; the legislative branch: The National Assembly is composed of the Senate, the 150 members fully appointed upper house, and House of Representatives, the 350 member lower house. The executive branch consisting of the Prime Minister of Thailand who was elected by the National Assembly and other cabinet members of up to 35 people. The cabinet was appointed by the king on the advice of the prime minister. The prime minister is the head of government. The judiciary is independent of the executive and the legislative branches. The judiciary of Thailand is composed of four distinct systems: The Court of Justice system, the Administrative Court system, the Constitutional Court, and the military court.

Nonetheless, the local government in Thailand did not play the main role rather than central government. Also, the relationship between the central government and local government always plays a crucial role especially in terms of politics and fiscal. the fundamental problem is that the intergovernmental fiscal transfer is not designed as means of appropriately meeting the fiscal needs of transferred services and responsibilities [20]. Also, the local government always control and supervision under the Thai administration line. Therefore, consistence with decentralization concept, it is an important that central government ought to collaborate and fully decentralize authority and fiscal in time of the COVID-19 pandemic.

Thailand is a unitary state. It has traditionally employed a highly centralized form of government, in which most employees at provincial, district and sub-district levels are affiliated with central agencies and local communities are governed directly by officials appointed from Bangkok [21]. According to The Public Administration Act in 1991 was promulgated which laid down the new administration structure which are central, provincial, and local administrations [22]. There are three basic levels of public administration in Thailand: central, provincial, and local administration. The central administration consists of ministries. The provincial administration comes under the concept of deconcentrating, which means that the central government delegates some of its power and authority to its officers who work in provinces and districts, and the provincial administration consists of provinces, districts, minor districts, subdistricts (or Tambon) and villages. The local administration is based upon the concept of decentralization, which allows local people to participate in local affairs under concerned laws and regulations, and there are 2 types of local administrative organization: the general type (composed of Provincial Administration Organization, Municipalities, and Subdistrict Administration Organization); and the special type (consisted of Bangkok Metropolitan Administration and the City of Pattaya) [23]. The below figure 3 shown a basic level of Thai Public Administration that currently had been carried out in Thailand.

Figure 2: Thailand Local Government System



(Source: Sakkayarojkul, 2013) [24].

The purpose of decentralization to local administrative organizations (LAOs) is to decrease central government's mission and increase power to community and local administration. This is because the local administrative organizations (LAOs) were designed to be the main organization to provide public services. The local administrative organization (LAOs) must provide services that serve the needs of the people efficiently through the process of public participation [25]. Moreover, decentralization is certainly crucial policy both for central government and local government. Thus, decentralization policy has various perspectives to present. It needs to shift accountability, power, and financial capital from the central government to local government [26].

Notwithstanding, Fiscal decentralization is considered as a key element to improve public governance in Thailand. The most important feature of fiscal decentralization is the

devolution of the central government's fiscal powers and responsibility to local governments in, among others, revenue collection, expenditure decision, and fiscal policy discretions. The central government also uses fiscal decentralization to enable local governments to improve efficiency and effectiveness in public services delivery that could also foster local accountability. Theoretically, central government's inadequate information on the needs of local people causes inefficiency in public services delivery across the country. The local governments are better informed on said needs and therefore they can address them more effectively than the central government [27].

Furthermore, civic consultation is a more meaningful approach to local participation, people can voice their ideas directly on local affairs through the provided channels in the decision-making process. The public and the authorities may have interactive dialogues over issues of concern [28]. Therefore, without a doubt, local government is a front-line organization that help create the efficient delivery pf public services and serve a local need especially Provincial Administrative Organization (PAO) municipality and Tambon Administrative Organization (TAO). PAO is the upper-tier which operates large-scale administrative duties and public services, while the municipally and TAO are the lower-tier which is responsible for small-scale duties [29].

In the meantime, COVID-19 pandemic disaster in Thailand is one of the most important case for Local Administrative Organization to mitigate the hunger and support the local people and fragile people in their area. In this case, PAO and TAO are closest government organization to support and sufficient information to local community needs in time of pandemic. However, the connectivity between the local level and higher level especially from the central need exchange information and provides the needs for local community nationwide.

THE CONCEPT OF FRAGILE PEOPLE

The concept of people fragility may be varied throughout a multi-dimension angle. The issues of unemployment, frustration and violence amongst people, and the capability for them to change norms and values, in addition to aid development, are all exacerbated in conditions of struggle and fragility. Fragility is an alternatively indistinct concept deriving from the notion of 'fragile states', states with a constrained ability and/ or political will to provide simple services to the population [30]-[31]. Numerous social, monetary, and political instabilities characterized fragile contexts, and fragility is frequently linked to the presence, current conclusion, or threat of violent struggle. Even though a generalised period, it is significant to take note of nuances and the distinctiveness of every context of fragility [32]. Moreover, there are variations among experiences of emergencies, early recovery, and reconstruction, yet overlaps and downsides make clear demarcations hard.

From the World Bank's literature work in characterizing the fragility are associated with the figuring out which nations are experiencing specifically fragile conditions has been in impact since 2006 by focusing in large part on countries experiencing the outcomes of struggle and violence [33]. As the World Bank (2020) has also said the definition on the fragility as a crucial development task that threatens efforts to cease severe people poverty, affecting each low- and middle-income nations especially in the COVID-19 pandemic crisis. The world bank conceptual measure on the people fragility does no longer focus on health specifically alone, but it is identified in-associated with views of the governance and monetary-related challenges which identified present intense threats additionally to public and private health. The World Bank additionally introduced the context on fragility is probably from the angle of climate change, growing the people inequality, demographic change, new technology changes, illicit monetary flows and different global tendencies may additionally create a fragility risks on vulnerable low- and middle-income people at the end of the day. Each low- and middle-income people within several the nations are much likely to be suffering from a fragility crisis this day. [34]

Fragility can as well result in negative consequences which include the violence, the breakdowns of institutions, displacement, humanitarian crises, or different emergencies. At the same time as nevertheless conceptualizing the people fragility as a state- or country-stage phenomenon, the OECD expands on the World Bank country policy and institutional evaluation via focusing on varieties of fragility rather than just on states, which affect monetary, environmental, political, safety, health, and societal domains. OECD estimates imply that by 2030, much likely 80% of the worldwide poor people will stay in contexts stricken by one or extra of the fragility crisis [35]; also, many stable and wealthy environments that fall into the middle-income country bracket are much likely to be in covered on this estimate [36]. Hence, with the aid of promoting this greater granular knowledge of fragility throughout a much wider pool of nations, the OECD hopes to set off a reflection by differentiated various strategies that needed to give a boost to the coping capacities of diversely fragile contexts among the people and globally.

METHODOLOGY OF THE STUDY

This study is using the qualitative-based approaches and the collection of the data is based on the secondary data which is the researchers will be collecting the related important literary works from the local and international perspectives to overseeing the functionality of the related local government agencies in handling the pandemic crisis. While the collection of the data findings such as statistics, official reports and case

studies from the relevant-local government's administration report that had been recently published via the newspaper, archives, mainstream media, social media, and some of the official documentation report from the respective local government that has been involved with some from the internet sources that much greatly contribute to the development of this respective study. In the context of Malaysia, the study is primarily based on the Kuala Lumpur City Hall (DBKL). For Thailand, the case took on the provincial level (PAO), Chiang Mai Provincial Administrative Organization and Chang Puak Sub-district (TAO level). After that content analysis used for analysed and interpreted on both cases.

A CASE STUDY ON MALAYSIA

Malaysia case study took place in Kuala Lumpur City Hall (KLCH), the Ministry of Federal Territories, had took the initiatives of introducing Community Care Initiative to help urban poor, B40 group, students, the homeless, petty traders, and hawkers to cope with the impact of the COVID-19 – 19 outbreaks. This initiative come with an allocation of RM 63,600,000.

As a basis, the initiative is looked as a function in helping citizens who stay and work in Kuala Lumpur, Putrajaya, and Labuan as they are in Federal Territories (FT). In addition, it also has its own focus on three main clusters who are front liners, patients, and patients under investigation (PUI) and citizens that include urban residents, B40, petty traders and hawkers. Other than that, the allocation being standardized with three main local government under FT, which Kuala Lumpur City Hall (DBKL), Putrajaya Corporation (PPj) and Labuan Corporation (PL) [37].

According to the Minister of Federal Territories, Tan Sri Annuar Musa, Malaysian Government always committed in giving reasonable helps to all of the homeless people [38]. In addition, he also adduced that they will be offered jobs on the factory and general fields and living places too after MCO be ended by Malaysian government. In the meantime, they will undergo several training and courses so that they are able to enter work field successfully [39]. On the part of DBKL itself, they already prepared for almost 1,000 vacancies for the people who want to work in Kuala Lumpur and at the same time, they do not have to become homeless anymore. What they need to do is by coming to DBKL or Department of Labour Malaysia branch Kuala Lumpur [40].

Thus, based on the efforts done by Ministry of Federal Territories together with DBKL, first group of the homeless consisted of 43 individuals had been accepted to work in Sitiawan, Perak whilst the others who only succeed in physical test and strainer test of Covid– 19 will get their job with DBKL itself [41]. Around 360 homeless already being sent to the training centre in Sepang for a month whilst another 60 being sent to Kuantan for attending courses and training for 3 months before they start working soon.

Based on the actions and efforts shown by Ministry of Federal Territories to curb and solve the homeless issues in Malaysia, it clearly shows that how serious they are in helping all the homeless people to live in a good life especially during this pandemic Covid–19. In the meantime, no actions contributed by DBKL can be forgotten because they also have given full contribution to make sure that all the homeless are safe. What can be perceived on this part of contribution is about the function delegated directly by Ministry of Federal Territories towards DBKL itself. As what can be seen, on the part of this homeless issue, they able to help all the homeless in Kuala Lumpur by providing the temporary placement for them and their daily needs. Other than that, DBKL together with Department of Labour Peninsular Malaysia Branch Kuala Lumpur had helped all the homeless in finding the jobs for them to continue their life in a good way and not living as a homeless anymore.

In the meantime, the petty traders and hawkers throughout the country including the one who work in Kuala Lumpur have faced the big impact on their businesses, as they are not able to run it to oblige with the Malaysian Government order which MCO. Concerning the petty traders and hawkers who run their businesses in Kuala Lumpur, Ministry of Federal Territories already took some measurements and initiatives to help lighting their burdens so that they can continue surviving their life during the pandemic. Like the homeless who have special allocation under Community Care Initiatives, Ministry of Federal Territories also gave full attention towards petty traders and hawkers in helping them. Thus, under Community Care Initiatives, Ministry of Federal Territories have allocated for RM500 one – off payment to all of them who run their business in places like Bazaria Larut Malam, night markets, open markets, food trucks, roadside stalls, agricultural markets, and kiosks, which sum up to RM 11,800,000. Other than that, 6,000 petty traders and hawkers in Kuala Lumpur also received an exemption for three months of lease payment from DBKL and for those who run it in Putrajaya; they will get the rent exemption payment for two months from Putrajaya Corporation [42].

Concerning about petty traders and hawkers in Kuala Lumpur, DBKL had took several actions to help them in running their business around Kuala Lumpur smoothly. By referring to the official portal of DBKL itself, DBKL already provided the strategic location for all the petty traders and hawkers. As a basis, DBKL have provided 100 strategic locations, which consists of 2,053 of stalls that can be fit in all the locations and it is very convenience to for the hawkers and the customers, as it is clean, comfortable, and orderly. In the meantime, the facilities provided by DBKL is offered to the Kuala Lumpur citizens especially for young generations to

start venturing their own food business. About the location, DBKL already categorized all of it into four main parts which DBKL Hawker Centres, Private Hawker Centres, DBKL Kiosk and DBKL Locked Stalls. The data is shown as below:

Section	Total Location	Total Stalls
DBKL Hawkers Centres	44	1154
Private Hawkers Centres	51	784
DBKL Kiosk	3	93
DBKL Locked Stalls	2	22

Source: Official Portal of Kuala Lumpur City Hall, 2020[43].

After that, during the pandemic Covid–19, it also gives new starts for the residents of Kuala Lumpur especially because, other than curb the spreadness of Covid –19, DBKL already took some actions in controlling and stopping the activities of illegal foreign hawkers who run their business around Kuala Lumpur. According to Muhammad Aminuraliff (2020), Mayor of DBKL, Datuk Nor Hisyam Ahmad Dahlan already gave out the order of no illegal foreign hawkers run their business especially in the hawking field in Kuala Lumpur anymore. In the meantime, he also added that DBKL would enhance the current by laws like Wholesale Markets (Federal Territories) 2002, Markets (Federal Territories) 2016 and Licensing of Hawkers (Federal Territories) 2016 to stop all of their activities too. The seriousness of DBKL in solving these illegal foreign workers could be seen in several actions done [44].

Another effort of providing trade lots at big shopping complex for the youths who just want to start their business clearly shows that how DBKL want to give the best facilities for them and a helping them in generating income for their daily life too. As a basis, youths are the generation that cannot be left behind as they are the next generation that will bring the bright future for Malaysia. Other than that, this effort also is one of the initiatives by DBKL concerning about giving the best and reasonable help so that they can learn new things about business besides generating incomes for their own. Then, DBKL also has provided trade lots for the Bumiputera who lost their jobs due to Covid–19 outbreaks are another initiative that should be commended too. This is because instead of just giving helps on the monetary and other daily needs, DBKL encourage them to put some efforts in earning some money to survive. On the other hand, it will quash out the statement of Malaysian people are lazy to work and they can have new plans for their future with the new norms of life.

A CASE STUDY IN THAILAND

Since the COVID-19 pandemic spread nationwide, The Thai government urged to lock down the whole country used a curfew period from 10.00 p.m. to 4.00 a.m. The Thai government has declared a national state of emergency in last week of March 2020. This emergency decree gives the Prime Minister wide-ranging powers to use as he deems appropriate, including the ability: 1) To ban people from leaving their houses or accommodation during specific time periods unless permission has been granted by authorities. In order words, to impose a curfew. 2) To prohibit public gatherings 3) To prohibit the dissemination of reports or distorted news which may lead to public panic. In other words, news censorship. 4) To prohibit the use of or entry to buildings. 5) To evacuate people from any area for public safety or to prohibit people from entering designated areas [45].

Moreover, the emergency decree impacted to Thai people daily life also, many stores, shops, hotels, and restaurants in service sectors have been suspended. For the homeless people, government statistics suggest Thailand has approximately 2,700 homeless people, likely a significant undercount in a nation of around 69 million [46]. The lockdown and empty streets mean fewer opportunities for homeless people to earn money. Also, the poor have found themselves facing increasing economic hardship since the government enforced social distancing measures and travel restrictions to flatten the curve of transmission. They survive off cheap food from street vendors, street stalls at markets or mobile food trucks -- many of which have suspended strategies or closed because of the government's restrictions on activities and movement [47]. In addition, they face stigmatization and accusations of negligently spreading the virus, as well as disobeying government orders. Government-run shelters are often overcrowded, without sufficient space required for physical distancing, and far from areas homeless people know and frequent, so they are reluctant to go.

This fragile people have no opportunity to get a better condition since their jobless in covid-19 pandemic across nationwide and defamed by the emergency decree. The only urgent solution while the whole country was locked down was 5,000-baht handouts over three months for 10 million households affected by the economic impact of Covid-19. The handout is worth 150 billion baht and it will come from the one-trillion-baht loan the government is seeks to acquire to finance its Covid-19 economic relief programs [48].

Therefore, the central government solution is insufficient to handle homeless people or fragile groups due to the limited of state revenue. The centralization of power from the Thai government which did not decentralized the power and revenue to local one thus, the remedy of 5,000-baht handouts over will be shortage faster and it does not sustain in the long run if the vaccine did not use for early next year.

Meanwhile, local government in Thailand did not have enough budget to help the fragile people and did not have authorities to provide some aids as well. Because of the government declared the emergency decree which was the

power in country has been in prime minister hand only. All the solution just came direct from the government. However. It had some little things that the local government did with the local community such as provided free foods and free masks.

For the example, villagers in Chang Puak Sub-district (TAO level) have come together to make masks to give out for free to other members of the community. These masks will be handed out to people who need them in the Chang Puak community. The group is currently producing 200 masks per day including normal cloth masks and a higher-grade mask which will be handed out to officials and personnel with higher risk of infection [49]. Moreover, on the provincial level (PAO), Chiang Mai Provincial Administrative Organization have gathered to distributed to people provided food. they shall give out lunch boxes to the public for 15 days.

However, the real deal that Thai people can handle the corona-19 pandemic is Thai volunteers in each community and private organization rather than the central or local government. For example, The Central Group, established the "Food Sharing for Love" project to create collective actions for collective impacts. The project is hosted and implemented in collaboration with a local partner organization, the Doi Inthanon Conservation Trust Fund Foundation. The foundation is seeking food donations and raising funds to source various produce like herbs, vegetables, and fruits directly from the FLR349 project's farmers and its local organic farmers network that are struggling due to the market closures and supply chain collapse. Distribution of the food is systematic and comprehensive, reaching marginal communities that have trouble accessing food all around Chiangmai. Since the initiative initiation on the 20th of April 2020, a significant amount of food and funds have already been donated from the Central Group, local business companies, and many individuals. The delivery of products is carried out by a local logistic company, Nim See Seng, for free of charge [50].

Furthermore, there are some people cooperate with the provincial level which needs to the civil servants take an action to distribute aids for community such as the governor of Chiang Mai received numerous donations in front of the provincial hall this afternoon with dried food donated by the Consular Corps of Chiang Mai and rice and other food donated by the Royal Project as well as masks and survival packs donated by the Lanna Thai Women Association [51]. Also, normally people offer food to monks to make merit, but during this time of crisis some temples have started giving food to people who have lost their jobs [52].

Therefore, without a doubt the central government control power and budget in their hand without decentralized power and budget to local government caused a fragile group or poor people get life harder than use to be. the shortage of revenue and the government solution which is hand out 5,000 baht for three months seems sustain in the long run. The sustainable solution is the central government needs to decentralize their power and budget to local government which is closet to fragile people or the poor one. In Thailand case, the lesson to learn is both local government and community can tackle the problem by cooperate each other and could help fragile people and poor are directly and just in time. We must admit that the covid-19 pandemic shown us that the power of local and community are the best solution to against a serious problem and situation rather than the central government control. Finally, decentralize power and revenue are the best answer to governance and administration for a sustainability to the people.

CONCLUSION

Covid-19 pandemic created a vast catastrophe in every dimension especially strongly impact to fragile people, however, to tackle the problems local government is the key player in this serious situation. In Malaysia case, local government seemed to be a main role for handle to support fragile people in the meantime of covid-19 pandemic.

Since the central government ordered to lock down the country, fragile people such as homeless, petty traders and hawkers are insufficient income and live their life as normal. They struggled and suffered from the lock down order. Therefore, in Kuala Lumpur, DBKL as a case study shown that they took a quick actioned to all the homeless in Kuala Lumpur by providing the temporary placement for them and their daily needs. Also, the DBKL provided 100 strategic locations, which consists of 2,053 of stalls that can be fit in all the locations and DBKL offered to the Kuala Lumpur citizens especially for young generations to start venturing their own food business. About the location, DBKL already categorized all of it into four main parts which DBKL Hawker Centres, Private Hawker Centres, DBKL Kiosk and DBKL Locked Stalls. Moreover, DBKL provided trade lots at big shopping complex for the youths who just want to start their business.

On the other hand, in Thailand case. It seemed to lack of the authority to take an abrupt action to support fragile people. The main reason was that Thai government had declared a national state of emergency. Hence, the central government of Thailand was a direct authority to took control the whole country without given local government authority to handle in their community. However, there were many local governments tried to support and handle fragile people on their own ways. In this case it tool couple local government to studied which were Chang Puak Sub-district (TAO level) and Chiang Mai Provincial Administrative Organization (PAO) level. They provided free foods, free masks, and lunch boxes for their community and fragile people. Indeed, the private sector and volunteers were the key to support fragile people rather than local government that they were looking

food donations and raised funds. Therefore, Malaysia's local government has more independent and design different business and social strategies to help fragile people consist of community care initiative, homeless people assistance and business scheme opportunity for petty traders and hawkers especially for a young generation. They cooperated with the central government rather than Thai's government that local government did not have fully autonomous authorities and independent from Thai government. Thai's local government had to follow the central government especially a state of emergency that strongly order. While the private sector and volunteers were key rather than both central and local governments in Thailand. This obviously outcomes shown that Thai government lacked fine strategy and insufficient resources to support fragile people nationwide. The government did not trust another sector and tried to solve the problems on their own with untrust no one. In contrast with Malaysia's government that the Ministry of Federal Territories, had took the initiatives of introducing Community Care Initiative and cooperated with local government that made fragile people could relief and comfort to support in both place and food also upgrade their skill for the future.

Finally, the contribution of this article up to enlighten the roles and functions of the local government as fundamental institution rather than centralized power to assist and support the local fragile and vulnerable people in facing the pandemic crisis of COVID-19.

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Causal Influence Analysis Model of Foreign Environment on Export Capability

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Abstract*— The objectives of this research aim 1) To research the elements of the environment in foreign countries that affect the export capability and 2) To analyze the causal influence between the elements of the foreign environment on the export capability The researcher collected samples from a specific target group of 145 companies. Data were analyzed by using descriptive statistics. Moreover, the researcher also analyzed information by descriptive statistics. In the part of analytical statistics analyzed, researcher using factors analysis and the causal influence analysis between variables according to the conceptual framework by structural equation modeling. The results revealed that foreign situation had influence on export capability. On the contrary, the analysis showed that had positive influence on the capability of exporting as same as the export regulation and the Muslim consumption had positive influence on the capability of exporting.Assessment on goodness of fit from the model found that export capability was consistent with the empirical data, chi-square =133.60, the degrees of freedom = 114, chi -square relative (x^2/df) =1.17, the probability (P-value) = 0.101, goodness of fit index (GFI) = 0.91, comparative fit index (CFI) = 0.95, Root mean square error of approximation (RMSEA) = 0.035.

Index Terms—*Foreign Situation, Export Regulation and the Muslim Consumption, Export Capability*

I. INTRODUCTION

Economic diversion affects all sectors, especially exports in which planning and careful research are required ; for example, the unrest in many European countries affects the sluggishness of tourists, or even the stagnation of the gross income of each country; therefore, the exports have been reduced. After all, the civil war in many Middle East countries has been attributed to goods that are not exported abroad or in small quantities. According to the [1] and the [4] has found that the world economy has been shrinking; as a result, the export business situation of Thailand has decreased, especially for agricultural, industrial and food industries. While the food industry was down at 1.6 percent from the previous year. In addition, the Office and Trade Strategy of the [5] has predicted that Thai exports will decline again at 4.0%, which will affect exports in many markets. In particular, the exports to ASEAN-5 CLMV and South Asian markets are likely to shrink at a high level in collaboration with the Office of Industrial Economics , the [5] has predicted that the situation of exports of industrial products in 2020 (excluding gold, weapons, tanks and combat aircraft) are likely to shrink by 14.11 percent. Industrial products with a contraction in exports will be automobile components and accessories, gems and jewelry (gold), plasmas, air-conditioner. Regarding the exports for industrial products are likely to continue to expand especially in the United States and China, while the exports to ASEAN, EU, and Japan markets are likely to shrink. In the meantime, agricultural industries valued at $ 1,483,389 million are likely to contract at 5.34 percent. As for the export marketing, the most important industrial products are electronics. The export value will be 2964.8 million US dollars with a contraction of 0.4 percent. The export value will be 1,857.6 million US dollars, shrinking 6.9 percent. Plastic resins with the export value at 612.7 million US dollars are likely to shrink at 24.0 percent. Equipment and components will be with the export value of US $ 2,213.6

million. Textiles and garments with the export value at 459.3 million US dollars are likely to contract 22.7. Gems and jewelry. (excluding gold bars) with the export value of US $ 351.9 million are likely to contract at 39.9 percent. In addition,from the circumstances of the occurrence of Covid-19 , Thailand is likely to have an export direction with $ 19621 million, down 3.86% compared to the same period of 2020, while imports were $ 17,391 million, a decrease of 9.08%, a trade surplus of $ 2,230 million. Thai shipping in Thailand (SOR) had expected that exports in 2020 were likely to be less negative and might come back positive, but some goods, such as food, there would still be obstacles because the exhibition could not be held and unable to travel between countries as usual. In addition, the [4] reported that Thailand's exports were less negative, which was a continuing recovery for exports due to the recovery of many exports that were less negative, including many products, starting to expand. The three main groups of products exported were food products such as cassava products, palm oil, frozen fresh pigs, beverages, food seasonings and pet food ,including products related to work from home and electrical appliances such as computers and furniture and refrigerator parts and freezers as well as washing machines and solar cells, and products related to infection prevention and epidemic reduction, such as rubber gloves. Meanwhile, many products continued to decline, such as sugar, rice, rubber, fresh chicken, frozen and processed gems; and Jewelry - excluding gold, radio receiver, television and its components , automobile, and components and products related to oil and gold. Many products continue to be exported, such as sugar, rice, rubber, frozen chicken and gemstone processing and jewelry excluding gold. Tv radio receivers and components Automobiles, equipment and components, oil and gold related product

On the demand for products in this group, It was found that although countries around the world experienced economic problems, however, their dietary requirements did not decrease partly due to the bird flu crisis, consumers turn to eat more food as well as the way of life of people today which is in a hurry, they cannot cook by themselves Choosing to consume products that are processed or cooked becomes more and more.

When considering the situation of the overseas market, it was found that it had influenced the planning of exporting to foreign markets. For example, the economic instability affected the export sector significantly owing to the political instability which would result in declining exports or being unable to carry out exports. In addition, it was found that the economic situation in the country in which the export operation was instable would affect the export less to that country and at the same time that country was unable to export a much as expected due to domestic economic problems [19] [20] . It can be said that exports have a positive effect on the exporting country. For example, a study by [15] found that Portugal had exported to other countries more than 60 percent of countries, which was the highest in Europe , bringing more than $ 1 billion a year into the country or [19] found that exports also helped surplus payments to the country. it played an important role in building a standard of living and helped create jobs for the people of the country. For example, the employment of workers within Germany 1/3 was the employment in the export sector. It also found that exports in the United States helped create jobs. 22,000-23,000 positions per export for every $ 1 billion.

For the exporters themselves, they also benefit from exports, causing the employment Increased product development and company growth. It also helps to expand the export base to more countries, maintain a stable financial status. The exporter, therefore, receives a wide variety of exporting countries, especially generating profits and nd confidence to the operator itself. Moreover, export companies also contribute to economies of scale, lower costs and production costs per unit, and increase profitability for the company in addition to providing a competitive advantage and increasing productivity. Besides, [14] found that the export supply chain had an acceptable relationship with cost-based export competitive advantage and advantages that the business unit, obtained from the use of available resources could only be sustained if its opponent were not be able to copy it.

In this research, the researcher was interested to study the food industry products because since the year 1991, they have generated more than 76,459 million baht per year in revenue, and also found that Thai canned seafood was exported to countries around the world as the number 1 since the year. 1999 [7] [9]. Moreover, it was found that the food industry products were more valuable than agricultural products, including other industrial products as well, and most of the raw materials in the production could be sought within the country. Office of the [3] said that exports of agricultural products and food industry relied on the import of raw materials at a low rate. It could support Thailand's economic expansion more than any other product group, for example, an increase of 10.000 million baht in fishery exports would increase GDP 3, 854 million baht; meanwhile, the cars increased by 10 billion baht. The GDP would increase by only 2,256 million baht. For the trend of exports of food products, the food institute (2016) showed

an increase of 5.8 percent compared to 2015 due to the weakening base currency, including lower production costs.

For example, exports of fishing products increased by 10 billion baht, resulting in an additional GDP of 3,854 million baht. The car segment increased by 10,000 million baht; GDP increased by only 2,256 million baht. [10] showed a 5.8 percent increase in growth, compared to 2015 due to the weakening major currencies as well as lower production costs.

Therefore, the researchers aim that this research will be able to find answers to the food export business practices of the food industry effectively as well as pointing out environmental factors in the international market. It is important to focus on export planning including new recommendations and findings that contribute to future export decisions.

II. RESEARCH OBJECTIVES

1. To research the elements of the environment in foreign countries that affect the export capability
2. To analyze the causal influence between the elements of the foreign environment on the export capability.

III. RESERCH METHODOLOGY

Research Design

This research is a cross-sectional design with the following research methods:

1. Target population and sample groups.

The population studied in this research was the food industry executives in Bangkok Metropolitan Region based on the database of the Department of Export Promotion. It was found that the target population of the food industry was in the total of 1,415 by specifying the sample size from Yamane's calculation table at 95% reliability level, with the static error at 0.05 , gaining 316 samples and then selecting specific samples from the group of entrepreneurs in the food industry.

Key Informants

The food industry executives in Bangkok Metropolitan Region based on the database of the Department of Export Promotion

Research Tool

The research instrument was a questionnaire developed from [19] [20]. In this research, the researcher defined the ten-point Rating Scale (Numeric Scale) as used by [9] studied in Romania and China etc. The scale was used because it had a higher resolution and the respondents could choose to answer that was more relevant to their actual opinions.

Data Analysis

Method for analysis of statistical data used for analysis (1) Descriptive statistics were descriptive analysis of various factors used in the analysis. It also described the general condition of the collected data and described the general properties of the studied population. The statistics used in quantitative measurements were the percentage value, maximum and minimum and (2) Analytical statistics with the exploratory factors analysis (EFA) was used to classify the variables or decrease the variables. After that, the survey elements were analyzed to confirm that the variables belonged to the actual theoretical study group as well as testing the relationship between the variables and the hypothesis according to the conceptual framework and the confirmation analysis (Confirmatory Factor Analysis (CFA) to confirm the accuracy of the variables from the exploratory element analysis. At the end, the researcher chose to use the LISREL program of causal influence analysis to aid the research. In addition, in assessing the harmony of conceptual frameworks, structural equations with the Structural equation modeling (SEM.) with the overall empirical data, [2] proposed that the SEM. had the potential to analyze conceptual frameworks, structural equation modeling (SEM). There were many important types including (1) Measurement model (2) Path analysis model (3) Full SEM. model etc. Therefore, according to a study by [27], the root means square error of approximation (RMSEA) was less than 0.05. If there were a value of 0.08-0.10, it would estimate that the conceptual framework would be appropriate, (2) the relative square value (x^2/df) should be less than 5 (3) comparative fit Index (CFI) value should be 0.90 or more.

IV. RESEARCH RESULTS

The food industry group consisted of 41 locations for canned and processed seafood (28.2%), 27 locations for canned and processed fruit i(18.6%) and 10 locations for canned and processed vegetables (6.9%), 14 locations for meat-based and processed industries (9.7%) and 8 locations for animal feeds (5.5%), 9 locations for semi-prepared foods / sauces (6.2%), cereal foods / beverages , 12 locations for rice industries (8.3%), 4 locations for sugar products (2.8%) and 4 locations for beverage industries (2.8%).

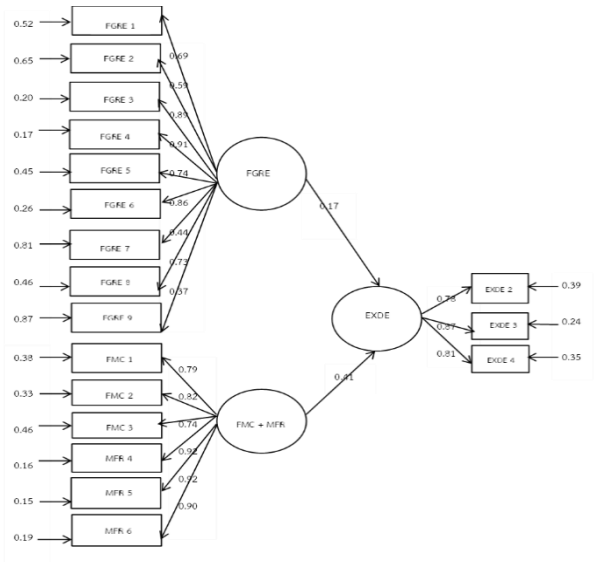
When considering the size of the factories according to [18], they were classified into three levels: small, medium and large, so the factories that were smaller, with less than 100 workers, were found in this study in a number of 50 locations (34.5%). The medium-sized factory employed between 101 and 499 people (31%) and from this study, 50 locations (34.5%) were large factories with 500 employees or more. In other words, a small factory and large sizes had the same number of factories.

In terms of personal characteristics, it was found that the study sample had the average age around 37.8 years old. The majority of people in the group graduated with bachelor's degree (57.2 percent), had traveled abroad on average 1-2 times per year (61.4 percent). It also found that up to 20 people who could speak other foreign language which were Japanese or Chinese except English (13.8%) and had the experience in the exports between 1-5 years were (21.4%).

The results of the exploratory factor analysis (EFA) of Foreign Markets Commission (FMC) consisted of 9 questions. It was found that with a minimum element weight of 0.641 and a maximum of 0.899, all with an element weight of more than 0.50 of all data variations could be explained around 67.920 percent.

Analysis of the survey elements of the Foreign Government-Related Entities (FGRE) and the Muslim Consumption Principles (MFR) found that the program incorporated the two variables into one component, measured by 6 questions. The lowest element weighted at 0.806 and the highest element weighted at 0.923. All questions had element weight greater than 0.50 and could explain the variation in the data at 77.036%.

After the survey component analysis was performed, a Confirmatory Factor Analysis (CFA) was performed. The results of the Confirmatory Factor Analysis of the Foreign Markets Commission (FMC) found that the 9 elementary measurement questions had more t-test scores or approached 2. The lowest t-test valued at 4.57 and the highest t-test valued at 13.88. The results of the verification for the harmony of the conceptual framework were x^2= 18.53, df = 20, P-value = 0.552 and RMSEA = 0.000. It can be analyzed that the conceptual framework was very consistent.



Fit index: x^2 =133.60, df=114, x^2/df=1.17, P-value=0.101, NFI = 0.96, CFI = 0.95, GFI = 0.91, IFI = 0.99, and RMSEA=0.035

Figure 1 Conceptual framework analysis model, structural equation

The results of construct reliability (ρ_c) analysis of the overseas market situation (FMC), foreign government regulations (FGRE) and Muslim consumption principles (MFR), export capacity (EXDE), were at 0.890, 0.940 and 0.673 respectively and the average variance extracted: : (ρ_v) were at 0.990, 0.997, and 0.719, respectively.

V. DISCUSSION

From the first objective of researching the foreign environmental elements affecting the export capability, it could be concluded that all elements have element weight greater than 0.50, described as the component weight of that variable. When studying survey elements , It was also found that the value of weight, the composition of the situation of the overseas market, and the government regulations abroad and the principle of consumption of all Muslims had an element weight more than 0.50, explaining that every question was an element of such a passive variable. When considering the composition of the situation of the overseas market , It was found that Question item 3, the size of the overseas market had an elemental weight at 0.91 in consistency with a study by [24] found that the size of the market was clearly correlated with its export capabilities. That was to say, companies in the United States took into account the size of the market and took it very seriously because it helped to anticipate further export planning in the future, as well as the profits to be earned. It also corresponded to a study by [26] found that marketing and foreign trade had an impact on the economy through both exports and imports. The exports were considered to support national income and economy, while the imports were generally considered the exit from the economy. In literature, it was generally argued that the exports had a direct positive and indirect impact on the economy while the imports had a direct impact on national income. In addition, the relationship between marketing for the exports - imports and economic growth was one of the most common among economists: the exports had a positive effect on economic growth [27]. In addition, It also provided market opportunities further. In terms of foreign government regulations and Muslim consumption principles, when considering the analysis of confirmation elements, it was found that question item 4, the rules for consumption according to Islamic principles, had the highest element weight of 0.92 in correspondence to the study of [6], proposing that the reliability in obtaining food certification

affected food consumption according to Islamic principles Including family and reference group which resulted in increasing religious consumption. Therefore, the entrepreneurs had to produce food according to the strict standards as well. Furthermore, in the 21stcentury there have been many efforts to create organizations. For example, the Muslim consumer group has used the H-MCG symbol for Halal certification which has given the Muslims evidence that ingredients and methods of production have been examined, tested and announced including being licensed by a certification body. It also provided authentication and permission for companies to export their products to the Middle East and Southeast Asian countries. [17]

For the second objective to analyze the causal influence between the foreign environmental elements on the export capability. The results of the study concluded that the path of influence between the situation of the overseas markets to the export capacity was statistically significant ($\beta = 0.17$, t-test = 1.98), consistent with the [14] reported the results of a study in Greece that the situation of the overseas market had influenced export capability. If such an environment did not receive the attention from the exporter, it would create a barrier to export and bring an obstacle since the aforementioned factors were factors related to the economic, political and social conditions, etc. If there was an uncertain condition in a foreign country, it would cause the exports to the overseas market to slow down. It was also in line with [11].

VI. CONCLUSION

Concluded that three elements of a particular external environment had Influences related to export activities, including real changes in production of products, technology with the product itself, businesses that compete in a high industry and marketing strategy and operations. Therefore, many companies needed to change their strategies to keep up with changing customer demands. Concentrationwas defined as expanding the path of influence between foreign government regulations and Muslim consumption principles significantly influencing export capacity ($\beta = 0.41$, $t = 4.26$) in line with [16] found that overseas government regulations and Muslim consumption principles , especially high or overspriced import tariffs could cause export problems, as a study in the Netherlands [27], 123 export companies in the United States [22] and Finland [21] found that overseas laws affeted exports. Therefore, exporters had to pay attention to the rules for export, including the principle of Muslim consumption. Nowadays, it is considered one of the standards that exporters must adhere to in order to obtain certification and to pass the basic regulations, thus allowing exporters to operate their exports more smoothly.

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The Development of Marketing Strategy of Community Enterprise in Sa Kaeo Province

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***Abstract*—** *This research had the following objectives: 1) To study the general characteristics and levels of importance of community enterprise in Sa Kaeo Province 2) To study components for community enterprise development 3) To develop marketing strategies for community enterprise and 4) To evaluate marketing strategies for community enterprise. The target population was 337 community enterprise's entrepreneurs in Sa Kaeo Province. Composition analysis was used to group the variables and test for accuracy and conduct a qualitative study to analyze and evaluate SWOT and then developed a marketing strategy including evaluating the marketing strategy in the next step. The findings were as follows: The general characterization of the surveyed community enterprises showed that the total 337 respondents, with the majority of respondents being female. Most of the respondents were aged 31-35 years and had an education level lower than a bachelor's degree. It was found that the majority of respondents had 5-10 years of experience in community enterprise entrepreneurship. Among the total of the samples, most respondents had the type of product or service which showed the largest number of fabric products. For the results of the analysis of the level of importance from the opinions of the community enterprise entrepreneurs in Sa Kaeo Province, it was found that community enterprise entrepreneurs had opinions on marketing mix factors at a high level overall Including products and services, price, service location, distribution channel, promotion, personal marketing, physical aspects and processes. The results of the synthesis of the development of community enterprise marketing strategies in Sa Kaeo Province. A proactive strategy was to create a unique product. A modified strategy was to increase distribution channels. Preventive strategies included promoting education and passive strategies such as relationship building.*

Index Terms— ***Community Enterprise, Marketing Strategy Development***

I. INTRODUCTION

Community enterprise which play an important role in the development of rural areas can fill the gap between the state and the market to be driven. The community enterprise is an opportunity for community development for the community to understand and able to discover one's own potential as well as local capital. There is an opportunity to develop capacity in the management of existing resources and capital, create a stronger community economy and build confidence among the people in the community to take pride in their own roots in local ancestors in the wisdom that has been passed down for a long time. Community enterprises is a truly new direction of development that will help the community and the country grows steadily. [10]

Furthermore, a [19] study found that enterprises in countries such as Canada, Germany, Britain and the United States had a greater impact on GDP by more than 5 percent and helped promote more than 10 percent of the workforce. In Spain, it was found that community enterprises generated more than 20 percent of the jobs and generated more than 10 billion euros in annual revenue. If you consider Asian countries such as South Korea found that community enterprises had an impact on GDP. more than 3 percent, including emerging and legacy community enterprises. For Thailand, it was found that community enterprise was considered as part of supporting the country's economy and could generate an annual income of more than 25.5 billion baht from the combination of more than 8.5 thousand enterprise groups with more than 1.4 million members by the Department of Agricultural Extension. The goal was to

promote the potential of community enterprises to develop products and services; for example, Doi Tung Coffee Shop operated a social enterprise with an income of more than 400 million baht per year and was able to employ more than 1,200 hill tribes without fundraising or even at Ban Phaeo Hospital in Samut Songkhram was transformed into a 300-bed hospital, serving more than 700,000 patients a year without receiving government funding. [1]

[15] and [11] found that the problems in the operation of community enterprise groups in general, there were still problems in market management including product and service management processes. This might be because some of the community enterprise groups had reunited and therefore lacked a supportive network connection and did not received support from the relevant authorities including finance, materials, equipment, modern technology knowledge. Also, the lack of publicity to promote the market, including the group, did not keep track of the market demand and the lack of protection against operational errors, thus causing problems, especially in marketing management, in determining distribution / service sources / target customers as well as monitoring the demand of target customers in a high level of operation. Due to the lack of knowledge and marketing expertise in the group, some groups produced insufficient products to sell outside the community. Sa Kaeo Province has 203 community enterprises that have been certified for the quality of community products and found that community enterprises had some problems such as brands that emphasized the uniqueness of the product including packaging with distinctive features to attract consumer including pricing that was too expensive, etc. [8] and [3]. Therefore, the researcher is interested in studying the marketing strategies of community enterprises to create a model standard for community product development.

II. RESEARCH OBJECTIVES

1. To study the general characteristics and levels of importance of community enterprises. Sa Kaeo Province
2. To study components for community enterprise development
3. To develop marketing strategies for community enterprises
4. To evaluate marketing strategies for community enterprises

III. THEORY AND RESEARCH

Theory

SWOT's key principle is that it is analyzed by surveying two aspects of the situation: internal and external conditions; therefore, SWOT analysis is called situation analysis, which is an analysis of strengths and weaknesses, to know ourselves (know us), know the environment (know him), and analyze opportunities and obstacles. Analyzing external and in-house factors can help organization executives identify changes that occur outside the organization, including what has already occurred and future trends, as well as the impact of these changes on business organizations and the strengths, weaknesses, and capabilities that organizations have. This information will be very useful in formulating a vision as well as appropriate corporate strategy and implementation.

Marketing mix theory is classified as part of the marketing strategy for marketing that service. In addition to the general merchandise marketing mix that consists of 4'Ps, namely Product and Service (Price), Property and Distribution Channel (Place), and Promotion (Promotion), the marketing mix, there are also three additional components in the service market as follows: employees, service processes and physical characteristics. These fundamental factors can be controlled, adjusted, modified and focused on meeting the needs of customers [14].

Related Research

According to a study by [2], marketing potential development guidelines for product paper products should focus on model development. The patterns should be unique and, importantly, should focus on branding. The price should be set according to the value perceived by consumers to distribute products to target audiences and marketing promotions. The focus should be on public relations through the media to be more inclusive in order for the target audience to be interested and encourage demand for purchases.

Moreover, the research of [6] found that 1. Consumer satisfaction with OTOP products found that consumers were satisfied with the products the most. Distribution channel price and promotion aspects, respectively. 2. The current situation of OTOP products was found that (1) the product aspect which the products produced to the market had a traditional pattern. (2) The price was found that the silk products had a high price. (3) the distribution locations showed that products were sold at various exhibitions and online sales, and (4) sales promotion was found that there were advertisements ,using pamphlets or brochures; 3. OTOP product development guidelines found that (1) product aspects had to develop the designs to be beautiful and modern, reflecting the history of each locality including

producing beautiful packaging design produced into other products apart from clothing and used innovation in manufacturing to reduce the heat in wearing (2) the price aspect should not be too high (3) the place expanded the market to various distribution sources and promote online distribution and (4) promotion aspect could use the purchase amount of OTOP products as a tax deduction.

The results of the research on marketing mix (7Ps) of [13] Most of the respondents were female than males, aged 31-40 years, had a single status, occupation of private company employees and had an average monthly income level 10,001 - 20,000 baht per month. The research result showed that the demographic factors affecting population decision making for buying OTOP Product, Pak Thongchai silk in Nakhon Ratchasima province were as follows: gender, age, occupation status and average monthly income. As for the marketing mix that influenced the decision to buy OTOP products, Pak Thongchai silk of the population in Nakhon Ratchasima were as follows: 1) product factor 2) price factor 3) distribution channel factor 4) Marketing Promotion Factor 5) Personal Factor 6) Process Factor and 7) Physical Characteristics. There were only 2 factors which was the product factor and marketing promotion aspects affecting the decision to buy OTOP products, Pak Thong Chai silk.

This is consistent with the results of [1] study of marketing mix factors (7Ps) affecting decision-making on a pharmaceutical product selection. Cosmetics from Centella Asiatica extract of consumers. Product factors (Product). Consumers made choices to buy a cosmetic product from Centella Asiatica extract as it was safe to use at the highest level. Price factor (Price) Consumers decided to buy cosmetic products from Centella Asiatica extract as the price of the product was reasonable with the quality distribution channel factors (Place). Consumers chose distribution channels that existed in most department stores or supermarkets. Regarding the marketing factors (Promotion), consumers decided to buy cosmetic products from Centella Asiatica extract with advertising as well as promoting it to be known on social media such as Facebook etc. Regarding the factors of employees service providers (People), consumers decided to buy cosmetic products from Centella asiatica extract that employees could provide accurate product information. Regarding the physical evidence and presentation factors, consumers decided to buy a cosmetic product from Centella Asiatica extract with credibility. Regarding process factors, consumers decided to buy a medical product from Centella asiatica extract that focused on delivering products with accuracy and precision. Regarding the purchase decision, consumers chose to buy cosmetic products with Centella Asiatica extract that used to apply it regularly as the first thing.

Research method

In this research, the researcher has established research regulations according to the research objectives, consisting of population, samples, studied variables, tools used to collect information, research tools instrument for quality testing, data collection and statistics used in data analysis. The details are described as follows: The population in this study was community enterprise entrepreneurs from the industrial office in Sa Kaeo Province. The total of 337 community enterprises were sampled with the certification of community product quality in Sa Kaeo Province [13] as of June 5, 2020. Tools used to collect research data, researchers were classified by research method as follows: 1) Quantitative research by questionnaire covering definitions of all studied variables; and 2) Qualitative approach using a semi-structured interview.

IV. RESEARCH RESULTS

The results of the data analysis showed that the total number of respondents was 337. Most of the respondents were female in the number of 192 people, representing 57.00 percent. The number of 60 people aged 31-35, representing 17.80 percent. The number of 201 people got married, accounting for 59.60 percent, had the education level lower than the bachelor's degree with the number of 242 people, or 71.80 percent. The number of 238 people got 5 - 10 years of community enterprise entrepreneurship experience, or 70.60%.

When analyzing the level of opinions about / importance of marketing mix in 7 aspects, the entrepreneurs in the community enterprises had opinions on marketing mix factors , product and service, price, service location and distribution channel Marketing promotion, personal marketing, physical characteristics, process aspect and marketing performance. The overall was at a high level.

When analyzing the elements, it was found that the in terms of products and services, your business has many types of products to choose from (PROD1) was the factor with the highest composition weight, price component, your business was inexpensive compared to other brands (PRIC4). With the highest element weight, property component and distribution channel, found that your business had a convenient location to purchase products (PLAC1) was the factor with the highest element weight value. The marketing found that your business had public relations with other agencies (PROM4) was the factor that had the most element weight. Personnel elements found that your business had employees who provided services in a polite manner, good human relations (PEOP2) was the most elemental weight factor. In terms of physical characteristics,

it was found that your business kept clean all the time (PHYS5) was the most elemental factor weights. In terms of the process, it was found that your business had provided a complete range of facilities and creating satisfaction for customers (PROC8) was the factor with the highest element weight. All of which were called Marketing mix factor. The data from this table could explain the variance of all data as 86.28%. The results of the SWOT analysis can be shown in Table 1.

Table 1: SWOT Analysis

(Strengths)		**(Weaknesses)**	
1.	Most of the community enterprise members were people in the community.	1.	Marketing channels have not yet been thorough, mainly because of the community sales.
2.	Had their own storefront. It was done at the group	2.	Enterprises had no direct marketing supervision.
3.	The products were sufficient to meet the needs of customers	3.	Packaging was not outstanding. Most products were unbranded.
4.	There were enough labor and personnel for production	4.	Lack of effective marketing knowledge
5.	Flexible management	5.	Lack of product development and packaging
6.	There were equipment and tools just for production	6.	Lack of management knowledge
7.	Workers had the skills and expertise in the production.	7.	Most of the elderly are inconvenient to use technology.
		8.	There is a shortage of working capital.
		9.	Members do not understand the business.
(Opportunity)		**(Threats)**	
1.	Consumers want unique products	1.	Product diversification is not yet known consumer
2.	Policy to promote job creation and income generation for rural people	2.	Consumers do not consume the product or products that are not branded
3.	Advances in technology help increase marketing channels such as communication system using Line, Facebook, etc.	3.	Government support does not meet demand and inadequate marketing promotion.
4.	The government has a policy to promote community enterprises in the area to be successful.	4.	Lack of main department in charge of marketing.
5.	Policy to promote job creation and income generation for rural people.	5.	Community enterprises do not have access to funding due to the lack of strength in the group.

The results of evaluation of the development of marketing strategies of community enterprises in Sa Kaeo Province Experts have made recommendations on strategies as follows:

1. A proactive strategy is to develop a strategy for creating a unique product that must develop a product model including community enterprise products to be different and varied, such as traditional woven fabrics, while maintaining local wisdom that is unique to their natives. The unforgettable thing is the quality of the yarn, quality of the weaver, or whether it is craftsmanship, the attention of the weaver and the weaving skills, which will affect the prominence and nuances of the product, and the packaging should be branded to indicate where the product is from to attract customers, etc.

2. The corrective/improved strategy is to increase distribution channels, which requires the development of marketing potential of community enterprises by using technologies such as line, Facebook or online sales, which are currently trending. Online trading is an option for buyers and consumers for a choice. Adding a sales channel is another way to sell by consignment to neighboring provinces and cooperate with the group of enterprises to issue products according to the event and annual event for public relations to increase product sales.

3. The preventive strategy is the development of education promotion strategies. Skills must be promoted and local wisdom needs to be passed on to the new generation. The transfer of knowledge has to be done by older generations as the older generation has old knowledge and wisdom. Therefore, we should focus and encourage these older generations to see the importance to transfer knowledge of the heritage, culture and wisdom that exists in order not to disappear from the local community and to the community enterprise groups in Sa Kaeo Province to get a higher potential. We should have a support from agency and promote skills and knowledge about doing business in exporting the products of community enterprises. There is a link between enterprises by generosity for each other, for example, some members can weave the fabric and another group can sew. If the fabric is not enough, they will buy from another group that weaves the fabric for sale. This can generates revenue circulating within the group and there is a network at the district level, provincial level, in order to exchange knowledge in various matters and develop a new model.

4. Passive strategy is the development of relationship building strategies that must create a network with public and private distributors by cooperating to organize a trade show or a business meeting between entrepreneurs and enterprises as well as meetings between traders both within

the country and abroad to provide entrepreneurs to have the opportunity to jointly develop products or products for both domestic and foreign trade, and also to provide assistance services. Introducing your customers online is another way to build a positive customer relationship that adds value and makes the enterprise group a superiority over the competition, that is, giving advice. Often, customers will come back to buy products based on their experience with products and services because what the customer wants is after-sales service and good after-sales service will result in repeat purchases. Also, the word of mouth can increases sales from new customers, etc.

VI. DISCUSSION

The first objective was "to study the general characteristics and levels of importance of community enterprises in Sa Kaeo Province". The study found that the marketing mix factors, overall was at a high level as well as the price factor, marketing promotion factor, personal and process factors at a very high level In line with the research of [4]), data on satisfaction levels with marketing mix factors (7Ps) were as follows: product, price, location, promotion, marketing, process, personnel, and physical characteristics of customers using the restaurant service and beverage at Wang Lang Community Bangkok. The customers who used the service had a high level of product satisfaction (Mean = 3.78), followed by price (Mean = 3.42), location (Mean = 3.42), personnel (Mean = 3.37), process (Mean = 3.28) Physical Characteristics (Mean = 3.07) and Marketing Promotion (Mean = 3.00) respectively.

The second objective was "to study the components of community enterprise development". Regarding the product and service components, price elements, property and distribution channel components, element of promotion and personnel component, when studying the composition Physical characteristics and composition Process aspect, the total element weight value was the highest. In line with the study of [7] it analyzed the marketing components of community enterprises in Kamphaeng Phet Province and it was found that marketing factors affected the purchasing of products of community enterprises in Kamphaeng Phet Province. It could be organized into four elements: promotion, product marketing, price and distribution channel. In addition, local wisdom and product exhibits and presentations were at very high level.

The third objective was "to develop marketing strategies for community enterprises" The results of a SWOT analysis revealed that the strength of community enterprises was members, and most community enterprises were people in the community who had their own storefront, made at the group. The major weaknesses were described that marketing channels has not been thorough yet. Most distribution in the community enterprise opportunities reflected through enterprise leaders. It could be seen that community enterprises had seen opportunities only on issues that were supported by government agencies only. Also, the obstacles faced by most community enterprises were that government agencies did not meet their needs. In terms of packaging and equipment, in line with the study of [5], it was found that the strength of community enterprises in the Songkhla lake area was that there were local raw materials for use in production. The main weakness was in the marketing aspect. In terms of opportunity, it was found that supports from government agencies involved in community enterprise projects and the popularity of the product produced by skilled labor. However, the main obstacle was the lack of marketing support or a place to sell products from the group, the lack of savings to invest and expand and industrial product standards etc.

The fourth objective was "to assess marketing strategies for community enterprises" The results of the research showed that 1.Proactive strategy (SO) was to develop a strategy for building a unique product that had to develop a product model for community enterprise products to be different and diverse, such as local woven fabrics by still maintaining the local wisdom. 2.Strategic Correction / Improvement (WO) was to increase distribution channels. There had to be a development of the marketing potential of community enterprises by bringing technology to help such as using Line, Facebook or online sales. 3. Preventive strategy (ST) was the development of strategies to promote knowledge. Skills had to be promoted and local wisdom had to passed on to the new generation. The transfer of knowledge had to be done by older generations as the older generation had old knowledge and wisdom, and 4. Passive strategy (WT) was the area of developing relationship building strategies that had to create a network with public and private distributors by cooperating to organize a trade show or a business meeting between entrepreneurs and enterprises In line with the research results of the [12] found that the Effectiveness of community enterprises in the area of Maha Sarakham Province consisted of (1) proactive strategy by developing production potential and raising the level of product quality standards to the national and international level as well as expand distribution channels, expand network development Businesses to promote product distribution. (2) Development strategy guidelines by strengthening community enterprise management capacity supports budget and personnel in the development of community enterprises including establishing integrated cooperation with relevant agencies (3) A set-up strategy

approach by developing the potential of community enterprise workers, improving the quality of community enterprise products, raising production standards, and (4) a flippant strategy approach by developing a strong network of community enterprises, researching innovations to improve product quality, and building cooperation between the public and private sectors in promoting community enterprises to be strong and self-reliant.

VI. SUGGESTIONS

Suggestions for policy

1. Regarding the guidelines for policy management, it should build a network that will help create the strength of the people in the community. Therefore, those involved should not be avoided to study such factors. It may apply for cooperation to local educational institutions such as universities or Rajabhat universities, or between different communities, as well as relying on local wisdom to achieve knowledge and understanding and to be able to rely on oneself and find the uniqueness of the product in their own community.

2. Pushing the values and the policy of using the country's community products Therefore, in order to pack such a guideline, products must be created to meet the standard of quality that is acceptable to the market.

Market development proposals

1.Continue to develop products to meet international standards. Including design, usage, packaging, distribution channels and pricing is reasonable Including creating value or the history of the product to create value and credibility.

2. Develop modern marketing channels through online marketing materials and create content in both Thai and English.

3. Develop personnel of the elderly in the community to have knowledge and understanding of online marketing and product development to be up-to-date.

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Applied Information Technology in Community Economy: A Case Study of the Financial Institution of the Community, Chiangmai Province

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Abstract: ***This aim of this research was to 1) Study the operational process of the community financial institution, 2) Study the condition of using information technology in the community financial institutions, 3) Develop guidelines for the application of information technology, in the development of the community financial institution. This research was carried out by using a joint combination of quantitative samples, which includes 240 members of the community financial institution and a qualitative sample, which includes 30 people from the administrative and staff of the community institution. In terms of data collection, this research collected their data with questionnaires, interviews, and observations and group discussion. The data were analyzed to find the frequency, percentage, text synthesis and content analysis. The result of this researched showed that: 1.) The result of data analysis on the operational process of the community financial institution was divided into 4 parts such as; 1) savings - deposit 2) loan and lending 3) Management of compensation and benefits 4) Management of the community financial institutions. 2.) The condition of using information technology in the community financial institution, both hardware, and software were been supported by the bank in charge, but still not enough in terms of usage. Some staff still lack adequate knowledge, and skill for information technology. 3.) Develop guidelines for the application of information technology for the development of community financial institutions. This was summarized into 3 issues: 1) In terms of hardware, they should be effective, efficient and suitable for work, they should also be sufficient for work. 2) In terms of software, they should be up to date developed software, responds to all segment of work levels. 3) In terms of personnel, the staffs should be encouraged and developed to gain more continuous knowledge and ready for work***

Keywords: Information Technology, Community Economy, Financial Institution

1. INTRODUCTION

Based on the situation of Thailand experiencing economic problems, which has a result affected the general population in rural and urban areas. The government, therefore, has a concept to stimulate and boost the economy from the grassroots level, using the Village and Urban Community Funds Policy in 2001. The purpose of this policy was to focus on solving the poverty-related problem of the people, by establishing a village community fund of 1 million baht each to be a source of flowing capital in the community. This allows the people to invest in their career, create jobs, generate income, reduce expenses, alleviate emergencies and urgent needs. This policy serves as a development tool in building "People" and "learning", which results to strengthen the community. [1] This was a way of boosting and stimulating the economy right from the grassroots foundations of Thailand, including the strengthening of potentials and economic strength of both the economy and society of the people in the village and the city.

Community Financial Institutions are a local organization that was raised from the Village and Urban Community Fund (NBTC) with objectives and benefits of helping villagers to have their financial organization at the community level. As a result, they can access funding sources that will help them start a business carrier at a more convenient level. They are also involved in taking care of properties. Which include self-supervised financial services and transactions. However, government banks have expanded their services by linking various businesses such as accepting payments for services to generate income and contribute to

the welfare fund of community financial institutions. This will help attract community members to turn to community financial institutions. It also encourages committees and community members to develop management and development ideas aimed at creating a learning process that is formatted, open, ethical, and caring for collaborative learning. There is a sustainable and continuous network of funds at all levels. However, community financial institutions under the supervision of government bank can be considered as building a community of financial institution at the national grassroots foundation level, and it's also a path that leads to success in tackling poverty. It can help in improving the economy as a whole and improving the livelihood of farmers as well. The existence of Community Financial Institutions will provide farmers with easy and accessible funding sources. It is convenient for various transactions as it is located in the community. On the other hand, it also helps in educating the members of the community. [2].

Based on the policy of establishing village and urban community fund, currently, the government has a policy of continuing to develop a strong village and urban community fund to become community financial institution so it will help provide financial services that can meet the needs of people in the community. Who lack access to funding sources and are unable to use financial services of general financial institutions following the objectives, criteria and standards set by the National Village and Urban Community Fund Committee. Based on current data collection, it found that there are both local and urban funds that can be established as community financial institutions. Besides, there are other villages and urban funds that are unable to develop and establish community financial institutions. [3]

The remainder of the dividend will be used to manage community welfare, which is a benefit that falls to the entire community. However, from the implementation of the community financial institution policy, it was found that there were still many operational problems which reflected many of the challenges, such as leadership skills, knowledge, the readiness of the facility for the operation, readiness of equipment and materials for operation, lack of publicity, consistency and participation in board meetings, lack of help from the Office of the Village and Urban Community Fund, lack of staff to volunteer, lack of continuity in the accounting system Including the lack of monitoring and evaluation of the performance of community financial institutions. Besides, community financial institutions are facing insufficient working flow capital problems. The deposit and withdrawal system are not up to standard, the regulations related to financial institutions are not clear and they lack guidance on the management and operations from central government staff [4] The Committee board needs to explicitly clarify their policies and training programs to educate the members to achieve conformity, resulting in the members' satisfaction and cooperation in participating with the financial institution community. Also, the committee board should improve operational methods, increase communication channels, and provide services to be up to date and in line with member needs. To enable the community's financial institutions, succeed in operation according to its goals. [5]

Each financial institution of the community has different policies and services in terms of deposits and loans. Therefore, to cover all the development of financial management systems for the financial institutions of the community of all financial institutions, become more challenging and interesting, Thus, it is important to consider the hardware and software that must always be up-to-date technology, as well as the level of expertise for the staff of each financial institution members with different limitations. Hence, if the financial institution of the community has an information system network to assist in their work, it will create a chance to help facilitate convenience for the committee. There will be operational reports, such as member information reports, savings information, loans information, utility bill payment information, and financial statements, both of which are statements of financial position, profit and loss statements, to analyze and formulate policies for the management financial institutions of the community. This will also allow the staff of community financial institution to have software they will use in facilitating the subscription system of the members, deposit system, credit system, and utility payment system to be better. [6]

According to the Data from the Department of National Village and Urban Community Fund 2001, Chiang Mai has 2,122 Village and Urban Community Funds, 66 were developed into Community Financial Institutions, therefore, there are still many villages and urban funds, that are looking to develop into community financial institutions. [7] Therefore, information technology systems are essential to the management of community finance. Nowadays, some various organizations and institutions use information and communication technology in a variety of ways, to help in knowledge management. Most of which are in the form of a website, however, the creators must possess adequate knowledge and expertise in creating a website programme and must also possess deep computer knowledge. Therefore, Website Technology becomes a limitation for agencies or small organizations, that do not have staff with sufficient knowledge, and there is no budget to hire experts to create a website to manage the organization's data. This result in ineffective management of small organizations.

Therefore, it is necessary to develop some guidelines for the application of information technology to develop community financial institutions and in solving community economic problems, one important factor to be considered is savings, loan. To help carry out the community economy in the field of production, marketing, networking and dissemination of information to the wider society, from the said problem and importance, this makes the research team pick up interest in studying the application of information technology in community economic development. Case Study of Community Financial Institution, Chiang Mai Province. To make them useful information data used in the planning of the development of community financial institutions. As well as improving the efficiency and effectiveness of the community financial institutions, be of benefit to the organization, community, society, and members, who are the key to sustainable development.

2. Research Objectives

1. To study the operational process of the community financial institution
2. To study the condition of using information technology in the community financial institutions
3 Develop guidelines for the application of information technology, in the development of the community financial institution.

3. Research Methods

This research was carried out using a Mixed-Method Research Methodology

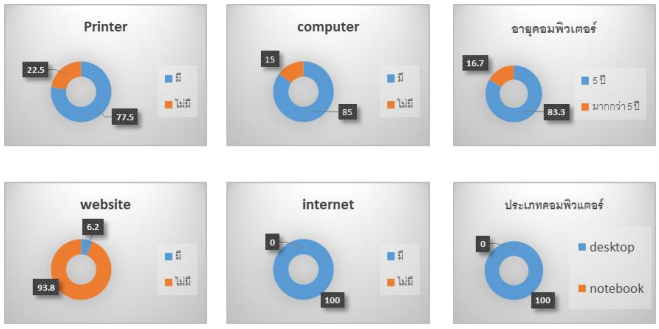
The quantitative research: A sample survey was done, and it consists of administrators and staff of community financial institution in San Sai District, Mae Rim District, Hang Dong District, San Pa Tong District, Mae Taeng District, Saraphi District and Doi Saket District. Chiang Mai, a total of 240 people out of a total of 8,928 members. The sample was randomized by quota random method. The sample size was calculated using the formula of Taro Yamane. Data were collected with a questionnaire; it had confidence at 0.845. The data were analyzed using a software package for social science research. The descriptive statistics used were frequency, percentage, mean and standard deviation. The qualitative research was carried through a focus group from 30 key informants.

4. Research results

Objectives 1 : Information on the Operational Process of Community Financial Institutions: According to the study and document related data, on studying the operational process of Community Financial Institution, it consists of the following (1) Savings – Deposit (2) loan and lending 3) Management of compensation and benefits 4) Management of the community financial institutions.

Objective 2 : The condition of using information technology in the community financial institution. According to the result of the study, it showed that,

2.1. The condition of using information technology in the community financial institution showed that most of the computer's lifespan is under 5 years, accounting for 83.3%. Everyone using it, have internet accounting for 100% without a website, accounting for 93.8 per cent. Most of them use a personal computer, accounting for 100%. In terms of the computer's performance, most of them are not capable enough accounting for 15% and the number of printers is enough.



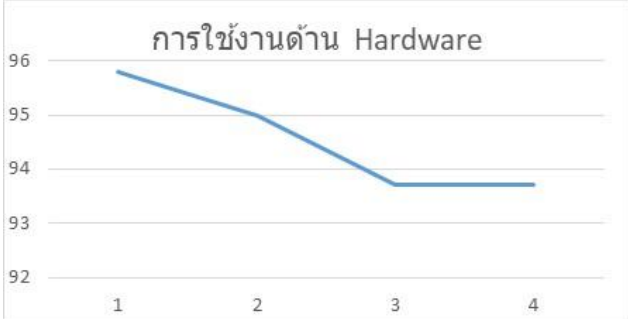
2.2. Information on how to use the application programs in community financial institutions, according to the result of the research, it found that the community financial institutions used varieties of application programs. The most used programs were financial -accounting system, followed by **Microsoft Word** and **Microsoft Excel.**

Program	Mean ($\bar{x}$)	Standard deviation (SD)	Variance
Financial-Accounting System	4.8	0.922	The Most Used
Microsoft Word	3.8	0.938	Much Used
Microsoft Excel	3.5	0.921	Much Used
Total	4.03	0.927	Much Used

Table 3: Shows Information on the Program Used by Community Financial Institutions

2.3. Hardware operability information: The result of the research showed that most of the Sub-district Administrative Organization were unable to perform hardware tasks. check/repair computers at 95.8 %. Installing operating system (OS) 95.0% and Installing peripherals such as

printers, scanner, including the installation of programs to be used for work accounted for 93.7%



2.4. Problems and Barriers Including Suggestions for Information Technology

1. In terms of Hardware 1) The internet system is slow, causes the workflow to be delayed as well. 2) The computer is efficient, but It is inconsistent with the capability of the new programs. 3) There is no clear information technology plan. 4) In terms of the maintenance budget, some departments are not defined in the action plan. 5) There are an insufficient number of computers 6) There are inadequate uninterruptible power supplies (UPS) posing some risk in terms of saving data and the use of other various devices

2. In terms of Software 1) The software used do not have legitimate user rights, such as Microsoft office 2) Used software from support agencies such as banks, result in some limitations in some areas the that Community financial institutions needed 3) lack of budget for software development 4) lack of cooperation among community financial institutions

3. In terms of Personnel 1) They lack some knowledge in terms of information technology 2) No plans to develop personnel in information technology 3) Insufficient IT staff

Objective 3 : Guidelines for the application of information technology, in the development of the community financial institution.

3.1 In terms of Hardware: They should prepare a database of all information technology equipment, do some data surveys and make purchasing plans for adequate information technology equipment for operation: such as computers, printers, uninterruptible power supplies, scanners, and network equipment, create a repair and maintenance plans, such as machine checks, virus removal and cleaning.

3.2 In terms of Software: They should develop a website for dissemination of information to members and make use of them in the management of community financial institutions. They should have an information system that dispatches information through mobile phones, such as time to pay bills, outstanding invoices. They should develop a system to connect with other systems, such as the community economy, this will help in the usage of such data for consideration of loan to another agency or fund for the ability to invest. They should develop a monitoring system of fund usage according to the objectives of the loan. The software applications should be up to date and supports changes in all aspects

3.3 Personnel: There should be a continuous human resource development plan in information technology because most of the personnel have little competence in information technology, they should be able to manage knowledge in finance, accounting, and information technology areas. They should develop the personnel to have basic knowledge of finance, accounting, and information technology before taking the training in the use of community financial institutions management system, there should be enough personnel with full knowledge of finance, accounting, and information technology.

5. Discussion of Research Results

The use of information technology with community financial institution. There are many problems and obstacles from both hardware and software that are not up to date, resulting in slowdowns and rapid technology changes. This went following Khanchit Malaiwong et., al they said there is an insufficient budget for purchasing development and maintenance of computer because information technology is developing rapidly and continuously, [15] However, Lucas, Henry focused on wireless technology and modern technology [16]

Application programs in community financial institutions: This is a program that the bank had provided free of charge together with computer. The banks are responsible for training and they serve as a mentor, but there are limitations in the field of use, such as the ability of the staff in charge Community financial institution system concerning accounting and information systems. Most of them are people within the community, they are unfamiliar with the system. This result in error-prone operations. This went following Sunthorn Sakritthee that found out that the preparation of the data for information lack some hardware and software specialist. Administration and management does not have the correct system and the working system should be based on computer management [17]

Use of information technology: The personnel of the community financial have little knowledge, understanding and skills in information technology. Currently, information

technology has many roles in working. The usage of computers in financial management, accounting and various fields to be efficient, convenient and fast, which some personnel still lack some knowledge in Information technology, therefore lack of information technology knowledge is a barrier to modern operations according to Zorkoezy [18] and Wimon Eiyamplad [19], who found that community financial institutions still faced a shortage of knowledgeable personnel with the understanding of information technology. The personnel lack systematic training in Information technology policies. However, they should be established and given priority to the users, creators, controllers and technology beneficiaries.

6. Suggestions

The findings from this research should be utilized in 3 levels as follows:

1. Government policy: The government should develop the community financial institution system and develop the community economy systematically. Allow them to be strong towards self-management 2. Budget: The community financial institution should allocate enough budget for purchasing maintenance and repair of information technology and also the development of personnel 3. There should be a plan for the continuous development of the personnel knowledge in information technology.

Conclusion

Application of information technology in community economic development: Case studies of community financial institutions, Chiang Mai Province.

1.) The result of data analysis on the operational process of the community financial institution was divided into 4 parts such as; 1) savings-deposit 2) loan and lending 3) Management of compensation and benefits 4)Management of the community financial institutions. 2.) The condition of using information technology in the community financial institution, both hardware, and software were been supported by the bank in charge, but still not enough in terms of usage. Some staff still lack adequate knowledge, and skill for information technology. 3.) Develop guidelines for the application of information technology for the development of community financial institutions. This was summarized into 3 issues: 1) In terms of hardware, they should be effective, efficient and suitable for work, they should also be sufficient for work. 2) In terms of software, they should be up to date developed software, responds to all segment of work levels. 3) In terms of personnel, the staffs should be encouraged and developed to gain more continuous knowledge and ready for work

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The Scientific Buddhism to Improve Human's Well-Being

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Abstract-This academic article has the purposes to demonstrate and explain about Buddhism as religious of science and the application of science based on Buddhism to improve human's well-being. The authors studied and collected the data from Buddhist scriptures, texts, and related document about Buddhism and Science to improve human's well-being, and analyzed by content analysis. The interface between Buddhism and science is the major issue. Scientific method is the answers of natural questions starting from what we understand as the smallest object to largest one by using five steps. It could be summarized into two steps namely rational of mathematic and senses. For Buddhism, Buddhist Philosophy is also interested in two main problems of human namely the problems related to human being directly, or it may be related between human and other human. Buddhist philosophy asserts that it is our minds that contribute most significantly to our own suffering and that the mind can be deconstructed and reconstructed to give the individual a more stable sense of peace, happiness, and equanimity. Also, Buddhism can be seen to have relevance to the commonly defined dimensions of human's well-being. The four noble truths and the noble eightfold path relate well with sustainability led to well-being. The first and the second o of noble truth explain about causes of suffering and unsustainability whereas the third and the last of the four noble truth explain about the effect or the way of achieving well-being. Wellbeing is stressed in Buddhism supposed to be driven by ethical motivation that seeks to cause no harm to individual and group, to create no agitation in society.

Index Terms- Buddhism, Human, Scientific, Well-Being.

I.INTRODUCTION

Buddhism is a religion which does not believe in the existence of God or a supernatural creator. The Buddha himself was opposed to the discussion of such subjects. The Buddha in his last message advised his disciples to take refuge in own self. The Buddha in Kalama Sutra asked his disciples to have a rationalistic outlook and not to believe in anything without verification. Buddhism is not a religion in that sense, but it is a way of life. The true spirit of Buddhism is of rationalism and free thinking. That is influenced the intellectuals of the world. Buddhism is more a code of conduct than a religion. The Buddha has stated the Sila(Buddhist Precepts) on the basis of which people can live their life in peace and happiness. As long as man exists in this world the value of an honest and virtuous life cannot be diminished. Also, the Buddhist scriptures are filled with advice from the Buddha regarding environmental values and they are applicable to monastic and lay lifestyle. Buddhism is based on love and compassion, in other words with loving kindness. The Buddha asked his disciples to scatter all around for the good and happiness. In the present 21st century, the teachings of the Buddha still continue to inspire Buddhists and non -Buddhists in their effort to make the world a better place to live in. The increasing influence and relevance of Buddhism in its various forms in the global society of the 21st century have given rise to a vibrant and evolving movement, particularly in the West, loosely called Socially Engaged Buddhism or the

Fourth Yāna with its roots in traditional Buddhist countries like Sri Lanka and Thailand [1]. From a Buddhist perspective, the mind is the forerunner and source of everything in existence, and Buddhism is best described as an ethico-psychological system rather than a religion in the conventional sense of the word [2]. Buddhism has a special role to play in the modern world because unlike many other religious traditions, Buddhism uniquely propounds the concept of independence which accords closely with the fundamental notions of modern science. Buddhism can be termed of three main categories - philosophy, science and religion. The religious part involves principles and practices that are of concern to Buddhism alone, but the Buddhist philosophy of interdependence as well as the Buddha science of mind and human emotions are of great benefit to everyone[3]. As Buddhism becomes more influential in the West, many practitioners, academics and activists look to Buddhism for answers to two of the most urgent and crucial issues of our time to protect the planet and eradicatediscrimination.

Buddhism, environmentalism, the ecological movement and feminism have been the subject of much interdisciplinary work. Buddhist philosophy, ethics and its system of meditation have found common ground with the movements known as Eco-Buddhism and Deep Ecology with the core acknowledgement of the interrelatedness of all beings and their intrinsic value for the health and survival of the planet and all its inhabitants[4]. In general, Buddhism is a way of finding peace within oneself. It is a religion that helps the human beings to find the happiness and contentment.

II. The RELEVENCE OF BUDDHISM AND SCIENCE.

The interface between Buddhism and science is the major issue**.** Scientific method is the answers of natural questions starting from what we understand as the smallest object to largest one by using five steps. It could be summarized into two steps namely rational of mathematic and senses. For Buddhism, Buddhist Philosophy is also interested in two main problems of human namely the problems related to human being directly, or it may be related between human and other human. Buddhist philosophy asserts that it is our minds that contribute most significantly to our own suffering and that the mind can be deconstructed and reconstructed to give the individual a more stable sense of peace, happiness, and equanimity. Science and religion both seek the truth of things and life. While science reveals physical truth, Buddhism offers spiritual truth. Buddhism aims at resolving the problem of human existence. Science aims to increase our understanding on things. But now science also studies mental aspects of human life and meditation has increasingly gained interested in the modern science world. The highest purpose of Buddhist practice is to enlighten and end suffering. Although some may achieve it, but one needs to practice until perfect it to truly understand the essence of the path to enlightenment. Science has limits, and scientific theories are always changing. Change in knowledge is inevitable as new observations, new technology or applications of technology emerge. The Buddha's teaching of anatta, or no-self to illustrate the transitivity of identity, is still proven true globally. Some teachings even get clearer. The Buddha also said that all things depend on one another. The world lives in us, and we live in the world. Whatever affects one, affects all. Our negative change can have impacts like falling dominoes. Humanity's carelessness towards the environment will inevitably affect the human race. This is the foundation of Buddhism: the Law of Cause and Effect. The Buddha encouraged people to think and investigate the truth. You believe nothing until you have experienced it. Buddhism does not demand blind faith[5].

There are many other areas of study where similarities with Buddhism could be found. For instance, the congruence between modern philosophy and Buddhism is undoubtedly more profound than the interface between Buddhism and modern science because Buddhism, other than being a 'religion' in its common usage, is a philosophy in itself [6][7]. In scientific and technological developed global society, there are

many amenities, for easy living and pleasure , people are both physically and mentally not satisfied and do not have a feeling of security . When the mind is satisfied that the person is free of physical danger, the mind produces an experience of safety. It is obvious that research is an activity, and a human activity for that matter, and for that it is increasingly clear that many lessons could be drawn from Buddha's teachings for research and research methodology. For example,The Four Noble Truths (Dhammacakkappavattanasutta in Sutta-pitaka) constitute a framework for science, investigation and particularly problem solving: Dukkha as problem identification, Samudaya as causal investigation, Nirodha as possible or required solutions and Magga as recommendations or pathways for desired solutions. The other two methodological components identified and discussed in this investigation are the importance of independent observation (Kalamasutta) and dialectical causality or dependent origination/arising (Paticcasamuppada)[8]. Buddhism is a psycho-ethical tradition which is manifested mainly in two paths as a process of thought of gradual pacification (Pariyatti) and a way of practical application in life (Patipatti).

III. THE SCIENCTIFIC MEHOD OF BUDDHISM TO ENCHANCE HUMAN'S WELL-BEING.

Scientists are increasingly using Buddhist wisdom for insight into several research topics and to illuminate the human condition. When psychologists use Buddhist concepts in their work, for example, they find their patients are less inclined to exhibit prejudice against people outside their social and religious group. And scientists have used the harmonic principles built into Buddhist "singing" bowls to design more efficient solar panels. Both disciplines share an empirical approach. Buddhists are trained to be skeptics, and to only accept a proposition after examining evidence. The following words are attributed to the Buddha: just as a goldsmith would test his gold by burning, cutting, and rubbing it, so must you examine my words and accept them, not merely out of reverence for me[9].Buddhist philosophy asserts that it is our minds that contribute most significantly to our own suffering and that the mind can be deconstructed and reconstructed to give the individual a more stable sense of peace, happiness, and equanimity.

The Buddha found that our desire for pleasant experiences and our aversion to unpleasant experiences gives rise to suffering. Because there are so many factors in life that are out of our control, and because everything is constantly changing, trying to hold onto pleasant things and experiences while pushing away unpleasant ones makes us unhappy because it is a battle we cannot win. This habit of attachment and aversion is present from moment to moment, arising through our sense, including the thoughts in our minds. The Buddha found liberation from suffering by relinquishing his desires and aversions. He taught that such a state does not negate the existence of personal preferences; one still has likes and dislikes, but one's happiness is not dependent on them. Thought unfolds the nature of reality, eradicates the ignorance and resents admonition for visualization of truth face to face. The only problem is the suffering of mankind. The solution is the attainment of a state of bliss and the path is the tri-stepped way, passing from one point to another. It is Dukha (suffering); the latter is Nibbana (Nirvana) and the path, the Magga. Non-violence (ahimsa) is one of the main teachings of the Buddha. Nonviolent attitude towards all living beings, which is the first precept in Buddhism, is based upon the principle of mutual attraction and rightness common to all nature.

The interdependence of the mind and body and the impact of emotions and thoughts on health and well-being were well known to ancient Buddhists. Buddhism speaks of the power of the mind and how we could control many functions of our bodies with our minds. According to Buddhist thinking, when dealing with illness and health, the mind, emotions and body must be dealt with in an integrated manner. Buddhism is emphatic on the inseparable connection between the mind and body – the complex interactions that take place between thoughts, body, and the outside world. The World Health Organization defines well-being as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. The Buddhist understanding of well-being is similar with its emphasis on the balanced interaction between the mind and body as well as

between life and its environment. Illness tends to arise when this delicate equilibrium is upset.

Buddhist theory and practice aim to restore and strengthen this balance. In the East, Buddhism has impacted the field of health and medicine for many years. In Buddhist sutras and ancient Buddhist chronicles, there are countless references to and discussion on health and medicine, and how the mind and emotions affect ones behavior and ultimately ones' health. Buddhist spirituality is founded on loving-kindness and compassion towards all living beings. According to Buddhism, to be active and healthy, one needs to live a spiritual life. Spirituality with meditation as an essential element of daily life, has a direct impact on the overall health of people. Science and Buddhism really share is the goal of understanding the nature of reality. Science uses that scientific method and a lot of technology – it starts from the outside and probes the nature of reality. Buddhism uses the human mind, reformed through meditation, starting from the inside, looking at the same questions. While modern medicine tends to address the ailing part of the body in isolation from the rest, treating it alone, the Buddhist understanding of health sees disease as a reflection of the total somatic system, or life itself, and seeks to cure it through a fundamental reorientation of a person's life-style and outlook. Physical aspects of life are inseparable from the emotional, mental and spiritual aspects. The optimal condition of health is one achieved when mind and body are functioning well and interacting together as one. Central of the Buddhist approach to health and healing is its emphasis on spiritual strength and an overriding sense of purpose in life based on compassionate action for others. Although modern medical science has made great strides, it has not necessarily furthered the cause of human happiness.

The emergence of the holistic and psychosomatic movements testifies to the need for something deeper in understanding the human being.In recent years focused scientific studies have revealed the decisive influence of people's states of mind, emotions, attitudes and beliefs on how they get sick and how they stay well. Upsets or shocks to the mind such as divorce, death of a loved one, have direct bearing on the biochemistry of the immune system. Similarly, wear and tear on the mind such as boredom, self-obsession, sense of not being in control, alienation, wears down the physical systems of the body. For example, the study on Pioneer in Modern Scientific Research on Buddhist Meditation Dr. Herbert Benson, Professor of Medicine at Harvard Medical School was a pioneer in modern scientific research on meditation. He says that he gives a biological explanation of meditation, which has been practiced in the East for thousands of years. In the 1970's, he published "The Relaxation Response" where he showed how meditation could increase concentration and counteract the harmful effects of stress. He founded the Mind -Body Medical Institute and argued that meditators counteracted the stress-induced fight-or-flight response and achieved a calmer, happier state[10].

Dr. Richard Davidson, Director of the Laboratory for Affective Neuroscience at the University of Wisconsin at Madison is the founder of the Mind and Life Institute which is dedicated to creating a powerful working collaboration and research partnership between modern science and Buddhism – the world's two most powerful traditions for understanding the nature of reality and investigating the mind. Its purpose is firstly, to promote the creation of a contemplative, compassionate, and rigorous experimental and experiential science of the mind which could guide and inform medicine, neuroscience, psychology, education and human development. Secondly, to contribute to the epistemological revolution which is taking place through modern physics as well as philosophy, in order to extend our understanding of knowledge to one that integrates the diverse dimensions of our world. Buddhism has refined meditation methods in order to probe the nature of mind, using the mind itself as the instrument of investigation. Only in recent years, the scientists in fields such as psychology, cognitive science, neuroscience and medical science have begun to show interest in this vast field of Buddhist knowledge. Today, biobehavioral scientists in increasing numbers are extending their methods and expanding their conceptual frameworks realizing the complementary nature of the two approaches. Studies show that meditation is boosting the immune system and helps to reduce

stress. Ten million American adults practice meditation regularly, twice as many as a decade ago. Meditation classes are very popular among mainstream Americans. Meditation is being recommended by more and more physicians and other health-care professionals as a way to prevent, slow or at least control pain of chronic diseases like heart conditions, AIDS, cancer and infertility. Meditation techniques are helpful in reducing stress, promoting positive attitudes, decreasing symptoms and improving quality of life for persons with life-threatening illness, such as cancer and HIV/AIDS. In addition, meditation can prevent disease, such as cardiovascular disease by helping individuals change adverse lifestyle behaviors[11].

CONCLUSION:

Buddhism can be seen to have relevance to the commonly defined dimensions of sustainability and well-being. The four noble truths and the noble eightfold path connect well with sustainability and well-being . The first and the second o of noble truth explain about causes of suffering and unsustainability whereas the third and the last of the four noble truth explain about the effect or the way of achieving sustainability. The explanation of suffering and causes of suffering enable one to realized that unsustainability is cause through excessive greed or carving. An over reliance on economic growth, mentality can be endanger large scale production and exploitation of natural resources including non-renewable resources and the creation of economy and social problems. This highlight an economic growth pursued without paying attention to planetary limits. The cessation of suffering identifies that unsustainability could be overcome by addressed its cause which is not overly relying on an economic growth mentality and being concerned about mindfulness, virtue practices, tolerance, contentedness, loving kindness,etc. can be used as measures of satisfaction with spiritual practices. The main expected outcome of the spiritual practices is to fulfill the desire for happiness. There are two components of happiness; physical and mental, with the mental experience or the inner force playing a more powerful role. Mahayana Buddhism happiness springs from an altruistic or compassionate mind. Since human minds are often agitated by afflictive emotions, the results frequently are negative actions, which in turn cause suffering. The essence of Buddhism, therefore, is to tame, transform, and conquer the human mind, for it is the root of everything – it is the creator of happiness and suffering[12]. Buddhism is a state of lasting, unconditional happiness known as enlightenment to bring us to this state, Buddhism points us to lasting values in this impermanent world, and gives us valuable information about how things really are. Through understanding the law of cause and effect, using practical tools like meditation to gain insight and develop compassion and wisdom.

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A Quality in Education of Lower Central Network School with Coaching and Mentoring Pass Online System

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Abstract*— A quality in education of lower central network with coaching and mentoring pass online system consisting of teachers, administrators by using the concept and activities of the mentoring system. The purposes were as 1) To Assess the promotion of knowledge and understanding of concepts used in the development of production and teacher development systems in relevant target groups consisting of teachers, administrators using concepts and activities, mentoring systems, Coaching and Mentoring and 2) To develop the system and the process of teaching and learning management by having teachers remove the knowledge management (KM) in classroom by developing a mentor for the target group with participating in the phase 1 project will apply the knowledge in real situations in the lower central region network schools and building a professional community of learning (Professional Learning Community: PLC) by the university professors do research to develop teaching and learning and develop teachers in small schools as well as "coaches" for teachers to use innovations developed for their students in this research using quantitative research methods and integrated experiments (Quantitative-Experiment Research) The researcher has set the framework for the research guidelines. The population for this research with selected purposive sampling by considering the context of responsibilities with university. In the network area of the lower central region which are small and voluntary schools of 30 schools, 98 teachers (science and math teachers), 22 university professors (teachers responsible for monitoring all 30 schools) for the academic year 2019. Data analysis using the statistics of percentage (%) average ($\bar{x}$) standard Deviation (S.D.) and qualitative data analysis. The results of the research were findings: 1) Assessment in the promotion of knowledge and understanding of concepts used in the development of production and teacher development systems Develop relevant target groups consisting of teachers, administrators using concepts and activities, mentoring systems, coaching and mentoring the satisfaction at the highest level ($\bar{x}$=4.74, S.D.=0.37) and 2) Development a system and learning process by having the teacher to remove the knowledge management (KM) in classroom consisting of 1) Learning Management with coaching and mentoring process, 2) Development of competency based learning with imagination (Competency Based on Imagination), 3) Supporting the process of building empirical knowledge (Construction of Knowledge), and 4) Performance Review for Creation of Innovation.

Index Terms— ***Coaching , Mentoring, Online***

I. INTRODUCTION

The index of important teacher teaching quality was measured by the quality of the learner in the field of analytical thinking without emphasis on memory. The results of the 2014 PISA and TIMSS tests of Thai students were below the average of the OECD participating countries. In addition, Thailand's IMD and WEF international rankings reflect that teachers Unable to bring knowledge, techniques, methods or teaching styles Modern and quality Used in solving the problems of learners to keep up with the changing of the world, thus, Thailand has faced problems in producing quality graduates and having expertise in teaching that will be used in the development of learners. To be efficient and sustainable self-development in accordance with the educational policy of the country that will raise the level of education and the development of the country with a concrete ideal of knowledge and happiness. (Office of the National Economic and Social Development Board, 2015), especially the poor quality education of small schools in Samut Songkhram Province. There are approximately 2,500 students (Academic Year 2016) and it is very problematic for small schools that lack the availability of several teaching and learning factors affecting students' academic achievement in science, math and English subjects. The approach to solving problems and improving the quality of education of small schools is to be effective, therefore focusing on the participation and cooperation network with mentoring system based on the integrated process and create mutual agreement on the success of goal. The Office of the Basic Education Commission Organized a teacher development program that emphasizes the strengthening of teaching and learning competencies in a variety of contexts of school nature and size. Use the coaching mentoring system to meet the needs of the Primary / Secondary Education Service Area Office. Coordinate higher education

institutions to become a development partner Developing to focus on the development of the school base during teaching (On the job training) and provide a support system in the form of coaching and mentoring, with emphasis on development to strengthen the spirit and ideology of being a teacher. Developing learners to have knowledge of Literacy, Numeracy and Reasoning Ability skills as well as providing learning with learners, namely Learning to Question, Learning to Search, Learning to Construct, Learning to Communicate, Learning to Serve according to the level. The learning management process for the core curriculum of basic education, BE 2551 in accordance with the 21st century learning approach (Faculty of Education, Nakhon Ratchasima Rajabhat University, 2013). Bansomdejchaopraya Rajabhat University has joined as a network of educational quality development and local development project with a tertiary institution as a mentor. To develop basic education of schools in the lower central region By developing teachers' potential, organizing activities in line with the policy, reduce study time, increase learning time STEM education management English language enhancement According to the needs of target schools, 11 schools are classified as under the Office of Education, Bangkok, 7 schools and 4 schools under the Primary Education Area Office in Bangkok. Hold a meeting to build knowledge and understanding about the project. And prepared a memorandum of agreement for academic cooperation (MOU) with 11 network school administrators on March 16, 2017 at 10:00 a.m. - 12:00 noon at the Alumni Association Meeting Room, Floor 6, Building 11, at Bansomdejchaopraya Rajabhat University. There are activities to develop teachers in 11 schools in 2 main activities which are 1) the development of learning management skills towards integrating Stem Education and 2) the development of knowledge and attitude in teaching English for teachers. Which consists of the following steps:

Phase 1: Building knowledge and understanding of concepts used in the development of teacher production systems and development Continue to develop relevant target groups consisting of teachers, executives using mentoring, coaching and mentoring concepts and activities.

Phase 2 Development of teaching and learning systems and processes By having teachers to remove knowledge and KM in order to get a knowledge set that can be used in the teaching process. Operated by the development of mentoring teachers And had the target teachers participating in the Phase 1 project to apply their knowledge in real situations in the lower central network schools. And create a professional community of learning (Professional Learning Community: PLC) by teachers in the university doing research to develop teaching and learning And develop teachers in small schools as well as being "coaches" for teachers to apply the innovations that have been developed for their students.

Therefore, the Faculty of Education has prepared to expand its operations to Samut Songkhram Province. Which is one of the provinces under the responsibility of the university. The Faculty of Education has conducted teacher development activities in Samut Sakhon Province. Which is already a pilot province Since the academic year 2016 and will be fully implemented in the 2018 academic year, the university intends to cooperate with the Primary / Secondary Educational Service Area Office, Samut Songkhram Province. To develop teachers in such small schools that teachers have the potential to develop students to have higher learning achievement. Especially in reading / writing Thai / English, mathematics, science, STEM education and critical thinking. Using the original format that was improved and developed to suit the context Both in space, time and other areas, focusing on research and development of educational quality of schools in the lower central network with mentoring systems under Professional learning community process (Professional Learning Community: PLC), including a model for creating a coaching system and a mentoring system.

II. RESEARCH OBJECTIVES

The objectives of this research article was a quality in education of lower central network school with coaching and mentoring pass online system

III. RESEARCH METHODS

Population

Population for this research The researcher has selected a specific method. Considering the context, coverage, duties and responsibilities of Bansomdejchaopraya Rajabhat University and school groups In the lower central network area Which is a small and voluntary school of 30 schools, 98 teachers (science and math teachers), 22 university teachers (responsible teachers supervising all 30 schools)

Research tools and quality evaluation tools

1. Learning Management Plan

1) Study the science teaching management manual. Lower secondary level To know the importance, vision, quality of the learners Learning standards Learning Learning process Learning resources Measurement and evaluation in group learning management

2) Explore student fundamentals of knowledge and skills. Analyze the problem of the learners. By exploring learning problems

3) Study theories, concepts, principles, documents, courses and research results related to experimental research. And learning management in science group

4) the study of guidelines for teaching and learning activities

5) implementing a learning activity plan Submitted to 3 experts who are experts in teaching and learning, 1 person in teaching and teaching in science subjects, 1 person and measurement and evaluation, 1 person to verify accuracy. Content validity Elements of the study structure Use of scientific equipment Learning and experiment design The learning activity management plan assessed by experts was used to find the average value. Determine the criteria for scoring in each item by means of 4.64 in the most appropriate level. By using the following criteria: (Boonchomsri Sa-Saaad, 2000)

Average between 4.51 - 5.00 means the most suitable.

Average between 3.51 - 4.50 means very suitable.

Mean between 2.51 - 3.50 means moderately suitable.

Average between 1.51 - 2.50 means improvement.

2. Satisfaction Evaluation

1) Content Validity was performed using the Item Objective Congruence Index technique by using three experts, each of which was the IOC value of 1.00 or more and the IOC of The whole satisfaction measurement form was value = 1.00.

2) determination of precision Reliability by using a satisfaction assessment test with 30 teachers using the Cronbach's Alpha Coefficient, which had r individual values from 0.80 and the total r value = 0.84.

3. Data Collection

Data collection in this research The researcher used the following tools. The researcher collects the data in the following:

1) Request a letter from Bansomdejchaopraya Rajabhat University to the Director of the Educational Service Area Office.

2) Contact the school coordinator for the sample. To ask for assistance in data collection and to determine the date and time for data collection by coordinating the data collection operation.

3) Provide adequate questionnaires for the number of teachers who will collect the information each time.

3.1) Finding the discriminant power of each question

3.2) Check the quality of the straightforwardness questions. In the nature of the fairness of the question

3.3) Verify the structural validity of the educational quality research and development questionnaire of schools in the lower central network with the developed mentoring and advisory systems.

3.4) Verify the accuracy of the research and development questionnaire for the educational quality of schools in the lower central network with the developed mentoring and advisory systems.

3.5) Analyze data according to the predetermined statistics. Check the completeness of each questionnaire. Which will select only the version that is complete to analyze the data

3.6) The questionnaires were analyzed by using a statistical package. To find the mean And standard deviation

3.7) For the open-ended questionnaire, the researcher will analyze the content (Content Analysis) and describe in an essay.

3.8) Configuring the priority of options The researcher has identified the importance. In which the respondents assess each question By setting the level of importance according to the scoring criteria as follows:

A score of 5 is defined as having the most suitable level.

A score of 4 indicates a high level of suitability.

A Score 3 means moderate suitability.

A score of 2 means that the suitability is at a low level.

Score 1 indicates that the suitability is at the slightest level. A criteria for Interpretation of the Data Determined from the mean which is divided into 5 grade ranges Using the best estimation criteria (Best 1981: 182) as follows:

Meaning Mean Score

4.50 - 5.00 was considered appropriate at the highest level.

3.50 - 4.49 is considered appropriate at a high level.

2.50 - 3.49 The suitability is moderate.

1.50 - 2.49 is considered appropriate at a low level.

1.00 - 1.49 is the least appropriate.

3.4 Data analysis

The researcher has performed the following data analysis.

1) Analysis for the quality of the learning management plan This is presented to experts to assess the consistency between content and behavioral objectives. The calculations were then calculated using the IOC formula and applied to the students according to the learning management plan.

2) Data from the satisfaction survey The data were analyzed by means of mean and standard deviation by setting the criteria for the interpretation of the mean. By holding the following criteria (Mariam Nilphan, 2010: 196)

The Average of 4.50-5.00 means that the satisfaction is at the highest level.

The Average of 3.50-4.49 means that there is a high level of satisfaction.

The Average of 2.50-3.49 means that the satisfaction is moderate.

The Average of 1.50-2.49 means that the satisfaction is at a low level.

TheAverage of 1.00-1.49 means that the level of satisfaction is the least.

3) Analyze open-end questions. The results obtained from the questionnaire. Researchers have categorized and ordered answers to be analyzed content (Content Analysis) and presented the analysis results in descriptive manner.
4) Analysis of data from a group discussion format. Which is an open-ended questionnaire The researcher has synthesized key issues into categories and variables in each area corresponding to the educational management approach with Coaching and Mentoring in the form of mind mapping for explain.

IV. RESULTS

Development of teaching and learning systems and processes By allowing teachers to remove knowledge (Knowledge Management) in order to obtain a knowledge set that can be used in the teaching process. Operated by the development of mentoring target groups And had the target teachers participating in phase 1 to apply their knowledge in real situations in the lower central network schools. And create a professional community of learning (Professional Learning Community: PLC) by teachers in the university doing research to develop teaching and learning And develop teachers in small schools as well as being "coaches" for teachers to apply the innovations that have been developed for their students as shown in Table 4.

Table 4. The Achievement of learning shown as pre-test and post-test of the learning outcomes

	Number of Students	$\bar{x}$	**S.D.**	**t**	**Sig (2-tailed)**
Pre-test	33	16.40	2.83	21.63*	0.00*
Post-test	33	36.72	0.65		

From table 4 above it can be seen that the learning achievement of students who study through the model of solar system with electric motor rotation via control system on smartphone with an average of 36.72, the standard deviation of 0.65 ($\bar{x}$ = 36.72, S.D.= 0.65), which was higher than before at the average of 16.40, the standard deviation of 2.83 ($\bar{x}$ = 16.40, S.D. = 2.83) with statistical significance at the level of .05 (t= 21.63). Shown as a model with learning process on smart phone.

The researcher performed the data analysis by conducting a factor classification and data groups in an information format to be used in the conceptualization and system of teaching and learning processes. Knowledge (Knowledge Management) to acquire a knowledge set that can be used in the teaching process. Operated by the development of mentoring target groups And had the target teachers participating in phase 1 to apply their knowledge in real situations in the lower central network schools. And create a professional community of learning (Professional Learning Community: PLC) by teachers in the university doing research to develop teaching and learning And develop teachers in small schools as well as being "coaches" for teachers to apply the innovations that have been developed for their students. It is a method for creating learners to invent, solve problems, connect and create knowledge, consisting of 4 concepts of competency and creative learning management as follows:

1. Learning management through Coaching and Mentoring processes.
2. Development of Competency Based on Imagination
3.Supporting the empirical knowledge building process (Construction of Knowledge)
4. Creation of innovation in everyday life (Creation of Innovation)

A diagram of the learning management through the Coaching and Mentoring process as shown in Figure 1.

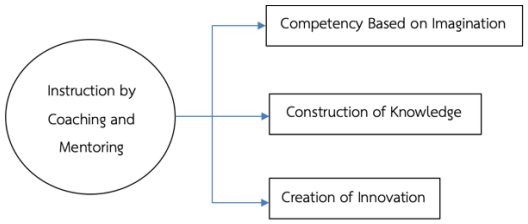


Fig.1 A diagram of the learning management through the Coaching and Mentoring process

From figure 1 show a diagram of the learning management process by Coaching and Mentoring is a method for creating learners to create, solve problems, connect and create knowledge, consisting of 3 concepts, competency learning management and creativity. Namely: 1) Competency Based on Imagination of Learner Competency Development; 2) Supporting the empirical knowledge building process. (Construction of Knowledge) and 3) Review of the capacity for innovation in daily life (Creation of Innovation), where these three concept maps are a system for developing learners to demonstrate self-learning potential. Social networking Information retrieval Data Actions And problem solving thinking Practicing with scientific process skills according to the development of primary school students under supervision. Consulting help And encouraging the will to foster continuous learning and experiences that will be embedded in learners' schemata (Meaning full learning).

Diagram of development of competency based on imagination (Competency Based on Imagination) as shown in Figure 2.

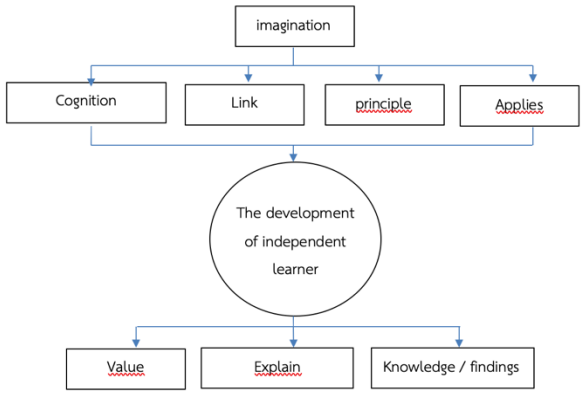


Fig.2 Competency Based on Imagination Chart

From figure 2 shows a diagram of competency-based on imagination development, where the teacher will be a key mechanism in creating learning power by stimulating the thinking power (Brain Storming). Appearance and co-working with others (Team Work) creatively emphasizing behavioral development based on learning and play of elementary school students in a creative and fun way, consisting of Perception activities. And conceptual processes of the learner (Conception), including 1) cognition (Understanding), 2) Connection, 3) Reasonable, and 4) Benefit by the students to reflect the competencies from their learning experience, namely 1) Valuable 2). Relay / Explanation (Explanation) and 3) knowledge/findings. (Construction)

Diagram to support the empirical knowledge building process (Construction of Knowledge) as shown in Figure 3.

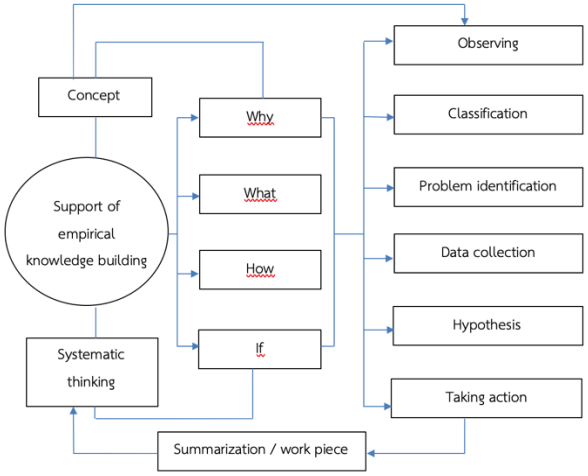


Fig.3 Competency Based on Imagination Chart

From figure 3 a schematic diagram of support for the empirical knowledge building process. (Construction of Knowledge) At this stage, the teacher plays a role in participation, learning, parallel to students, co-partners, questioning Encourage learners to develop cognitive skills in conceptualization and systematic thinking, problem solving processes using scientific processes Questions from challenging situations are being asked to achieve accurate, fast and accurate results, including why, what, and if, which leads to self-confidence and fast learning through a coherence-based mindset system. Learning behaviors consisted of 1) observation, 2) classification, 3) problem identification, 4) data collection, 5) hypothesis and 6) implementation. Until being able to take action and create the work efficiently.

Diagram of competency review for innovation in daily life (Creation of Innovation) is shown in Figure 4.

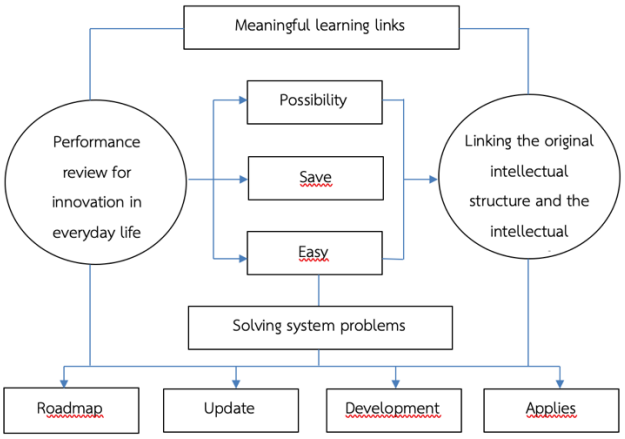


Fig.4 Competency Based on Imagination Chart

From figure 4 the chart shows the performance review for innovation in daily life (Creation of Innovation) is a step for teachers to measure and evaluate learners according to their creative performance by solving systematic problems and being able to mean for learning Containing The possibilities, the economies, the simplicity based on the self-learning process include creating a roadmap, improving development, and its useful and cost-effective application. By reflecting the competency of the learner at this stage, it plays a critical role in the student's lifelong learning. It is an immersive experience which is an intellectual growth. Instructors are required to design challenging activities.

Encourage to seek answers and have fun. The knowledge gained must be intelligent in solving problems and knowing the possibilities. Primary school students with this age will behave in harmony with nature. They see the world that is beautiful, rational, very loving, and has great purity of thought. By obeying teachers, parents, friends and intellectual advisers such as monks, missionaries, thus creating a student learning experience for inspiration. Creativity that will lead to the extension of the original intellectual structure to the new cognitive structure. It is a process of particular importance. A design instructor activities, it must focus on the development of the mind, encouragement, acceptance, forgiveness, cooperation of students. With various reinforcements, creating a platform for exchanging knowledge using diverse experiences from outside the classroom and building pride in learning from behavioral competencies that can be measured with results and innovation in everyday life. Teachers may be required to design activities through periodic planning, schedules, development tracking and student responsibilities. The scheduling inspections and improving work individually This could be a practice experience. Information retrieval data actions techniques and methods of presenting information causal analysis Solution to the problem Until students are able to summarize ideas and be able to build a conceptual diagram with confidence and explain and answer questions until the correctness is accepted. It is improved, developed, trial and error and is jointly examined on the possibility. Until being able to take action to create concrete pieces At this stage, the instructor has to split the time to follow up with each student individually. Or working groups using information technology together to provide convenience, speed and up-to-date events such as Application youtube and online various coaching and mentoring processes at this stage. Acknowledge the truth according to cause and effect, be observant, know, think, analyze, know, solve problems, get wisdom from problem or project (Project-Based Learning or Problem-Based Learning) is a process of seeking knowledge which is mentally invigorating. Which students may understand things from invention in the form of projects or research RBL (Research-Based Learning) or RBP (Research-Based Project), which all learners must have a systematic learning base as well. By integrating it with the research base project as a base for creative thinking and sustainable value.

V. DISCUSSIONS

Development of production systems and development of teachers Continue to develop relevant target groups consisting of teachers, administrators, using mentoring, coaching and mentoring concepts and activities.This time, the objective is to 1) to enhance the knowledge and understanding of the concepts used in the development of teacher production and development systems. To develop relevant target groups consisting of teachers, administrators, using mentoring, coaching and mentoring concepts and activities 2) for the development of teaching and learning systems and processes. By allowing teachers to remove knowledge (Knowledge Management) in order to obtain a knowledge set that can be used in the teaching process. Operated by the development of mentoring target groups And had the target teachers participating in phase 1 to apply their knowledge in real situations in the lower central network schools. And create a professional community of learning (Professional Learning Community: PLC) by teachers in the university doing research to develop teaching and learning And to develop teachers in small schools as well as to "coach" teachers to use the innovations that have been developed for their own students, it was found that reflecting the competency of the learner at this stage played a very important role in learning. Know all the life of the student it is an immersive experience which is an intellectual growth. Instructors are required to design challenging activities. Encourage to seek answers and have fun. The knowledge gained must be intelligent in solving problems and knowing the possibilities. Primary school students with this age will behave in harmony with nature. They see the world that is beautiful, rational, very loving, and has great purity of thought. By obeying teachers, parents, friends and intellectual advisers such as monks, missionaries, thus creating a student learning experience for inspiration. Creativity that will lead to the extension of the original intellectual structure to the new cognitive structure. It is a process of particular importance. To design instructor activities, it must focus on the development of the mind, encouragement, acceptance, forgiveness, cooperation of students with various reinforcements, creating a platform for exchanging knowledge Using diverse experiences from outside the classroom And building pride in learning from behavioral competencies that can be measured with results and innovation in everyday life. Teachers may be required to design activities through periodic planning, schedules, development tracking and student responsibilities by scheduling inspections and improving work individually This could be a practice experience. Information retrieval Data Actions Techniques and methods of presenting information Causal analysis Solution to the problem until

students are able to summarize ideas and be able to build a conceptual diagram with confidence and explain and answer questions until the correctness is accepted. It is improved, developed, trial and error and is jointly examined on the possibility. Until being able to take action to create concrete pieces At this stage, the instructor has to split the time to follow up with each student individually or working groups using information technology together to provide convenience, speed and up-to-date events such as Application Youtube and Online various Coaching and Mentoring processes at this stage. Acknowledge the truth according to cause and effect, be observant, know, think, analyze, know, solve problems, get wisdom from problem or project (Project-Based Learning or Problem-Based Learning) is a process of seeking knowledge which is mentally invigorating. Which students may understand things from invention in the form of projects or research RBL (Research-Based Learning) or RBP (Research-Based Project), which all learners must have a systematic learning base as well. By integrating it with the research base project as a base for creative thinking and sustainable value This is in line with Paradee Kamphu Na Ayudhya (2017), saying that the study of creative problem solving and creativity In children with special abilities, Sirinapa Kitkuakool (2015) said that STEM Education is an integrated learning management in 4 disciplines: Science (Technology) Engineering. (Engineering) and mathematics. (Mathematics), a concept that arose from the lack of quality labor in engineering and science in the United States. STEM learning management therefore emphasizes on encouraging all learners. Can be creative And have skills in designing and thinking of problem solving according to real conditions according to engineering design principles

VI. RECOMMENDATIONS

A. Recommendations for Practices

1) Organize learning through coaching and mentoring processes as an operational guideline for creating learners to create, solve, connect and create knowledge, consisting of 3 concepts of competency learning management and creativity, namely 1) development. Competency Based on Imagination 2) Empirical knowledge-building process support. (Construction of Knowledge) and 3) Review of the capacity for innovation in daily life (Creation of Innovation), where these three concept maps are a system for developing learners to demonstrate self-learning potential. Social networking Information retrieval Data Actions And problem solving thinking Practicing with scientific process skills according to the development of primary school students under supervision. Consulting help And encouraging the will to foster continuous learning and experiences that will be embedded in learners' schemata (Meaning full learning).

2) Developing Competency Based on Imagination by the teacher will be a key mechanism in creating learning power through brain storming, assertiveness.) And working with others (Team Work) creatively emphasizing behavioral development based on learning and play of elementary school students in a creative and fun way, consisting of perception activity and conceptual process. Of the learners (Conception), including 1) cognition (Understanding), 2) Connection, 3) Reasonable, and 4) Benefit by the students to reflect the competencies from their learning experience, namely 1) Valuable 2). Relay / explanation (Explanation) and 3) knowledge / findings. (Construction)

3) support of empirical knowledge building processes (Construction of Knowledge) At this stage, the teacher plays a role in participation, learning, parallel to students, co-partners, questioning. Encourage learners to acquire cognitive skills in conceptualization and systematic thinking, problem-solving processes using scientific processes. Questions from challenging situations are being asked to achieve accurate, fast and accurate results, including why, what, and if, which leads to self-confidence and fast learning through a coherence-based mindset system. Learning behaviors consisted of 1) observation, 2) classification, 3) problem identification, 4) data collection, 5) hypothesis and 6) implementation. Until being able to take action and create the work efficiently

B. Recommendations for Further Research

Measuring and evaluating learners based on their creative performance with a systematic solution has implications for that learning.

1) possibility
2) economical
3) Ease
4) challenges
5) creativity
6) Utilization
7) Application
8) accuracy
9) speed
10) accuracy

On the basis of a self-learning process, such as creating a roadmap for improving development and its application that is beneficial and cost-effective. By reflecting the competency of the learner at this stage, it plays a critical role in the student's lifelong learning. It is an immersive experience which is an intellectual growth. Instructors are required to design challenging activities. The knowledge gained must emerge from the intelligence of problem solving and the realization of possibilities by creating a student learning experience for inspiration. Creativity that will lead to the extension of the original intellectual structure to the new cognitive structure. It is a process of particular

importance. In designing instructor activities, it must focus on the development of the mind, encouragement, acceptance, forgiveness, cooperation of students. With various reinforcements, creating a platform for exchanging knowledge Using diverse experiences from outside the classroom And creating pride in learning from behavioral competencies that can be measured with results and innovations in everyday life.

CONCLUSION

In conclusion, the findings from the quality in education of lower central network with coaching and mentoring pass online system consisting of teachers, administrators by using the concept and activities of the mentoring system consist of assessment in the promotion of knowledge and understanding of concepts used in the development of production and teacher development systems develop relevant target groups consisting of teachers, administrators using concepts and activities, mentoring systems, coaching and mentoring the satisfaction at the highest level and development a system and learning process by having the teacher to remove the knowledge management (KM) in classroom consisting of 1) Learning Management with coaching and mentoring process, 2) Development of competency based learning with imagination (Competency Based on Imagination), 3) Supporting the process of building empirical knowledge (Construction of Knowledge), and 4) Performance Review for Creation of Innovation. learning management process by Coaching and Mentoring is a method for creating learners to create, solve problems, connect and create knowledge, consisting of 3 concepts, competency learning management and creativity. Namely: 1) Competency Based on Imagination of Learner Competency Development; 2) Supporting the empirical knowledge building process. (Construction of Knowledge) and 3) Review of the capacity for innovation in daily life (Creation of Innovation), where these three concept maps are a system for developing learners to demonstrate self-learning potential. Social networking Information retrieval Data Actions And problem solving thinking Practicing with scientific process skills according to the development of primary school students under supervision. Consulting help And encouraging the will to foster continuous learning and experiences that will be embedded in learners' schemata (Meaning full learning).

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Strategic Management of Upper Mae Kuang River Basin with the Participation of Civil Society

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Abstract *- The purpose of this research was to analyze management patterns, barrier levels, factors affecting successful management of the river basin, as well as offering strategic guidelines that will serve as a mechanism for the effective involvement of civil society. However, the result of this research will be of benefit to the academic sector, policy implementation, to the society and community, natural resource, and environmental management, including educational research and various development forms. Many of which will lead to the development of natural resources and environment, and appropriate river basin management that are under the area. Target area and key informants consisting of Mae Kuang River Basin Network Committee, relevant government personnel, experts, scholars, community leaders, philosophers, villagers, and people in the area. A questionnaire, survey, interview, group meeting, workshop, and critical analysis were used as a form of data collection. The data were analyzed and were presented in both qualitative and quantitative.*

The result of the study showed that the management pattern and procedures, for the management of the Upper Mae Kuang River Basin, consists of for patterns such as 1) Government Management Pattern 2) Project Management through Roya Initiatives 3) Community Management 4.) Private organization or NGO. Whereby, operate according to King Rama 9 Philosophy: 1) implementation of the procedure from small to large 2) the process of reforestation in the people's mind learn, understand, access and development 3) support on a culture's resources, natural environment, and community, 4) participation and cooperation process from all parties. The results of the research lead to the development of the Upper Mae Kuang River Basin ecosystem. Which help improve the quality of river basin in the area, the community were able to live and eat abundantly around the river basin with the community economy from agro-forestry and eco-tourism management. The Barrier level from the management of the Upper Mae Kuang River Basin involves the quantitative participation of civil society was found to be low, as for the qualitative results, it was found that the government and the public sector lacked the knowledge and understanding of the holistic river basin management and the perceived information between government officials and people differed. And the implementation of redundant development / solving projects in the government sector. The factors affecting the success of the management of the Upper Mae Kuang River Basin include 1) the knowledge body that is appropriate to the geosocial characteristics and the learning process that can build awareness, build understanding based on culture, Wisdom and life 2) An explosion from the inside (inside out) caused by understanding, recognize the value system, reach out, generate opinion guidelines for developing and implement a plan of action and judgement. 3) Participation, identify love, unity, strength, through group processing, networking and empowerment from all sectors including government, private, academics, developers and communities 4) Holistic co-management. It is driven by vision, plan, working together and management in all dimensions. Analyzing the strategic guidelines that will serve as a mechanism for the effective involvement of civil society analysis include the following: 1) Integrated Management Strategy by the mechanism of the Integrated River Basin Management Committee River basin provisions and river basin management funds. 2) Strategies for driving the management process through the mechanism of the Institute of Natural Resources Environment and way of life for the future is responsible for driving knowledge management. Being the core of cooperation Expansion of concepts, principles, and knowledge.

Keywords: *strategic management in the river basin; River basin management according to royal initiatives; Civil society participation*

I. INTRODUCTION

His Late Majesty King Bhumibol Adulyadej Rama IX realized the long-term loss of forest, river basin and streams. Therefore, the royal initiative establishes the Huai Hong Khrai Royal Development Study Center and was initiated on December 11, 1982, at the Huai Hong Khrai River Basin, Doi Saket District Chiang Mai Province. To use, it as a channel for conducting experimental studies, research, and development patterns of landscape, society, and river basin. Allowing people to live in harmony with the forest sustainably. Another purpose for establishing the Huai Hong Khrai Royal Development Study Center was to resolve the degradation crisis in the river basin area and to further apply the results and knowledge gained from studies, experiments, and research in sustainable development. By developing both forest and fisheries simultaneously. [1] On March 25,1992, there was a royal initiative programme to utilize the gained knowledge to develop upper Mae Kuang River Basin. In a project title Khun Mae Kuang Forest Development Project [2].

Upper Mae Kuang River Basin area is an upstream area Mae Kuang Dam and Udomthara, covering the Thep Sadet Sub-district, Pa Miang Sub-district, Choeng Doi Sub-District, Luang Nuea Sub-district, Mae Pong Sub-District, Doi Saket District, Huay Kaew Sub-District, and Mae On District, it has an area of approximately 345,000 rai with the top of Doi Phu Langka Luang as the highest mountain. It has an altitude of approximately 2,031 meters above sea level. The general river basin forest is evergreen forest, mixed with deciduous forest, and dipterocarp forest, which is the source of 5 streams such as Mae Kuang Nam, Mae Wong Nam, Mae Wan Nam, Mae Nam River and Huai Kang Nam, all the 5 streams flow into the Mae Kuang Udomthara Dam. In this area, we have a total number of 27,032 people, 11,400 households, 55 house groups in 6 sub-districts, and 2 districts, living in the upper Mae Kuang river basin. They settle in this area together with when Chiang Mai city was about to be created in 1839. The original ethnic people were, Khmu, Lua, Pka Kueyor, Tai Lue (Xishuangbanna) and Lanna, their traditional way of life was by farming in plain and slope area. Make rice fields and plantations on the highlands. Their cultural and traditional beliefs are tied to the production of Miang for community economy [3].

Since 1992, the Mae Kuang River Basin has been managed according to the Philosophy of His Majesty King Bhumibol Adulyadej Rama IX. For more than 25 years in a concrete way, which as a result makes Mae Kuang River Basin, still acting as a river basin forest, producing water that flows into Mae Kuang Udomthara dam uninterrupted. The communities in the river basin can live in harmony with the natural ecosystem, while the river basin areas in the 13 northern provinces, which is the origin of 4 rivers such as Ping River, Wang River, Yom River and Nan River flow together as the Chao Phraya River. However, Chao Phraya River is an important river in Thailand covering a total of about 8.6 million hectares, and a population of about 800,000 people are utilizing the area for monoculture crops. They use herbicides for weeds and pests at a high rate. Therefore, result in a bad and critical condition for the river basin are and mountains affecting social life, and the overall ecosystem, causing economic damage worth more than 469 billion baht per year [4].

The researchers realized the concrete importance of the upper Mae Kuang River Basin. Therefore, we focus on the success model of efficient management of the Upper River basin. To study the pattern, process, of successful management of the river basin. Also, create management strategies for a river basin with the participation of civil society in all dimensions. To serve as a learning prototype and therefore, expand the results of the development and apply them to the King's Philosophy.

II. RESEARCH OBJECTIVES

The purpose of this research was to analyze management patterns, barrier levels, factors affecting successful management of the river basin, as well as offering strategic guidelines that will serve as a mechanism for the effective involvement of civil society.

III. RESEARCH METHODS

A) Study Area

The study area, Upper Mae Kuang covers Doi Saket district, Pa Miang sub-district, Cherng sub-district, Luang Naua sub-district, Mae Pong sub-district, Including Huay Kaew sub-district, Mae-On district, covering an area of approximately 345, 000 hectares of which are vital to the ecosystem and communities. The river basin area is useful for the people in the communities in all aspects because of its complete resources. They use it for agriculture, fisheries, consumption and it is also an important route for water transportation that allows people to exchange cultures. Resulting in a mix of cultures in the Mae Kuang river area (Picture 1)

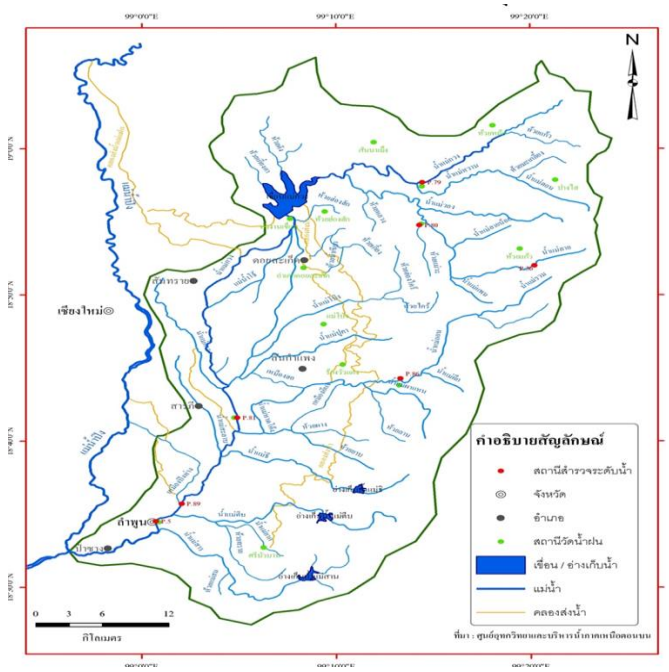


Figure 1 The path of the upper Mae Kuang River Basin
Source: Sustainable Management of River basin areas. According to the King's Philosophy, Intellects and Landscapes: Mae Kuang River Basin

B) Population and sample

This research is participatory research from all stakeholders in Mae Kuang River Basin and it consists of Network committee of Mae Kuang River Basin, related government personnel experts, scholars, community leaders, philosophers, villagers and people in the area. The sample groups and key informants were classified into 3 groups as follows:

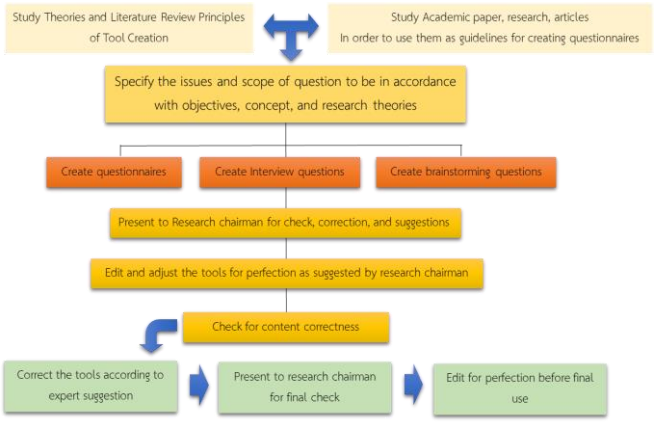
Group 1: Knowledge Transcription Stage,5 sub-branches of the Mae Kuang River Basin, comprising of Network committee of Mae Kuang River Basin and the people in the community of Luang Nuea Sub-district (Huai Kang River), Pa Miang Sub-district Community (Mae Kuang River), Thep Sadet Sub-district Community (Mae Wan River - Mae Wong River), Huay Kaew Sub-district community (Mae Lai River) and Choeng Doi Sub-District and Mae Pong Sub-districts community. There were 400 questionnaires samples, 10 people were interviewed, group meeting of the 5 rivers consisting of 250 people, including 80 people in the workshop and 80 people were involved for the criticism and review.

Group 2: Knowledge transfer platform, this consists of government executives in the area and Network Committee of Mae Kuang River Basin. 10 people were interviewed, group meeting of the 5 rivers consisting 80 people, including 80 people in the workshop and 80 people were involved for the criticism and review.

Group 3: This group consists of academicians, experts and administrators, relevant government personnel (This population does not need to be in the 5 sub-basin areas of the Mae Kuang River Basin. 10 people were interviewed, group meeting of the 5 rivers consisting 80 people, including 80 people in the workshop and 80 people were involved for the criticism and review.

C) Research Tools and Quality Review of the Research Tool

1. The process of creating this research tool consists of questionnaires, interview, and forms used to formulate a question for brainstorming. The research team followed the following steps.



2. Quality review and inspection of the research tools, The research team did validity test on the questionnaires and interview questions by determining the conformity index (IOC) the evaluation results were classified by the expertise and the assessment criteria passed.

D) Data Collection

1. Document analysis: The study analyzed data (Documentary Data) by gathering evidence from primary sources, both from the media, with the use of information technology, research work, thesis, laws, journal articles, books and other related publications. The data were compiled systematically, and database was created for researching and presenting in group meetings, workshops and activities conducted at all stages of the research.

2. Field study: This was done after document and database creation for a guideline for implementation has been

created. To get accurate result and information. This was done by collecting data through a survey in the communities, including the topography of the area. informal interviews from stakeholders were also included such as; Network Committee of Mae Kuang River Basin, relevant government personnel, experts, scholars, community leaders, philosophers, villagers and people in the area.

3. The Work and Conference Stage: This was done in group meeting meetings to mobilize opinions from people involved in all sectors in the 5 sub-districts rivers area to take lessons on the management of the branch river basin, analyze the problems, needs and guidelines for the development of river basin management with the people involvement.

4. Data analysis and synthesis: This was done by gathering all information to evaluate them and create a strategy and mechanism for the Joint Management of Mae Kuang River Basin with the People Participation and Civil society. So, they can be presented for critique and review by stakeholders and related individuals to get complete and reliable information.

5. Critique and Review: This was a process of presenting information relating to strategies and mechanisms for the Management of Mae Kuang River Basin with civil society participation for all stakeholders to be aware of the strategy, check and review, include suggestions, add more data to achieve a perfect strategy.

E) Data Analysis

The research team analyzed received data, they include both quantitative and qualitative data. Therefore, the analysis was divided into 2 parts: in terms of qualitative data analysis. The research team analyzed the data according to the type of data collected from different sources, including the analysis of data obtained from document analysis which were compiled from books, textbooks, articles, and research works, Survey data analysis, include data from a real field survey such as an in-depth interview. In terms of quantitative data, including the evaluation of data obtained from the questionnaires and they were analyzed using Likert the Scale criteria [5].

F) Presentation of Analyzed data

The analysis of data in this research consists of 2 parts: qualitative and quantitative data. Presenting the qualitative information was done by writing them in a descriptive approach, which is the information obtained from the study, such as survey, interviews, group meetings Critical review and analysis, including data from various sources related to the topic of interest to confirm the researchers results on each issue. In terms of quantitative data, which includes data collected from the questionnaires and survey will be presented in the form of a table, using descriptive statistics for the explanatory variables, which includes, percentage, mean, and standard deviation, based on the characteristics of the variables.

IV. REAEARCH RESULTS

The content of this research was divided into four categories as follows:

A) Forms and Management Process of Upper Mae Kuang River Basin consists of 4 forms. 1) Managed by government agencies: This is a management process according to their duties and responsibilities, they have a plan, the budget has allocated by the government, they also have objectives, goals, and indicators of performance to determine how they manage. **2**) Manage as Part of Royal Initiative Project is operated by a working group consisting of personnel, staff from relevant departments. They have a central platform for coordinating operations, planning, setting objectives and goals. 3) Community-based management model. Is an operation according to the way of life, according to the traditional culture and tradition of the people in the village, they have village committee, Natural Resources and Environment Conservation group, as the care coordinator with the participation of community members and various organizations from outside 4) Manage by private and non-governmental organization They operate to promote and support community activities according to the needs of the community or joint planning to manage the activity process

Operational Activities in River basin Management consists of 5 activities, they include: 1) Prevention: Maintain natural resources such as inspection activities, suppressing regulations, 2) Rehabilitation: Improving and enhancing ecological efficiency, such as planting 3 trees with 4 benefits, reforestation, Building upstream dams. 3) Development, Promotion, Support and Community Development such as professional development, support of inputs, building a learning process, sustainable use of resources, development of a resource-based community, and economy system 4) Development of Participatory Processes such as group process development, the establishment of river basin conservation groups and committee for the river basin, activities on the cultural base of forest stream, including environmental education activities 5) Development Prototype learning Center for Community such as Baan Pasak Ngam Model of river basin restoration management under Royal Initiative of Ban Mae Kampong, Ecotourism management by Ban Pang Champi community, model for restoring natural water sources, etc.

Management Process of River basins: This was driven by the concept theory of the King's Philosophy. His Majesty King Bhumibol Adulyadej Rama IX, as follows: 1) Proceed step by step from small to large Management of the Upper Mae Kuang River Basin. Determine the area and divided them into three phases: Phase 1 - 30,000 rai, Phase 2 - 70,000 rai and Phase 3 - 245,000 rai. It covers the upper Mae Kuang River Basin. To practice management skills and show operational efficiency 2) The Process of Reforestation in the People's Mind: learn, understand, access, develop, the first stage of development is to reforest in the people's mind so they can understand, and realize to achieve a common goal of understanding and then gradually decide to consider the appropriate operational guidelines in line with the geosocial characteristics as deems necessary. 3) Cultural-based Support. Natural resources and community environment, each community has a cultural base, Local wisdom that has been accumulated as a way of living. Community culture-based support is encouraged to connect to changes in development leading to sustainable satisfaction. 4) Participation Process and Cooperation from All Parties this is a process of strengthening, and mobilize resources from all sectors, reduce conflicts, create justice, reduce the complexity of operating together.

B) To study and analyze the level of problems and obstacles in the management of the Upper Mae Kuang River Basin.

From the survey results in terms of obstacles in the management of Upper Mae Kuang River Basin, the result found out the following 9 issues: 1) The people in the community lack the idea of ownership in the natural resources 2) They lack the awareness and Love to cherish the natural resources in their area. 3) The data shows that the people's problems and needs are not being solved and developed 4) Operation of the various development project of the government are complex 5) They lack the understanding of joint management of river basin 6) Government Management was limited 7) Difference in awareness and understanding among government officials and the people 8) Fairness in the utilization of natural resources in the river basin and 9) lack in the Integration of local wisdom and modern management. To develop a management process suitable for the context of the area leading to management prototyping and expanding the concept. In conclusion, the analysis from the questionnaire showed that most of the respondents did not participate in the management of the Mae Kuang River Basin. Meanwhile, most of those who answered the question do not participate in the Management of Mae Kuang River Basin. At the same time, those who answered the question and participate in the management of the river basin were few. Therefore, it is interesting that there are problems with the Management of Mae Kuang River Basin with the participation of the civil society, what are the factors that contribute to the success of managing river basins. Therefore, strategies and mechanisms to manage the Upper Mae Kuang river basin water with civil society participation can be presented.

C) Successful Management of river basin in ecosystem structure.

The result found that the upper Mae Kuang River Basin has abundant quality. River basin resources have changed from the jungles of 7.93% of the drainage basin. In 1990, it became a river basin forest with 51.62% denser of the river basin. In the year 2016, the amount of water being liberated flows into Mae Kuang Udomthara Dam. In 1993 - 2000 there was an average of flow in September at 43.63 million cubic meters. Increased to 44.47 million cubic meters in the year 2001 to 2016. This shows the effectiveness of river basin area, which serves as an area to store and mop water, including the discharge of water from the ecosystem more effectively.

The river basin community lifestyle reflects the model of "support people living with the forest." The community has learned the king's philosophy the principles of living insufficiency economy, Sustainable use of river basin resources, Adaptation from the traditional way by quitting farming on the highlands, Development of agroforestry system, Planting additional crops according to the royal initiative, planting 3 trees with 4 benefits, for example, coffee cultivation together with upstream forest, persimmon cultivation, adjust to mixed agriculture and learn to collect, development of added value from forest products and ecosystems. The researcher found that 1) The upper highlands is useful in agroforestry and ecotourism 2) The central area land is used in rice terraces, mixed agriculture, mushroom cultivation, seedling propagation. Ornamental flowers Agricultural product processing Tourism - Homestay 3) The lower area, which is quite sloping and flat, has a pattern of utilization of farm, rice, mixed garden, and livestock, fishery and ecotourism. And environment

The factors affecting the success of the management of upper Mae Kuang River Basin include 1) The knowledge body is in accordance and appropriate with the characteristics of the social landscape and the learning process that can build awareness, build understanding based on culture, wisdom, and way of life 2) Explosion from inside out, this is as a result from understanding, aware of the value system, access to ideas development and development guidelines, implement planning, and decision making 3) Participation: know love, unity, strengthen through network group, process and empowerment from all sectors including government, private

sector, academics, developers and communities. 4) Holistic collective management. It is driving work with vision, having a plan, and working together. Including the management of all dimension connectively.

D) Strategies and Mechanisms in the Management of Upper Mae Kuang River Basin with the Participation of Civil Society. From the study analyzes, the management process of Upper Mae Kuang River Basin management found out the following strategies:

1) Integrated Management Strategy by Integrated River Basin Management Mechanism river basin provisions and river basin management funds. This area is a landscape ecology, with elements that are linked together as a structure and function. Therefore, the Management of the river basin must consider the management of all elements at the same time, we cannot focus on just one component, because the ecosystem is holistic, any small change in one section will affect the whole system. Therefore the management of the ecosystem is done with an integrated method. However, in this research, the research found out the following strategies

1.1) Integrated Committee on River basin Management Mechanism: Operate as a committee which is structured as a river basin council, It consists of representatives from all sectors, including the community, government sector, private sector, academicians and developers. They plan together, co-ordinate plans for each sector, fused into river basin management, and jointly operate according to each role and duties according to skills and abilities

1.2) Legislative Management Mechanism: The river basin council or the river basin committee jointly consider establishing rules, regulations, and conditions as a guideline for action in determining roles and duties that should be performed. Undesirable and conditions for managing problems, obstacles, provisions, prohibitions, excuses

1.3) Fund Management Mechanism: This is to mobilize factors in the management of river basin areas, establish a fund with, create a committee to manage the fund for transparency. Therefore, there should be a source of the funds with support from the government, donations including various types of fundraising.

2) Management Process Strategy: The mechanism of the Institute of Natural Resources Environment and Way of Life for Future / Green. They are responsible for driving and knowledge management. They are the core co-operation centre and expansion of concepts, principles and knowledge



Sustainable Development of Upper Mae Kuang Waterched area

V. SUGGESTIONS

Based on the findings from this research, the researchers have the following suggestion for the Management of Upper Mae Kuang River Basin with the Participation of Civil Society. The suggestions include both policy suggestions and how to implement those policies into practice. Including suggestion for further studies.

A) recommendation policy.

1) Strategy formation for the Management of Upper Mae Kuang River Basin with the Participation of Civil Society will be successful only if the government and private sector adjust their roles, thinking methods, processes, and methods of operation.

2) The system of Government management should improve, such as the process, structure and operation. They should emphasis on integration as a key guideline.

B) Suggestion for Practical Use of the Policy.

1) Participatory operation of the civil society in determining the strategic mechanism, including project plans, and activities. So that all sectors operate appropriately according to their role and duties.

2) After the achievement of the strategic plan for the management of the Mae Kuang River Basin with the participation of civil society, there should be a workshop to convey the plan into action and the operating results should be followed up quarterly and at the end of the operating period, the person responsible for each project prepares an operational report. Along with a summary of the overall performance to be able to assess the operating situation within the framework of the work plan.

3) During the year of the plan implementation, there should be a central agency that coordinates and

organizes meetings to continuously monitor the performance of all responsible parties.

C) Suggestion for Future Studies

1) There should be a study on the processes for driving strategies and integrated systems management mechanisms for the river basin. To serve as a guideline for creating strategic management of another river basin.

2) There should be a study on how to increase the efficiency of Network enhancement in participatory river basin management. To achieve the concept of integrating river basin management. That will lead to the creation of tools and mechanisms to operate effectively.

CONCLUSION

This research was both qualitative and quantitative research, intending to analyze management patterns, barrier levels, factors affecting successful management of river basin in Mae Kuang River Basin Doi Saket District - Mae On District, Chiang Mai Province and to consider synthesize strategic proposals and mechanisms for sustainable management of river basin areas, which is important to formulating solutions in resolving degradation crisis in the river basin area. From this study, it was found that the model was successful by introducing the king philosophy, His Majesty King Bhumibol Adulyadej Ram 9 to drive expansion and achieve concrete results. The lesson learned from this prototype model can be applied in the management of the River Basin with the participation of civil society with the following strategies 1) Integrated strategy management with integrated committee management mechanism, legislative mechanism, and fund management mechanism. and 2) Management Process Strategy with the institute of natural resources and environment and way of life for a future mechanism, acting as a centre for knowledge management. Under today's rapid changes in society, economy, politics, and technology, we focus on driving the economy based on technological innovation. However, in the past, the base of natural resources and the environment has been done to cause global warming. Depleted resources biological loss, diversity, pollution, water source and stream destruction. Affect the quality of life in human society as a whole. Therefore, Human society must focus on development based on sustainable natural resources and the environment. The strategies and mechanisms for the management of the Upper Mae Kuang River Basin from this study is a lesson of success that is important for creating practical benefits to natural resources and the environment. Especially in river basin areas that should be realized and jointly rehabilitated quickly

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Development of Strategies to Promote the Learning and Innovation Skills of Students for Schools under the Secondary Educational Service Area Office

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Abstract— *The purposes of this research were: 1) to study the components and indicators of students' learning and innovation skills for schools under the Secondary Educational Service Area Office; 2) to study the current conditions and factors contributing to the promotion of students' learning and innovation skills; 3) to create and review strategies that promote students' learning and innovation skills. The sample groups consisted of 357 school administrators and teachers. The tools used in this study were interviews, current condition questionnaires and factors contributing to the promotion of students' learning and innovation skills and the construction and strategies assessment. The data were analyzed by using percentage, frequency, mean, and standard deviation. The research results were found: 1) The components and indicators of learning and innovation skills of students consisted of 3 compositions and 11 indicators, 2) The current conditions promoting learning and innovation skills, Creativity and innovation, critical thinking and problem solving, and communication and collaboration were at a high level. Additionally, internal and external factors were at a high level. Share value and technology were at the highest level, 3) Assessing suitability and the implementing strategies consisted of 4 strategies, 14 minor strategies, strategies verification by suitability assessment and implementing strategies by experts, Strategy 1 Staff development has the highest average in the overview.*

Index Terms— ***Development of Strategies, Promotion, Learning and Innovation Skills***

I. INTRODUCTION

In the present, the modern world has changed rapidly and radically in all dimensions such as society, economy, politics, and technology which accelerate many countries to adjust and develop policies to keep up with the changes and be able to take up space in society. The quality of people is a significant factor which supports and encourages policies to succeed and achieve the international standards. To develop the country to be as developed as other countries, it is necessary to upgrade from being a technology purchaser to be the innovator. Therefore, educational development is an immense factor which leads to personnel development and a shift of body of knowledge. To create a society of learning, educators are required to have people prepare for change and emphasize the importance of creating innovations. (Office of the Education Council: ONEC, 2016)[1] The 21st century is the productivity era, the era of creating innovation competition to respond to daily life and work life of every occupational class. Hence, Thais need to learn new technology and be innovators who create and develop innovations according to the context of Thai society. (Upper Secondary Education Bureau (Office of the Basic Education Commission: OBEC), 2017)[2] In accordance with the 12th National Economic and Social Development Plan [3] which focuses on the Philosophy of Sufficiency Economy, sustainable development and people-centered development are concentrated. Moreover, the economic growth which decreases inequality, the growth of productivity acceleration based on wisdom and innovations are targets. (Office of the National Economic and Social Development Council, 2016)[4] Reformation of the learning process responding to changes in the 21st century, development and promotion of human resources, and the improvement of the learning system to encourage 21st century skill development are mentioned in the National Strategies 21 years (2018-2037). Encouraging Thai people to create and develop technology and innovation for the country, transforming social values and culture, providing opportunity and equality, promoting the area of development based on technological and innovative knowledge, the progression of science, technology, and innovation are also stated. According to the strategies mentioned, being a lifelong learning and adaptive person are necessary for Thai people. Traditional education is inadequate to survive in the modern world. Hence, every Thais need to learn to adjust themselves to survive in society. (Administration and Knowledge Development Institution of King Mongkut's

University of Technology of Thonburi, 2017) Three factors leading to the potential of creative organization focus for innovation are people, knowledge, and skills of human resource. (Hoy and Miskel, 2008)[5] The education needs to be adapted to suit the learning of the 21st century for creating a learning person without focusing on a body of knowledge but skills, especially creative and innovative skills which are necessary skills in the 21st century. Those skills prepare people for being creative entrepreneurs in the future because the creative and innovative skills are crucial factors to support achieved and survived organization. (Von Stamn, 2008)[6]

According to the analysis results of sample countries consisting of China, Vietnam, Japan, Korea, Germany, and Finland, "A person of Quality" is used as a guideline to develop countries. In China and Vietnam, special skills of the population are mainly developed, and likewise, science, technology, and educational innovation are promoted to be equal to other countries. To develop human to have potential for high competition in Western countries, Asia, and recently opened socialist countries, comparing the overall of "a person of quality" found that there are similar features which are having high learning and working skills, being a learning enthusiast with ability to produce and create new innovations. Similarly in Germany and Finland, culture of learning is the main educational culture. Therefore, one quality policy is innovative development for competitive potential. (Sinlarat et al, 2010)[7]

Development of the innovation creators or the "innovators" is extremely challenging. Hence, interest and capacity in creating new knowledge to solve problems are essential skills. (Yaboonthong, 2020, p.142-143)[8] The quality of Thai education is necessarily adjusted to improve students' potential by focusing on creating people with 21st century skills, especially learning and innovative skills, the necessary skills for the modern world. (Thailand Development Research Institution: TDRI, 2013)[9] Therefore, innovators in the education segment need to understand the causes and methodologies of educational management for the successful educational disruptive innovation. (Pakotang, 2020, p.19)[10]

According to the importance and problems stated, the researchers are interested in studying the current conditions and conditions encouraging development of strategies to promote learning and innovation skills of students in school under the Secondary Educational Service Area Office. The results of the research can be applied to develop students' quality and used as the guideline for schools with the same context as target schools. Moreover, academics, educators, directors, and people

who are involved in education can adapt and apply the results in other schools which led to sustainable development.

II. RESEARCH OBJECTIVES

1) To study the components and indicators of students' learning and innovation skills for schools under the Secondary Educational Service Area Office.
2) To study the current condition and factors contributing to the promotion of students' learning and innovation skills for schools under the Secondary Educational Service Area Office.
3) To create and review strategies that promote students' learning and innovation skills for schools under the Secondary Educational Service Area Office.

III. RESEARCH METHODOLOGY

Research Design

This study was a qualitative research carried out by the following procedures;

1) To study the components and indicators of students' learning and innovation skills for schools under the Secondary Educational Service Area Office, documentary, articles, journals, and research were synthesized and expert interviews were arranged to verify the components and indicators.
2) To study the current conditions and factors contributing to the promotion of students' learning and innovation skills for schools under the Secondary Educational Service Area Office, online questionnaires were applied.
3) To create and review strategies promoting students' learning and innovation skills for schools under the Secondary Educational Service Area Office, inner factors (7s McKinsey) and outer factors (PEST) were analyzed into the TOWS Matrix table. Furthermore, the Workshop was arranged by experts to create and verify strategies and the experts used the Connoisseurship method to examine strategies.

Key Informants

1) The synthesis of documentary, articles, journals, and research, and components and indicators verification by interviewing 11 experts were exploited to study the components and indicators of students' learning and innovation skills.

2) Studying the current conditions and factors contributing to the promotion of students' learning and innovation skills, 357 random samples consisting of school administrators and teachers randomized by a table of Krejcie and Morgan (Krejcie & Morgan) responded to online questionnaires proved by 5 experts.
3) Creating and reviewing strategies, analyzing inner factors (7sMcKinsey) and outer factors (PEST) into the Town Matrix table was operated. Additionally, to create strategies, a workshop by 11 experts was

arranged, and the Connoisseurship was applied by 9 experts to examine strategies.

Research Tools

1) To study the components and indicators of students' learning and innovation skills, the synthesis table was used and a structural interview was arranged to verify the components and indicators.

2) To study the current conditions and factors contributing to the promotion of students' learning and innovation skills, online questionnaires were used. The questionnaires consisted of 4 sections as followed; Section 1: Check list questionnaire containing basic information of respondents, Section 2: Questions of current conditions contributing to the promotion of students' learning and innovation skills, Section 3: Questions of factors contributing to the promotion of students' learning and innovation skills for schools under the Secondary Educational Service Area Office, and Section 4: Questions surveyed for suggestion of promoting students' learning and innovation skills. The second and third sections of the questionnaires are 5-point rating scale questionnaires which is different form Section 4 containing open-ended questions.

3) To create and review strategies, a workshop was arranged to create and verify strategies. Furthermore, rating scale questionnaires which were used for assessing suitability and implementation were applied to examining strategies.

Data Analysis

1) Studying the components and indicators of students' learning and innovation skills, statistical analysis was calculated for percentage.

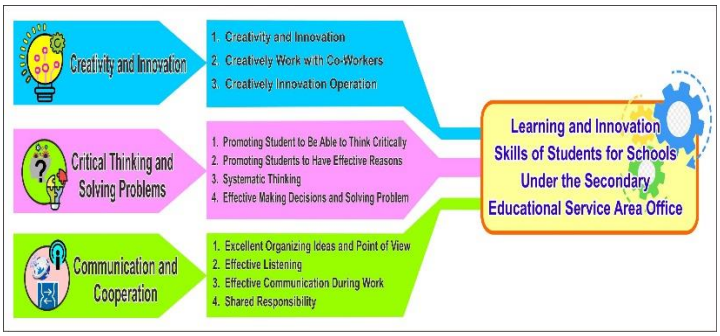
2) Studying the current conditions and factors contributing to the promotion of students' learning and innovation skills, online questionnaires proved by 5 experts using the Index of Item Objective Congruence: IOC were applied and statistical data was analyzed by using mean and standard deviation (S.D.)

3) To create and review strategies, create and verify strategies, a workshop was arranged, and 5 points rating scale questionnaires along with Connoisseurship were used to survey the suitability and implementation. Mean and standard deviation were calculated.

IV. RESEARCH RESULTS

1) According to the study of components and indicators of students' learning and innovation skills for school under the Secondary Educational Service Area Office, three components were found. To verify the components and indicators of students' learning and innovation skills for school under the Secondary Educational Service

Area Office found that Component 1: Creativity and innovation has the majority opinion which accounted for 100 percent followed with Component 2: Critical thinking and problem solving which is 97.75 percent and Component 3: Communication and cooperation (93.25 percent). The Component 1: Creativity and innovation included the indicators as followed; 1) Creativity and innovation, 2) Creatively work with other people, and 3) creatively innovative operation. These indicators have the same response rate which are 100 percent. Next, Component 2: Critical thinking and problem solving consisted of 3 indicators with the same opinion rate, 100 percent; 1) Promoting students to be able to think critically, 3) Systematic thinking, 4) effective making decisions and solving problems. And Indicator 2: Promoting students to have effective reasons accounted for 91 percent. Lastly, Component 3: Communication and cooperation discovered that Indicator 1: Organizing idea and point of view and Indicator 3: Competent communication in work have the same response rate which accounted for 100 percent. Additionally, Indicator 4: Shared responsibility has 91 percent of response rate and Indicator 2: Effective listening accounted for 82 percent.



Picture 1: Components and indicators contributing to the promotion of learning and innovation skills of students in schools under the Secondary Educational Service Area Office

2) The overview of current conditions promoting students' learning and innovation skills for schools under the Secondary Educational Service Area Office is at a high average (x = 3.95 S.D. = 0.73). Considering each indicator individually found that the average of creativity and innovation indicator is the highest (x = 3.99 S.D. = 0.73). In contrast, the communication and cooperation indicator and critical thinking and problem solving indicator have the lowest average (x = 3.92 S.D. = 0.71). The factors contributing to the promotion of students' learning and innovation skills for school under the Secondary Educational Service Area Office have the high average in overview (x = 4.05 S.D. = 0.76). Obviously, inner factors have the highest average (x = 4.10 S.D. = 0.75) followed with outer factors (x = 3.96 S.D. = 0.77), when considered the indicators separately. The overview of inner factors contributing

to the promotion of students' learning and innovation skills for schools under the Secondary Educational Service Area Office has a high average (x = 4.11 S.D. =0.75). When the indicators are considered individually, it is found that share value has the highest average (x = 4.27 S.D. = 0.72) followed with structure (x = 4.15 S.D. = 0.77), strategy and staff (x = 4.14 S.D. = 0.71) which also have high averages. On the contrary, the average of the system is the lowest (x = 3.95 S.D. = 0.73). The results of outer factors contributing to the promotion of students' learning and innovation skills for schools under the Secondary Educational Service Area Office have a high average in the overview. The average of technology is the highest (x = 4.10 S.D. = 0.68) followed with policy and politics (x = 4.03 S.D. = 0.75), social (x = 3.90 S.D. = 0.79). The lowest average is economy (x = 3.85 S.D. = 0.83) when individually considered each indicator.

3) Creating strategies and promote students' learning and innovation skills for schools under the Secondary Educational Service Area Office requires 4 master strategies, 14 minor strategies, 21 objectives, 28 indicators, and 31 guidelines, as followed:

Master Strategies: Strategy 1 Staff Development

Minor Strategies

1. Create positive power and be good colleagues who are open-minded at work.
2. Create ideologies, values, and creativity when work together
3. Strengthen productive and applying innovation skills of school administrators, teachers, and students.
4. Encourage teachers to manage the classroom for 21st century learners.
5. Strengthen competencies of students which led to the development of 21st century learners.

Objectives

1. Staff are good co-workers with unity and cooperate to solve problems.
2. Staff are open-minded, listen to different opinions and perspectives, and work democratically.
3. Staff accept changes and work flexibly according to the context of schools which moves with the times.
4. Staff recognize and involve in creating ideologies and values.
5. Staff recognize and be creative during work.
6. School administrators, teachers, and students present their innovations in sharing forums and competitions.
7. Teachers manage various teaching methodologies to encourage students' learning and innovation skills.
8. Students have competencies leading to 21st century learner development.

Indicators

1. Percentage of the number of staff who are good colleagues with love and unity.
2. Percentage of the number staff who regularly participate in assisting PLC and solve learning management problems.
3. Percentage of the number of open-minded staff and work democratically.
4. Percentage of the number of staff who have ability to work following the policy of the affiliated agency which is flexible according to the context of school and keeps up with the times.
5. Percentage of the number of staff who have ideologies and values at work.
6. Percentage of the number of curative and cooperative staff.
7. Percentage of school administrators, teachers, and students who present their innovation in sharing forums or competitions once in an academic year.
8. Percentage of the number of students who have at least a good level of satisfaction with teachers' learning management.
9. Percentage of the number of students who think outside the box, think creatively, set alternatives for solving problems, and choose a suitable way to solve the problems.
10. Percentage of the number of students who are able to identify conceptual relationships.
11. Percentage of the number students who have 10 key competencies.

Guidelines

1. Arrange activities to create positive power, love, and unity of staff and encourage good relationships between co-workers.
2. Regularly organize PLC activities for exchange information and solve learning management problems.
3. Create activities to promote staff to be open-minded and work democratically.
4. Work following the policy of the affiliated agency which is flexible according to the context of schools and moves with the times.
5. Provide activities promoting staff to cooperatively create ideologies and values.
6. Arrange activities to encourage creativity of staff during working together.
7. Arrange sharing forums for innovation presentations of school administrators, teachers, and students once in an academic year.
8. Provide various learning management such as GPAS, Active Learning, PBL, STEM, and SEEEM to strengthen students' learning and innovation skills.
9. Teach students based on questioning methods focusing on creativity and freedom of thought.
10. Create activities promoting students to share logical ideas, discuss reasonably, summarize logic reasons, be able to distinguish personal opinions and biases, and create innovation.

11. Arrange ingenious and creative activities challenging students to overcome obstacles.
12. Promote students to identify problems, collect and analyze data to determine the causes, set alternatives for solving problems, and choose a suitable way to solve the problems.
13. Organize activities for students to relate the conceptual relationships.
14. Arrange activities to strengthen students' key competencies. Thai people have English communication skills, high capacity, and are socially conscious.

Master Strategy: Strategy 2 Modern Media, Technology, and Innovation Development

Minor strategy

1. Encourage teachers and students to create and apply media and information technology for learning and innovation development.

Objectives

1. Teachers and students produce and implement media, information technology, E-learning, and online media for continual learning and innovation development.
2. High speed Internet, computers, media, and modern materials and tools are provided for students adequately.
3. Students apply media, and information technology productively.
4. Teachers are able to use educational platforms.
5. Teachers are able to assess the performance of educational platforms
6. Information Center is provided for people involved in education to get information and share ideas to staff or schools publicly.

Indicators

1. Percentage of the number of teachers producing and applying media, information technology, E-Learning, and online media.
2. Percentage of the number of students who cooperatively produce and present innovations.
3. Percentage of the number of students applying media, information technology, E-Learning, and online media as learning tools.
4. Percentage of the number of students using high speed Internet system, computers, media, and modern materials and tools.
5. Percentage of the number of students with media literacy have a high level of effective information technology skills.
6. Percentage of the number of teachers who are able to apply educational platforms.
7 The number of educational platforms which is assessed the performance (At least 1 per an academic year)

8. Percentage of people involved in education who have a good level of satisfaction with the Information Center.

Guidelines

1. Promote teachers to produce and apply media, information technology, E-Learning, and online media for continual learning and innovation development.
2. Encourage students to cooperatively produce and present innovations (At least 1 innovation per a group in an academic year)
3. Encourage students to implement media, information technology, Internet system, E-Learning, and online media as learning tools.
4. Improve high speed internet systems, computers, media, modern materials and tools to provide for students adequately.
5. Strengthen student's media literacy, techniques of using media and technology, and accurate and appropriate usage for communication.
6. Encourage teachers to apply educational platforms.
7. Teachers assess performance of educational platforms using learning methodology through educational platforms of students as criteria.
8. Manage service system, Information Center for people involved in education to get information and share ideas to staff and school publicly.

Master strategy: Strategy 3 Management System Development

Minor strategies

1. Develop operational plans, projects which contribute to promotion of students' creativity and innovation and align with policies of the affiliated agency.
2. Encourage the appointment of staff to be responsible for promotion of students' creativity and innovation
3. Strengthen the supervision system.
4. Promote the internal quality insurance.

Objectives

1. Visions, operational plans, and projects which contribute to promotion of students' creativity and innovation and align with the policy of the affiliated agency are set by the cooperation of staff.
2. The staff are appointed for promotion of students' creativity and innovation.
3. Advisory and following up the creating innovation of staff are provided.
4. The effective internal quality insurance is set.
5. The form of performance assessment relating to the school achievement is set.

Indicators

1. Percentage of the number of staff and people involved in school have at least a good level of satisfaction with operational plans and projects.
2. Percentage of the number of projects and project reports which contribute to the

promotion of students' creativity and innovation.
3. Percentage of staff who are satisfied with the operation promoting students' creativity and innovation.
4. Percentage of school administrators and teacher who were supervised and followed up the innovation (At least once a semester)
5. The results of internal quality insurance are at least at an excellent level.
6. Percentage of school administrators and teachers have work relating to the school achievement.

Guidelines
1. Cooperatively set the visions, operational plans, and projects which contribute to promotion of students' creativity and innovation and align with policies of the affiliated agency.
2. Implement policy promoting students' creative and innovative skills to actualize students' potential.
3. Strengthen students' learning and innovation skills by applying shared responsibility and creativity.
4. Supervise and follow up the innovation production of school administrators and teachers at least once a semester.
5. Apply a quality system for management and implement the quality assurance.
6. Assess the performance of school administrators and teachers using the school achievement as a criteria.

Master strategy: Strategy 4 Network Development

Minor strategy
1. Promote systematic working with the network to develop students' creativity and innovation.

Objectives
1. Build cooperative networks to create innovation and strengthen students' thought and intelligence continually and rapidly.
2. Strengthen networks by exchanging great innovation practice.

Indicators
1. The level of satisfaction of the networks towards students' creativity development is at the good level.
2. The number of times of network cooperation when arranging activities promoting students' creativity and innovation.
3. There is a good creating innovation practice of the networks to compare with students' methodologies.

Guidelines
1. Encourage students to build networks and share responsibility to develop students' creativity and innovation.
2. Cooperatively arrange activities promoting creativity and innovation to find the empowerment concept to drive the idea into action.

3. Encourage the discovery of good innovation practice to compare with students' methodologies.

The overview of examining strategies by suitability assessment and acceptance of strategies promoting students' learning and innovation skills for schools under the Secondary Educational Service Area Office are x = 4.83 S.D. = 0.40 which is considered as the highest average. When strategies were considered individually, it was found that Strategy 1: Staff Development has a high average (x =4.89 S.D. = 0.33) followed with Strategy 2: Modern media, technology, and innovation Development (x = 4.86 S.D. = 0.40), Strategy 3: Management Development (x = 4.82 S.D. = 0.39), and Strategy 4: Network Development (x = 4.74 S.D. = 0.49).



Picture 2: Strategies promoting learning and innovation of students for schools under the Secondary Educational Service Area Office

V. DISCUSSION

Components and indicators of students' learning and innovation skills for school under Secondary Educational Service Area Office are as followed: 1) Creativity and innovation consisting of the indicators 1.1) Creativity and innovation, 1.2) Creatively work with others, 1.3) Creatively innovation operation, 2) Critical thinking and problem solving along with 3 indicators: 2.1) Promoting students to be able to think critically, 2.2) Promoting students to have effective reasons, 2.3) Systematic thinking, 2.4) effective making decision and solving

problem, 3) Communicate and cooperation consisted of 4 indicators, 3.1) excellent organizing idea and point of view, 3.2) effective listening, 3.3) effective communication during work, 3.4) shared responsibility. The components and indicators aligned with Neelayothin (2016)[11] who studied The Indicators of Students' skills in the 21st Century for the Fundamental Education: The development of Structural Relationship Model and also agreed with Meedee and Lincharoen (2015)[12] studied The Guidelines of Assessment Development of Learning and Innovation Skills of Students According to the Idea of Learner in the 21st Century Assessment.

In the overview, Component 1: creativity and innovation of current conditions which promote students learning and innovation for school under the Secondary Educational Service Area Office have high average. Considering the components separately found that creatively work with other people has the highest average, but creativity and innovation and creatively innovative operation have the lowest average. Additionally, Component 2: critical thinking and solving problems has a high average in the overview and systematic thinking has the highest average when considered the components individually.

Effective making decisions and solving problems, having effective reasons, and critical thinking have the lowest average. The average in the overview of Component 3: communication and cooperation is high. The indicators considered separately found that organizing ideas and point of view has the highest average, whereas shared responsibility, effective listening, and effective cooperation during work have the lowest average. The current conditions are consistent with the study A Model of the 21st Century Desired Characteristics for Students Quality Development of Nanjatee and Chuchart (2017)[13]. The study found that setting management systems, cooperatively organizational development, and the development of curriculum and learning process, learning management for technological and communicative potential of students are the most essential components to develop learners to have the 21st century desired characteristics.

In the overview, the average of inner factors contributing to the promotion of students' learning and innovation skills for schools under the Secondary Educational Service Area Office is at a high level. In contrast, considering inner factors individually found that share value has the highest average, followed with structure, strategy, and staff which have the same average. In addition, the inner factors with the lowest average are skill, style, and system. For the outer factors contributing to the promotion of students' learning and innovation skills for schools

under the Secondary Educational Service Area Office, the average is high in the overview. Moreover, when the outer factors are examined separately, technology has the highest average which is considered in the high level, and the outer factors with the lowest average are; policy and politics, social, and economy. The stated results are agreeable with Chimthongdee (2014). The study School Management Strategies for Creating Learning Management Innovations found that enrichment of creative culture, strategic planning, and creating innovation procedures are the strengths.

Creating strategies promoting students' learning and innovation skills for school under the Secondary Educational Service Area Office consists of 4 master strategies, 14 minor strategies, 21 objectives, 28 indicators, and 31 guidelines, examining strategies by assessment of suitability, and acceptance of strategies promoting students' learning and innovation skills for school under the Secondary Educational Service Area Office has high average in the overview. Considering strategies individually, it is found that Strategy 1: staff development has the highest average and it is consistent with the 12th National Economic and Social Development Plan, the development center. (Office of the National Economic and Social Development Council, 2016, p.4)[14] Strategy 2: modern media, technology, and innovation development has the second average level followed with strategy 3: management system development and Strategy 4: network development which are consistent with the study of Sriweraskul (2010)[15] Strategies to Enhance Good Character of Students in Schools under the Foundation of the Church of Christ in Thailand. The study found that 1) to strengthen teachers and school members' existing capabilities by pooling together their strengths, skills, knowledge, devotion and commitment, 2) to improve management qualities of the school and teachers and 3) to synergize the family, community and related organizations outside the schools are effective strategies which agree with the study named Academic Administration Strategies to Promote 21st Century Skills of Students in Alternative Private Schools of Chaisooksung (2014, p. 194-195)[16]. The suitable and possible strategies discovered from the study are Master strategy 1) reforming the evaluation to promote 21st century skills of students 2) enhancing the learning environment to promote 21st century skills of students 3) creating excellence of the professional development to promote 21st century skills of teachers. Moreover, the results of studies align with the study named A Study of 21st Century Learning Skills for High School Students in Cao Bang Province, Vietnam of Nguyen (2018, p.14)[17]. The study presented the guideline of encouraging 21st

century learning skills as the following; learning management focusing on theory and practices, practicing creativity and problem solving skills, providing competitions and training on 21st century skills and learning by doing.

VI. CONCLUSION

The components and indicators of students' learning and innovation skills for school under the Secondary Educational Service Area Office are 1) Creativity and innovation which consists of 3 indicators; 1.1) Creativity and innovation, 1.2) Creatively work with others, 3) Creatively innovation operation, 2) Critical thinking and problem solving along with 3 indicators; 2.1) Promoting students to be able to think critically, 2.2) Promoting students to have effective reasons, 2.3) Systematic thinking, 2.4) Effective making decision and solving problem, 3) Communicate and cooperation consisted of 4 indicators, 3.1) Excellent organizing idea and point of view, 3.2) Effective listening, 3.3) Effective communication during work, 3.4) Shared responsibility.

The current conditions of promoting secondary students' learning and innovation which proceeded with the components and indicators of student's learning and innovation are ranked as following; Component 1: Creativity and innovation, Component 3: Communication and cooperation, Component 2: Critical thinking and solving problems. Share value is in the first rank of inner factors contributing to the promotion of students' learning and innovation skills followed with structure, strategy, staff, skill, style, and system. The outer factors contributing to the promotion of students' learning and innovation are technology, policy and politics, social, Economy. The strategies promoting student's learning and innovation are Strategy 1: Staff development, Strategy 2: Modern media, technology, and innovation development, Strategy 3: Management system development, and Strategy 4: Network development.

To summarize, secondary school teachers should apply the components contributing to the promotion of students' learning and innovation skills which are found in the study to develop students to contain learning and innovation skills and be consistent with the content of school. Furthermore, the affiliated agency of secondary schools should encourage school administrators to support learning and innovation skills of secondary students by promoting, supporting, and resource management. Study the recommendation of secondary school policies to accelerate the development of learning and innovation skills to be systematics and genuinely developed.

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A Conceptualized Model of Digital Transformation for Sport Organization in Thailand

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Abstract— *Digital transformation becomes a significant driver for numerous industries such as sports, food services, automobiles, and clothing. Firms are obliged to understand how to develop digital capabilities to avoid an inevitable technological disruption and transform their business model successfully. The notion of digital transformation for Sports Organizations in Thailand is a novel idea in academia. This research aims to explore an insight of Sport Organization in Thailand. It focuses on what dimensions should be considered and incorporated while implementing any digital transformation. This research inductively builds a digital transformation framework for sports organizations in Thailand via reviews and in-depth interviews of 28 experts with a digital and sporting background. This research agenda proposes a framework driven by–1) reviewing digital transformation literature and the work on digital maturity concepts on a theoretical basis, 2) proposing and refining a conceptual model from the experts' critical insights. Furthermore, research findings indicate that digital transformation for Sports Organizations in Thailand should incorporate six capability dimensions composing of strategy, agility (organization and culture), operations (including sports sponsors and sporting agencies), people (employees), technology, and sports fans/consumers when considering such an implementation. Such capabilities should be viewed as an important basis for a research initiative in digital transformation in Thailand's sports organizations. Practitioners can modify or adapt the proposed conceptualization model and the defined six capability dimensions as guidance for the current state and progress of their digital transformation efforts.*

Index Terms— ***Digital Transformation, Digital Maturity, Digital Capability, Sports Organizations, Thailand***

I. INTRODUCTION

The digital transformation is radically influencing and affecting some business disruption. The rise of digital technology plays a vital role in driving change in various industries. It encourages an organization to remodel the design, operation, and interaction in its business model. Digital transformation is customer-driven and requires organizational changes alongside the implementation of digital technologies (Bloomberg, 2018; Peter, 2017). Furthermore, volatile market conditions have accelerated most industries' challenges, including, but not limited to, sports industries. Several of them have adopted some form of digital transformation and evolved it to different maturity stages. However, some organizations still struggle to establish and execute digital agendas because they are unable to contemplate the setup, the process, and the topics (Hebbert, 2017; Peter, 2017; Römer et al., 2017).

Bughin & Van Zeebroeck (2017), on the other hand, assert that some companies are aware of the need to pivot to a digitally inclined model, but there is little guidance to determine the right course of action. Furthermore, they are struggling to sustain the new and ever-evolving digital reality. A recent study (Bughin & Van Zeebroeck, 2017) confirms that only a small minority of companies successfully undertake digital transformation consistently and with an articulated corporate strategy. Furthermore, Gimpel et al. (2018) also reveal that most research output

focuses primarily on specific digital transformation facets or case-based evidence. For example, some sports firms have already strategized to communicate and implement digital transformation facets in their operation, process, and fan engagement. Others are still under review or operate using a traditional format. The lack of guidance in sports industry accentuates how such organizations in Thailand respond to digital challenges and carries out their current operation—understanding what management should consider when undertaking digital transformation in the sports organization is a recent phenomenon. On the practical side, consulting firms have published several practice-oriented publications about digital transformation. However, such publications have proposed insufficient concrete action to enhance an organization's efforts. On the academic side, the research in digital transformation for the sports field in Thailand remains limited. This study aims to develop a conceptual digital transformation model for guiding and providing insights into its compositions. This study will also promote the digital development of sports organizations in Thailand by providing a roadmap that enables determination, focus, and prioritization when planning an implementation. Furthermore, this study is also designed to use the digital maturity model as a theoretical framework. An extension to the conceptualized model will be explored from the professional's view in sports and digital areas for its relevancy and practicality.

Digital Transformation and its importance

Technology has continued to transform businesses across all industries. The process of using digital technology and transitioning among systems is called "digital transformation." Such transformations have drastically displaced current business models and reconstructed their working operations.

Digital transformation is a novel method of undergoing activities that generate new value propositions in businesses. Reddy and Reinartz (2017) define digital transformation as using information technology as a means of a more efficient and effective value creation process. The means refers to changes that new technology can bring about in the system. Thereby enabling organizations to transform their design, operations, and interactions within the business model. Digital transformation is also customer-driven and requires organizational change along with the execution of digital technologies (Bloomberg, 2018; Peter, 2017). Bughin & Van Zeebroeck (2017) point out that organizations that do not react to digital transformation are likely to suffer in their revenues and profits.

The ongoing change, driven by technological acceleration, has created a new synergy in business models across various segments. Sports organizations are likely to undergo rapid changes to converge on digital transformation to improve their performance and business growth. To capitalize on these opportunities, sports organizations can introduce more scalable technologies and platforms to engage fans. Furthermore, such organizations should be driven to innovate and create more personalized experiences.

Despite the opportunities, sports organizations may face difficulties such as a lack of vision and unwillingness to change behavior, traditional operation processes, and complex legacy systems. There are few studies and research on what management should consider when undertaking digital transformation initiatives in sports organizations and businesses. On the practical side, consulting firms have published several practice-oriented publications about digital transformation. They have included digital maturity models which assess the maturity of an organization when transforming digitally. However, the activities an organization must undergo to enhance its digital roadmap are not robust. In scholarly work, the research in this area relating to the sports industry in Thailand is limited. Therefore, understanding how digital transformation can be implemented for sports organizations in Thailand will guide them to review and examine their opportunities.

Digital maturity model

Digital maturity is the company's collected reaction to changes in the digital sphere, implementing digital achievements into business processes, and developing its staff capability in the digital realm. Westerman (2014) explained that digital maturity is a gradual digital transformation process and can be implemented in the organization's processes, staff, and other resources. The digital transformation process is a journey that involves several capabilities in an organization. The digital maturity model can be used in each phase of transformation to help identify gaps, and the organization can establish critical areas to focus on and where to start. Such a framework is

adopted to understand how digitally mature an organization is today and allows for developing a future roadmap.

Furthermore, this framework provides an understanding of where the organization is today and what could be incorporated. It can map the organization's projects based on the maturity of the transformation and help understand the organization's effort—the aforementioned supports clarifying the organization's goal on the digital transformation and reviewing whether it is successful.

It is understood that digital transformation is not the same as digital maturity–digital maturity is the basement of digital transformation. Companies that seek to increase their digital maturity level go through digital transformation in all aspects. The organization cannot approach digital transformation by doing it standalone as it requires an integrated approach with several functions and processes. In attaining the maximum level of digital maturity, the organization must rely on digitalization strategies with KPIs that allow the organization to evaluate its implementation.

Forrester's business digital maturity model 4.0 has explained four key dimensions that determine how well an organization transforms digitally to reach its maturity level– culture, technology, organization, and insight (Gill and Van Boskirk, 2016). However, some researchers may define this differently as customers and strategy (see Figure 1).

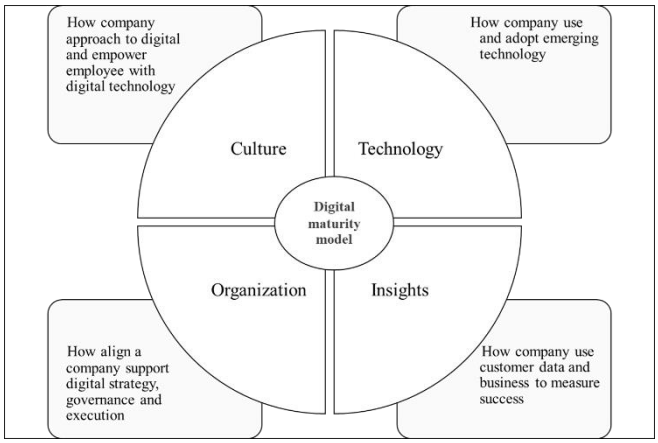


Figure 1 Foresster ‘s Digital Maturity Model 4.0

Some practical researches are working on the digital transformation model and identifying the organization's dimensions. Gimpel et al. (2018) provide an actionable digital transformation framework for cross-industry applications. This framework consists of six actions: the customer, the value proposition, operations, data, organization, and transformation management. Back and Kaltenrieder (2017) propose a similar model with nine dimensions: customer experience, product innovation, strategy, organization, digitization process, collaboration, information technology, culture and expertise, and transformation management. Furthermore, Valdez-De-Leon (2016) presents a digital maturity model for the telecommunication industry. This model aims to offer a structured view of digital transformation that helps organizations benchmark themselves. This model introduces seven dimensions: strategy, organization, culture, value chain/eco-system, operations, technology, and innovation.

In recent years, experts from the sports industry have developed a digital maturity model (Wijnen, 2020). This model has not performed well within the industry as organizations are accustomed to the traditional operation. However, the traditional approach will be challenged by the changing digital technology trend and an uncertain market environment. The disruption threat has been underlined, and thus the traditional organization needs to be modified. The traditional model has thereby opened opportunities for researching the significance of digital transformation in the industry of sport and its organization. However, this research does not aim to find the digital transformation's maturity but rather explore the dimensions that sports organizations should consider when they embark upon a digital transformation.

II. RESEARCH OBJECTIVES

This research will explore specialists' perspectives on what elements or dimensions sports organizations should examine while implementing the digital transformation. It aims to develop a conceptualized model of digital transformation for sport organization in Thailand.

III. RESERCH METHODOLOGY

Research Design

This study is designed to explore the perspectives of digital and sport practitioners qualitatively. The following procedures carry this out:

1) The first stage of research involves a review of literature on digital transformations. The concept of digital maturity is also reviewed and used as a theoretical framework to amplify a conceptualized model for sports organizations in Thailand.

2) The second stage involves qualitative methods to explore sports and digital experts' perspectives on the nature of reality and improve the proposed model.

3) The final stage is to collect, identify and analyze the experts' descriptive information to refine the model and report.

Key Informants

1) The study gathers detailed information from experts who have backgrounds and experiences in the sport and digital field.

2) 28 participants are recruited from the relevant digital and sports areas. These include– Business Management, Sport Management and Association, Digital Marketing and Administration, Academist in the digital field. Experts are selected by sampling stratified on their academic backgrounds and expertise.

Research Tool (Interview)

The study is based on an in-depth interview method with qualitative data in the form of opinions, interview transcripts, and noted documents.

1) With their consent, the research construction, the objectives, and the interview process are explained to participants through data collection and analysis reports.

2) The participants are interviewed using open-ended questions. Such questions allow them to elaborate their ideas while also allowing a researcher to probe for further information to assure that the model is relevant and pragmatic.

Data Analysis

1) Data is accumulated from interview transcripts to understand the phenomenon, the verbatims, and the facts.

2) Content analysis is used to codify, organize and categorize the data into meaningful structures conforming to research objectives.

IV. RESEARCH RESULTS

According to the inductive work and main findings, the digital transformation model for Thailand's sports organizations is generated successfully. Six dimensions have been suggested: strategy, agility (organization and culture), operation with customers in views of sport sponsor and sport agency, people in the organization, modification of technology, and sport fans or consumers (see Figure 2).

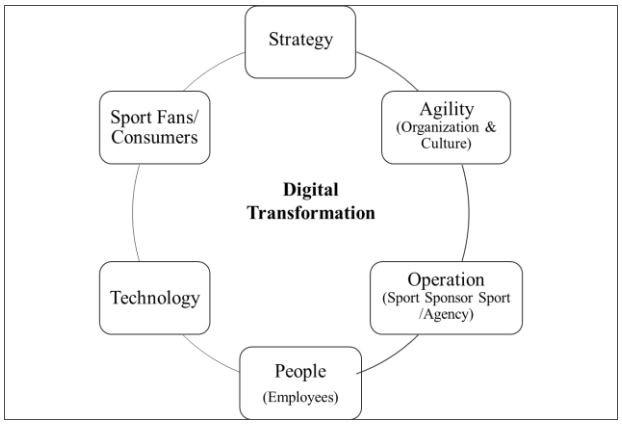


Figure 2 Digital Transformation Model for Sport Organization in Thailand

Strategy: An organization should agree on its goals and objectives before developing a digital strategy. Most experts suggest that an organization's goals and the digital goals should be aligned prior to the inception of the company's strategy as it helps understand the investment and required resources. This alignment will help an organization focus on its strategies and potentially accomplish its plans. Furthermore, the strategy needs to be streamlined to include a digital strategy while also effectively conveying all involved functions and departments in the organization. Other studies on digital transformation models assert that digital strategies of successfully transformed organizations are not only well documented but are also communicated sufficiently (Kane et al., 2016; Schumacher, Erol & Sihn, 2016). Therefore, management must communicate the organization's progressive vision and strategy and endorse the transformation roadmap (Svahn et al., 2017). Moreover, the organizations should proactively and systematically explore and evaluate new trends to identify new business opportunities.

Agility: This plays a vital role in an organization and its culture. Sports organizations should encourage both management and employees to respond quickly to changes in technology, market environment, fan clubs, and sponsorships. Research supports that organizations that move away from their traditional hierarchies and embrace leaner organizational structures provide greater agility and quicker decision-making (Webster et al., 2002). Cooperation, collaboration, and commitment from each function are the focus points that must be cultivated and reinforced in sports organizations. Additionally, openness, candor, and informality are the other behaviors that should be promoted in sport organizations to devise a native digital culture. Such characteristics are supported by Schlaepfer et al. (2017), who claim that company culture must allow

freedom to experiment, room for creativity, and psychological safety.

Operation: This includes internal administration, operations, dealing with customers, and other stakeholders (such as sports sponsorships and sports agencies). It is essential to identify the existing process or operation that will no longer support the organization's goals, sports fan engagement, nor sponsorship involvement. The organization should move away from a silo, uncoordinated and complex environment and make it more interactive, simplified, and efficient. In response to this, an efficient platform and innovative technology may be required. Getting core operations accurate can be a secret weapon in an industry that increases efficiency, reduces costs, and maximizes impact. Moreover, a sound approach can help the firms keep up with the market (Martin G. & Shar V., 2016). When considering a transition, a gradual and a small-scale change should be recommended to minimize external disruption and internal resistance.

People (Employees): Apart from technology, people in the organization should be well equipped and training provision. Organizations must develop and implement appropriate training programs to promote digital skills and new skills to reinforce employee capabilities. If digital skills are missing or inadequate, external candidates can be used to complement existing teams. Cascio & Montealegre (2016) suggest that a skill gap prevails among existing employee skills and those required to compete in a volatile and complex world. Finally, a global study stated that 76% of the digitally maturing organizations indicated that they provide their employees with resources and training opportunities to develop digital acumen. Thereby demonstrating the importance of talent development for a successful transformation (Kane et al., 2016).

Technology: This should start from adopting and using technology for data management, especially for customer engagement. It is insinuated that, given the rise in popularity of big data, sports organizations will be required to invest in new capabilities such as real-time data collection of digital exposures and experiences. Gathering data will allow sports organizations to assimilate and respond to the ever-changing fan behavior and preferences. As a result, they can accommodate sponsors with information on advertising, consumer touchpoints, and user journeys. The agency can thereby use the data to create a marketing solution and build long-term relationships with fans in real-time and provide them faster services. Thus, sports fan engagement and customer loyalty management can be leveraged through data management and campaign personalization driven by consumer preference. Anderson & William (2018) report that organizations should use the benefits of digital technologies by collecting customer data and utilizing it to predict trends and behaviors to provide personalized services. However, it is recommended that an organization should gradually involve consumers with innovative programs and loyalty campaigns rather than bombarding them.

Fan and consumers engagement. Fan engagement is one of the most critical challenges for sports organizations as consumers shift their behavior towards mobile devices. Social media and the Internet have dramatically transformed consumer needs. Consumers expect thrilling experiences in short durations. Furthermore, experts suggest that sports participation in the stadium might not be a solution given today's volatile environment and social distancing. Organizations should review how to leverage connectivity to deliver sports fans and consumers satisfaction consistently and in an entertaining manner. Given the deteriorating attention span of a consumer and recent technological advancements, organizations may be required to deliver entertaining content more proactively. Additionally, experts recognize that digital platforms will become an essential factor in sustaining fan engagement in the future. Organizations will be required to opt for digital channels to interact with their fans and consumers. Research suggests that digital technology can help better understand fan behavior and experiences when viewing sports (Berghaus et al. ,2017). Therefore, the organizations must ensure digital content and channels are appropriately designed to serve and respond to the fans' experience on all digital and non-digital channels. Not all fans and customers have the same behavioral needs. Therefore, digital marketing communication will help gain a more profound knowledge of fans' preferences and implement targeted promotional campaigns.

V. DISCUSSION

This research focuses on the theoretical understanding of digital maturity as a knowledge base. A conceptualized digital transformation model for sports organizations is constructed via an innovation-based and inductive approach using expertise from the digital and sports domain. Moreover, the results provide executives with recommendations to implement, focus and prioritize digital transformations at their firms. With the rise of digital transformation and its disruption threat, the aforementioned becomes a driver for sports organizations and emphasizes the need to act urgently. Furthermore, Bughin & Van Zeebroeck (2017) point out that organizations that do not react to digital transformation are likely to suffer. Therefore, firms need to produce a clear strategy and incorporate a

"digital" outlook in the core of their business strategies. Furthermore, to capitalize on the opportunities and continue to grow in an uncertain environment, sports organizations will have to consider a digital transformation and embed it in each phase of their operations.

Despite the opportunities, some sports organizations may still face difficulties when introducing and focusing on digital. This research contributes pragmatic insights to support a sports organization via a digital transformation conceptual model that proposes six dimensions. Such a model can be an imperative basis for a research initiative in digital transformations in Thailand's sports discipline. Practitioners can thereby modify or adapt the suggested framework and use it as guidance for their digital transformation progress. However, a clear conceptual definition of this model in the academic domain is limited.

It should be noted that such a transformation is a continuous effort as the market is continually evolving. Firms might need to start on a small scale to ensure the concepts and models are secured and buy-in throughout the organization. Once the models are deemed fruitful, the initiative can be scaled up. It is a journey that requires a deep understanding of current capability. The future vision will determine how the six dimensions will need to be adapted and changed.

Although the presented research has a limitation– it is not designed to verify the framework quantitatively. The model may serve as a basis for future research, which can escalate to conduct a formative measurement to review the transformation efforts and their maturity. Another area of future research could be to analyze and define its implementation or explore a causal effect between digital maturity and corporate performance.

VI. CONCLUSION

The ongoing digital transformation has challenged organizations to interact and modify the business model. Inevitably, sports organizations will follow suit. Furthermore, it is favorable to understand how digital transformation should be established to capitalize on its opportunities and minimize disruption. This research provided a conceptual foundation and defined elements to develop a digital transformation model for sports organizations in Thailand. The presented model illustrates the dimensions the sports organization should incorporate when undergoing digital transformation. There are six dimensions to be focused on and prioritized: strategy, agility (organization and culture), operation (including external stakeholders), people (employees), technology, and consumers or sports fans. This research's findings might be viewed as the foundation and the roadmap to guide sports organizations in Thailand for digital transformation application. The sports organization can decide whether to modify the other generic or this specific one, depending on their purpose, readiness and digital capabilities.

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The Structural Model of Organization Performance in Small and Medium Enterprises in Thailand Medium Enterprises in Thailand

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Abstract - This research aimed to 1. Study factors of supplier quality management and production quality management that affect organization performance. 2. Confirm the structural models that affect organization performance. This study was mixed methods research. The quantitative research consisted of 13 observable variables, which collected data from 260 medium and small companies in Thailand. The qualitative research collected data from a focus group of experts involved in organizational management, quality management, and supplier management of nine experts. The research results were found that 1. The structural model of organization performance in Small and Medium Enterprises in Thailand were consistent and harmonious with empirical data, with consistency values of χ^2= 94.89, df = 61, χ^2/ df = 1.56, CFI = 0.98, GFI = 0.95, SRMR = 0.049, RMSEA = 0.046. 2. Factors affecting organization performance are factors of Supplier Quality Management, and Production Quality Management, respectively.

Keywords— ***Supplier Quality Management, Production Quality Management, Organization Performance***

I. INTRODUCTION

Organization Performance (OP). Nowadays, every organization, both small and large, must develop and create the organization to have good performance. The organization performance of an organization is either good or bad, not only from development within the company itself. Organizations may rely on good business partners [1] such as having good suppliers, good relationships and being able to help each other when demand is uncertain, or having a company that can assist in production that helped with production in case our company fails to produce etc. Since there are many SMEs in the present, each company needs to have a good organization performance that can reduce costs and profit for the company to survive and gain more market share. On the other hand, within our company we have to improve the quality of our products and services in order to make our customers satisfied with our company. Production quality management was a combination of management from management, production management optimization, production planning, relationship [2] between production departments in each department, as well as organizational development through training employees to be able to produce products to meet the required quality standards.

Therefore, proper organization performance should study internal influences, namely Production Quality Management (PQM) and external influenced Supplier Quality Management (SQM) in order to be able to measure organization performance appropriately and with varying degrees. Therefore, the researcher has studied the factors of Production Quality Management and Supplier Quality Management that influence organization performance to guide the development of supplier quality management and production quality management.

II. RESEARCH OBJECTIVES

1. Study factors of supplier quality management and production quality management that affect organization performance.
2. Confirm the structural models that affect organization performance.

III. LITERATURE REVIEW

Producing quality products now requires good quality raw materials. In Thailand, there are many SMEs emerging to manufacture products and produce various parts to feed the big industry. Therefore, developing organizations or SMEs to have quality, able to produce products are required. What is indispensable is to have a good organization

performance that can help businesses survive in the current environment. Small and Medium Enterprises in Thailand have divided Small and Medium Enterprises (SMEs) in Manufacturing in 3 categories. These included Micro businesses employed no more than 5 people and earned no more than 1.8 million baht per year. Small businesses employed more than 50 people and earned not more than 100 million baht per year. Medium enterprises employed no more than 200 people and earned not more than 500 million baht per year. Small and Medium Enterprises (SMEs) account for 35.30% of gross domestic product, which was one third of the GDP of Thailand [3]. Supporting SMEs to have good organization performance will further increase the GDP of Thailand.

3.1 Supplier Quality Management

The suppliers [4,5] were a person or company that delivers goods or raw materials to the next level of manufacturing companies. TD suppliers are suppliers that are ready to deliver goods [6], quality raw materials, on time [7]. There may be a number of trusted and reliable suppliers to have, but the right supplier may be selected at the right time. A good supplier to suit the supplier company can effectively support our manufacturing processes. Having a good and suitable supplier for the company means that the company does not have to hold large volumes of inventory, which reduces the cost of managing its inventory. The raw materials can be delivered within the specified time and quantity. Hence, having a reliable supplier will directly affect the inventory volume. Good supplier management impacts inventory and production processes, because with good suppliers, they can support the company's raw materials, products, and services according to the company's needs. In accordance with [8] supplier management, it is the management of the manufacturer of the product or the person who supplies the raw material to the company for production in order to optimize performance in terms of price, quality, delivery times. From the above research, the factors related to Supplier Quality Management can be summarized as follows: 1. Relationship between suppliers and manufacturers 2. Price management 3. Quality of products and services 4. Delivery time

3.2. Production Quality Management

Production Quality Management is the quality production management where quality is largely dependent on the customer who is responsible for most SMEs who have to follow the systems that the customer company has implemented in their production [7, 9, 10]. For example, the Total Quality Management (TQM) system is a system that emphasizes quality in production with an emphasis on organizational participation. The TQM system is also focused on the entire organization, but at the supervisor level to the operational level so that the company can produce products or services according to the standards set by the company or customers, including SMEs in Thailand [11]. At present, TQM systems have been applied to suit the company's context. Another indispensable system for quality control is ISO9000, which is a quality control system. Bringing raw materials into production to delivering products to customers has long been a system that is familiar to Thai SMEs, which has been adapted and applied in work to meet the needs of customers. The quality of production can be summarized into 6 factors as follows: 1. Top management in management, control and leadership in quality management within the organization. 2. Process management is the management of the production process to be able to control the quality at every step and can check the quality in every step of the production. 3. Quality data reporting is an important factor, since the collection of

production quality data, good data collection that can be used for various purposes for analysis is important, including traceability of the non-quality products from the manufacturing period or what is the cause of the poor-quality products? 4. Employee relationship is a relationship between employees with each other because most of the work must work as a team, especially the TQM system, have to set up a team that acts on the quality of the product and must serve to distribute responsibility in the production of the product Quality for the entire organization. 5. Customer Relationship is the relationship between the manufacturer and the customer in order to be able to produce products that meet the needs of the customers. Therefore, having a relationship may not only be a matter of product quality, but may affect business operations as a long-term partner. 6. Training is to train employees to understand the quality of products and services so that employees are aware of the production of quality products [1, 2, 7, 10, 12, 13].

3.3. Organization performance.

Nowadays, whether an organization will survive in its present conditions is an important issue. Performance Measurement has several methods of measuring current performance [14]. This is the measurement of customer satisfaction because the customer is satisfied with the product or service will affect the sales and revenue further, the measurement of the profit generated from the operation, the measurement of sales growth compared to the past, the measure of increased market share. Measuring results in SMEs should be simple and measurable by the organization itself. From the above research, the factors related to organization performance can be summarized in 3 aspects: 1. Cost Performance 2. Profitability 3. Market share [15-19].

3.4. Supplier Quality Management and Production Quality Management.

Production Quality Management. One thing that is indispensable is having a company that supplies raw materials, delivers good source products to them so that they can continue to produce good products or services [1]. Having a good supplier means that the company is not afraid that there will be no raw materials in production, but a good quality supplier will help plan the raw material requirements or help with the support Keeping inventory to help the company reduce the cost of managing inventory or stock. Choosing a supplier is also involved in the production management, because the same raw materials, the same quality, may be available in many companies, so choosing the right supplier for the time period may result in cost savings [4, 8, 9, 12, 20-23]. Therefore, supplier quality management affects the production quality management.

H_1 Supplier Quality Management Influences Production Quality Management.

3.5. Supplier Quality Management and Organization performance

Supplier Quality Management is the arrangement for the suppliers or the person who will send the products to the manufacturing company, so suppliers contribute a lot to organization performance because the performance of most organizations is a focus on cost efficiency. Therefore, having a quality supplier with a reasonable price can help reduce production costs and increase profitability. A good supplier must have a good relationship with the organization and not bring any trade secrets to its competitors because it will enable the competitor to have more competitiveness which will directly affect the company's market share. Having a good supplier must be able to support both the mold that the company can compete and have quality products. Therefore, supplier quality management is an integral part of organization performance [5, 8, 24-26].

H_2 Supplier Quality Management Influences Organization performance.

3.6. Production Quality Management and Organization performance

Production Quality Management is the quality management of production because the production depends on your quality factors both in terms of quality production, management from effective supervisors. Reporting various data in production so that the company can produce quality products, so the production management can directly affect the company's performance. For example, cost performance, if quality products are produced, the company will not have to cost many times for production or the cost of handling the product of the manufacturer [1, 15, 27] and also affect the profitability of the organization. Therefore, quality production directly or indirectly affects organization performance [1, 9, 15, 19, 28].

H_3 Production Quality Management influences organization performance.

Research variables can be summarized as follows: 1. Supplier Quality Management (SQM) 1.1. Supplier-Supplier Relationship (SQM1) 1.2. Price Management (SQM2) 1.3. Quality of Products and Services (SQM3) 1.4. Delivery time (SQM4) 2. Production Quality Management (PQM) 2.1Top management (PQM1) 2.2. Process management (PQM2) 2.3. Quality data reporting (PQM3) 2.4. Employee relationship (PQM4) 2.5. Customer Relationship (PQM5) 2.6Training (PQM6) 3. Organization performance (OP) 3.1. Cost Performance (OP1) 3.2. Profitability (OP2) 3.3. Market share (OP3) and can show Concept model as

Figure 1.

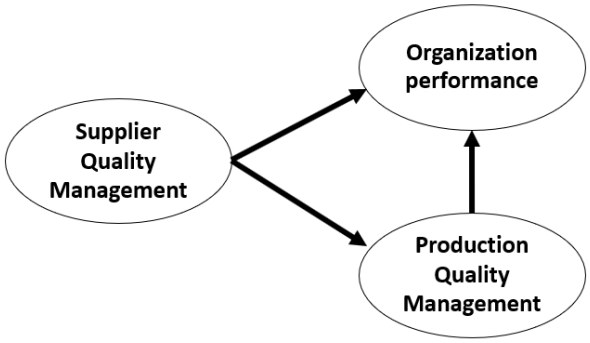


Figure 1. Concept model

IV. Research Methods

This research is a combination of quantitative research that collected 260 data samples from 517,899 SMEs in Thailand [3] due to 13 observable variables [29] from the SMEs industry group in the manufacturing sector of Thailand with a convenient randomization method. The tool was used as a closed-ended questionnaire with a Likert scale 5-level scoring, with an IOC of 0.8-1.00, and a Cronbach's alpha value of 0.811. The distribution of questionnaires were manually and electronically. Qualitative research was a focus group of nine experts working in quality management or in-house supplier management by selecting experts using the judgment sampling. The criteria are supervisor level or above and have at least 10 years of working experience in quality management or supplier management as a validation of the model derived from quantitative research.

V. Research Results

Research results from 260 SMEs data collection were 16 micro businesses or 6.15%, 237 small businesses or 91.15%, 7 medium enterprises or 2.70%. Structural Equation Analysis (SEM). From the analysis of the model, 3 latent and 13 observable variables were found. The interpretation of the results by Lisrel confirmed the consistency of the empirical data collected with the questionnaire model to be consistent and harmonious. The results showed that $\chi^2 2$= 94.89, df = 61, χ^2/ df = 1.56, CFI = 0.98, GFI = 0.95, SRMR = 0.049, RMSEA = 0.046, passed the criterion of [29] and

had a predictive coefficient of R^2 at 67% as shown in Figure 2.

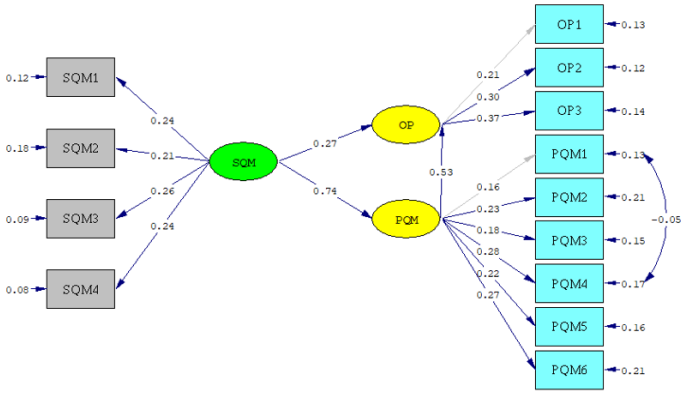


Figure 2 Causal models affecting organization performance

From Figure 2, it was found that the causal model affecting organization performance was consistent and harmonious with the empirical data according to the criteria of [29] and had the total effect as shown in Table 1.

Table 1 showed the total effect of each influence relationship

Hypothesis	Direct Effect	Indirect Effect	Total Effect	Decision
H_1 Supplier Quality Management Influence Production Quality Management	0.740	-	0.740	Accepted
H_2 Supplier Quality Management Influence Organization performance	0.270	0.392	0.662	Accepted
H_3 Production Quality Management Influence Organization performance	0.530	-	0.530	Accepted

From Table 1, there were 3 hypotheses and all 3 hypotheses with descending influence as follows: 1. H1 Supplier quality management influenced production quality management with 0.740 influence that were 0.740 direct influence, and No Indirect Influence. 2. H2 Supplier quality management influenced organization performance with 0.662 influence, divided into 0.270 direct influence, and 0.392 indirect influence. 3. H3 Production quality management influenced organization performance with 0.530 influence, divided into 0.530 direct influence, no indirect influence.

The qualitative research was a focus group of nine experts from experts working in quality management or in-house supplier management to validate empirical models. The focus group results were in the same direction, which was to agree with the aforementioned models because the production of quality products must start from upstream, that was good raw materials obtained from suppliers who were good at handling quality raw materials. Medium water was the production of quality. If there is good quality control during the production process, then it will be able to produce good products that meet the needs of customers. The production process required cooperation throughout the organization from the supervisor level down to the operational level in order to obtain quality products, but all experts were also focused on ensuring the company's relationship with customers and the relationship between company and supplier, because synchronization and sharing of information can reduce production costs and increase organizational efficiency

VI. DISCUSSIONS CONCLUSION

This research was a study to determine the structural models that affected organization performance. This research was a mixed method research by studying the factors of supplier quality management and production quality management that influence organization performance.

Supplier quality management influenced production quality management because the quality production requires quality raw materials. It was consistent with the research of [1]. Quality production required quality raw materials sourced from qualified suppliers, selected by manufacturers. Quality suppliers had the highest direct influence on production quality because of their strong relationship. This was consistent with the research of [2, 4, 21, 24], because manufacturers will have quality suppliers to deliver raw materials, there must also be a selection criterion for suppliers that are suitable for each SMEs. Suppliers in Thailand that manufacture parts for large companies were mostly SMEs. Most SMEs had a production system that was directed by the customer's company. For example, SMEs did not have ISO9000 standard, but customers who received products from SMEs would help to produce products that met the standard of ISO9000 in order to meet the quality standards set by customers.

Supplier quality management influenced organization performance because a good supplier of quality must deliver raw materials at reasonable prices and at a fraction of the cost of other suppliers. The price of raw materials was also an important factor in selecting a supplier because organization performance needed to have an efficient production cost or the lowest cost in order to maximize profit. This was consistent with the research of [1,19,27,30], and when there was an organization performance that was efficient or low-cost that can be competitive, it would affect the larger market share, respectively.

It also had an indirect influence on organization performance, which is an indirect influence on quality production. Due to having a good supplier and delivering products that met quality standards, quality production also resulted in lower costs. Production quality management had an influence on organization performance because quality production controlled the entire production process from upstream to downstream. Therefore, quality production can reduce production costs and directly affect organization performance. This was consistent with the research of [1, 11, 19, 31], where quality production can also influence market share in the future. Due to the quality of the products, customers would order larger quantities and tell the same industry to buy products from companies that had production quality and can dominate the market, respectively.

The research has found a relationship that was the relationship between supplier quality management that influences the production quality management and organization performance of SMEs in Thailand because most SMEs in Thailand were suppliers who supplied products to large manufacturing companies to use to assemble products. Therefore, Thai SMEs should be encouraged to develop organizations in all four areas: 1. Quality of products and services, 2. Relationship between supplier and manufacturer, 3. Delivery time, and 4. Price management, respectively

VII. SUGGESTIONS

1. Further research should increase relevant variables in the study of SMEs in Thailand, such as variables in government support, competitiveness variables, knowledge-building variables, etc.

2. This research did not categorize research SMEs. The further research should be compared between micro, small, and medium businesses to make the research more complete**.**

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Study on Track Frame Model of a Thai-Made Rice Combine Harvester

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Abstract - A rice combine harvester has an important role in Thai rice production and has been popular in Thai farmer. Almost Thai-made rice combine harvester is too heavy and large in size. Because the track frame of Thai-made rice combine harvester is a main component that affects the harvester's size and weight, the objectives of this research, therefore, were to investigate and improve the track frame strength using the finite element method (FEM). Similitude analysis was employed for determining the proper scale of experimental frame. The strength analysis using the loading test with experimental frame was used to verify the accuracy of the FEM. Two field-work conditions of the harvester's header were selected namely horizontal position and maximum lift position. The FEM results showed that the maximum stresses of those conditions were 91.13 MPa and 91.69 MPa, respectively, while the maximum deflection 2.31 mm and 2.36 mm, respectively. The experimental results from the loading tests confirmed that the strength analysis of track frame using FEM had a high accuracy and could be applied in practical use. The improvement of the track frame model could increase the strength about 40% and reduce mass about 18%.

Keywords — ***Rice Combine Harvester, Track Frame, Strength Analysis, Finite Element Method***

I. INTRODUCTION

Agriculture is not alone in dealing with human food shortages, but still needs to supply enough renewable energy to meet the needs. While agricultural land and labor continued to reduce in order to increase agricultural productivity and efficiency. Therefore, agricultural machinery and various technologies have been introduced to help with farming. Agricultural machinery plays an important role in the different procedures of agricultural work.

A rice combine harvester is agricultural machinery that plays an important role in the rice production process of Thailand. The main mechanical systems of the Thai rice combine harvester can be classified into 4 systems: harvester and conveying system, threshing and cleaning system, undercarriage and drive system, and the powerful engine system [1]. The development approach of the Thai rice combine harvester often focuses on having high performance and being able to work in any area. As a result, the rice combine harvester has a working width and relatively large and heavyweight. The development of the combine harvester in this direction has a negative effect on rice cultivation because it causes structural damage to the soil [2]. It also makes the combine harvester more expensive [3]. When comparing the Thai rice combine harvester with the foreign rice combine harvester, it was found that the foreign rice combine harvester was relatively small and lightweight. These factors are the main reasons why the foreign rice combine harvester is increasingly popular with farmers. Although the foreign rice combine harvester will operate in a limited state of the land. Therefore, the Thai rice combine harvester needs to be developed to a suitable size to minimize the impact on the farm, reduce production costs, as well as increasing competitiveness in both domestic and export markets.

From a discussion meeting between Thai rice combine harvester manufacturers and researchers, a solution to the above problem has been established. It focuses on improving parts of the Thai rice combine harvester to be able to lose weight, increase strength, and reduce energy consumption in driving. Studying the factors involved in the production of Thai rice combine harvester, it was found that the construction of the undercarriage was simply the introduction of the tracked drive system of a large caterpillar tractor. This results in a very strong structure, quite large size, and heavyweight. In general, the Thai rice combine harvester weighs approximately 7,000-10,000 kg, the undercarriage of the combine harvester weighs more than 30% of the machine weight, requires about 35-40% of the

power to drive the plant [4]. The undercarriage of the Thai rice combine harvester consists of a track frame, a drive chain set, a sprocket set, a roller set, and a track blade set. The track frame weighs approximately 25% of the undercarriage [5]. Therefore, this research project has an idea to improve the track frame of the Thai rice combine harvester to reduce weight. However, it is still able to support the weight of the other structures of the Thai rice combine harvester as well or better than the original track frame.

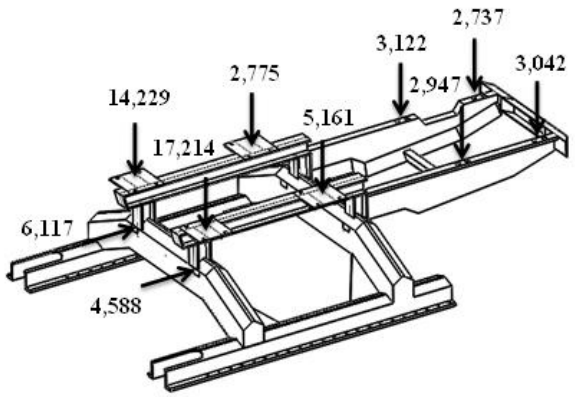
II. Research Objectives

This research has the objective to investigate and improve the track frame strength of the Thai rice combine harvester to reduce weight. However, it is still able to support the weight of other structural parts of the Thai rice combine harvester.

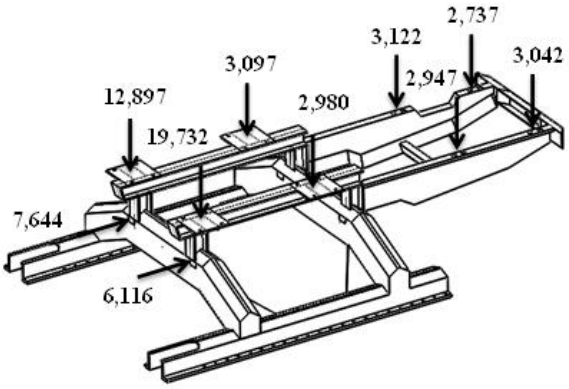
III. Research Methods

A. Load Exerted on the Track Frame of the Thai Rice Combine Harvester

The track frame of the Thai rice combine harvester does not have a clear design and standard. Therefore, this research uses data from Talaythong brand rice combine harvester from Talaythong Factory Co., Ltd. [5]. The weights from the rice combine harvester components act on 10 undercarriages, divided by 2 types of performance characteristics as follows: 1) The horizontal header position means the rice combine harvester is being harvested. And 2) The maximum lift header position means the rice combine harvester reversing head and changing working area as shown in Fig. 1 [6].



(a) Horizontal header position



(b) Maximum lift header position

Fig. 1 Direction and magnitude of external forces on the track frame model under two field work conditions (digits denote forces in Newton)

B. Strength Analysis by Finite Element Method

The strength analysis by finite element method is divided into 3 steps: 1) Real proportionate finite element modeling with SolidWorks program. 2) Setting the conditions, model material properties, and the force exerted on the track frame according to the working characteristics and 3) Stress and deflection analysis of the model.

The finite element model of the Thai rice combine harvester track frame was made to be a 10-node tetrahedral element and unequal in size due to its complex structure. Therefore, the model has a suitable mesh size of 150-19 mm, which makes it has 45,360 elements and 89,887 nodes as Fig. 2. By similitude analysis [7], the miniature track frame models were obtained with suitable mesh sizes in the range of 50-7.2 mm, resulting in 44,553 elements and 88,217 nodes.

Static structural analysis was applied to condition the finite element model of the track frame. The von Mises failure theory was determined as follows: Table I. The von Mises failure theory was analyzed for the strength of the model.



Fig. 2 Mesh of the track frame model

Table I Material property for FEM analysis

Property	Mild Steel
Young's modulus (GPa)	200
Shear modulus (GPa)	79.3
Yield stress (MPa)	250
Tensile strength (MPa)	400
Poisson ratio	0.26
Density (Mgm^{-3})	7.85

C. Experimental Model of Thai Rice Combine Harvester Track Frame and Loading Tests

The experimental model of the Thai rice combine harvester track frame was created to verify the accuracy of the strength analysis using the finite element method. The validity was validated by comparing the stress and deflection between the finite element method (FEM) and the loading test under the rated load. The experimental model was constructed of SS400 steel, features as shown in Table I, and is welded to the same structure by arc welding.

The stress on the experimental model was measured using a 45° 3-element Rosette TML strain gauge, stacked type model FRA-1-11-1L, and was amplified with a Yokogawa brand amplifier MW100. The Kennedy 300-7520K dial gauge with a resolution of 0.01 mm was used to measure the deflection of the model.

Due to the load determination limit on the experimental model, the loading test is divided into two types: The type 1 loading test was a simple force test by hanging weights with dimensions 103 N 227 N 330 N 503 N 727 N 1005 N and 1257 N performed vertically at the center of mass (CG) of the model as shown in Fig. 3. To compare the stress and deflection values that occurred in the FEM model with the experimental model, the strain and deflection were measured with position C. The type 2 loading test (Fig. 4) was performed to simulate the track frame load situation. A load of 500 N performed vertically in positions A, B, E, and F, and a load of 230 N act vertically at positions C, D, G, and H, to measure the stress occurring on position A, B, C and D, as well as to measure the deflection of the experimental model at the position I (Fig. 5) [6].



Fig. 3 Loading test 1



Fig. 4 Loading test 2

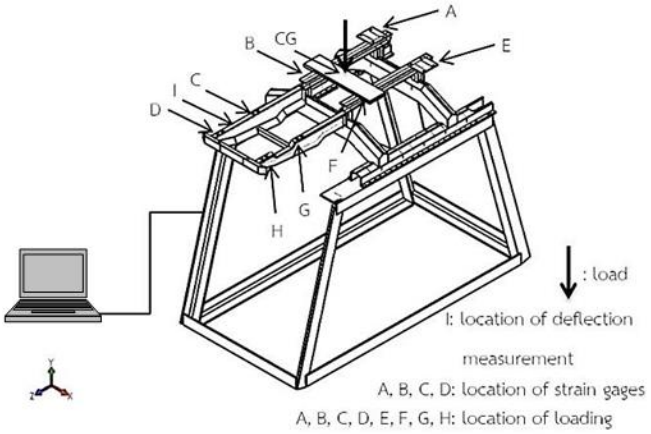


Fig. 5 Loading test set-up

D. Improvement of the Track Frame Model of the Thai Rice Combine Harvester

The track frame model of the rice combine harvester has been redesigned to be robust, in line with agricultural machinery design principles, and has reduced mass. However, it still corresponds to the parts of the old system, that the operator has already produced. There are 3 types as follows: Pattern 1, install a steel beam with a thickness of 9 mm to increase the strength at the center of the two rear pillars of the track frame as shown in Fig. 6. Pattern 2, developed to reduce the additional installed mass 50% from pattern 1, as shown in Fig. 7. And pattern 3, developed from model 1 by modifying the track frame design to simplify machining and assembly. Including reducing the thickness of steel A, B, C, D, E, and F from 9 mm to 6 mm to reduce the weight of the track frame and have the appropriate strength as Fig. 8.

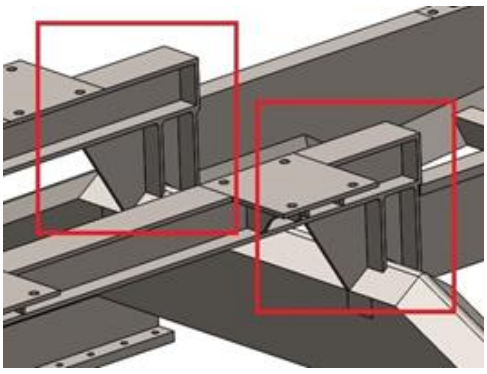


Fig. 6 The development in pattern 1

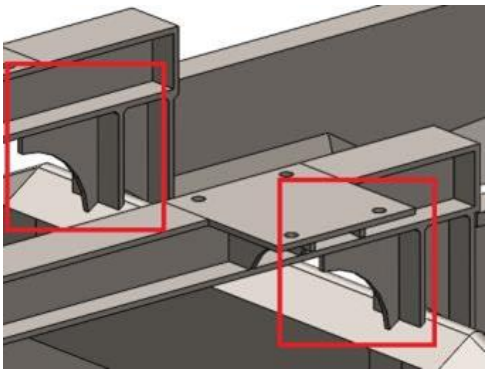


Fig. 7 The development in pattern 2

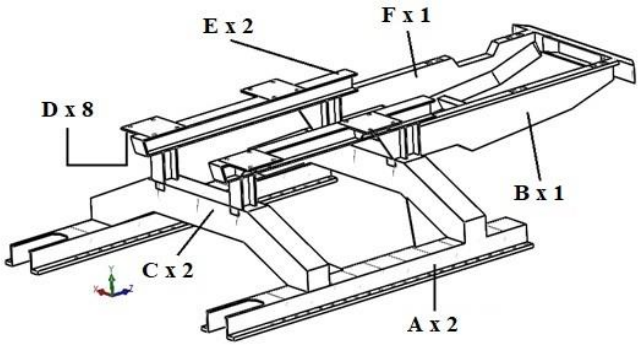
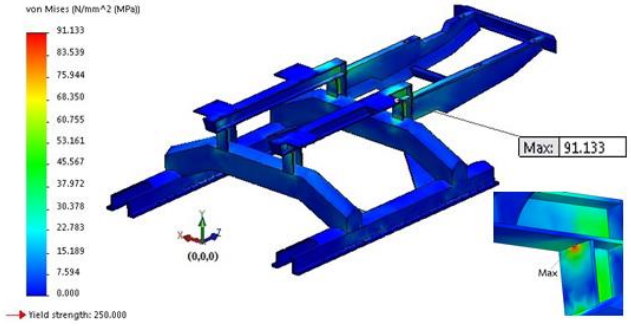


Fig. 8 The development in pattern 3

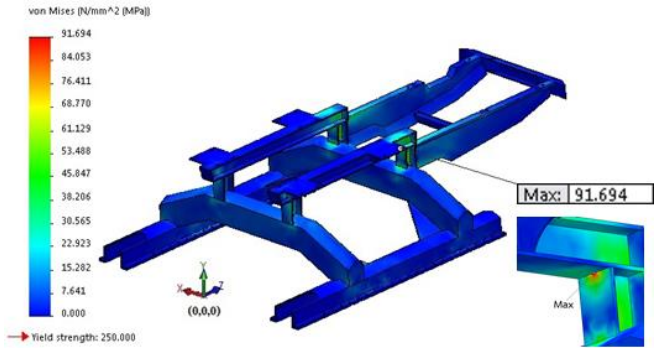
IV. RESEARCH RESULTS

A. The Results of the Analysis of the Track Frame Strength of Thai Rice Combine Harvester by Finite Element Method

From measuring the load on the track frame of the harvester, it was found that the maximum load position is 17,214 N and 19,732 N in the case of the header was in the horizontal position and the header was raised at the maximum lift position, respectively. At the same time, the least loaded position is equal to 2,737 N (Fig. 1). The results of the analysis of the track frame strength of the Thai rice combine harvester by finite element method showed that the maximum stress occurred in the case of the header was in the horizontal position and the header was raised at the maximum lift position, the values were 91.13 MPa and 91.69 MPa, respectively. This resulted in a safety factor of 2.7 in both cases as shown in Fig. 9. The maximum deflection that occurred in the case of the header was in the horizontal position and the header was raised at the maximum lift position were 2.31 mm and 2.36 mm, respectively, as Fig. 10.

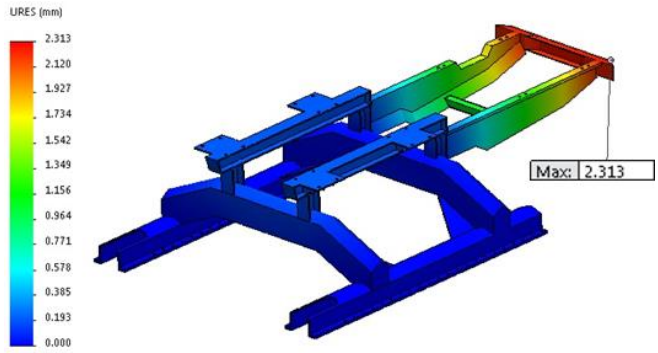


(a) Horizontal header position

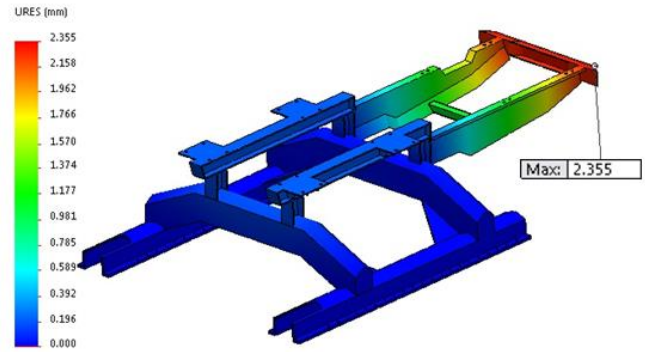


(b) Maximum lift header position

Fig. 9 Stress distributions on the track frame model under two field work conditions



(a) Horizontal header position

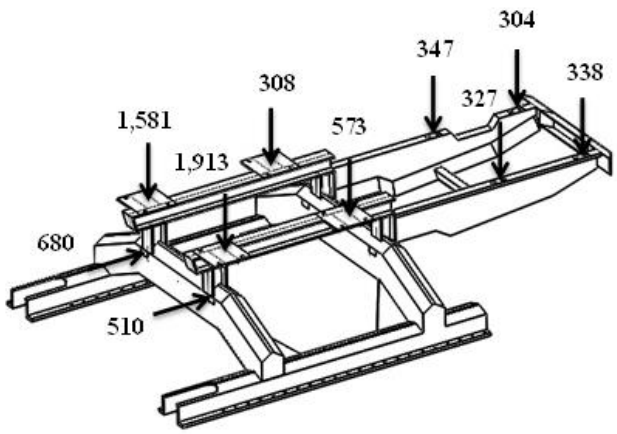


(b) Maximum lift header position

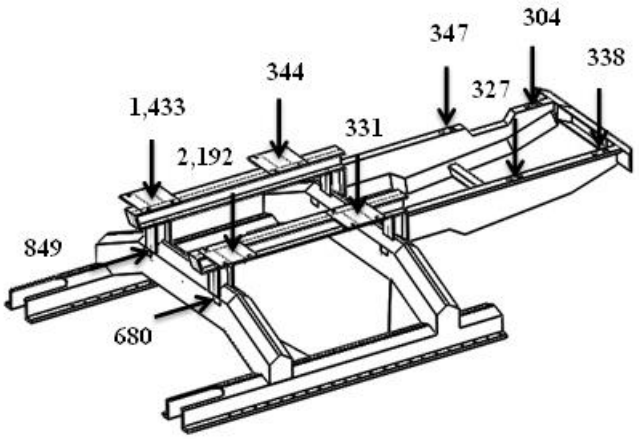
Fig. 10 Deflection distributions on the track frame model under two field work conditions

B. Analytical Results of the Similitude

Fig. 11 shows the force acting on the mini rice combine harvester track frame model at different positions, which is 9 times reduced from the prototype rice combine harvester track frame model based on the analysis of similitudes. The results of the strength analysis showed that the maximum stress, safety, and maximum deflection achieved in the case of the header was in the horizontal position, the values were 90.97 MPa, 2.7, and 0.77 mm, respectively. In the case of the header was at the maximum lift position, the values were 92.16 MPa, 2.7, and 0.79 mm respectively, which occurred at the position as Fig. 9 and Fig. 10.



(a) Horizontal header position



(b) Maximum lift header position

Fig. 11 Direction and magnitude of external forces on the similitude model of the track frame under two field work conditions (digits denote forces in Newton)

C. Loading Test Results

The loading test was performed by comparing the stress values at position C of the loading test type 1. It was found that the stress values from the finite element method and the actual readings of the experimental model were different by 1%. In the type 2 loading test, the difference between the finite element method and the stress from the experimental model was less than 5%.

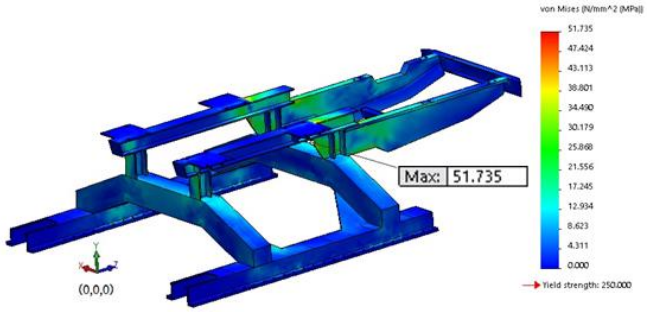
From measuring the deflection of the track frame model of the mini scale rice combine harvester found that loading test type 1 deflection from the finite element method was 0.008 mm while deflection from the experimental model could not be measured due to the limitations of the measuring instrument. Loading test type 2 deflection from the finite element method was 0.396 mm and the deflection from the experimental model was 0.40 mm, which was not different.

D. Improvement of the Track Frame Model of the Thai Rice Combine Harvester

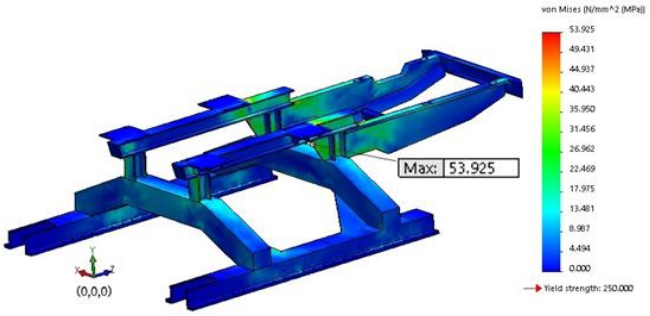
Table II shows the results of the improvement of the track frame models of various types of Thai rice combine harvesters. By the results of the analysis of the track frame model pattern 1, the maximum stress occurred in the case of the header was in the horizontal position and in the case of the head lifted at 56.12 MPa (decrease by 38.42%) and 56.09 MPa (decrease by 38.83%). Respectively, the maximum deflection that occurred in the case of the head parallel to the ground and in the case of the head raised, the values were 1.78 mm and 1.82 mm respectively.

In the track frame model pattern 2, the analysis results showed that the maximum stress that occurred in the case of the head parallel to the ground and in the case of the maximum lifted was 66.30 MPa (reduction of 27.26%) and 66.96 MPa (reduction of 26.97%), respectively. The maximum deflection occurred in the case of the header was in the horizontal position and in the case of the hob being raised, the maximum values are 1.93 mm and 1.97 mm respectively.

In the track frame model pattern 3, the analysis results showed that the maximum stress arising in the case of the head parallel to the ground and in the case of the maximum lifted was 51.74 MPa (43.2% decrease) and 53.93 MPa (41.2% decrease), respectively, as Fig. 12. The maximum deflection that occurred in the case of the head parallel to the ground and in the case of the peak raised was 1.66 mm and 1.70 mm respectively, as shown in Fig. 13.

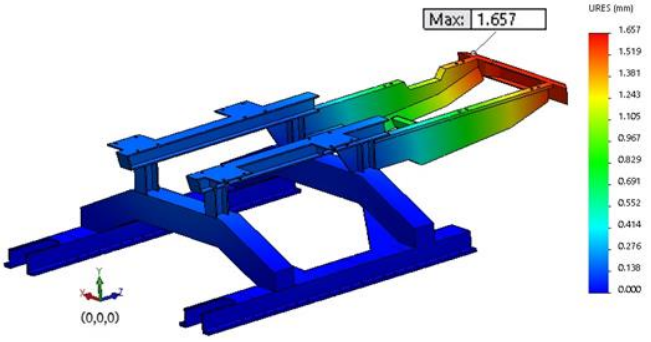


(a) Horizontal header position

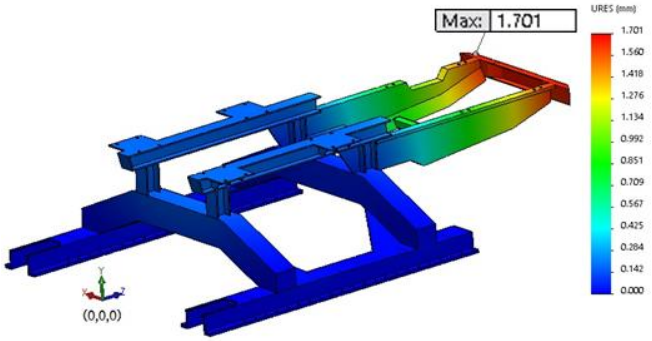


(b) Maximum lift header position

Fig. 12 Distribution of the track frame stress, pattern 3



(a) Horizontal header position



(b) Maximum lift header position

Fig. 13 Distribution of the track frame deflection, pattern 3

Table II Improvement of the track frame models of various types of Thai rice combine harvester

Approach	Mass (%)	Horizontal header position		Maximum lift header position	
		Max. Stress (MPa)	Max. Deflection (mm)	Max. Stress (MPa)	Max. Deflection (mm)
1	+0.30	56.122	1.777	56.094	1.817
2	+0.16	66.295	1.931	66.962	1.967
3	-19.50	59.635	1.985	60.548	2.018

V. DISCUSSIONS

From measuring the load on the track frame of the rice combine harvester, it was found that the position that has the highest load comes from the harvester and conveying system, threshing and cleaning systems. The position that is the least loaded comes from the powerful engine system. The results of analyzing the track frame strength of Thai rice combine harvester using finite element method showed that the maximum stress occurs at X = -325, Y = 616.78, Z = 1,717, located in the middle of the junction between the left beam and the left rear column under the threshing and cleaning system. The maximum deflection occurred at X = -430, Y = 619.78, Z = 3270, which is located on the left side of the rear beam supported by the engine power system. The stress and deflection values occurring on the prototype model and the fractional model were related to each other. Thus, the stress distribution on both models is similar. Therefore, it can be concluded that the similitude results of the track frame of the Thai rice combine harvester are correct.

From the loading test results, the slightest error occurred due to the FEM model has homogeneous material properties in every position of the material of the structure and without using the weld to be analyzed. This is not correct for the experimental model because experimental modeling goes through welding processes, cutting, and abrasion, etc. Therefore, changing mechanical and thermal properties. By this experiment showed that the analysis of the strength of track frame of the Thai rice combine harvester by finite element method is accurate to a reliable level.

The improvement of the track frame model of the Thai rice combine harvester, pattern 1, showed that the maximum stress occurred at X = -320.5, Y = 619.78, Z = 1849.625 located on the left inner edge of the beam near the column. Behind the left under the threshing and cleaning system. The maximum deflection occurred at X = -430, Y = 619.78, Z = 3270, which is located on the left side of the rear beam supported by the engine power system. By improving this design can strengthen the track frame as well but gives a 0.30% increase in mass.

The improvement of the track frame model of the Thai rice combine harvester, pattern 2, revealed that the maximum stress occurred at the position X = -329.5, Y = 535.129, Z = 1671.39, which was in the center of the extended left beam. Under the threshing and cleaning system, the maximum deflection occurred at X = -430, Y = 619.78, Z = 3270, which is located on the left side of the rear beam supported by the engine power system. This improvement has not been able to increase the rigidity of the suspension sufficiently. It also gives a 0.16% increase in mass.

The improvement of the track frame model of the Thai rice combine harvester, pattern 3, revealed that the maximum stress occurred at X = -320.5, Y = 619.78, Z = 1831.34, located on the left inner edge of the beam near the column behind the left under the threshing and cleaning system. The maximum deflection occurred at X = -430, Y = 619.78, Z = 3270, which is located on the left side of the rear beam supported by the power engine system (Fig. 13). This improvement can strengthen the track frame as well. It is also possible to reduce the mass by 18%.

VI. RECOMMENDATIONS

A. Recommendations for Practices

The distribution of the load exerted on the track frame of the Thai rice combine harvester should be improved.

B. Recommendations for Further Research

1. The effects of weight reduction of the track frame of the Thai rice combine harvester should be studied.

2. The strength of the track frame of the Thai rice combine harvester should be analyzed when being performed by a load in a dynamic state.

CONCLUSION

1. The maximum stress arising in the case of the head parallel to the ground and in the case of the maximum lifting head were 91.13 MPa and 91.69 MPa, respectively. Resulting in a safety factor of 2.7 in both cases. The values

were 2.31 mm and 2.36 mm in the case of the head parallel to the ground and in the case of the head raised, respectively.

2. The similitude method for statically elastic structure can be accurately applied to the track frame of the Thai rice combine harvester.

3. The finite element method can be applied to analyze the strength of the track frame of Thai rice combine harvester with a reliable level of accuracy.

4. The improving of the track frame, the third type of Thai rice combine harvester can increase the strength of the track frame well and can reduce the mass by 18%.

ACKNOWLEDGEMENT

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Buddhist Doctrines for Human Capital Development in Thailand

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***Abstract*—** *This research aims to explore how the five Buddhist doctrines called 'The Five Precepts (FP)' are used to develop human capital in Thailand. In this study, the qualitative research method was used to collect the data from the key informants joined in the organized focus-group discussion. The research results indicated that FP including to abstain from killing, stealing, sexual misconduct, false speech and intoxicants causing heedlessness can be used to promote the human capital as the behavioral guideline of actions or a code of conducts. However, the study suggested that using the FP in promoting the human capital should be integrated with the other Buddhist principles such as Bhavana 4 and so on. Because FP is the method to control only the physical and verbal actions only, therefor other doctrines should be used to control the mental actions. When the three actions are in control of consciousness, the human capital is effectively and perfectly developed.*

Index Terms— ***Human Capital, Five Precepts, Buddhist Doctrines, Thailand***

I. INTRODUCTION

The term 'human capital' was used in the earliest formal way in economics probably by Irving Fisher in 1897 [1]. Since then, the term has been historically defined and discussed by many academics such as Jacob Mincer, Gary Becker, Schultz and Robert Solow [1]. Today, human capital is essential in terms of its significance to the national development based on human resource development. In Thailand, the development of human capital is one in six key indicators of the National Strategy in pursuit of the goals of the national development: 'A Secure Nation, Contented People, Continued Economic Growth, An Equal Society and Sustainable Natural Resources'[2]. In regards to this, it is necessary for Thailand to boost multi-dimensional and national competitiveness to empower human beings at each and every stage of life to produce the competent and moral citizenry[2]. The national strategy clearly aims to develop and strengthen human capital in order to improve Thai people of all ages in a multi-dimensional manner to become good, skillful and quality citizens. In order to attain the mentioned goal, the operational scope of this mission covers promotion of physical, mental and intellectual qualities, adequate multidimensional developments, sustainability of welfare of life, promoting public mindedness, and generating social responsibility.Thai individuals are also expected to be frugal, generous, disciplined, and ethical, equipped with logical thinking, 21st century skills and communication skills [2].

In 2018, the National Statistical Office declared that a school of Buddhism called 'Theravada' was followed by 93.5% of the Thai population [3], although Thai people today do not religiously practice as seriously as their ancestors. However, it is to say, since its arrival approximately 250 BCE, Buddhist doctrines have been used to develop human capital in terms of physical, verbal, mental and intellectual domains. At the beginning, the Buddhist teachings is used to serve the religious ultimate purposes such as to attain Nirvana or to eliminate the worst evil called 'defilement' or to attain the ultimate happiness. Later on, it is used to promote peace within the society as it is beneficial to the country governance. The one of the best examples has

been seen in the national project called 'Five Precepts Villages' undertaken between 2014-2017 by collaboration of National Office of Buddhism, Thai Sangha, governmental agencies, educational institutes, local governmental organizations, private organizations, sub-district headmen, village headmen and Buddhist network organizations [4]. This project encourages Thai individual to abstain from killing, stealing, sexual misconduct, false speech and intoxicants causing heedlessness [5]. Nowadays, Buddhist teaching is alternatively used to build the national competitiveness as seen in the National Strategy mentioned above [2].

As mentioned above, the development of human capital becomes the important key indicator of the national development as it is one of the keys to build the national competitiveness. Also, Buddhism has played the important part in developing Thai society. There are many studies related to the application of Buddhist teaching to develop the manners of personnel in Thailand. However, these studies have focused on the behavioral development, a few of them focuses on the application of Buddhist teaching to promote the human capital to increase the national competitiveness [6]. Due to this academic gap, this research has its aim to fill the gap left behind by the former scholarly works. Therefore, this study aims to explore the how FP is used in the human capital development to contribute the national competitiveness.

II. RESEARCH OBJECTIVES

The research methodology involved the interpretative paradigm and aimed to explore how FP is used to develop human capital in Thailand. In so doing, the first objective of this study is to investigate Thailand's policies on human capital development and study the ways that FP supports the human capital development in Thailand.

III. RESERCH METHODOLOGY

Research Design

This study was a qualitative research carried out by the following procedures:

1) Study the concepts of Thailand's policies, current conditions, problems, needs and other sources related to using FP to develop the human capital in Thailand. In this stage, the documentary research is mainly used.

2) The Focus Group Discussion (FGD) of six experts was organized to discuss the ways to use FP in developing human capital in Thailand.

3) The information systematically recorded from the FGD was analyzed and reported to the public.

Key Informants

1) The area of this study was to study the perspectives of the experts in six different academic fields from universities in Khon Kean Province towards using FP in developing human capital.

2) The FGD participants included six experts from the relevant academic fields including: (1) Buddhist Studies, (2) Social Sciences, (3) Educational Administration, (4) Political Sciences, (5) Buddhist Philosophy and (6) Social Development, selected by purposive sampling based on their academic backgrounds and expertise.

Research Tool (Focus Group Discussion)

The FGD in this research is designed and developed according to Krueger [7] and Urwongse's [8] techniques as follows:

1) The FGD members were briefed about the topic of discussion, also informed about their rights and confidentiality by the assigned moderator. For example, their identities will not be revealed in any report or publication.

2) The participants were asked with the open-ended questions and sometimes were encouraged to talk more freely. During this process, the entire session was recorded in both audio and visual formats; at the same time, the note-taker wrote draw the important aspects of the discussion.

Data Analysis

1) Analytical Induction: the researchers summarized and analyzed the data obtained from the whole research process.

2) Content analysis was used to codify and summarize the data from documents and information technology as well as FGD.

IV. RESEARCH RESULTS

Today, human capital management is a new dimension of challenge that changes the concept of human resource management by drawing the talent of people to create added value to help organizations increase their competitiveness as the dynamic changes require organizations to adapt for sustainable survival. Human capital arises from individual knowledge, ability and skills affecting the intelligence of each individual in organizations and it becomes the intellectual capital of the organizations. Any organization that has the right intellectual capital will take a lead to create a sustainable competitive advantage [9]. In Oxford Learner's Dictionary (Online), human capital is defined as 'the skills, knowledge and experience of a person or a group of people,

seen as something valuable that an organization or nation can make use of'[10]. This includes assets like education, training, intelligence, skills, health, loyalty, working habits and punctuality. In 2003, Gratton and Ghoshal's work "Managing Personal Human Capital: New Ethos for the 'Volunteer' Employee", published in European Management Journal [11] presented the three elements of human capital or what they call three kind resources that people possess which, collectively, constitute individual human capital: intellectual, social and emotional capitals (see Figure 1).

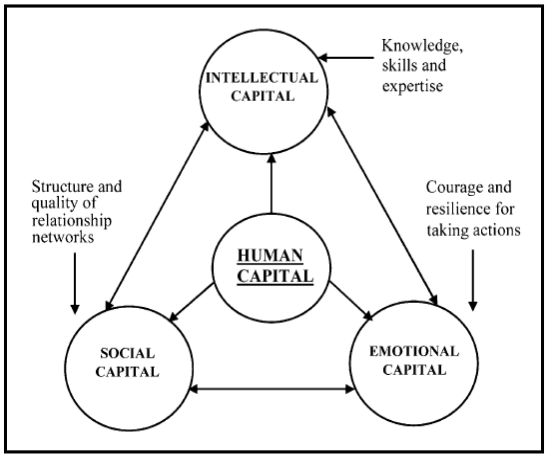


Figure 1 Gratton and Ghoshal's Human Capital consists of the Intellectual, Social and Emotional Capitals of Individuals and Organizations

The first is consisted of knowledge, skills and expertise and it is sometimes called 'tacit knowledge'. The second refers to the structure and quality of relationship network and the last is composed of courage and resilience for taking actions. When the individual has these three elements, he/she becomes a valuable asset of the organization.

Globalization of the world in the 21st century has connected the world as one, leading countries enter the fast-paced competitive battle with a weapon called 'Human Capital', making it the most powerful and valuable weapon in the organization. This gives the organization a competitive advantage and drives the organization to its goals efficiently. If any organization has talented people with potential, it makes the organization stronger than its competitors and achieves organization's goals. This means that the overall competitiveness and progress of a country can be achieved when there is quality human capital in each country's public, private and governmental enterprises [9]. Therefore, the notion of human capital mainly concerns the competence of human or human competency, beneficial to the organization and then the country.

However, Thai people are not expected to have such competence only but also to be disciplined and ethical according to the National Strategy [2]. In order to achieve such goal, many moral trainings have been organized in the educational institutions, and governmental and private organizations with the aim to train Thai people to be ethical. It does not exaggerate that Thai government wants its citizens to be a perfect human endowed with competency and morality [12]. Thus, Thailand's national human capital is slightly different from others in this respect. Depending on the religious background and learning ages, many Buddhist doctrines are taught to Thai citizens such as Four Noble Truths, Eightfold Noble Path, Threefold Training and so on. The most common one taught to all generations directly as the topic of a talk or indirectly as a part of the ceremony is FP, generally known as a code of conduct or rules for helping people behave morally and ethically. The rules of FP are: to refrain from(1) taking life, (2) taking what is not given, (3) misuse of the senses or sexual misconduct, (4) wrong speech and (5) reckless intoxicants [5]. Today, FP is taught to people in Thai society with the belief to create happiness for the practitioners and their members of the family and society.

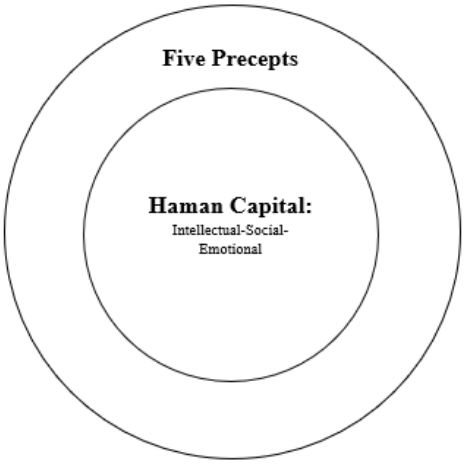


Figure 2 FP is used to develop Human Capital as a behavioral guideline or a code of conduct.

To answer the question 'How does FP support the development of human capital?', as FP is used to control the physical and verbal actions of the practitioner, it can be used as the behavioral guideline restricting the human actions in wholesome ways. It can be said a smart person with high human capital is not always a good person. Having a lot of people with high human capital but without morality or ethics can cause more damage to the organizations. It is the same as having a master thief or outlaw at work.

VI. DISCUSSION

According to the research results, the development of human capital in Thailand's National Strategy focuses on

developing human competency together with morality or producing a competent and moral citizenry [2]. It is said Thai people must be a good worker and a good person simultaneously; while, FP plays its important role in developing people to be ethical or moral or helping people behave in a moral and ethical way. This directly and indirectly responses to the development of human capital, one of the six key indicators of National Strategy: (1) well-being of Thai people and society, (2) national competitiveness, economic growth, and income distribution, (3) development of human capital, (4) social equality and equity and (5) sustainability of national biodiversity, environmental quality, and natural resources [2].

Based on the data obtained from FGD, FP should not solely used to support the development of human capital as it is a conceptual framework of physical and verbal conducts or development only. What left here is the mental development. The FGD participants therefore have recommended various Buddhist doctrines in order to fill such gap. For example, Four Noble Truths should be used to promote the human capital in terms of critical thinking as it is the teaching related to problems-solving skills: find a problem, identify its causes, set the plan and goal to solve the problem and follow the plan. Meditation (Samādhi) or mindfulness was recommended to use as the tool to develop better consciousness and emotion in consistency with Teper and Inzlicht' s work 'Meditation, mindfulness and executive control: the importance of emotional acceptance and brain-based performance monitoring', published in Social Cognitive and Affective Neuroscience, Oxford Academic, which confirms that meditation increases the acceptance of emotional states and the capacity to deal with the emotions associated with errors. [13].

The most agreed Buddhist doctrine used to support the development of human capital of Thailand is the teaching called 'Bhāvanā 4 (Four Kinds of Development)[5]'. This doctrine is consisted of four elements: (1) Kāya-bhāvanā (Physical Development), physical development to be healthy and ready to work, (2) Sīla-bhāvanā, development of morality, (3) Citta-bhāvanā, development of the mind to have good qualities and (4) Paññā-bhāvanā, intellectual development. Some FGD participants said this principle may be more effective and suitable than using FP to support the development of human capital. This is consistent with the work by Krongbun 'Buddhism-based Human Capital Management in Thailand 4.0 Era', where Bhāvanā 4 is recommended for human capital development [14]. However, what is missing in this doctrine is the verbal training which can be seen in FP. Moreover, the Noble Eightfold Paths (Right View, Right Thought, Right Speech, Right Livelihood, Right Effort, Right Mindfulness and Right Concentration) [5] was suggested as one of the doctrines that should be used to the human capital development. However, some said there is a need to integrate all aforesaid doctrines in the systematic process for the effective use.

VI. CONCLUSION

In pursuit of the goals of the national development: 'A Secure Nation, Contented People, Continued Economic Growth, An Equal Society and Sustainable Natural Resources', Buddhist doctrines could be used to promote the development of human capital. FP is suitable for the physical and verbal development, but for the mental or intellectual development, it requires other doctrines such as meditation or Bhāvanā 4 to support. However, the human capital development should not be limited to using the Buddhist doctrines only, other religious teachings can be applied if applicable. As mentioned in the National Strategy in developing and strengthening human capital, human capital is one of the key factors to propel the country development making Thailand to be a developed country, driven by wisdom and innovation. It is necessary for all stakeholders in Thailand to have a systematically comprehensive human capital development strategic plan. The integration of honesty, discipline, moral and ethical standards in educational programs should be effectively made by the educational and religious institutions and community.

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Service quality affecting to customer's satisfaction toward the artificial football turf

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Abstact --- The service quality is the thing that all customers expect to gain the best product and the best service, so the customer's satisfaction depend on how the service quality are. It is therefore the problem of the artificial football turf spreading, but many of them are still lacking of the good service quality which will affect the customer's satisfaction in the issue of repeating use from those customers. Objective: To study the service quality affecting the customer's satisfaction toward the artificial football turf. Methods: This study employed a quantitative research design which the phase of data collection by the questionnaire with 260 participants by non-probability sampling with the accidental method, and analyzed with the descriptive statistic and correlation research method. Results: The service quality which were comprised of 1) Tangible, 2) Reliability, 3) Responsive, 4) Assurance, and 5) Empathy have the correlation with the customer's satisfaction toward the artificial football turf (r = 0.820 – 0.901) with statistically significant at the 0.05 level (P-value = 0.00).

Index Terms--- ***Service quality, Customer's satisfaction, The artificial football turf***

I. INTRODUCTION

The artificial football turf is becoming more popular among those football lovers who like to play very often. There are lot of benefits of the artificial football turf, for example All-weather utility, Versatility and preparation, No growing required (1). Nowadays, people tend to be stressful very easily due to their responsibility form work. They have so many burdens to take care of; for example, People have so many different in their society, some need to be the role of the parents and son. In the means while, many of them hold too many position in their life. Another example is a guy may be a boss at work, but at home he has to act the best rule in husband and farther character towards his family. This could be the main reason why people in these days are looking for a place to release their stress.(2) There are so many places for doing an exercise, such as fitness center, swimming pool, tennis court, football filed, and so on. (3) Anyway, one of the main reasons for people to choose artificial football turf is to meet friends and exercise with their favorite sport in any season.

The service quality is generally viewed as the output of the service delivery system, especially in the case of pure service systems. Moreover, service quality is linked to consumer satisfaction. Service quality is a perception of the customer. Customers, however, form opinions about service quality not just from a single reference but from a host of contributing factors. (4)

From the above statement, Studying of the customer's satisfaction through the service quality theory and the satisfaction theory would be the key successful factors for knowing the right the customer satisfaction. Since the artificial football turf "Talent sport club by J chanathip" is very famous and successful among their competitors. This is the reason why the researcher would like to study the service quality affecting customer's satisfaction toward the artificial football turf "Talent sport club by J chanathip" in order to know which factors are the most important for satisfying their customers and why people give much royalty to their service. The researcher hope that this work

could be the benefit for people who want to start doing this business and those who are already in the business.

II. RESEARCH OBJECTIVES

The objective of this research was to study the service quality affecting the customer's satisfaction toward the artificial football turf.

III. RESEARCH METHODS

This study utilized a quantitative design using the questionnaire with 260 people who used the artificial football turf at "Talent sport club by J chanathip" with the G Power program for qualifying the sample size.

The sample was the customers who came to use the facility. All were selected through non-probability sampling with the accidental method.

The researcher developed a questionnaire based on the previous literature. The survey consisted of main factors for perceiving the customer's satisfaction toward the artificial football turf from the quality service and satisfaction theories. The survey comprised 50 items. The content validity of this survey was determined through Item-Objective Congruence (IOC). Furthermore, the reliability was .85 (Cronbach's Alpha Coefficient). Questionnaires including 5 points of strongly agree, agree, neither agree nor disagree, disagree, strongly disagree.

The quantitative data was analyzed through descriptive statistics including frequency, mean, standard deviation and simple correlation analysis.

IV. RESULTS

This research is a three-step process.

Step 1. Descripting the characteristics of the level of the service quality from those customers who who used the artificial football turf at "Talent sport club by J chanathip"

Table 1. The result of the average, the standard deviation and the level of the service quality from the customers toward the artificial football turf "Talent sport club by J chanathip".

Service Quality	Mean	Std.	level
1. **tangibles**	4.19	0.75	High
2. **reliability**	4.21	0.74	High
3. **responsive**	4.29	0.70	High
4. **assurance**	4.28	0.70	High
5. **empathy**	4.09	0.66	High
The total results of the Service Quality	4.21	0.71	High

Table 1 shows that the overall of the service quality was high, and when each aspects were considered found that the highest was the responsive (Mean = 4.29, Std.0.70). The second highest was the assurance (Mean = 4.28, Std.0.70), the reliability (Mean = 4.21, Std.0.74), the tangibles (Mean = 4.19, Std.0.75), and the empathy (Mean = 4.09, Std.0.71) respectively.

Table 2. The result of the average, the standard deviation and the level of the customer satisfaction from the customers toward the artificial football turf "Talent sport club by J chanathip" .

Customer satisfaction	Mean	S. D	level
1. Equitable Service	4.29	0.64	High
2. Timely Service	4.21	0.67	High
3. Ample Service	4.11	0.84	High
4. Continuous Service	4.06	0.62	High
5. Progressive Service	4.04	0.71	High
The total results of the service result.	4.14	0.69	High

Table 2 shows that the overall of the customer's satisfaction was high when each aspects were considered found that the highest was the equitable service (Mean = 4.29, Std.0.64). The second highest was the timely service (Mean = 4.21, Std.0.67), the ample service (Mean = 4.11, Std.0.84), the continuous service (Mean = 4.06, Std.0.62), and the progressive service (Mean = 4.04, Std.0.71).

Table 3. The result of the correlation analysis between the service quality and the satisfaction from the consumers toward the artificial football turf "Talent sport club by J chanathip".

Service Quality	(1)	(2)	(3)	(4)	(5)	(6)
1.tangibles	1					
2.reliability	.885**	1				
3.responsive	.828**	.809**	1			
4.assurance	.819**	.854**	.866**	1		
5.empathy	.849**	.776**	.902**	.829**	1	
6.Customer satisfaction	.887**	.846**	.820**	.901**	.889**	1

**. Correlation is significant at the 0.01 level (2-tailed).

Service Quality	Customer satisfaction		The result	The correlation level
	Correlation	P-Value		
1.tangibles	.887**	**0.000**	Accept	High
2.reliability	.846**	**0.000**	Accept	High
3.responsive	.820**	**0.000**	Accept	High
4.assurance	.901**	**0.000**	Accept	High
5.empathy	.889**	**0.000**	Accept	High

From the correlation analysis found that the independent variables of the service quality has the r value between 0.820 -0.901 which is correlated in high level (P-Value = 0.000). It can be interpreted that the good service quality affects toward the customer's satisfaction, and will be leading to the repeated use.

r- Value	The correlation level
0.90 - 1.00	High correlation
0.70 - 0.90	High correlation
0.50 - 0.70	Average correlation
0.30 - 0.50	Low correlation
0.00 - 0.30	Very low correlation

V. DISCUSSION

The findings of this study are consistent with the previous research about the good service quality and the satisfaction. The discussion topics will be divided into 3 topics.

Topic 1: From the result of the average, the standard deviation and the level of the service quality from the customers toward the artificial football turf "Talent sport club by J chanathip" are related to the service quality theory (5) and the work of Safiek Mokhilis which his title is about The Influence of Service Quality on Satisfaction: A Gender Comparison, and the result found that the study also revealed that that tangibles, reliability and responsiveness were critical service quality dimensions for determining satisfaction of both male and female customers.(6)

Topic 2: The result of the average, the standard deviation and the level of the customer satisfaction from the customers toward the artificial football turf "Talent sport club by J chanathip" are related to the satisfaction theory (7) and the work of Down lacobucci which his title is about the calculus of service quality and customer satisfaction: Theoretical and empirical differentiation and integration, and the result was concluded that quality and satisfaction are extremely important concepts to academic researchers, particularly in services marketing, and to practitioners as a means of creating competitive advantages and customer loyalty. (8)

Topic 3: The result of the correlation analysis between the service quality and the satisfaction from the consumers toward the artificial football turf "Talent sport club by J chanathip" are related to the work of Azman Bin Ismail which his title was about examining the relationship between service quality and customer satisfaction: A factor specific approach, and the result found that the outcome of multiple regression analysis showed that responsiveness and assurance variables reflected a high correlation with customer satisfaction (9)

VI. RECOMMADATIONS

1. The future research should collect the data from the different sample group and location which will make more diversity.

2.The analyzing in this research using the service quality and the satisfaction in general, not based on all types of the artificial football turf in

Thailand, so the measurement may need to be changed in different locations.

CONCLUSION

From the research finding it can concluded that the overall result both form the aspect of service quality and the satisfaction were high, and the outcome of the correlation analysis showed that the service quality variables reflected a high correlation with the customer satisfaction.

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Structural Model of Adaptive Capabilities, Network Capabilities and Community Based Tourism Innovation in the Central Region of Thailand

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Abstract : This research aimed to study 1) the influence of community adaptive ability on innovation of community tourism in the central region of Thailand 2) the influence of community adaptability on the capacity of managing the community-based tourism network in the central region 3) the influence of network management ability on community tourism innovation in the central region and 4) to propose a structural model of community adaptability and network management capabilities with community-based tourism innovation in the central region. The mixed methodology research between the quantitative research using the survey data from the questionnaire with 213 communities of community tourism network in the central region and the qualitative research using the in-depth interview method and focus group interview conducted with 5 informants was implemented. Structure Equation Model (SEM) was used for the data analysis. The results demonstrated that (1) the community adaptability in the central region directly influenced community tourism innovation with an influence of 0.56 and indirectly influenced through the management of the community-based tourism network with an influence of 0.66. The total influence was 1.22. (2) Community adaptability directly influenced on the ability of the tourism network management in the central region with an influence of 0.62. (3) the ability to manage a network of communities direct influenced on community-based tourism innovation in the central region with an influence of 0.68. Last but not least, (4) the structural model of adaptive capabilities and the network management capability with community-based tourism innovation in the central region were consistent with empirical data based on the six harmonization indices with $\chi 2 = 59.85$ p-value = 0.08, $\chi 2 / df = 0.55$, GFI = 1.00, AGFI = 0.98, and RMSEA = 0.01 that met the acceptance criteria.

Keywords— ***Community adaptability, Community network management ability, Community-based tourism innovation***

I. INTRODUCTION

The Sustainable Community Tourism Strategic Plan from 2016 to 2020 sets a vision for the importance of community-based tourism in Thailand to develop towards sustainable community, resource preservation and management. The plan focuses on the management that can create international standards of service, hygiene and safety to accommodate quality tourists according to the community potential. The tourism management is based on the concept of preserving and managing the community's resources by people in the community. The management covers many aspects from culture to society and environment (Ministry of Tourism and Sports, 2018). Community tourism plays a significant role in the development of the driving mechanism and the community tourism management system. It is also a vital linkage of the civil state community-based tourism network aiming to develop and manage with a stable and sustainable community-based tourism development. As mentioned above about community tourism, the advancement of community tourism towards sustainability is of great importance and it is imperative to take action through the participation process of all sectors involved in tourism (Eng-Chuan, 2018).

Community-Based Tourism (CBT) is a tourism that focuses on the sustainability of the environment, society and culture. The community plays the role of a manager or a supervisor to direct the operation of community tourism and create learning opportunities along with visitors. Participation is a key component to the success of community-based tourism management. Thus, stakeholders must be involved in decision-making, operations, and community benefits from tourism management. In addition to this, the connection between tourism networks from upstream, middle and downstream should be promoted. Direct involvement of the community in tourism management will be the base for managing sustainable tourism because the direct involvement will promote the integration between business development and community development which includes environmental conservation and taking into account the capacity of nature in the area as a form of sustainable tourism management (Kaewmanee, 2014).

However, academically, the study of the effects of various factors or variables on community tourism such as

the adaptability of the community, the network management capabilities and the management of community tourism innovation have not yet made community people or other stakeholders really take part in the management of community-based tourism from the upstream, midstream and downstream. It is therefore challenging to study the effects of such factors or variables so that it can be one of the guidelines for the development of tourism by the community. This notion will create sustainability in terms of natural resources conservation that includes environment, culture and community traditions leading to the sustainability from available resources.

From the background and the importance of community tourism, I am therefore interested in studying and finding empirical answers by examining the effects of adaptability of the community and the effects of the network management capability in the central region of Thailand. This leads to the contribution new knowledge under a model of community adaptability and network management capability with community-based tourism innovation in the central region. The results obtained from this study will benefit the community-based tourism network group and the government sector in creating ways to support domestic tourism in the future.

II. Research Objectives

1. To study the effects of community adaptability on the community tourism innovation in the central region of Thailand.
2. To study the effects of community adaptability on the ability of managing the community-based tourism network in the central region of Thailand.
3. To study the effects of network management ability on the community tourism innovation in the central region of Thailand.
4. To propose a structural model of community adaptability and network management capabilities with community-based tourism innovation in the central region of Thailand.

III. Literature Review

Concepts of Community Tourism Adaptability

Building adaptability is important for community tourism. As community tourism in Thailand attracts tourists with a wide variety of nationalities, cultures and beliefs, community-based tourism has to adapt to this diversity. The process of adaptation according to the concept of community tourism adaptability involves with accessing information from competitors as well as being up to date on news and activities of both national and international competitors. This is to recognize the nature of tourism operations and strategies and how other communities promote their community tourism. This is because the information will be adapted to the circumstances of the community in order to differentiate itself from other tourism by the community. In addition to competitor information, it also requires access and understanding of customers and technology (Noel et al., 2020). The understanding of customers and technology allows the communities to serve the needs of the tourists better through the ability to develop processes that foster new ways of working, providing tourism services and developing community products to tourists. The understanding also creates value to meet the needs that tourists expect. Therefore, the community must have effective resource management to prepare for the opportunities that will arise (Sadaqat et al., 2020).

The development of community tourism adaptability takes the unity and understanding of the community members to build this adaptability together by building a learning community and promoting knowledge exchange within the community. This will also encourage learning between communities to enable communities to create values that arise from their own resources. The resources that each community has will be different; thus, the community tourism presented by each community will be different. In conclusion, the adaptability of community based tourism indicator is related to the accessibility of industry competitors, the accessibility to customer data and the ability to apply technology to the community-based tourism service (Sadaqat et al., 2020; Noel et al., 2020). The community has the ability to develop community processes into the market and the available resources are managed in order to respond quickly to the opportunities that arise and meet the needs of tourists (Pusck et al., 2019; Sadaqat et al., 2020).

The Ability to Manage Networks in the Context of Community Tourism

The concept of network management has been studied in order to create sustainability arising from the increased capacity development of community-based tourism groups in terms of capital, labor, production technology, awareness and distribution (Yuttachai, 2016). Due to proactive competition nowadays, the ability to manage networks is essential and generates a number of benefits to the economic and social system because information and news are connected among the networks (Khakhar and Rammal, 2013). It is necessary for communities to study and analyze the environment in various contexts that will affect them. In addition, the study of network management ability focuses on developing network connections for community management. It is shared among communities. Benefits and resources are also shared. For this reason, trust can be built among the

communities. This will results in better performance of the communities and benefit the customers. It can be said that network management capabilities can lead to the creation of new innovations in community-based tourism that contribute to sustainable operations.

Concept of Community-Based Tourism Innovation

Community-based tourism innovation influences marketing growth. Community-based tourism innovations can increase the competitiveness in the construction business and can generate profits in times of crisis as well. (Martinez-Roman, Tamayo and Gamero, 2017). According to literature review both foreign and Thai sources, it was found that community tourism innovations could be described in the manner of a new product-oriented marketing. The community is focused on creating products and services that are different from the existing communities by relying on community resources to develop models to create new products and services. Local wisdom or community ways of life are used to create a marketing approach for the development and improvement of new travel products and different marketing (Ho and Lee, 2020). This is consistent with Martinez-Roman, Tamayo and Gamero (2017), which sees the nature of tourism innovation in the field of developing and creating community processes. It also promotes a market that focuses on knowledge development, working process skills and changing different methods of producing products and services. The changing process can be done through the development of technological knowledge and other techniques that are related to one another. Further, community-based tourism innovation promotes manufacturing process of efficient service and operations. Moreover, this is in line with Birgit, et al. (2019) who emphasized on the creation of new community processes while developing new services. Community-based tourism innovation is presented by the community as a model in tourism service. The innovation is unique as it is the result of the development, the new creation or the improvement from the old version. Hence, bringing technology helps create and add more economic value.

IV. RESEARCH METHODS

This research was conducted by implementing mixed methods research of ๅquantitative research methodology) and qualitative research methodology. The details are as follows:

1. Quantitative research studied the effects of independent variables and dependent variable to construct the structural model of the adaptability of the communities and the network management capacity of the communities with the innovation of community tourism in the central region which is consistent in theory and empirical data.

2. The qualitative research was conducted by using phenomenological method, which is a method of acquiring knowledge and the study of human life phenomena and experience by understanding the meaning from the life experience of the person primarily (Chai Bodhisita, 2009). The qualitative research was divided into 2 steps as follows:

2.1 The first step was an in-depth interview. The key informants were the Community Tourism Association Committee in the central region and scholars specializing in the field of community tourism . The key informants were selected based on the criteria of being a tourism leader in the central region with knowledge and experience in community tourism as well as having conducted a research in community tourism and willing to provide the information related to tourism.

2.2 The second step was focus group. It was conducted with key informants. It was the use of data collected from the data analysis in quantitative research and in-depth interviews. The focus group was implemented in pursuance of examining and confirming the conclusion of the research.

Population and Samples

The population consisted of 224 communities from community tourism networks. They were the members of the Community Tourism Association in the Central Region of Thailand. (Ministry of Tourism and Sports, 2019).

The sample group was the members of the Community Tourism Association in the Central Region of Thailand. They were selected because of their role as a leader in the Community Tourism Network in the central region registered as a member of the Central Community Tourism Association. To determine the sample size for analysis, there were not less than 20 samples per 1 observed variable. There were 9 observable variables in this research. Thus, there were 180 samples selected to prevent statistical error (Hair et al., 2010). In this research, the data were collected from 224 communities. However, 213 communities accounted for 95 percent responded; thus, there were used as a sample of this research.

There was a total of 5 key informants selected to provide the information. The 5 key informants were the members of Community Tourism Association Committee in the central region of Thailand and scholars in the field of community tourism. 2 of these key informants were the members of Community Tourism Association Committee in the central region of Thailand and 3 of these key informants were scholars in the field of community tourism. They were selected by purposive sampling method. The criteria to select them were based on their experience in community

tourism and related research experience in community tourism.

V. RESEARCH RESULTS

The Analysis of Hypothesized Variables Results

The effects of causal variables which were the community adaptability and network management capacity of the communities in the central region of Thailand with the results of the structural model of the adaptive capacity of the communities and the network management capabilities of the community and the innovation of community tourism in the central region. The model has been developed to explain the research hypothesis. The analysis results are detailed in Table 1.

Table 1 The Effects of Variables in Structural Models Based on the Research Hypothesis

Causal Variables	ADAP			NET			R^2
Dependent Variables	DE	IE	TE	DE	IE	TE	
ADAP	-	-	-	-	-	-	-
NET	0.62*	-	0.62*	-	-	-	0.32
INNO	0.56*	0.66*	1.22*	0.68*	-	0.68*	0.48
Chi-Square = 59.85, df = 107, P-value = 0.08, RMSEA = 0.01, AGFI = 0.98, GFI=0.96							

Chi-Square = 59.85, df = 107, P-value = 0.08, RMSEA = 0.01, AGFI = 0.98, GFI=0.96

*p<0.05; DE refers to direct effects; IE refers to indirect effect; TE refers to total effects.

According to Table 1, the findings of the casual variables and the results of the structural model of the adaptive capacity of the communities and the network management capabilities of the community and the innovation of community tourism in the central region that has been developed to explain the research hypothesis were detailed as follows:

Hypothesis 1 The community adaptability of the central region communities under the ability to keep track of information, process development capabilities and resource management capability directly affected the community tourism innovation in the central region. In addition to this, it indirectly affected on community-based tourism innovation through the central community network management ability. Moreover, it was found that Community Adaptability (ADAP) had a positive direct effect on community-based tourism innovation (INNO) with direct effect of 0.56 and the indirect effect through the community tourism network capacity (NET) of 0.66. The total effect was 1.22 with statistical significance at 0.05 level. Therefore, research hypothesis 1 was accepted.

Hypothesis 2: According to the community adaptability of the central region communities under the ability to keep track of information, process development capabilities and resource management capability, it was found that the community adaptability (ADAP) had a positive direct effect on the ability of the community-based tourism network management (NET) with direct effect of 0.62 and total effect of 0.62. It was statistically significant at 0.05 level. Therefore, research hypothesis 2 was accepted.

Hypothesis 3:

Hypothesis 3 According to the network management capacity of the central region under the elements of the ability to share knowledge, to create a network organization culture and to be interdependent, it was found that the ability to manage the community Network (NET) had a positive direct effect on the community-Based tourism Innovation (INNO). The effect was 0.68 and the total effect was 0.68. It was statistically significant at the 0.05 level. Therefore, research hypothesis 3 was accepted.

The Results Analysis of the Structural Model of Community Adaptive and Network Management Capability with Community-Based Tourism Innovation in the Central Region as Shown in Figure 1

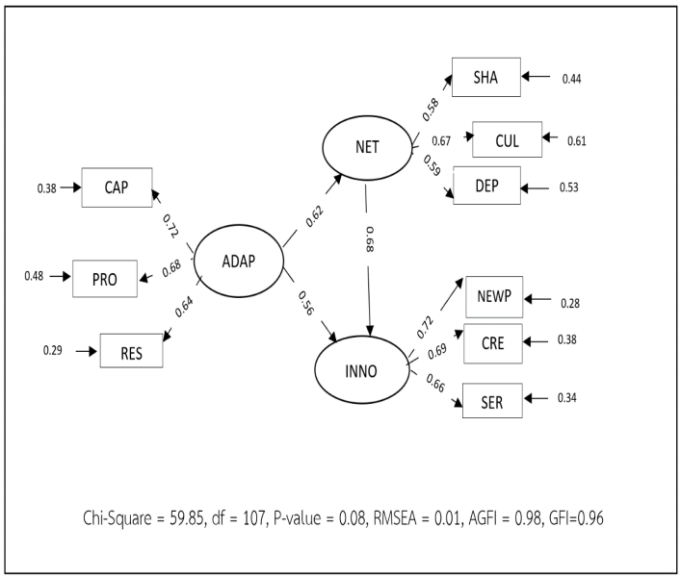


Figure 1: Structural Model of Community Adaptability and Network Management Ability with Community-Based Tourism Innovation in the Central Region of Thailand

The Confirmation and Verification of Findings from In-Depth Interviews and Focus Group Discussion

The results from the In-Depth Inter are as follows:

1. The Adaptability of Community Tourism in the Central Region

The development of the community to support tourists is a characteristic of adapting to create value for their own community. Creating value is a business concept which is an adaptation of the community to be able to generate income for the community and to achieve economic sustainability in the community. In this regard, the whole adaptability of 1) the ability to track information, which is the ability of the community to keep up to date with the competitors in order to have information that is ready for the competitive situation at all times. 2) The process to provide tourism service to attract tourists to travel to the community requires the development of processes in various areas. The process is a key component of the hospitality industry that will make an impression to the visitors. 3) The availability of resources to accommodate tourists in terms of both service resources, food, accommodation and people through the resource management process. In terms of procurement, development and creation, this allows the community's resources to have more values and to maintain its value.

2. Network Management Capabilities of the Central Community

The ability to manage a community network requires sharing the knowledge gained from networking at both the member and community level. Knowledge from outside must be transferred to members of the community. There is a process of teaching to the community members to gain new knowledge in tourism and services. Community cultures have been created in order to strengthen the community in network management. Shared values between communities creates joint improvements and development of tourism management. There is a change in knowledge and skills together to foster joint capacity development. There is a creation of resource exchange and dependence on resources. Strengths of each community support one another between communities. The community network is another reflection of the community's ability to access information. This is the sharing of information that the community needs and is also a validation of feedback to ensure that information or the knowledge that is shared is accurate and can be used to create value for the community.

3. Results of Community Based Tourism Innovation in the Central Region

Community-based tourism innovation promotes marketing campaigns that focus on the form of selling community products. New product-oriented marketing is a process innovation that plays a role in promoting market expansion to tourists. Encouraging new product development requires processes that support the development of knowledge, techniques and skills to create effective work processes by bringing technology to take part in the development to have increased competitiveness. The process and the promotion of new product development will create new types of tourism services. This will bring the community's identity to add and develop values. It is the hallmark of a community that can make a difference from the original and other communities. However, by creating innovation, the community cannot create by itself. It requires communities networks. In terms of new products, in the present day, it is not necessary for the community to produce products themselves. It can be a joint production but the product itself should represent the community value.

Results from Focus Group

The focus group showed that empirical data obtained from quantitative research and interview data were confirmed by key informants with hands-on experience and academics with expertise in community tourism. The results of the focus group also added suggestions that could be used to benefit the community. The research results were disseminated in various forms of communication, preparation of management manuals, and building community networks. Educating by organizing training in collaboration between communities and educational institutions should be implemented. Informants were also those who applied the findings of this study to their own communities.

Therefore, the confirmation and examination of the findings from in-depth interviews and the focus can be concluded that the model of community adaptability and network management capability with community tourism innovation in the central region are consistent with empirical data. The research results could be explained that the causal variable was community adaptive capacity and the transmission variable was the ability of the community network management both directly and indirectly affect community tourism innovation. This can be displayed as an equation as follows:

NET = (0.62*x1) : R2 = 0.32
INNO = (0.56**x1) + (0.68**NET) : R2 = 0.48

VI. DISCUSSIONS AND CONCLUSION

1. According to the research results, it was found that the ability to adapt of the central region community has a direct impact on the community tourism innovation in the

central region and indirectly affect community-based tourism innovation through network management capabilities of the central region. It shows that a community with a community culture is ready to receive new knowledge and ready to adapt to the new opportunity as well as ready for the threat that will affect the community. Thus this allows the community to create strong innovation. It has had a positive effect on investing in product innovation. This shows that a community with a community culture can make a difference and will result in sustainable innovation in the community. The creation of community-based tourism innovation requires network management capabilities not only to make a difference in mutual interest but also gives rise to innovation. Network management capabilities also gives communities a competitive advantage. As a result, the operations are in line with the goals set. This is because building a competitive advantage has implications for building confidence in success. It also has an important link to the foundation of the organization's resources. This will contribute to the success of the improvement (Ghapanchi, Wohlin and Aurum, 2014). This is also in line with the results of the Kuncoro and Suriani (2018) study who stated that due to the increased competition in the domestic market and all over the world, if there was some reduction in international trade barriers, it may lead to the development of information technology including changing customer needs. Further, it was found that entrepreneurs themselves were in a need to find an effective business management model more than ever ever. The trend suggested that entrepreneurs should build tools to be more efficient so that they can gain a competitive advantage and benefit from the competition back to the company or business in which they operate. For this reason, community-based tourism innovation is the result of talent development within the organization. The ability to manage the network is in accordance with a dynamic environment. From developing and building adaptability, the assimilation and development of new community products (Breznik and Hisrich, 2014) is the basis of capacity building based on existing resources and the adoption of external knowledge to integrate and adapt to the enterprise. This will bring about community tourism innovation and bring business success further. In addition to this, the links with government agencies, government policy can enhance the benefits among the communities and increase the competitiveness. This link also requires network management capabilities (Kang, Kim and Hur.2014).

This is consistent with the research showing the relationship between the community's adaptive ability in relying on information, modifying the form, process, method while managing resources for maximum sustainability. These processes affect the variables as the community requires networking to promote community-based tourism innovation.

2. According to the research findings, it was found that the adaptability of the central community directly affected the capacity of managing the central community tourism network. This is consistent with Ho and Lee's (2020) research describing business innovation: It is data-driven, so if a business does not have information that means knowledge, it does not know how to create new things, new processes, new products or services. The improvement and the transformation of existing potential to respond to changing conditions of the environment is also known as adaptability (Helfat et al., 2009) It also fits the idea of Pavlou and El Sawy (2011) who stated that adaptation is often embedded in community processes and practices that help communities adapt to changes and market competition conditions. Innovation is a combination of elements in product, technology and process management. In addition, individuals and groups within the community can take advantage of new knowledge and skills. Lewis, et al. (2002) also said that product development was born out of the thought of members within the community. Creating value for members of the community. and accepting the creation of value is important and it indicates the work of the community. Community performance autonomy is the creation of work value that gives rise to creativity and forms of innovation. Having the opportunity to make their own decisions and being self initiative will unquestionably affect the goals of community tourism management.

The results of this research show that community-based tourism innovation arises from the organization's ability to continually adjust above its competitors, which is derived from the ability to learn and adapt before other competitors, resulting in sustainable results.

3. From the research results, it was found that the network management capability of the central communities directly affected the innovation of community-based tourism in the central region. It is a systematic link with the community. Steps to make innovation happen. demonstrated how the network management capabilities affected community-based tourism innovation. This is consistent with the Mendonca, Varajao, and Oliveira (2015) study, saying that a collaborative network helps organizations stand out. Collaborative network is amodel for communities to be more competitive through innovation that creates differentiated community products. One of the things that contributes to the success of community tourism innovation is organizational flexibility. The ability to reduce costs, enterprise resources, exchange of information, skills and knowledge and general strategies can also be used to increase community service growth. These are all network management competencies (Wang et al., 2013). Network

management competencies are the development of business models that have the potential to describe performance, be promoted and conveyed by opportunity. The development of relationships and networking capabilities can positively impact organizational performance at both the community and national levels. The ability to manage a network is a valuable resource. It can be defined as a universal theory that highlights the role of relationship between members and between communities in the evolution and growth of markets. The adoption of technology generated by network exchanges as appropriate for development can include cultural differences (Bianchi and Mathews, 2016). This is because the local community has insufficient resources to develop innovation. It requires support from a network that creates an exchange of resources. These resources and capabilities will be developed into community innovation to promote community tourism.

4. The results of empirical analyzes both quantitative and qualitative research data were consistent with the above literature as it shows the effects of network management capabilities under the elements of the ability to share knowledge, to create a network organization culture and to work interdependently. These have a direct effect on community tourism innovation in the central region. The ability to manage the network is a strength in the area that the community is missing both in terms of information knowledge and technology (Piyakorn, Tin and Phongsak.2020).

Suggestions for Application

1. Study in this research used cross-sectional study. The data was collected at only one time. Studies in business administration is constantly changing. For this reason, longitudinal study should be applied for future study. The longitudinal study can demonstrate the effects of the adaptability and network management on community tourism innovation in the central region over the long term. This could be further studied about creating sustainable innovation in the future using a longitudinal study data collection model.

2. In future research studies, this research conceptual framework can be brought to study control variables such as community size, or characteristics of different community. This is to examine whether any differences could be found about the adaptability and network management towards community-based tourism innovation in the central region.

3. In this research study, it is only to explain the concepts and theories related to adaptability and network management towards community tourism innovation in the central region. There are also other concepts involved and can be a factor in further studies.

4. This research was to collect both quantitative and qualitative data in which qualitative methods were used the question of quantitative research as a guideline. This makes it possible to confirm the results of the quantitative research from the main informants. In this regard, the key informants are community-based tourism operators, so they can further apply the research results to benefit their own community-based tourism. This model is a discussion of interstitial variables in network management that can promote community adaptation to create tourism innovation more effectively.

5. The interstitial variable in network management can be applied to other industries, including the service industry that is similar to tourism and manufacturing industries that rely on networks to strengthen their supply chain.

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The Analysis Model of the Causal Influence Factors of Attractiveness and Commitment to Export Affecting Export Capability

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Abstract - The objectives of this research aim 1) to investigate factors which are related to the attractiveness and commitment of food exporting industry and 2) to develop a model of causal influence of attractiveness and commitment on food exporting industry. The researcher collected samples from a specific target group of 145 companies. Data were analyzed by using descriptive statistics. Moreover, the researcher also analyzed information by descriptive statistics. In the part of analytical statistics analyzed, researcher using factors analysis and the causal influence analysis between variables according to the conceptual framework by LISREL program. The results revealed that attractiveness of export had influence on export capability. On the contrary, the analysis showed that export commitment had positive influence on the capability of exporting. Assessment on goodness of fit from the model found that export capability was consistent with the empirical data, the chi-square =185.57, the degrees of freedom = 99, chi -square relative (x^2/df) =1.87, the probability (P-value) = 0.00, goodness of fit index (GFI) = 0.98, comparative fit index (CFI) = 0.98, Root mean square error of approximation (RMSEA) = 0.50.

Keywords— ***attractiveness, commitment to export, export capability, casual influence factor***

I. INTRODUCTION

Economic volatility has forced the business sector to continually adjust to maintain operational stability. In particular, exports and international trade have been the main drivers of each country's economy in recent times. Even for countries that use traditional production systems, exports have helped drive those countries to adopt modern manufacturing processes and technologies in a more systematic and efficient way of producing goods. It also affected the movement of production bases to export products to other countries in the region, especially the relocation of production bases to countries with cheaper wages.

In order to maintain the market and create a sustainable stability for the export industry, the government has established a policy of "Food Valley "to create international food standards and production planning to be linked with various departments, for example, research and development must be linked to the university, etc. This reinforces the need for exporters to accelerate the creation of higher international standards and develop innovations to suit their own business. However, Thailand is an important resource in producing food for the world market. In addition to having raw materials for various factories, it was also found that Thailand has a higher potential to export food products and food products than other countries. In addition, the export value of food-to-total exports of Thailand has continued to increase when compared to 2014-2015, which increased by 4.9 percent or increased by 6.9 percent (Chotika Chummi, 2013, 1; Kasikorn Bank, 2015: 1-24).

Thailand therefore attaches great importance to the export of food products, which are the basis of Thailand and take advantage of the abundance of natural resources both on land and in water as a source of raw materials for production and processing into various types of food products. In addition, food is necessary goods, where demand does not vary with population income. Although countries around the world face economic and financial problems, their dietary needs have not decreased as well.

However, Thailand's exports still face various challenges and obstacles from the external environment such as requirements for production standards and product quality of leading countries in the European Union, the United

States and Japan, etc. Moreover, the situation of competition is very intense from other competitors in the world market that can produce products of the same quality as Thailand but the cost of production and the selling price of the product are cheaper.

This study focuses on the study of the food industry. It was found that in 2021 has been expanded continuously from 2020 including the pharmaceutical industry and the food industry (Economic News Thursday November 19, 2020 12:30 - Info Quest News Agency IQ). Export attractiveness factors such as the baht weakening were also examined. The researcher hopes that this research will be able to find answers about planning guidelines for the food industry's export business to be more efficient.

II. Research Objectives

1. To study the factors of attractiveness and commitment in exports on export capability.
2. To develop the influence of attractiveness and commitment in exports on export capability.

III. Literature Review

Theories used in this study consist of an internationalization theory in which resource variables, export decision-making knowledge, and export experience were discussed. These variables were the fundamental concepts of this theory, that is to say, having an organization with knowledge and experience in exporting would help make export planning more successful. Moreover, exports must take into account both the domestic and international environment in terms of differences between politics, government, culture, tastes, laws and regulations. Therefore, the export must rely on the determination of the export as well to be successful. In internationalization theory also discussed the attractiveness of the output, that is, exporting to any market needs to take into account the profit, risk and growth that will be gained from the export to that market. In export attractiveness, this factor had been researched from traditional concepts in an organization's export decision, which is related to the level of awareness or understanding as well as the process of learning about the attractiveness of the export of the company. According to various research studies, most researchers agreed that the idea of export attractiveness must first start with management's attention. Moreover, exports correlated with the level of management's perception, for example, the perception of attractiveness in exports. This may have an effect on the output capability (Nguyen, 2000: 102-109 and Pak, 1991: 24-29).

According to Nguyen (2000: 102-109), it was clearly stated that exporting attention needs to be taken into account the risks and profits, as well as the motivation and growth prospects of the organization.

The export determination factor of the organization was the factor that helps the organization to be successful. If the organization's export commitment was low, the export would not be as successful as it should be. Therefore, it could be said that an organization's export commitment is managerial commitment, which was equivalent to trust and cooperation in the workplace. According to Papadopoulos & Martin (2010; 388-406) in Spain and Matanda & Freeman (2009: 89-107) in Africa, the level of positive export commitment towards international level and export capability was consistent with Thanthip Pojsupap's conceptual studies (2015: 35-37) said that, the work had to be planned together to study the necessary information about the export so that the operation could be more successful. The factor had a weight factor of 0.869, which is considered the highest factor loading.

IV. Research scope

1) Content scope - It was the scope of the content based on concepts, theories and research work related to the factors of attractiveness and commitment to export capability.

2) Population boundaries - 316 entrepreneurs in the food industry in Thailand with their headquarters in Bangkok or metropolitan area as a member of the Department of Export Promotion.

V. Research Methods

This research focused on quantitative research to find answers to research using cross-sectional data collection with the details as follows:

The target population and population sample studied in this research were food industry executives in Bangkok Metropolitan Region based on the database of the Department of Export Promotion, the target population in the food industry was 1,415. The sample size was determined according to Yamane's calculation table at a 95% confidence level, which found that the expected shift was 0.05. After 316 samples were obtained, such sampling was selected because it had a higher resolution. Respondents could choose to answer more accurately with their opinions. The research instrument used questionnaires developed from Pak (1991: 24-29) and Nguyen (2000: 102-109).

The quality validation of the instrument was carried out using a content-validity test with a pilot study. There would be a committee of 3 external experts who were not involved in research, but havd relevant research knowledge and expertise for validating data in the Index of Item - Objective Congruence (IOC) test and the structural validity test is performed to test the validity of the variables whether they were based on theory and hypothesis. The researcher selected the factor analysis method to test the preliminary data from 10 samples to test the preliminary analysis results. The preliminary test results showed no factor loading of less than 0.05. Then a reliability test was found that the value of Item-Total Correlation was greater than 0.3. The results of the preliminary examination before analyzing conceptual frameworks, structural equations with LISREL program was found that results of homoscedasticity, linearity between independent and dependent variables and muticollinearlity was at the level that met the primary requirements.

VI. Data analysis

The statistics used for analysis were (1) descriptive statistics which were analyzes in detail of various factors as well as describing the general condition of the collected data and explain the general characteristics of the studied population. Popular statistics used in quantitative measurement are mean, standard deviation, maximum and minimum and (2) The main objective of analytical statistics was for the researcher to prove a hypothesis and to confirm the findings that influence each other at the variable level. According to Zikmund's concept (2000), multivariate statistical analysis required both independent and dependent variables. Researchers using exploratory factors analysis found that, the factor analysis technique was an analytical technique used to categorize a large number of variables into a system. It also allowed the researcher to perform categorization of the variables. In case the researcher does not know how to categorize it (Suchart Prasit Rathasin, 2001: 50 -70), confirmatory factor analysis was used to confirm the validity of the variables from the survey factor analysis which can be analyzed by LISREL program. Then the average variance extracted of the latent variable must be greater than 0.5 and analyze the construct reliability of the latent variable, which must be greater than 0.6. Finally, the causal influence of the correlation path was analyzed with the LISREL program.

VII. Benefits

1. Academic benefits - In the discovery of new knowledge, relevant departments could further utilize the findings of this research as a database of research studies, policy-making and planning.

2. Benefits to exporters - It could be used as a model for planning export decisions of the food industry in Thailand and to provide data to measure food exports to markets around the world.

3. Benefits to the nation - The Ministry of Commerce were used as information for marketing strategies, planning of exports that can compete with foreign markets. The National Economic and Social Development Council were able to formulate policy planning, export development, export policy and export competition as well as product development.

VIII. Research Results

The results of analysis using descriptive statistics showed that the food industry group consisting of canned food could be classified into 41 canned and processed seafood (28.2 percent), canned and processed fruit, 27 places (18.6 percent) and canned and processed vegetables, 10 places (6.9 percent); meat dishes consisted of meat-based and processed meat industry, 14 places 9.7 percent), Animal feed, 8 places (5.5 percent) and instant food / seasoning sauce, 9 places (6.2 percent); grain food / beverage consisted of rice products industry, 12 places (8.3 percent), sugar products, 4 places (2.8) and beverage industry, 4 places (2.8 percent). For personal characteristics, it was found that the sample age was 38 years old, graduated with bachelor's degree (57.2 percent), used to travel abroad on average 1-2 times a year (61.4 percent), English speaking proficiency (96.6 percent), and it was also found that up to 20 people who can speak a foreign language other than English were Japanese or Chinese (13.8 percent) and have experience in exporting between 1-5 years (21.4 percent). In the survey factor analysis by Varimax rotation method of export attractiveness factor (ATX), all five factors had factors loading from 0.509 up and the profit factor of the export operation had a maximum factor loading of 0.870, which could account for the cumulative sum of all factors of 61.762percent.

Then an exploratory factor analysis of the export commitment (OCE) was found. All 9 factors had factors loading from 0.696 up and product factors that affect commitment, cooperation, factor maximum loading at level 0.886, which could describe the cumulative sum of all factors 68.378 percent

Afterwards, a factor analysis of export capacity (EXE) was found that the first export factor in the same

market at the same level had a factor loading of less than 0.05 and the remaining 3 factors had factor loading more than 0.850, which could explain the cumulative sum of all factors 59.545percent.

In the field of confirmatory factor analysis with LISREL, the results of the analysis of the factor of export attractiveness found that, the influence path between the latent variable to the observable variable had a statistic of greater than 2. The results of the conformity assessment with the empirical data were found to be very high. The chi-square was 2.98, df was 3, P-value is 0.395, and RMSEA was 0.000.

When analyzing the confirmatory factor of the export cooperation commitment, it was found that the influence paths between the latent variable to all observable variables had a statistic greater than 2. The results of the conformity assessment with the empirical data were found to be highly consistent. The chi-square was 22.78, df is 17, P-value was 0.156 and RMSEA was 0.049.

Finally, the confirmatory factor analysis of output capability found that the influence paths between the latent variable to the observable variable had statistic values greater than 2 for all paths. The results of the conformity assessment with the empirical data were found to be very consistent. chi-square is 0.00, df was 0, P-value was 0.00 and RMSEA was 0.00.

The construct reliability (ρc) analysis of the latent variable in terms of export attractiveness (ATX) was 0.894. Export Commitment (OCE) was 0.925, Output capacity (EXE) was 0.837. The Average Variance Extracted (ρv) analysis result in terms of export attractiveness (ATX) was 0.629. Export Cooperation Commitment (OCE) was 0.589. Output capacity (EXE) was 0.637.

After confirmatory factor analysis, a model analysis of structural equations (Figure 1) was performed to prove the causal influence of the correlation path based on the conceptual framework established on the hypothesis. The analysis revealed that the influence path between external latent variables in terms of export attractiveness (ATX) to internal latent variables on export co-operation commitment (OCE) was statistically significant ($\beta = 0.65$, $t = 6.40$) The pathway of influence between the internal latent variables in terms of the export co-operation commitment (OCE) to the internal latent variable on export capacity (EXE) was statistically significant ($\beta = 0.62$, $t = 6.75$).

The influence pathway was then analyzed betweenthe external latent variables in terms of the attractiveness of the output to the external observable variables of all 5factors were statistically significant (t between 9.72 and 11.7). The pathway of influence between the internal latent variables and the cooperation commitment in the export to the observer within all 9 factors was statistically significant (t between 7.50 and 9.31). The analysis of the influence paths between the internal latent variables on the ability to export to observable variables within the 3factors was statistically significant (t between 6.44 and 6.91).

x^2=185.57,df=99,x^2/df=1.87,GFI=0.98,NFI=0.95, CFI=0.98, RMSEA=0.050

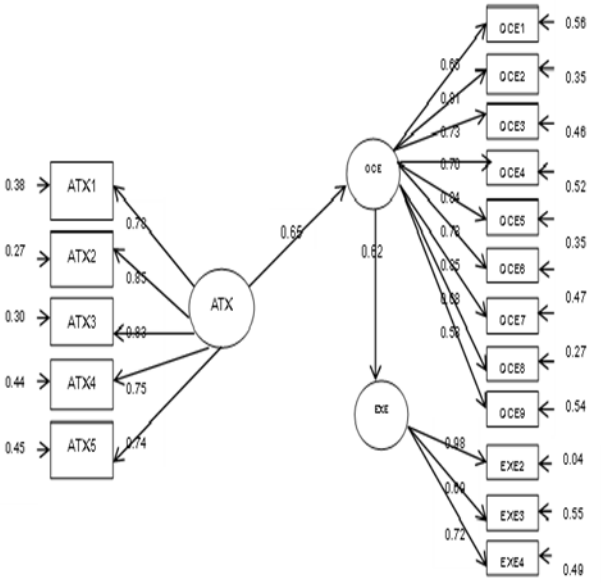


Figure showed a model of a structural equation according to the conceptual framework

Evaluation of the model's conformity index with adjusted empirical data showed that the chi-square (x^2) was 185.57, the degree of freedom (df) was 99, the relative chi-square (x^2 / df) was 1.87. Absolute Fit Index consists of Goodness of Fit (GFI) was 0.98. Adjusted goodness of fit index (AGFI) was 0.91. Relative Fit Index consists of the Normed Fit Index (NFI) was 0.95. Non-Normed Fit Index (NNFI) was 0.97. Comparative Fit Index (CFI) was 0.98. The conformance index in the form of error consists of the value Root Mean Square Error of Approximation (RMSEA) was 0.050. Root Mean Square Residual (RMR) was 0.050. From the above, it can be concluded that the results of the model analysis and the overall empirical data were consistent and appropriate.

IX. CONCLUSION AND DISCUSSIONS

The results of research were summarized from factor analysis in terms of export attractiveness as a factor of the organizaion's export commitment and statistical significance. This was consistent with results from the Javalgi et al. (2010: 129 -150) study that mentions export attractiveness. If it had high export attractiveness, it was low risk and had high resources and capability, which explained the company's readiness to enter the international market.

Factors in terms of organizational export commitment to export capacity were consistent with the results of studies by Serra et al. (2012: 210-224) and Bloemer, Pluymaekers, and Odekerken (2013: 363-380), resulting in planning, cooperation and forecasting of operations.

From the analysis of the causal influence of the structural equation model, it was found that export attractiveness had a statistically significant positive influence as well as an organization's export commitment because the attractiveness of exports was the expectation of profits, rewards as well as operational risks before exporting. Therefore, it meant what the operator expects to gain from exports. Consistent with the study's results consistent with the study results of Stioian et al. (2010: 117-135), it was found that executives (companies), including in Thailand, were interested in short-term and long-term profits as well as the growth of their organization. This influenced the planning of export decisions that if the company received a high level of profit in the domestic market, it would encourage export planning as well as further increasing the profit. This was a very important factor in helping to make an export decision. However, profit expectations were the most important factor in export decisions.

The path of influence between export commitments to export capacity was found to be an element involved in joint planning. Without cooperation in the work, the work will not be successful. In line with the results of the study by Serra et al. (2012: 210-224) and Bloemer, J., Pluymaekers, M., & Odekerken, A. (2013: 363-380), once again proved the hypothesis that an organization's export commitment affects export decisions and export capabilitie, resulting in planning, cooperation and operational forecasts, etc. It also proved the path of influence between an organization's export commitment and export decision-making as a path that had a positive effect. Therefore, cooperation in appropriate resource allocation in the organization could lead the organization into the export market, which must be applied to the appropriate resources for each organization as well.

X. SUGGESTIONS

Management has to consider factors affecting export planning and how to improve and develop their business such as products, domestic situation, government regulations, government assistance, etc. These are important factors that need to be considered in the first place.
Therefore, the planning of operations in the organization requires cooperation in the work, with a clear division of work, predicting product demand, production capacity, as well as developing new products and keeping the quality at the standard level. It is also necessary to consider exporting to potential markets, both new and existing. In particular, markets that do not pay much attention, such as markets in Africa, are able to export products that are not of very high standard or quality. Inexpensive items may be sent to these markets. As for the existing markets in the US or EU, it is imperative to develop a high level of product quality due to the high competition. Consumers tend to pay more attention to products than distribution channels. However, in today's consumer behavior, in addition to wanting to take care of their health, women have found a greater influence on purchasing decisions than men. This is because women tend to be the ones who choose products into the home as a housewife Therefore, it must produce products to appeal to consumers who have the authority to decide to buy these products as well. Product label design to be attractive, writing to describe the value of the product clearly, setting the price to be suitable for competitors, the consumption of the product as well as the convenience of eating were taken into account. In addition to the importance of corporate social responsibility, nowadays, every company must be aware of this issue. In a global crisis, if aquatic animals are caught for food, they should only catch those that are in demand and seasonally. It is also necessary to find substitution measures for these fish by breeding to help increase animal and plant supply.

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Tourists' Behavior and Factors Affecting their Decision for Visiting Ayothaya Floating Market, Phra Nakhon Si Ayutthaya Province

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Abstract*—The objectives of this research were 1) to study tourists' behavior and service marketing factors affecting their decision to visit Ayothaya Floating Market in Phra Nakhon Si Ayutthaya Province during the crisis, and 2) to validate the model of tourists' behavior and service marketing factors affecting their decision to visit Ayothaya Floating Market in Phra Nakhon Si Ayutthaya Province during the crisis. This research was a mixed methods research through quantitative and qualitative methods. For the quantitative research, 17 observable variables were explored and collected from 340 tourists visiting Ayothaya Floating Market. For the qualitative research, data were collected from 9 experts related to the floating market service business, obtained based on a purposive sampling. Research instruments were a questionnaire and semi-structured interview. Data were analyzed with LISREL program, Structural Equation Model (SEM). The results of this research indicated as follows: tourists' behavior and service marketing factors affecting their decision to visit Ayothaya Floating Market in Phra Nakhon Si Ayutthaya Province during the crisis were consistent and harmonious with the empirical data. The results of calculating index of consistency (IOC) were as follows: $\chi 2 = 199.78$, $df = 109$, $\chi 2 / df = 1.83$, $CFI = 0.97$, $GFI = 0.94$, $SRMR = 0.051$, $RMSEA = 0.050$. 2. Factors affecting tourists' decision to visit Ayothaya Floating Market included tourist's behavior and service marketing factors, respectively.*

Index Terms—***Decide for using the service, Tourism behavior, Factors affecting the choice of service***

I. INTRODUCTION

Tourism in Phra Nakhon Si Ayutthaya Province is considered a tourism industry that plays an important role in Thailand. Tourism is a sector that can utilize income for provincial development and the nation's economic stimulation. Tourism can generate a lot of income for the country as well as continuously create businesses such as hotels, shopping malls, shops, which were places of large-scale employment represented the manufacturing sector, resulting in employment and consumption. Later, when the economy grows, people have more incomes. People began to look for happiness especially in the pursuit of tourist destinations, resulting in the tourism industry following. Thailand therefore turned to support and promote tourism as an economic development instead of industry. According to the global tourism situation, there were 1,134 million tourists and the economy was as high as $ 7.8 trillion, which was 3.5%. Tourism industry was a rapidly expanding industry, playing a very important role in Thailand's economic and social system, being a major source of income, leading to foreign currency, job creation, and diversification into the region. [1]

Likewise, when the figures for tourism revenue in Thailand were considered, it was significantly high and very satisfactory. At the same time, there was also an underlying concern, because of any political crisis or accident occurring, or even at present, by the domestic tourism situation after the COVID-19 virus outbreak. Thailand's tourism sector has been stagnant since April 2020. Travel restrictions of foreigners entering the country have had significantly adverse impacts on tourism-related businesses such as airlines, hotel chains, and tour companies, including the MICE business group (Meetings, Incentive Travel, Conventions, Exhibitions), car rental companies, floating markets, cruise ships, tour guides, museums, shopping centers, shops, and restaurants. The outbreak has a huge impact on these businesses, causing difficulties to recover quickly as well as the number of foreign tourists entering for

travel in Thailand. As a result of this situation, many countries around the world have taken measures to mitigate the impacts of tourism for domestic operators. For Thailand, the government has issued direct and indirect measures for treatment and remedies, including measures to directly and indirectly mitigate the effects of the coronavirus on the Thai economy, Phase 1–3, and additional measures specifically in the case of "tourism businesses" to mitigate the impact and enhance liquidity for entrepreneurs. [2]. In the past few years, the tourism industry has played a very important role in substituting the manufacturing industry in attracting foreign money into Thailand as an essential tool in the economic development of the country. Tourism policy has been developed continuously until the tourism industry was the main income-generating industry and was one of the country's top earners. Tourism also played an important role in the development of transport infrastructure, as well as trade and investment. Tourism was not just for recreation, it has evolved into knowledge and environmental responsibility. Currently, the Ayothaya Floating Market, Ayutthaya Province has become increasingly popular and has attracted the attention of both Thai and foreign tourists. Ayothaya Floating Market Tourism, Phra Nakhon Si Ayutthaya Province was considered another form of tourism that emphasizes relaxation with nature and focused on activities related to the environment and receives more attention from tourists. However, tourists' attention was not much, compared to that at pre-covid-19 era and other crises. Therefore, the researcher was interested in studying behavior and factors affecting the decision for visiting Ayothaya Floating Market, Phra Nakhon Si Ayutthaya Province during the crisis. This study focused on exploring tourists' behavior, service marketing factors, and purchase decision process. The findings will be used to plan for tourism administration in order to be able to formulate strategies to suit the tourism management of Ayothaya Floating Market, Phra Nakhon Si Ayutthaya Province. In addition, they would be used as the guidelines for the relevant agencies to develop more efficient tourism in the future.

II. Research Objectives

1. To study tourists' behavior and service marketing factors affecting their decision to visit Ayothaya Floating Market.

2. To validate the model of tourists' behavior and service marketing factors affecting their decision to visit Ayothaya Floating Market and to conduct confirmatory factor analysis of factors affecting their decision to visit Ayothaya Floating Market in Phra Nakhon Si Ayutthaya Province.

III. Literature Review

Theory of Millet's satisfaction[3] studied the satisfaction of the people with the service. The theory must adhere to the measure of satisfaction in 5 areas: 1. Equitable service, 2. Timely service, 3. Ample service, 4. Continuous service, and 5. Progressive service. [3]

Maslow's Hierarchy of Needs is the theory of satisfaction that has been adopted by several theories, depending on the leader in each place which was used to suit each situation, but the theory that was considered a fundamental and discussed theory the most was Maslow's Hierarchy of Needs, who said that all human beings have needs that are hierarchically ranked. [4]

The concept of consumer behavior in tourism is a research on consumers' behavior. Tourist groups are categorized into Thai tourists and foreign tourists, as well as an individual tourist, a couple, a group, or an organization. The categorization of tourists is for realizing the characteristics, needs and behaviors of consumers in tourism. Consumers' behavior or tourists' behavior refers to behavior to provide or procure goods or services that are expected to meet the needs of themselves and others. Studying the behavior of consumers or tourists can clarify tourists' decision model as follows: 1. What products and services do tourists buy?, 2. Why do they buy that product/service and when?, 3.Where to buy the product/ service? , 4. How often to buy the product/ service and 5. How do they evaluate them [5].

The concept of marketing mix factors (7Ps): Marketing mix is considered as a controllable marketing tool or variable to meet the customers' satisfaction. The marketing mix (7 P's) is one of the important concepts for modern marketing entrepreneurs. This concept of marketing mix plays an important role for entrepreneurs. or related persons as this concept integrates various techniques used in operations. By applying this concept,

business organizations can adapt and change to keep up with customers' needs and target market. [5]

When Thailand was encountered the economic crisis from the COVID-19 outbreak, the tourism industry played an important role in generating much income for the country and could help the economy recover in a much faster time than manufacturing and service sectors. Hence, the purpose of tourism has been developed to manage and add value to tourism in Phra Nakhon Si Ayutthaya Province. Ayothaya Floating Market is organized as one of popular tourist destinations among domestic and foreign tourists.

However, the attractiveness of Ayothaya Floating Market during the crisis is not much enough when compared to the pre-crisis conditions and other crises. Therefore, based on the background mentioned above, the researcher was interested in studying behavior and factors affecting the decision for visiting Ayothaya Floating Market, Phra Nakhon Si Ayutthaya Province during the crisis. This study focused in exploring tourists' behavior and factors affecting their decision to visit. Therefore, to increase the attractiveness of Ayothaya Floating Market and stimulate tourists 'choice for visitation, many factors play an important role. Factors affecting tourists' decision to visit Ayothaya Floating Market, Phra Nakhon Si Ayutthaya Province during the crisis are related to tourist behavior patterns [6] and service marketing mix is considered as a marketing tool or variable that can meet the satisfaction of target customers. The marketing mix, or 7 P's, is a very important concept for modern marketing entrepreneurs, where the concept of marketing mix plays an important role for entrepreneurs or stakeholders. As it integrates various techniques used in operations. By applying this concept, business organizations can adapt and change to meet the needs of customers and target markets or to motivate target customers with high demand for their products and services [7]. Under the goal of every marketer in a consumer context, factors that affect the behavior of decision-making to visit Ayothaya Floating Market, Phra Nakhon Si Ayutthaya Province during the crisis could be explained as follows.

1. Tourism behavior

Consumer behavior is the act of consumers or tourists in choosing to purchase goods, things or other things, including consumption goods where entrepreneurs pay their attention and focus on repurchase. Consumer behavior is also related to the decision-making process involving the use of certain ideas or experiences in determining the selection of activities, products, services, or selecting something in response to consumer demand. This covers various social influences and environments that affect the mind and travel decision-making behavior of the consumer or individual tourist. Besides, factors influencing consumer or tourist behavior include social psychological factors, cultural factors, and situational factors. These factors determine the interaction of consumers in terms of actions such as what consumers think (perception), feel (impression) and act (behavior), etc. Consumer behavior is the response of each individual on various external variables. Consumer behavior defines an exchange between one person to another. In the case of the relationship between the consumer and the producer, a consumer will determine his/her needs while the producer determines the market supply. If both parties which are the producer and the consumer have created mutual understanding, it will be of great importance in the purchasing process and the production of goods and services. Consumer behavior involves a continuous or simultaneous action for making alternative choices. Making alternative results in a decision. Marketing activities are applied as tools to promote and sell products, change consumer or tourist behavior. The perspectives that entrepreneurs need to study and focus on which will affect consumer decision are: who is the key person in making purchasing decisions? How do consumers buy? Where did they buy and when did they buy it and so on? [8] [9] [10] [11] [12]

2. Service marketing

Service marketing is a marketing or economic activity that an entrepreneur of one party offers goods/service to the customer of the other party. Duration is used as a basis for the operations to deliver produce or anything else the customer needs in exchange for somethings like money, time and effort while the customer expects to receive from goods, labor, skills, and facilitation. That activity is collectively known as the Service Marketing Mix or it may refer to controllable marketing tool or factor that businesses (manufacturing or service business) should use to meet the needs and create satisfaction to target customers or to motivate the target customers to generate demand for the product and services. Marketing mix refer to the components of factors in marketing planning in the product or service. In most cases, if it is a product, there will be only 4 factors in the marketing mix: Product / Service, Price, Place / Distribution Channel, Promotion. However,
service marketing mix is different from marketing mix as the former must focus on employees as service providers, service process and physical evidence. Three factors, including people, process, and physical evidence are included and integrated as the core to provide the service. Therefore, service marketing mix for the service market is an activity that responds to the needs of the customer. To maximize customer satisfaction, prior to the purchase, the customer will have to try to put in place rules about quality and the benefits that will be gained from the service or the seller. The seller or the operator must build confidence. The seller must try to find strategies or collateral for consumer's making faster decisions, which is the service marketing mix, known as the 7 P's.

Generally, the traditional marketing mix, 4P's is required for product market. However, for the service market, which is tourism business, a floating market or a hotel, it is necessary to rely on the service marketing mix (7P's) with additional three elements included: People,

Process, and Physical Evidence in order to satisfy customers or service recipients as well as to prepare service providers to operate effectively and meet the needs of consumers or tourists. Most importantly, the service provider must set goals and a full-fledged marketing process, implementing STP (Segmentation, Targeting and Positioning), which is a market share analysis. This analysis aims to consider where can generate sales in the total market? After that, it can be used in the formulation of marketing strategies. This follows the concept of modern marketing. Marketers must correctly select marketing strategies that match their target customers and create a marketing mix that is neither too large nor too small to achieve maximum customer satisfaction by applying the service marketing mix in order to satisfy customers and maintain the business survival. Marketing mix concept that should be applied to the service market is the service marketing mix (7Ps), which is: 1. Product is to deliver what customers want, such as appearance, service, quality, etc. 2. Price is setting the price that is suitable for the products and services. 3. Place is to create a convenience for customers to access easily, such as selling through online marketing channels, etc. 4. Promotion is the use of marketing strategies to stimulate customer perception in order to make decisions faster. 5. People is the preparation of personnel to always respond to the service to customers or tourists to impress. 6. Process is the management method of the organization that must maintain quality. and speed, in time to meet the needs of customers and 7. Physical evidence is to maintain the landscape and the environment to be clean and free from pollution, etc. [13] [14] [15] [16] [17] [18]

3.Decision Making

Decision making concept is the goal or expectation of entrepreneurs. Most of them focus on profit, including all marketers who want to know how consumers will make decisions including how to figure out what to do in order for consumers or tourists to make decisions to purchase goods or services. Therefore, what operators or service providers need to know is the decision-making process of consumers or tourists. There are 5 steps in the decision-making process, with the method or process of making such decisions. It is a way to search, study and compare in order to select a product or service as well as assessments to make the best decisions, including. 1. Identification of the problem means a process used in determining decisions that consumers demand and want and if operators can respond this. This may come from inspirational advertising media. If consumers are aware and perceive, they will feel the need. 2. Searching information means in the search process, the operator may conduct research to find products or services that can meet customer needs or requirements. This may be done by conducting research surveys to know the real consumer needs as well as surveying from both internal and external environments (both controllable and uncontrollable environments) that will result in responding to customer needs. 3. Evaluation of alternatives means that consumers are aware of their needs in step 1 and enter the process of searching for products or services in step 2, then the decision was made to assess the alternatives or what is best or most suitable for them at that time by evaluating several factors, such as price, quality of service, or other factors, etc. 4. Selection process refers to the decision-making method by which consumers have already gathered information from the 1st to 3rd steps. They bring the aforementioned information to the decision on whether how should they choose to buy or not to buy? In order to suit the consumers under the evaluation of all 3 steps earlier. 5. Evaluation of the decision means the final process after the consumer has made a decision to purchase or receive a service. Customers have to evaluate their decision on whether to make the repurchase or not. With or without negative experience, it will give customers the experience of making a choice to factor in their next alternative evaluation. [19.20.17,21,22]

4. Tourism behavior and Market Service

[23] said the behavior of consumers, customers or tourists is related with service marketing. By testing the relationship between marketing mix factors and tourism behavior in the Republic of Korea (South Korea), it was found that the two factors were related. When individual aspects were considered, an aspect with the highest influence on tourism behavior was promotion, followed by other marketing mix factors, respectively. Marketing mix factors are most closely related to consumers. Consumers gave priority on the product aspect and the variety of travel styles that affect purchasing decisions. In terms of price, the details of the travel program prices are clear. Promotion is conducted through price reduction program, special discount offer for low-season. When marketing mix factors were considered, it was found that the majority of respondents were satisfied with promotion the most, followed by product, physical evidence, and other aspects consisting of price, place, people and process, respectively. From testing the relationship between marketing mix factors, it was found that they were related with tourism behavior in Republic of Korea (South Korea. In addition, the service marketing mix in terms of product, price, promotion, and process influenced tourism behavior in terms of number of times they visited and used services. In terms of tourism potential, attractions, amenities, and administration influenced tourism

and purchase behavior of consumers [16,17,24,25] and these can be summarized as hypothesis 1 as follows:

H_1: Tourism behavior influences Market Service.

5. Tourism behavior and Decision Making

Consumer behavior influences decision to use the services of consumers, customers, users and tourists. [7,21] A survey of the decision-making process of Russian tourists traveling to Thailand, after analyzing the data, it was found that Russian tourists showed acceptance and decision-making behavior. In addition, the decision-making process of Chinese tourists traveling to Thailand was surveyed, it was found that consumer behavior was focused on determining how to make decisions based on accessibility and availability , such as enough time and the right time for the available place, enough money or assets to buy things in order to decide to buy or choose to use the service. Many researchers agree that the tourists' decision-making process is complex and multifaceted. They said that tourist behavior is a direct consequence of the ongoing interactions between personal and environmental variables, so decision making is a process of perceived by consumers, customers and tourists. The relationship between making decisions in product selection and place [7,21] can be summarized as the hypothesis 2 as follows.

H_2 : Tourism behavior influences decision making.

6. Service marketing and decision making

In terms of the relationship between service marketing and decision making, [26] stated that service marketing strategy affects purchasing decisions of consumers, customers, or tourists. The service marketing strategy consists of product, price, place, promotion, people, process, and physical evidence. The research results showed that service marketing strategy was correlated with decision to access service in Uttaradit municipality. The results were consistent with the service marketing mix and the consumer decision-making process. In addition, [27] said that the service marketing mixes (7P's), consist of product, price, place, promotion, people, process, and physical evidence. According to the research, it was found that tourists paid more attention to people. In addition, it was found that tourists who travel to Taling Chan Floating Market gave an importance to people in terms of good service and hospitality of the vendors. The findings were consistent with the research of [28], studying Marketing Mix Factors Affecting Backpacker's Decision to Purchase Accommodation in Rattanakosin Island Tourism, Bangkok, Thailand. The results of this study indicated that marketing mix factors affecting backpacker's decision to purchase accommodation was the promotion, process, people. Personnel should have a friendly personality when serving tourists. In addition, the sample placed importance on price. From the research, it was found that the price is reasonable with the quality of the product, which was consistent with the previous research of [28] exploring the Influence of service marketing mix (7P's). The relationship can be summarized as the hypothesis 3 as follows:

H_3: Service marketing influences decision making.

From all three hypotheses, a conceptual model could be shown in Figure 1.

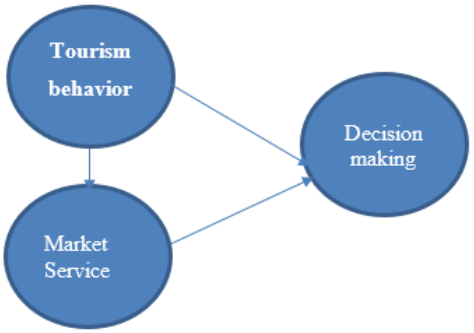


Figure 1 Conceptual Model

IV. Research scope

1) Content scope - It was the scope of the content based on concepts, theories and research work related to the factors of decision making Ayothaya Floating Market, Phra Nakhon Si Ayutthaya Province.

2) Population boundaries - The population of this research was 340 tourists visiting Ayothaya Floating Market, Phra Nakhon Si Ayutthaya Province.

V. Research Methods

This research was a mixed methods research. For the quantitative research, data were collected from the sample of 340 people, obtained based on a convenience sampling. The tool was used as a closed-ended five-rating scale questionnaire with a Likert scale with IOC range 0.8-1.00 and Cronbach's alpha of 0.83. The researcher conducted paper and electronic questionnaire distribution. For the qualitative research, data were collected through a focus group discussion of 9 experts working in the floating

market, or until the data were saturated by using Judgment Sampling. The inclusion criteria included being a supervisor level or higher, having working experience in tourism management and market management to validate the model obtained from the quantitative research.

1. Population

The population of this research was tourists visiting Ayothaya Floating Market, Phra Nakhon Si Ayutthaya Province.

2. Samples

The researcher had determined the size of the sample, which was the tourists in Ayothaya Floating Market, Phra Nakhon Si Ayutthaya Province, using a sample size model of Hair, Black, Babin, and Anderson (2010). Referring to the criteria used to determine the sample size, the sample should be 20 times the observed variable. In this research, 17 observable variables were required to have a sample size of 340 samples, which the researcher used to determine the size of the sample 20 times, so the number of samples was 340 people.

3. Instruments for collecting research data

The research instruments used to collect research data were classified according to the research method. 1) For quantitative research using questionnaires covering definitions of all studied variables; and 2) for qualitative research using a Semi-Structured Interview. Details were as follows.

1) Research tools for quantitative research. The researcher used a questionnaire to collect the opinions of tourists visiting Ayothaya Floating Market, Phra Nakhon Si Ayutthaya Province. The researcher has established a Rating Scale in the questionnaire to 5 levels.

2) Research instrument for qualitative research. Qualitative research was to study behavior and factors affecting the decision for visiting Ayothaya Floating Market, Phra Nakhon Si Ayutthaya Province during the crisis. The researcher defined a semi-structured interview and a focus group discussion with tourists visiting Ayothaya Floating Market, Phra Nakhon Si Ayutthaya Province.

4. Quality testing of research instruments

Content Validity testing was conducted by 5 experts. The questionnaire created for consistency with the question, objective, and conceptual framework of the research were examined. The results of the quality testing of the questionnaire in terms of content validity, coverage of questionnaires, suitability, and clarity of language from five experts were found that the index of consistency was between 0.8-1.00, which was in accordance with the reliability assessment criteria using Alpha coefficient. The results of the reliability testing of the items from the trial were conducted with 30 samples, which were not the sample in this research indicated that the items with the reliability (Cronbach's alpha) of 0.83 could be used in the study and met the criteria

VI. RESEARCH RESULTS

The research results of studying 340 samples and the structural equation analysis (SEM) revealed that there were 3 latent variables and 17 observed variables as follows: Tourism behavior (TB), divided into 5 aspects: 1. What products and services do tourists buy (TB1) 2. Why do they buy that service and when (TB2) 3. Where do they buy the service (TB3) 4. How often do they buy the service (TB4) and 5. How do they evaluate those services (TB5). Market Service (FA) can be divided into 7 aspects: 1. Product (FA1) 2. Price (FA2) 3. Place (FA3) 4. Promotion (FA4) 5. People (FA5) 6. Process (FA6) and 7. Physical Evidence (FA7). Decision Making (DV) can be divided into : 1. Problem Identification (DV1), 2. Searching Process (DV2) 3. Alternative Evaluation (DV3) 4. Selection Process (DV4) 5. Evaluation of Decision Making (DV5). Results were interpreted with Lisrel Program to validate the consistency of the model with the empirical data. The results showed that $\chi 2 = 199.78$, df = 109, $\chi 2$ / df = 1.83, CFI = 0.97, GFI = 0.94, SRMR = 0.051, RMSEA = 0.050, which met the criteria of [30]. The coefficient of determination (R^2) was 55%, shown in Figure 2.

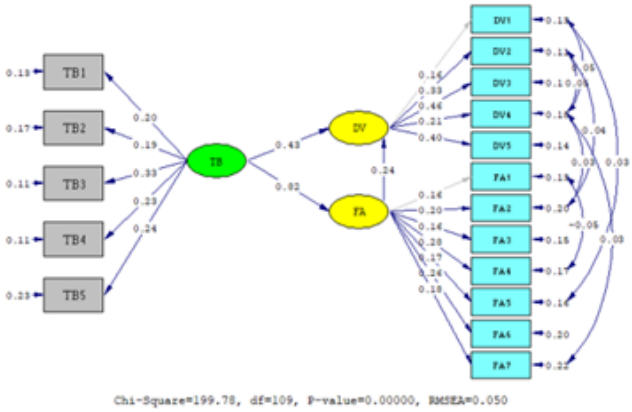


Figure 2: The causal model of Tourism Behavior and Service Marketing Factors Affecting their Decision for

visiting Ayothaya Floating Market, Phra Nakhon Si Ayutthaya Province during the Crisis

From Figure 2 above, it can be seen that the causal model of tourism behavior and service marketing factors affecting their decision to visit Ayothaya Floating Market during the crisis was consistent and harmonized with empirical data according to the criteria of [30] as shown in Table 1.

Table 1 Index of consistency and harmonization with empirical data

Evaluation criteria 12<Observed variable s<30	Analytic results	Summary
p-values ≤ 0.05	0.000	Pass
CFI > 0.91	0.97	Pass
SRMR < 0.08	0.051	Pass
RMSEA < 0.07	0.050	Pass
χ^2 / df ≤ 3	1.83	Pass

From Figure 2, it was found that the causal model of tourism behavior and service marketing factors affecting their decision to visit Ayothaya Floating Market during the crisis was consistent and harmonious with empirical data to meet the criteria of [30] and total effect was shown in Table 2.

Table 2: The total effect of the hypotheses

Hypothesis	Direct Effect	Indirect Effect	Total Effect	Decision
H_1 Tourism behavior influences Decision making	0.43	0.1968	0.6268	Accepted
H_2 Tourism behavior influences Market Service	0.82	-	0.8200	Accepted
H_3 Market Service influences Decision making	0.24	-	0.2400	Accepted

From Table 2, there were 3 hypotheses and all passed the criteria. For three hypotheses, the hypothesis with the highest level of influence as follows: 1. H2 Tourism behavior influences Market Service with an influence power of 0.8200, divided into direct influence of 0.82 and without indirect influence, followed by 2. H1 Tourism behavior influences Decision making with an influence power of 0.6268, divided into direct Influence of 0.43 and indirect influence of 0.1968, and 3. H3 Market Service influences Decision making with an influence power of 0.2400, divided into direct influence of 0.24 and without indirect influence.

For the qualitative research, data were collected through a focus group discussion from nine experts on tourism behavior and service marketing factors to confirm the causal models of tourism behavior and service marketing factors affecting decision-making to visit Ayothaya floating market, Phra Nakhon Si Ayutthaya Province during the crisis obtained from empirical data. From the focus group discussion, the results are in the same direction, i.e. they agreed with the aforementioned model. From the focus group discussion, most of key informants emphasized on place or to decide where to buy a service and how much time does it take to use the service. They assessed the services that have been provided including what products and services tourists buy. In addition, key informants in the focus group also gave the importance to service marketing mix factors influencing service decisions. As a result, most of them focused on promotion, namely discount, exchange, giveaway, followed by processes. So, it can see that for tourists' behavior and factors affecting their decision to visit the floating market business, entrepreneurs should pay attention to promotion, including discount, redemption, distribution or giveaway. In addition, a good service process is one of the factors that consumers, customers or tourists are equally important, so entrepreneurs should pay more attention and should provide before, during, and after-sales services, increasing customer impression, leading to repurchase.

VII. Conclusion

This research was a study to identify tourist behavior and service marketing factors affecting their decision to visit Ayothaya Floating Market in Phra Nakhon Si Ayutthaya Province during the crisis. This research was a mixed methods research to find the influence of tourist behavior and service marketing factors influencing service decision. The relationship can be summarized as follows:

Tourism behavior influenced the Market Service. This was consistent with the study of [23]. The relationship between marketing mix factors and tourism behavior indicated that these two factors were related. If individual aspects were considered, it was found that an aspect with the highest influence was promotion, followed by other factors. Most of consumers focused on marketing mix factors. Consumers placed their priority on product, and the variety of travel styles affecting purchasing decisions. In terms of price, the details of the travel program prices are clear. In terms of promotion, they focused on discount, promotional program, and special offer during the off-season.

Tourism behavior influenced decision making. This was consistent with the study of [7,21]. From the testing, consumer behavior influenced their decision-making. It was found that consumer behavior was focused on determining how to make decisions based on accessibility and availability , such as enough time and the right time for the available place, enough money or assets to buy things in order to decide to buy or choose to use the service. Many researchers accepted that the tourists' decision-making process is complex and multifaceted. They said that tourist behavior is a direct consequence of the ongoing interactions between personal and environmental variables, so decision making is a process of perceived by consumers, customers and tourists, selection of products, locations, etc. to respond to consumer needs.

Market Service influenced Decision Making. This was consistent with the study if [28]. The results indicated that the sample emphasized on promotion, followed by good service process ,and friendly personnel (people) to serve tourists. These marketing factors influence their decision to use the service.

VIII. SUGGESTIONS

The findings indicated that for tourists' behavior and factors affecting their decision to visit Ayothaya Floating Market, most of the sample preferred visiting the floating market and emphasized on promotion, a good service process of entrepreneurs, merchants, and vendors to increase tourists' satisfaction when visiting Ayothaya Floating Market. Local people wanted to stay in the community in the midst of systematic development, especially with tourism, where government agencies were expected to play an important role in the development of tourism in the community. People in the community took pride in the attractions as it was a source of generating income for the local area with a long history. When tourism occurred, people expected that government agencies or related agencies would pay more attention to the role of community people in problem analysis, participation in development until benefit sharing and income distribution along with wanting to participate in the performance monitoring. Therefore, relevant agencies are required to use the findings of this research as a basis for determining guidelines for community participation in order to further develop ecotourism in Ayothaya community..

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An Approach to Enhancing Local Assets for green area protection — a Case Study on Song Khlong, Chachoengsao Thailand

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Abstract : Green areas are continually being decreased due to urbanization although it has been controlled by city planning law. This article aims to propose strategies to maintain green areas in the Song Khlong area based on a value-added planning approach. An inventory of the existing communities' fund and green spaces was established as communities' database. Subsequently, a map of these data was created with community participation. Thereafter, strategies for either reducing the running costs or generating income were taken into consideration. It is possible to promote ecotourism in the Song Khlong areas as the major activities during weekends of people living and working around Song Khlong are shopping (48%), going to the temple (20%), going to the beach nearby such as Bang Saen beach (11%), going to the floating market (9%), and others (9%). Therefore, three projects were proposed, including (1) aesthetic improvement along the RiebKhlong road, (2) development of the WatTrisaranakom floating market, and (3) conservative tourism development in the mangrove forests of the Song Khlong village. All three projects support each other: activities on day trips can mostly be at the floating market, with going for a stroll could be at the nature-learning trails and staying for overnight at homestay. This is not just nature learning; it can simultaneously be a learning of community lifestyle with sustainably maintaining green areas.
Key words: Community Assets, Urban Green Conservation

1. Introduction

Green areas are continually being replaced with concrete because of progress in urbanization. Urban expansion mostly tends to occur in hinterlands which are generally adjacent to biodiversity hotspots (Secretariat of the Convention on Biological Diversity, 2012; Seto et al., 2013). In addition, the fast pace of change and the high price of land in urban environments have posed a threat to green corridors as far as long-term protection is concerned (Dearborn D.C., 2009). At the same time, sustainable development in which green areas are retained is a challenge for both developing and developed countries (Haq, 2001). Consequently, urban growth now has to seriously include creation of as much large recreation zones as possible which remain natural areas (Savard et al., 2000).

It has been suggested that the attitude of the civil society is a very important factor in maintaining green areas if governments do not provide much encouragement to the land owners to keep their areas green. Therefore, it is necessary to understand clearly how green areas can provide added value to the economic growth of communities. For instance, the general satisfaction resulting from the aesthetic environment in Singapore and Kuala Lumpur, Malaysia, attracts investors and residents to these places (Sorensen et al., 1997). At the same time, it has been found that green areas are able to increase the value of community properties by around 5 percent to 15 percent (Heidt and Neef, 2008). Several literature reviews have also revealed the positive influence of green areas on land property values (Benson et al., 2000; Luttik, 2000; Wolf, 2004; Harnik and Welle, 2009). In addition, urban green areas provide the scenery of a place as favorable, and that encourages retail sales and attracts tourism (Woolley, 2003). Furthermore, urban agriculture, among the

types of green area (Greenspace Designs, 2010), can decrease urban dependence on food supplies as urban areas depend food productivity heavily on hinterlands. As far as biodiversity of green areas is concerned, it provides low risk of disease transmission to humans as well as low risk of mental illness (Secretariat of the Convention on Biological Diversity, 2012; Colleen et al., 2010). Moreover, as, in recent times, the impact of climate change has become exacerbated, the green infrastructure has been proposed as a potential approach toward mitigating the risk from climate change (Forest Research, 2010). By and large, the benefit of green areas is broad. Cilliers and Timmermans (2013) categorized the value of green areas into direct and indirect benefits. With respect to direct benefits, it covers social benefits, environmental benefits, and future benefits, and all of them cannot be measured in terms of monetary value, while indirect benefits can be referred to in terms of economic value.

The lack of a consistent strategy makes it difficult to manage urban green infrastructure (Shikha, 2016); however, planning processes need to ensure that green infrastructure can be maintained as a crucial part of urban fabric (Cilliers et al., 2010). According to Cilliers and Timmermans (2013), value-added green areas need to pay attention to creation of green space inventory and suggestion of strategies to either reduce running costs or generate income. This paper focused on creating green space inventory in the study area through the participatory process and community capitals. Following which, searching for proper guidelines in order to create strategies for generating financial returns from urban green spaces was performed with regard to an advisory community. Finally, the policy and conceptual design of green value addition was proposed to the local authority.

2. Methodology

In order to propose strategies to maintain green areas in Song Khlong, the value-added planning approach (Cilliers and Timmermans, 2013) was applied as the primarily guideline of this research process. Therefore, this research process covered two main steps: firstly, an inventory of the existing green spaces in Song Khlong was established, and, secondly, strategies for either reducing the running costs or generating income were taken into consideration (see Table 1). In the first step, there are two main objectives, including the extent of designing of green areas and the gathering of data regarding the green space. According to research objectives which mainly aim to propose strategies for generating income from existing green spaces, the green area inventory, therefore, focused only on its types and sites. Literature review and meeting with stakeholders were conducted so as to achieve the aims of the first step.

Regarding the second step, in order to achieve generating income strategies from existing green spaces, three objectives need to be achieved. First of all, pertinent information needs to be derived. This consists of community capital, activities, and lifestyles of residents and workers living around Song Khlong. In accordance with Brown et al. (1997), sustainable development highly relies on holistic analysis in which ecological, economic, and social systems are taken into account for the study. Simultaneously, the development needs to be based on self-capital so that the community would be able to see the potential, and that would lead to sustainable development in the community. This research applied the concept of community capital (Community Development Department, 2010) as information for considering the methods for the determination of generating income strategies. This concept pays attention to five categories, including natural capital, physical capital, human capital, social capital, and financial capital. The participation was determined from meeting with stakeholders including mayor, deputy mayors, village heads, other local officials, and local people so that the information regarding the community capital could be demonstrated as a capital map. Meanwhile, information on the activities and the community lifestyles were obtained by ways of questionnaire analysis. Furthermore, all attributed data acquired from the previous step was going to be synthesized and transformed into imaginary information by groups of architecture students. Moreover, imaginary projects for generating income were proposed to stakeholders through the meeting in which the strategies were delivered to the stakeholders and the local authority.

Table 1 Summary of Research Operation

Working steps	**Process**	
	Objectives	Methods
1. Create a list of green inventory	1.1 design extent of green areas	reviewing literature
	1.2 gather data of green space (type and site)	meeting with stakeholders for making them understand the importance of green space, and establishing a community green area map
2. Design strategies	2.1 gather information for generating income strategies - information needed is composed of the	meeting with stakeholders for the following purposes: (1) making them understand the meaning of community

Working steps	Process	
	Objectives	Methods
	following: 2.1.1 community capital	capital (2) designing community capital in Song Khlong (3) expressing their attitudes on desirable green areas
	2.1.2 investigate activities and patterns of lifestyle of residents and workers who live around the Song Khlong area	questionnaire analysis
	2.2 synthesize and transform attributable information into imaginary information	groups of students studying in the last year of an architecture program gather and work with all the information, combining social data with field survey to create projects which generate income for the community based on their green spaces
	2.3 propose strategies for generating income for communities and local authority	meeting with stakeholders to propose strategies with potential projects

2.1 Study area

Song Khlong sub-district, Bang Prakong district, Chachoengsao province, Thailand, was properly chosen as the area for study because of its physical characteristics and geographical location. The area of Song Khlong covers 29.374 km^2, and it includes 10 communities. One-third of this area is covered by mangrove forests; therefore, the occupation of the majority of the people there has been coastal fishery and aquaculture. There are only a few factories in this area, and the rest of the area is predominantly residential. According to a ministerial regulation of applying a comprehensive plan for Bang Prakong city, the type of land use in Song Khlong is such that it is designated as a green zone.

Although the geographical area of Song Khlong shows its location as Bang Prakong's estuary which encompasses developed industrial zones, it has become a green area though it is in the center of developed industrial areas. The Bang Prakong Industrial Zone is in the east while the Welco industrial estate is in the north, and the Bang Plee and KlongDaan Industrial Zones are in the west; only the south is connected to the Gulf of Thailand (see Figure 1). The ministerial regulation to applicable comprehensive plan is the only key factor contributing to the remaining of the majority of the aquaculture areas presently in Song Khlong. But this is not an actual requirement of a majority of citizens, and particularly the local authority, as what they require are more opportunities for development. This is because there is not enough financial returns from aquaculture for supporting a good infrastructure for them, and, crucially, their land price has been lower than that of the surrounding developed zones.



Figure 1. The Song Khlong boundary and its adjacent areas.

3. Results

Based on both objectives — green inventory and design strategies — the results of green inventory are included the community's green space map, the list of community capital, and the activities and the patterns during weekends of people living around Song Khlong. These data would lead to achieving designs that take into consideration recommendations of projects that generate income for the community and support for the conservation of green areas.

3.1 Extent of green areas: Types and sites of green spaces in Song Khlong

To explain the potential of the community through learning about the community assets and to create harmonious views of the value of green areas to the community, the first meeting with the mayor, deputy mayors, eight community leaders, other local authority officials, and Song Khlong community's members took place. The participants had worked together to find out the community capital, to create a handmade map of green spaces, and to design green spaces in Song Khlong (see Figure 2). Based on the meeting results, it can be summarized that green spaces in Song Khlong rely on aquaculture areas. These comprise fish ponds, shrimp ponds, cockle culture areas, salt fields, agricultural areas, canal networks, mangrove forests, and seaside areas.

3.2 Community assets of Song Khlong

Based on the category of community assets of Community Development Department (2010), the community assets of Song Khlong was determined through the meeting process. Local authority officers and relevant stakeholders had the opportunity to spend a period of time working together to design the capital based on the kinds of capital the places have been. The result can be presented as follows (Figure 3):

1) Natural capital refers to general natural resources and environment: from these aspects, seaside areas, mangrove forests, canal networks, and fishery resources can be provided in Song Khlong.

2) Physical capital refers to man-made constructions which support human lifestyles: these can be counted as including the Hong Tong temple, the Trisaranakom temple, the Samekhao temple, the mandapa of the Buddhist master (Pan), shrines, mosques, markets, and schools.

3) Human capital refers to distinguishing of skills or local wisdom of local people; human assets in the Song Khlong community include Thai traditional dramatic performances, Thai classical masked ballets, instrument builders, aquaculture trap builders, boatbuilding, and a development center of sufficient economic.

4) Social capital refers to social interaction in a given society which is presented as a public organization, a civil society, community cooperation, or community traditions. Song Khlong has retained several traditions such as the ceremony of pouring water onto a Buddha image, the water-pouring ceremony that seeks blessings from respected elders, and religious ceremonies at the central areas of communities.

5) Financial capital refers to monetary characteristics which include monetary bodies and the potential or opportunity to access fund resources. There are several funds that belong to Song Khlong, and some of these are the community fund, supporting career fund, agricultural fund, fishery fund, permanent house fund, etc.

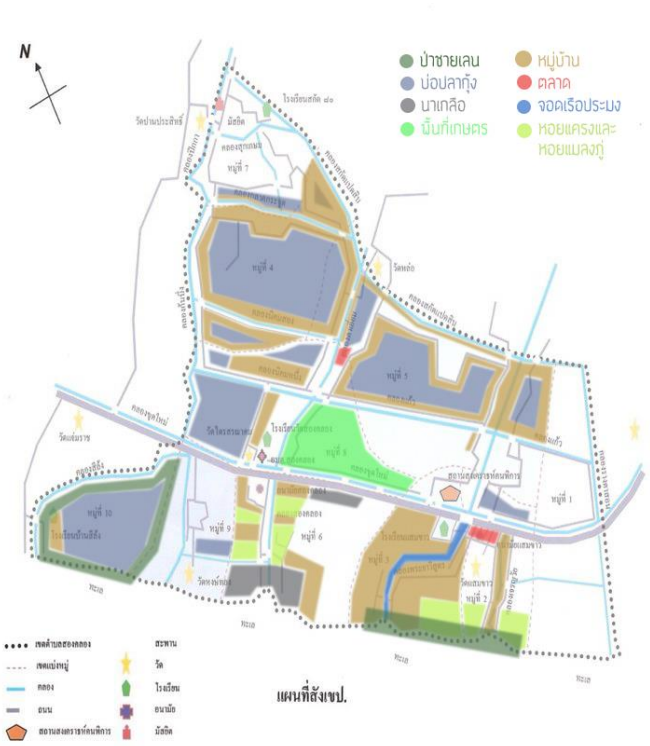


Figure 2. Distribution of green space in Song Khlong.

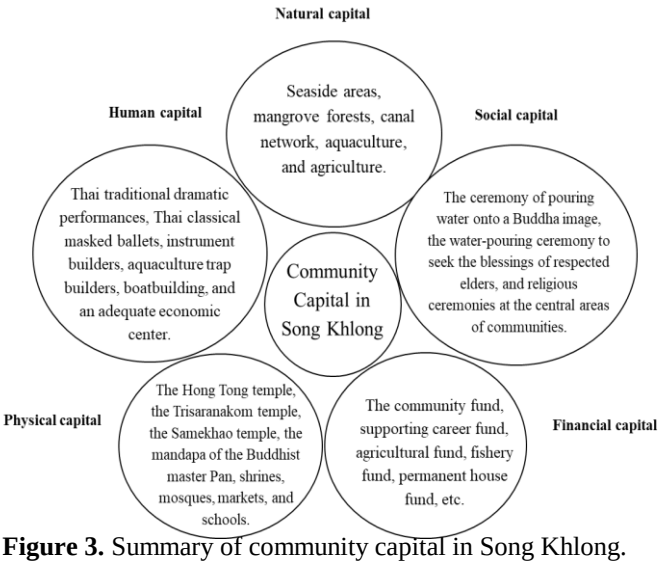


Figure 3. Summary of community capital in Song Khlong.

3.3 Activities and patterns of lifestyles during weekends

It can be summarized that the Song Khlong community has several assets. The community participation majorly proposed ecotourism to add value to their community. The location of the Song Khlong community itself can attract tourists to live or work in the surrounding areas. The design of ecotourism must respond to weekend lifestyle of residents and workers living around the Song Khlong district. Therefore, a total of 324 cases of questionnaires were distributed by conducting interviews face to face with residents and workers in order to investigate the activities and the patterns of recreation of those people. (The information is detailed in Table 2.) The results of the investigation could be summarized thus: the major activity during weekends of people who live around Song Khlong has been "shopping," with 48%, while the second major activity, with 20%, has been "going to the temple." The third activity is "visits to the beach," with 11%, and the fourth, with 9%, has been "going to the floating market." The last activity, with 9%, was "eating at the seaside."

Table 2 General Information from Questionnaires

Issue of respondents	**Information regarding respondents**	
Age of respondents (work-force age)	20–50 years	Average age: 33 years
Occupation	Factory worker	96%
	Others	4%
Members of the household	3–4 persons	
Income (average)	16,500 baht/person/month	36,800 baht/household/month
Expense (average)	8,000 baht/person/month	21,000baht/household/month
Expense for weekend recreation (average)	1,395 baht/person	3,690 baht/household

In accordance with patterns of lifestyles, these can be discussed in terms of frequency. It was found that about 10% of respondents had gone for recreation every Sunday, while the majority of respondents, 60%, had gone for vacation about 1 to 2 times per month. As for the rest, it was found that they went for vacation less than once per month. If the details are considered thoroughly, it can be found that the group of respondents who go for weekend vacations at least once per month preferred to go to floating markets and temples, while the group that goes for weekend vacations less than once per month mostly went to the beach or ate at the seaside.

The activities and patterns of lifestyles of people living around Song Khlong will play an important role in designing and deciding whether green areas in Song Khlong should be developed in order to generate income to the community with demand of the consort.

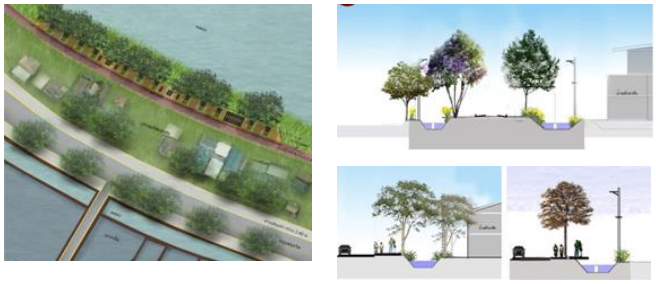
Based on the community capital which presents that the Song Khlong lifestyle is dependent on the canal network as their major occupation are aquaculture while the physical areas are in the coastal zone with a large area of the mangrove forests, and with regard to information about the attitudes relevant to the activities and the patterns of residents around Song Khlong, the floating market is the most popular hub of activity on weekends for the group of respondents that go out at least once a month. Therefore, three projects were proposed for the local authority and the Song Khlong people, and they include the following: (1) Aesthetic improvement along the RiebKhlong road, (2) development of the WatTrisaranakom floating market, and (3) ecotourism development in the mangrove forests of the Song Khlong village.

3.4 Aesthetic improvement along RiebKhlong road

These project areas cover the right of way to Sukhumvit road, the starting point of which is at the community on the east and the finishing point is at the west community (Figure 4). The concept is that of providing an identity to the area with arched entrance on both sides and plants along the road. The arched entrance will become a recognizable landmark. With plants along the road, a separate concept is presented that the south edge of the road will provide a large pedestrian stretch with the shade of plants, and the north edge of the road will provide a bicycle lane with periodic resting points (Figure 5).



Figure 4. Areas for applying aesthetic improvement along Sukhumvit road.

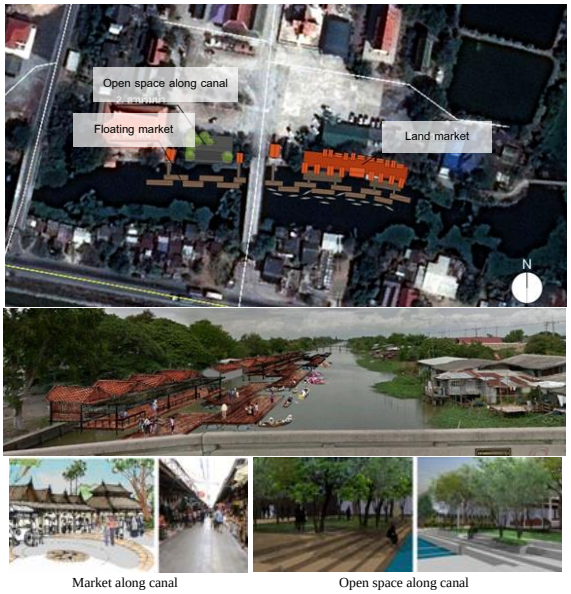


Design for the south edge Designs for both the sides of the road

Figure 5 The conceptual design for the south and the north edges of Sukhumvit road.

3.5 Development of Wat Trisaranakom floating market

Development of the floating market is mainly aimed to provide opportunities for generating income to the villager, and, as a result, support the financial system of the local government through fees acquired from merchants in the floating market. This market will cover areas both on the land and in the water. The concept design will be providing trading zones which mainly support local community products. A utility zone will be prepared at the edge of the canal to serve as the recreation area. This market will also provide an outdoor activity zone which will support the conducting of traditional festivals during intervals. With regard to the floating part of the market, it is designed as a raft connecting to the land part, while the sellers will be on their boats (Figure 6). This project is now included in the three-year development plan of Subdistrict Administrative Organization.



Market along canal Open space along canal

Figure 6 The conceptual design of the floating market.

3.6 Conservative tourism development at mangrove forest of Song Khlong village

This project covers three components which consist of a nature-learning trail, nature-sailing tourism, and homestay. With regard to the nature-learning trail, this could be enjoyed with coastal community lifestyles, simultaneously learning coastal ecological system. This trail will be shaded and provided with resting points. In some parts of the trail, it is possible to try to traditionally collect cockle by the mud sled. Another activity, sailing trail, is a longer natural trail than the nature-learning trail. The sailing trail may be provided with several resting points with community products. The last component is homestay, and this will provide an opportunity for visitors to stay at Song Khlong longer, and they can witness community lifestyles and visit several distinguished areas such as temples or local markets (Figures 7–10).



Figure 7 The nature-learning trail network in Song Khlong village.



Figure 8 The nature-learning trail design.

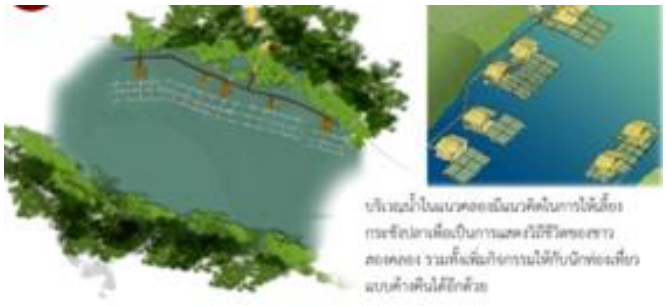


Figure 9 The homestay pattern.

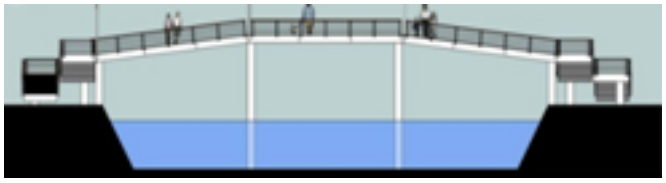


Figure 10 The linkage bridge design

4. Discussion

The results presented show that the projects contributed the most toward adding value and conserving green areas with regard to the community capital and the recreational lifestyles of the workers and residents of the neighborhood. The guideline of the projects for adding value relied on the canal network (Figure 2); the physical areas are in coastal zone with a large area being taken up by the mangrove forest. These community capitals are considered with reference to the attitudes relevant to activities and the patterns of relaxation of the residents around Song Khlong. The floating market is the most popular hub of activity on weekends for the group of respondents that go out at least once a month. Most of the respondents preferred to have their weekend recreation in green areas because they can relax their mind and body, while the community can gain financially from the tourists. This result is in line with the findings of the studies on building community capacity by appraisal capital assets for application in tourism development (Bennett et al., 2012). According to Wooley (2003), urban green areas provide favorable scenery of a place, and that encourages retail sales and attracts tourism. These value-added green areas of the Song Khlong community pay attention to keeping the green space inventory based on their assets (Clliers and Timmermans, 2013), and pays heed to suggestions of strategies to generate income from the floating market, which in line with Clliers and Timmermans (2013).

All the three proposed projects are feasible for implementation since their conceptual design is from the community capital and the needs of the tourists of the neighboring area. The floating market project is now included in the three-year development plan (2017–2020) of the Song Khlong municipality. Therefore, these participatory planning processes go a long way in ensuring that green areas can be retained as a vital part of urban fabric, as established by Cilliers et al. (2010), and have been clearly determined to be the future target of development plans (Rubin and Rubin, 1992). However, the green-value added projects which were proposed for the Song Khlong sub-district could be properly adjusted for socioeconomic situations since the insight details of project administration such as phase of operation, undertaker, and budget all rely on the vision of the leaders and the cooperation of all the stakeholders. The community leader must think and act on the lines of keeping the green areas; in addition, participation from the community is very important, which can reflect the changing needs and aspirations of the participant communities (O'Brien and Natakun, 2016). These two have been considered as the key factors for success in leading the community toward sustainable development in which the members of the community can properly maintain their lifestyle. The alteration has to be on the basis of sustainable development, in which the benefits from the development result in better quality of life of the community.

However, the influence of industrial expansion around the community may influence the decision of land owners and make them more inclined toward selling. This is especially true in the case of people living in villages named Baan KhlongTaruaw and Baan Charoenwai; as the locations of these villages are next to the Bangprakong industrial estate, the land owners prefer to tentatively change their land use from green area to industrial area. Some respondents gave reasons such as being able to earn a large sum of money from selling their lands; others supported their decision that they can gain higher benefits from their lands by developing their lands from being agricultural to any other types such as industrial, residential, or commercial land uses. Similar to other findings, it was revealed that the major drivers for agricultural land conversions were the significant investments for the industrial and the residential expansion (Dadi et al., 2016; Pauleit and Duhme, 2000; Gill et al., 2007), and the spreading out of transportation network (Lanchanon, 2013). The quick-paced step of change and the high price of land in urban environments have posed a threat to green corridors as regards long-term protection (Dearborn, 2009). To curb this expansion, the Song Khlong sub-district is determined to remain as agricultural and conservation land use in the comprehensive plan which is enforced on the people by law. However, the urban comprehensive plan only considers the

significance of controlling the green area by law without taking into consideration how to attract the cooperation of the community by giving them an incentive for keeping their land green. This reason makes the local people in the Song Khlong sub-district choose to change their land use. Value addition in green areas is necessary and can build the capacity of communities for supervising their green areas for sustaining the environment. As Heidt and Neef (2008) found out, green areas increase the value of community properties by 5–15 percent. Therefore, added value, community capacity, and community assets are significant factors for sustainable green area protection.

5. Conclusions

In summary, activities in three projects were designed, which were based on the community capital and the recreational preferences of the residents and the workers around the study area. All the projects support each other; for instance, activities of the day trip can be carried out by mostly spending time at the floating market, and work can be conducted in the nature-learning trail. If anybody has more time to stay longer, even by a day, homestay can be considered, and they can carry out the sales in the evening or learn about nature from the nature-learning trail. This is not just nature learning: simultaneously, it can be learning about the community lifestyle (Figure 11). The Song Khlong capital showed that it is capable of being not just the nature and physical capital; it can also overwhelm with human and social capital as well as financial capital. These observations point to the potential in ensuring value addition to green areas. If communities can attract visitors, they will be able to market themselves. Once communities have their own markets, they can produce a wide variety of their own products. These varieties of products ensure a sustainable economy, and that leads to more opportunities and sureties of green spaces remaining green in Song Khlong.



Figure 11 Activities for supporting the process of green value addition.

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Factors Influencing the Technological Pedagogical Content Knowledge (TPACK) of English Teachers in Primary Schools, Chiang Mai Primary Educational Service Area 1

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Abstract*— The purposes of this study were to measure the Technological Pedagogical Content Knowledge (TPACK) and to investigate the factors influencing the TPACK of English teachers in primary schools, Chiang Mai Primary Educational Service Area 1. A sample of 81 English teachers in primary schools of Chiang Mai Primary Educational Service Area 1 were selected through two-stage cluster sampling. The research instruments were a likert 5 point scale questionnaire and a semi-structured interview. Data collected by questionnaires were analyzed by frequency, percentage, mean, standard deviation, Pearson Product Moment Correlation Coefficient, and Multiple Regression Analysis. Data from the interview were analyzed through Content Analysis. The results showed that 1) the TPACK of English teachers in primary schools of Chiang Mai Primary Educational Service Area 1 was at a high level (M=3.62 SD=0.55) and 2) the factors influencing the TPACK of English teachers in primary schools, Chiang Mai Primary Educational Service Area 1 at 0.05 level of significant were frequency of technology use in classroom (β = -0.414) and technology literacy (β = 0-.280)

Index Terms— ***Technological Pedagogical Content Knowledge, technology literacy***

I. INTRODUCTION

In 21st century, technology has evolved at a rapid pace and become necessities an all aspects of life. In area of education, technology has become an expected requirement rather than additional benefits to the classroom because it apparently increases the effectiveness and productivity of teaching. Technology, therefore, becomes integral in teaching and learning. The changes in teaching and learning, due to technology, teachers in this digital era are challenged with developing technological knowledge and connecting it to their teaching. To put it simply, technological knowledge is essential.

Technological pedagogical content knowledge (TPACK or TPCK) is the framework proposed by [1]. It was developed based on Pedagogical content knowledge (PCK) framework of [2]. It consists of two main components: Content knowledge (CK) or knowledge about a subject being taught or learnt both inside and outside class, and pedagogical knowledge (PK) means knowledge of the practices, processes, and methods in relation to teaching and

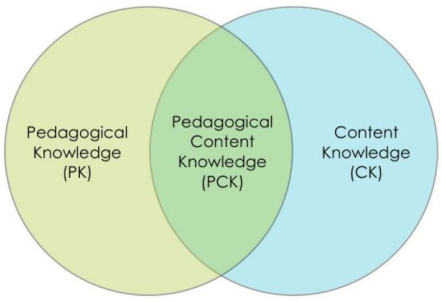


Fig. 1 PCK framework by [2]

learning. In addition to CK and PK, [2] stated that teachers needed pedagogical content knowledge (PCK) for relating their PK to their CK. PCK indicates teachers' capacity to transform content knowledge to suit different learners' ability and background. As such, students can relate their prior knowledge to their new knowledge and, consequently, have comprehension of that subject [2], [3].

Nonetheless, after technology was initiated in educational context, PCK gained a large number of critiques since it excludes the role of technology in education. TPACK is the framework that adds technological knowledge (TK), or knowledge and skills in operating all types of technology, into PCK. The interconnection among CK, PK, and TK exhibits three more components: 1) Technological pedagogical knowledge (TPK) is knowledge of tools suitable for a specific teaching and learning settings. It portrays that technology and pedagogy influence each other.

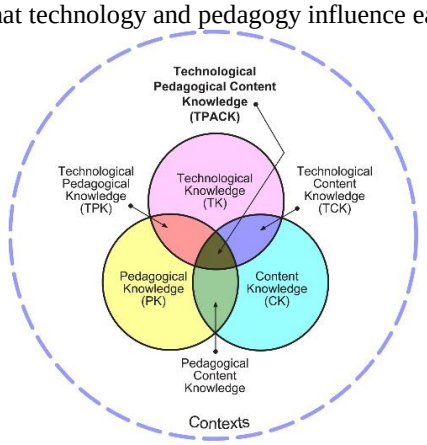


Fig.2 TPACK Model by [1]

By implementing technology to teaching and learning, changes in teaching will take place; 2) TCK or knowledge about how technology and content is related. Teachers know which technology to be used and how to implement it with which kinds of subject content. The implementation of technology to subject content would assist students' learning, making them to achieve learning goals or learning outcome. TCK also involves the use of technology by teachers to enhance their knowledge in that subject content; and 3) Technological Pedagogical Content Knowledge (TPACK) is a set of knowledge that emerges from interaction among CK, PK, and TK. It is the basis of effective teaching subject content through technology; teachers have knowledge in technology and can use it for teaching content in a teaching learning context aiming to develop students' knowledge. It is explained that the success in teaching and learning is not a result from teachers' knowledge and skills in using technology, but the integration of CK, PK, and TK [4], [5]. (see Figure 1).

In language teaching, English to be specific, teachers have implemented a variety of technology as tools for different purposes such as for exposing learners to authentic language use [6], [7], for motivating students to participate in activities [8], for assessment [9], and for creating learning community [10].

Despite the fact that most teaching and learning uses technology nowadays, problems relevant to implementing technology in teaching and learning have been addressed. For example, teachers do not use technology in class because they lack time and technology facilities [11], teachers cannot integrate technology corresponding to learning objectives [6] nor employ it to the whole learning process [12]. Some teachers refuse to implement technology in class because they view it as unnecessary tools and are unwilling to learn about it [6]. According to [7], it is explained that, for a teacher to introduce technology into his or her classroom, factors such as teacher's present knowledge, students' need, societal expectation, and monetary and human resources were contributory factors.

Therefore, it can be said that, to integrate technology into teaching effectively, teachers need to acquire technological knowledge and relevant factors should be examined closely.

Past studies show that there are factors contributing to technological pedagogical content knowledge. Many authors have stressed the importance of gender on TPACK. Following the study of [13]**,** gender affected level of technological pedagogical content knowledge. He concluded that male had higher level of TPACK than female. Similarly, [14] found that male teachers were able to implement technology into teaching and learning more effectively than female teachers. In addition, male teachers' knowledge of all TPACK components was higher than female teachers.

Teaching experience is another factor several researchers agreed to influence TPACK. [14]-[15] pointed out that with more teaching experience, teachers had more confident in integrating technology into their teaching subject content. This is congruent with the study of [12]. Other factors influencing TPACK being investigated included basic knowledge of computers, the support from school, and the availability of computers in school [16]; and intrapersonal factors such as self-efficacy, outcome expectation, and interest [17], for example.

Although some researchers conducted their studies on TPACK, there was limited number of studies on factors affecting TPACK of English teachers in primary schools in Thailand's context. This study was, therefore, conducted with two objectives:

1) To measure TPACK of English teachers in primary schools

2) To investigate the factors influencing TPACK of English teachers in primary schools

II. Research Methods

A. Research Design

This study employed the mixed method design which include both qualitative and quantitative approach to collect and analyze data. The basic premise of the mixed method design is that the combination of quantitative data and qualitative data brings to the more complete and compelling utilization of data sets than the separated data collection and analysis [18]. On one hand that quantitative method involves collecting numerical data that can be subjected to statistical analysis, qualitative method is used for exploring quantitative findings and reflecting participants' points of view. In this study, the quantifiable information was drawn from the questionnaire while the qualitative e data, obtained from the interview, provided extended details that help interpretating of data gain from the questionnaire.

B. Participants

The participants of this study were 81 English teachers in primary schools of Chiang Mai Primary Educational Service Area 1. They were selected through two-stage cluster sampling. For the first sampling stage, schools of Chiang Mai Primary Educational Service Area 1that had more number of primary English teachers were purposively selected. The second sampling stage was the selection of primary English teachers through simple random sampling.

C. Research Instruments

Two instruments were used in this study: a questionnaire and interview.

1. Questionnaire.

The questionnaire consisted of two parts. The first part was informant's background information including age, gender, education background, working position, teaching experience, school size, frequency of use of technology in classroom, technology literacy, and training experience. This information related to factors that might have an effect on TPACK. The second part measured TPACK. It consisted of 39 questions with all questions requiring on a five point Likert scale. A Cronbach's alpha value of 0.995 confirmed the reliability of the questionnaire.

2. Semi-structured interview.

A semi-structure interview consisting of 5 predetermined questions was used in this study. The semi-structure interview allows the researcher to control the interview by means of predetermined questions constructed as a reflection of the research topic and used as guidelines during the interview. [19] states that in semi-structured interviews allows depth to be achieved by providing the opportunity on the part of the interviewer to expand on the interviewee's responses. Additionally, the followed-up questions, the other type of questions in the semi-interview that emerge spontaneously, yield additional insights to the predetermined questions and help an interviewer expand interviewees' opinions [20].

D. Procedure

The questionnaire was distributed after obtaining the informed consent letters from the participants. The participants were ascertained the data they provided in both questionnaires and the interview were confidential and used in this study only. After the participants filled out the questionnaire, they were scheduled for the interview which lasted approximately 15 minutes at their convenience. With the consent from the participants, each interview was audio-recorded and transcribed for further analysis.

E. Data Analysis

Quantitative data collected by questionnaires were analyzed by frequency, percentage, mean, standard deviation, Pearson Product Moment Correlation Coefficient, and Multiple Regression Analysis. On the other hand, qualitative data from the interview were analyzed through content analysis.

III. Results

The results were discussed based on the research objectives as follows:

Research Objective 1

To measure TPACK of English teachers in primary Schools

The findings show that, among the seven components in the TPACK framework, the participants expressed their knowledge in 7 components—content knowledge, pedagogy knowledge, pedagogical content knowledge, technological content knowledge, technological pedagogical knowledge, and technological pedagogical content knowledge—at a high level. Nonetheless, technology knowledge (TK) was the only component with average level as can be seen in Table I.

Table I TPACK of English Teachers in Primary Schools

TPACK Components	M	SD
TK	3.46	0.59
CK	3.78	0.54
PK	3.86	0.44
PCK	3.87	0.47

TCK	3.66	0.51
TPK	3.63	0.53
TPACK	3.62	0.55

Research Objective 2
To investigate the factors influencing the TPACK of English teachers in primary schools

Results from multiple regression analysis indicate that there is a significant relationship between the two factors—frequency of use of technology in classroom and technology literacy—and TPACK. Frequency of use of technology in classroom gained the highest relationship with TPACK (β = -.414; p = .163) followed by technology literacy (β = -.280; p = .163) (Table 2).

Table 2 Results of Multiple Regression Analysis for the Factors on TPACK of English Teachers in Primary Schools

Variables	**B**	**SE**	β	**t**	**p**
Constant	5.26	0.58			
Gender					
- Male	-0.15	0.16	-.106	-0.89	.375
- Female	(reference group)				
Age					
- 21 - 30	-0.53	0.38	-.409	-1.42	.162
- 31 - 40	-0.21	0.30	-.183	-0.72	.477
- 41 - 50	-0.12	0.21	-.080	-0.57	.570
- 51 - 60	(reference group)				
Level of Education					
- Bachelor's degree	-0.06	0.15	-.054	-0.41	.686
- Master's degree or higher	(reference group)				
Academic position					
- Contract teacher	0.02	0.26	.016	0.09	.931
- Assistant teacher and Practitioner level	0.13	0.20	.107	0.66	.513
- Professional level	-0.22	0.30	-.191	-0.73	.465
- Senior professional level	(reference group)				
Years of experience teaching English to primary students					
- 1-5	-0.03	0.33	-.022	-0.08	.936
- 6 - 15	0.07	0.31	.061	0.22	.824
- more than 15	(reference group)				
Years of teaching experience					
- 1-5	0.31	0.42	.241	0.74	.461
- 6 - 15	0.14	0.32	.124	0.43	.669
- more than 15	(reference group)				
School size					
- small and medium	-0.02	0.15	-.018	-0.14	.886
- special-large and large	(reference group)				
Frequency of technology use in classroom	-0.32	0.10	-.414	-3.36	.001
Technology literacy	-0.21	0.09	-.280	-2.30	.024
Technology training experiences	-0.07	0.09	-.099	-0.73	.468

(R^2 = .261, Adj R^2= .077, F = 1.42, p = .163)

IV. Discussions

A. The mean score of the components related to technology were in rank order from the lowest (TK=3.46, TPACK=3.62, TPC=3.63, TCK=3.66).

To explain this point, because the participants had knowledge in technology (TK) with the lowest mean score, other factors related technology implementation was influenced and low accordingly. According to [21], as cited in [17], technology knowledge nowadays is very different from the past because it changes constantly and becomes increasingly complicated. Also, since technology becomes a part of life in this digital era, technology knowledge, thus, involves knowledge in data processing, forms of communication models, and solving problems with technology. Because technology knowledge is progressing constantly, many teachers are not able to keep their pace in developing their technology knowledge with the pace of technology development. Undoubtedly, when they integrate technology with content in their teaching, they do not know how to do it effectively. Their TPC, TCK, and TPACK, therefore, are low accordingly.

Data from the interview reflected this point. Ying stated that "I am not good at technology. Likewise, Kai said that, "The major problem of teachers about technology is that, at the moment, we neither know what kinds of technology or application is available and suitable for our class, nor how to integrate it in our teaching." Oil asserted that, "There are many forms of technology that can be integrated to my teaching, but, unfortunately, I don't know them."

B. Technology literacy or abilities to use technology, to be more specific, is the factor with significant relationship with the majority of TPACK components which are TK (t=6.02, p<0.001), CK (t=3.91, p<0.001), TCK (t=2.01, p=0.048), and TPACK (t=2.05, p=0.044) .

[22] explains that, because abilities in implementing technology manifests technology knowledge (TK), teachers who are competent in using technology will be confident to use technology. They would use technology as a tool for exploring more about the subject content they are teaching. This causes effect to content knowledge (CK) and technological content knowledge (TCK). Additionally, by being skillful in using technology, they are likely to facilitate their teaching through integrating technology with their methods of teaching (TPACK). In [16], abilities to use technology is the influential factor in TPACK as it determines teachers' decision in integrating technology to their teaching and learning. That is, a teacher who are not good at using technology would avoid using technology because they feel that using technology is too complicated.

One interesting finding is that the avoidance of implementing technology to teaching is not solely due to technology literacy and TK. During the interview, Nuch said, "Technology is not always suitable for teaching primary schools. My students are young learners. I would rather develop their communication interaction with people around them by myself than implementing technology. This agrees with an opinion of Am, another interviewee. She said that,

" Generally, my selection of technology depends of the level of students. I teach very young students at this school. Thus, technology may not be the best answer for my class. I prefer teaching them through coloring activities and activities physical movement activities."

C. Frequency of technology use in classroom has significant relationship with TCK (t=2.96, p=0.004), TPK (t=2.26, p=0.026) and TPACK (t=2.93, p=0.004).

The frequent use of technology in classroom provides opportunities for teachers to know more about hardware and software. This helps teachers improve their knowledge and skills in implementing technology, become more proficient, have more confident in using technology, and results it TCK, TPK, and TPACK.

Past researchers showed that frequent use of technology represents teachers' interest in integrating technology to their teaching. For instance, in the study of [23], they pointed out that interest in using technology is a personal factor affecting teacher's decision in integrating technology into their teaching. [24] explained that if teachers had negative attitudes towards the use of technology, they would see it as unnecessary tool and heavy burden on teachers. Subsequently, they would reject technology.

Nuch, an interviewer, stated that, "At school, there is no encouragement from anyone to use technology because we all think our way of teaching is good enough—we don't have to spend time on searching information from online resources, connecting to the Internet, or preparing new lesson plans in which technology is integrated." This affirms that, if teachers lack interest in using technology, the implementation of technology in classroom is unlikely to take place. Level of TCK, TPK, and TPACK would remain low also. The study of [12], [16], and [25]and support this point.

V. RECOMMENDATIONS

A. Recommendations for Practice

1. Since the ability in using technology, or digital literacy, is a factor that influences most of the components of TPACK, school administrators should promote their staff's development of technology knowledge and skills. This can be done by inviting speakers to give knowledge about new technologies, organizing technology training that suits with the skill level and interest of their teachers, and organizing workshops for teachers to have hands-on experience in implementing technology, and exchange knowledge and experience with other teachers, for instance.

2. Teachers should continuously seek knowledge related to main components of TPACK either by self-direct learning, or attending a training or workshop, so that they will be able to integrate technology when they teach the subject content effectively. The emphasis should be placed more on technology knowledge (TK) since the rapid development of technology brings about new knowledge and skills. The acquisition of TK allows teachers to manage their teaching with technology promptly.

3. School administrators are obliged to have insights into the components of TPACK and know their workforce's TPACK level. As such they can prepare guidelines to develop the knowledge of components in relation to TPACK and their workforce will eventually be able to maximize their technology knowledge and skills. Besides, they can integrate technology to their teaching effectively leading to learners' successful learning. This concurs with the study of [26] suggesting that an important thing that should be taken into

account about technology implementation is enhancing teachers' knowledge, skills, and abilities in using technology. As such, they can integrate technology into their teaching, develop their teaching learning process, and make utmost use of technology available at their institutions

4. It is necessary for school administrators to place the emphasis on the importance of the availability of various technological equipments in the classroom. A teacher in a classroom without technology readiness will lack opportunities to integrate technology into his or her teaching. As a consequence, he or she would view technology as an unnecessary tool and have no motivation in seeking technology knowledge.

B. Recommendations for Further Research

1. Future studies are needed to look at wider range of factors affecting level of TPACK. They include gender, teachers' belief, teachers' attitudes towards technology, teachers' self-efficacy, outcome expectation, teachers' interest, schools' policy on integrating technology into teaching and learning, the readiness of different aspects related to technology such as the Internet, computers, and software, for instance.

2. The relationship among the six components of TPACK should be investigated to explain how teachers connect them in classroom and how all components affect TPACK.

3. There is a need to examine TPACK of teachers who teacher other subjects, and those who teach at different educational levels such as high school teachers and university lecturers. Thereby, educational practitioners and school administrators will obtain useful data for planning guidelines to develop their technology knowledge and skills corresponding to TPACK framework.

4. The relationships between TPACK and English language learning achievement should be explored. This would reveal how TPACK results in English language learning management as well as learning achievement of English language learners.

5. The results from this study can be used as a basis for developing TPACK model for English language teaching context.

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The Dynamics of Public Participation in the Integrated Management of Natural Resource and Environment: A Case Study of Ban Pa Sak Ngam, Luang Nuea Sub-district, Doi Saket District Chiang Mai Province

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Abstract - *The purpose of this study was to 1) 1) To study the social context, Politic and Governance, Culture and Economy based on participatory development of the public sector in managing natural resources and the environment 2) Study the dynamics of development and adaptation process for the restoration of community natural resources and environment. 3) To propose guideline and mechanism for management of sustainable integration of natural resources and environment. This research is qualitative and participatory workshop research, which lead to the strengthening of communities and agencies in the area for management of sustainable integration of natural resources and environment. In terms of the social context, they were like family, they social structure consist of both vertical and horizontal. In terms of politics and governance, it was decentralized by dividing the community administration into categories. There are common rules and regulations of the village. In terms of community culture, there are cultures, traditions, beliefs, and rituals that are inherited from their ancestors. And finally, in terms of the community's economy, there are abundant natural resources, which serves as a capital cost of production, to support the community's economy, the use of local intellects as a base for strengthening the community. These includes local intellects, learning of the community leaders and knowledge transfer, conservation of natural resources and adaptation to change The results of this research showed that the dynamic process of development and adaptation with the participation of the people in the management of natural resources and environment can be divided into 4 categories as follows: 1) Settlement Stage, 2) Franchise and transition stage 3) Development and adaptation stage and 4) Current Stage. However, the overall picture of changes in natural resources and environment result in critical damages on the community's ecosystem, hitherto, the community benefit from the ecosystem and they are also affected by these damages. Therefore, they are being pressurized by the government to suppress, prevent and conserve the community's forest. Therefore, the community's learning process became aware of the joint efforts to restore, conserve, preserve, protect and benefit from biodiversity without affecting livelihoods and environments. The Natural Resources and Environmental fund of Ban Pa Sak Ngam Community is a foundation for maintaining a sufficiently good quality of life. The extensive forest area is a source of abundant biodiversity production. Forest management in various forms, as well as lessons and knowledge gained by the community used to drive all aspects of development work. Therefore, it was discovered the approach and mechanism for integrated natural resource management are 1. Community development based on natural resources and environment 2. Development as a center for environmental studies 3. Development as a center for the transfer and teaching of the King's Philosophy. 4. Development as a health development center based on environmental education and to develop as a center to support learning and research processes of educational institutions.*

Keywords: *Dynamics of Development Process, Participation of the Public Sector, Adaptation and Restoration of Natural Resources and Environment.*

I. INTRODUCTION

In the past, the Thai government has focused on only one part in accelerating economic development, causing the situation of natural resources and the environment in Thailand to change rapidly in terms of soil, water, forest, and wildlife resources. All these things are important factors in the development of the country, and they play a vital role in poverty eradication. However, we cannot deny the fact that Economic development inevitably harms natural resources in exchange for material prosperity and the well-being of people in general [1]. According to the report on the situation of Thailand's natural resources and environment, it was discovered that the forest area across the country in 2018 - 2019 amounted to 102,484,072.71 rai, or 31.68 per cent of the country, in 2017-2018 was there a decrease in the amount of 4,229.48 rai [2]. The trend on natural resource and environment situation shows that there is change due to the driving force of the whole country both within and outside that has occurred within past years. However, they result in both direct and indirect effect to environmental activities of human making the overall quality of natural resources within the country to deteriorated including an imbalance in the ecosystem.

However, problems arising from the struggle for natural resources and the environment persist due to change and continuous increase in population and solving the problem in a structural nature from government policy (Top-Down Approach), the said approach could not solve the problem to be successful, as cited by Natthawat Sunthornwaritichot, who said that the main cause of the environmental problem is that, people lack participation, they lack conscience to take responsibility, they mainly think of personal benefits, they lack discipline and lastly, the people believe that preserving and solving environmental problems is the duty of the government and not them. Therefore, participation is the key foundation to create awareness on the conservation of natural resources and environment [3].

The northern region, in the past, was fertile in terms of natural resources and the environment. Forest areas, mainly at the northern are tropical forest moist in the mountains and is a source of fine teak with foreign private companies coming to exploit the forests in Thailand. Since the government introduced the $1^{st} – 9^{th}$ National Economic and Social Development Plan, there have been policies to develop the economy, quick development of the industrial sector and commercial use of forest land by the government, giving forest concessions to foreign logging companies. Making the foreign logging process more open. However, these concessionaire cuts the entrance to the area. The company established itself as the conqueror of the forest. We can find them in 2 areas: the area where the community lived before concession companies are required to coincide with the power of the local community. They have to pay for their influencers in the community for logging. Because logging conflicts with the occupation and interests of the villagers. The logging companies employ some community workers as loggers and bring in outside workers. However, when these companies moved, they only moved their workers out as well, only some of them could not move with them because they have a house here already. The area where there was no community before the logging concession, the company will bring outside workers to cut large and valuable timber and move them to other areas [4] indicating that the northern area expanded both its economic and social aspects with the necessity of relying on various natural resources that have existed and fertile to be used as a fundamental factor in production, resulting in quick deterioration of those natural resources, without systematic management plan to restore them to their original state. However, they are still lacking to think about the future effect as a result, those natural resources deteriorate, changing its factor to contribute and now become a limitation to development.

Although the problems in forest management in the past seems to be a failure of the government, the people within the area also contribute to the deterioration of the health of the forest. This may be due to a lack of management knowledge or based on finding profit for themselves and their associates in illegal logging, in exchange for the huge sums of money that could be obtained, or combination of people in power both within the outside. However, these problems may come from the unemployed villagers or those who lack their land, making them use it as a channel to get and exploit benefits from the natural resources, including the lack of tools, equipment and budget to maintain the forest in the area.

From the development stream of capitalism that has changed the consumption behaviour or the reckless use of resources, lack of consciousness, selfish use of natural resources, and not being of benefit to the majority of the people, resulting in the gradual deterioration of natural resources. Ban Pa Sak Ngam, Luang Nuea Sub-district, Doi Saket District Chiang Mai Province**,** originally has always been fertile with tremendous natural resources such as a source of water, streams, wildlife, and abundant diversity from the forest, and it is also a good source of teak wood. Later, there were foreign private companies that came to engage in logging activities since 1960 based on the forest concession issued by the government. The villagers turned to contract for logging and plantation for logging companies and the forestry industry in 1984, they were hired to survey the trees, take care of the trees, mark the trees, number the tress, cut and maintain them [5] For this reason, the people

in the community learn to cut wood, handle equipment and, there was a reversal from the people, who had been hired to make the villagers started to turn to be a wood manufacturer and sell by themselves. They began the illegal logging and divided the area together for processing timber sold alongside with the capitalist. Also, there are supports from the capitalists in terms of both tools and money used for wood processing, After some time, those who became successful now become subject of imitation by other villagers. They start buying chainsaw into their homes for more logging, cutting, and processing of woods expand continuously, up to the extent they started cutting the forest trees, which later results in forest degradation. Thus, causing the flowing water, which crosses the creek to dry up and cannot be used for the cultivation of rice and community consumption water became scarce like never before. The forests, which was once a place for a wide variety of wildlife began to reduce. The community have to pay the price of the advantages taken away by the people outside the community, they took away the abundance of natural resources, it became a trigger point and the source of the problem. The condition of the forest was destroyed and there was the movement of government policies and investors from outside of the community.

In 1982, His Majesty King Bhumibol Adulyadej Rama 9 as part of the royal initiative, establish a project called Huai Hong Khrai Royal Development Study Center, and in 1992 they established a project to Develop Khun Mae Kuang Forest as another part of the royal initiatives covering the forest area of Mae Kuang at 345,000 hectares. Ban Pa Sak Ngam, therefore, became the first community project that was solved urgently, because soldiers were sent into the village to help stop Illegal logging and their selling. Moreover, Ban Pa Sak Ngam was the mainstream of water consumption and utilization, which as a result see government agencies and projects sent into the village to help with the restoration and support of the area, by making the community aware and focus on how to solve arising problems to make the forest fertile again before deforestation. Therefore, organized a forum for brainstorming and seeking suggestions that will help conserve and develop forest regeneration and cross creeks, this was done with the integration and creation of "The conservation and development group of Pa Sak Ngam" For the past 10 years now, the community had been awarded various certification on the restoring and conserving of the forest according to the royal initiative. This serves as a reminder of how the community had become successful and now a learning centre for other interested communities. [6]

From the current situation, the community is now facing a powerful capitalism problem as a result, the relationship between the community and the natural resource base has changed. Although the community knew what they will lose, they have no other choice. Because of the need to struggle to survive the situation. Therefore, this study aims to find answers to the issues of the context and development of natural resource management and community adaptation process of community rehabilitation resources under dynamic and high complexity. By using Ban Pa Sak Ngam community, Luang Nuea Sub-district, Doi Saket District, Chiang Mai Province as a case study, because Ban Pa Sak Ngam is a strong community that has long been in the good management of the natural resource. Which will be useful in joint learning to be able to link and expand the pattern of forest recovery approaches to other areas with similar contexts.

II. RESEARCH OBJECTIVES

The objectives of this research article were 1) to study the social context, Politic and Governance, Culture and Economy based on participatory development of the public sector in managing natural resources and the environment. 2) to study the development dynamics and adaptation processes for the restoration of natural resources and the environment of the community, and 3) to suggest guidance and mechanisms for sustainable integrated natural resources and environmental management.

III. RESEARCH METHODS

This research was carried out with a qualitative method with the following details:

A. Collection of data: Data were retrieved through document research, this was a collection and analysis of qualitative data from relevant research, academic papers, related journals, related government textbooks, field research, organizational study, and villagers, in-depth interviews. The key informant's interview was carried out using a questionnaire and observation to collect their data both those involve and those not involved in the community organization activity management, which include attending meetings or events carried out by the villagers. etc.

B. Research tools: The instrument used in this study include: 1) Specification of Key Informant as a group of people involved with the conservation of forest trees in the community such as Community leaders, religious leader, professional experts, scholars, and relevant authorities, including villagers at a total of 25 people. 2) Focused group: Interview was used as a model of brainstorming session using Appreciation Influence Control, Brainstorming, Mind mapping, to achieve clarity on various issues with the people

in the community. 3) Non- Participant Observation: this was done using a checklist to study the behaviour and attitudes of the people in the village from engaging in various activities 4) Observation this is a technique of gathering research data, by keep watching or studying the various phenomenon that is happening and 5) Participatory meetings: this was done by brainstorming in other to understand the problems, needs of the community and their potential in various sectors.

C. Data analysis: Considered issue were classified into four modern eras, 1) Settlement era, settlers established or before the concession period 2) Franchise and transition era, 3) Development and adaptation era and 4) Current era. By understanding the interaction between community activities, to analyze the link between the human ecosystem and the physical ecosystem in the holistic area, as well as the adaptation of the community and related agencies when confronted with problems and find appropriate solutions. The analysis of this data lies on two key concepts:

(1) The concept of a network: is a key concept and is used to describe the movement from group to network to drive the development process or to change things in the operational process to achieve network development. The networks are as follows: 1) raising awareness is the fusion of ideas, knowledge, experiences through a continuous learning process; 2) creating common ideologies through learning and changing experiences, problems, and obstacles. It is a database that compiles the goals and objectives or the common ideology of the community leaders. 3) Network formation is the determination of the structure and strategy for implementation. Brainstorming ideas to disseminate to groups at the community level know the guidelines 4) Developing capacity through exchanging knowledge, brainstorming network operations to strengthen communities and networks. 5) Planning covers 3 issues: care, protection. Rehabilitation Development for better quality and utilization 6) Promotion and implementation to drive action activities 7) Lesson summary and evaluation. To improve, modify or develop network projects/activities [7]

(2) The concept of natural resource management consists of five main frameworks: 1) a view of the production system and natural resource management in the context of economic, political, and ecological structure changes; 2) cultural context. The relationship between human and nature is holistic, 3) the view of the resource management system as part of the shared ownership system of the community, 4) the view of the community resource management system as a social movement, and 5) the context of the community ownership system. Rural development and conservation and restoration [8].

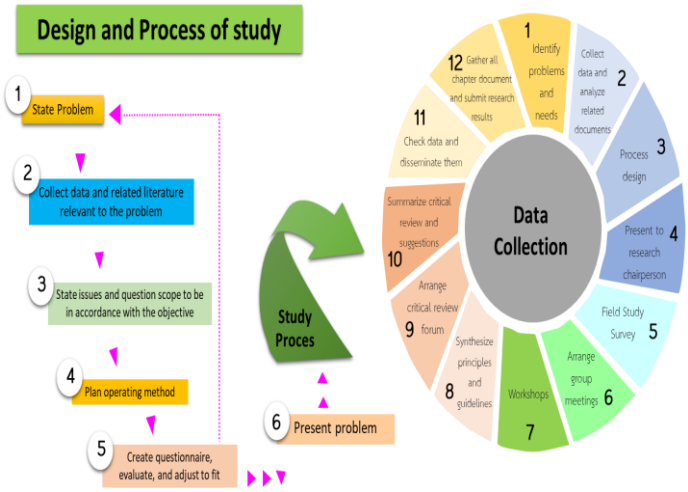


Figure 1 Study design and process

IV. RESEARCH RESULTS

1) According to the study, after studying the social context, Politics and governance, Culture and economy, based on the people's participation in the management of natural resources and environment. The result found that the community had a social relationship in form of family cycle, they had both vertical and horizontal social structure, group members are organized by setting common objectives or goals for problem solving or community development. Group management is organized in form of committee structure, they divide their duties and responsibilities together, there is learning and knowledge transfer, they help each other. As well as building networks both within and outside the community to create power in joint activities. In terms of politics and government, there was decentralized division of community administration in a form of unit head, the unit head is responsible for 10-15 houses, to assist in the administration and coordination of activities. The village headman acts as a coordinator between the government and the people. This is an important mechanism that allow and help to achieve integration, brainstorming, and exchange of knowledge. Hence, making it democratic political mechanism at the local level, in determining the direction of village development and mobilizing all contributions to assist in the administration and coordination of community activities, with the community rules and regulations as the basis for mutual peace. In terms of culture, this research found that culture, traditions, beliefs and rituals were considered as social capital of the community, it is an important tool and an anchor for the people of the community. Passed by their ancestors from generations to generations. Through relationships as a network, Neighbors and activity groups. Therefore, there are always joint activities in the community

that are developed towards solving community problems, making the community self-reliant with dignity. In terms of the community's economy, the result of the research found that, the sufficiency economy concept was applied within the community. They practice Integrated agriculture, this allow them to gather member group, and is often empowered at the community level. The community livelihood was by organizing groups or organizations for production, distribution, fundraising, savings, to serve as a financial institution of the community, they have and engage in activities that help reduce cost, increase income, which help promote the economy of the community and organize the market in the community. For the exchange of products between communities and communities and between the producer and the consumer through the empowerment of the community at the individual and community level, which is an important mechanism, which help strengthen and create sustainability of a learning community.

2) Development dynamics and adaptation processes for the restoration of natural resources and environment of the community. The evolution of the use of natural resources and environment of Ban Pa Sak Ngam community at each period has it's own distinct characteristics and can be classified according to time frame into 4 main eras which are:

Settlement era: It is a time when the environment and natural resources are fertile, good soil, water flowing all year, abundant wildlife. Forest products are also abundant, smaller communities are making use of resources as dependence on family and community recruitment processes. The forest is treated with respect and there are rules of care that are consistent with traditional and traditional lifestyles, therefore the economic system is closed. Production and consumption are sustenance only.

The era of concessions and transitions: It was a time that communities began to interact and learn more from outside. Both from the forest concession, that the private sector has entered into the logging process, forest land leasing, by utilizing natural resources and earning income until creating a full-fledged illegal log trade, together with the cooperation of the insiders and outside in the community. Making them neglect agriculture, leaving the area to be desolate and selling them to private investors. Natural resources are viewed only as a source of income. Thus, natural resources were fully used and eventually degraded.

The development and adaptation: Since 1952, King Bhumibol Adulyadej King Rama IX began to visit people in every region of the country. His Majesty's wish to acknowledge the troubles and needs of the majority of the people who work in agriculture, firstly he visited the people in the northern region in 1958 and a royal initiative began, which emphasizes the importance of natural resources and environment. The royal initiative project made some highlights on the importance of agriculture natural resources and environment, which was the base of the people to be in balance. His work in the area and the establishment of a royal project in the Khun Mae Kuang National Reserved Forest from 1976-1992 from the royal initiative was to build the Mae Kuang Udomthara dam, Huai Hong Khrai Royal Development Study Center, and the Khun Mae Kuang Forest Development Project. However, these royal initiatives cause different activities that damage the forest area. Therefore, people in Ban Pa Sak Ngam community have to adjust their livelihoods and enter the development process of the government, learn to develop a variety of careers. Including taking part in restoring, maintaining, and preserving natural resources and the environment to be fertile as before.

Modern era: Throughout the development period, adapt and co-operate activities on the conservation of natural resources and the environment. Continuously improve the quality of life There are all sectors to support the development. Including government agencies, private institutions, educational institutions, and community networks across the country. Communities, therefore, play various roles in natural resource management. Both as a learner, operator, coordinator, and broadcaster. As well as being a developer from all sectors according to many government policies or projects.

From the change of natural resources in each of the above periods, it pointed out, that under the situation of natural resource loss, it causes a serious impact on the ecosystem of the community, who are the beneficial and user, including being affected directly under pressure from the government to suppress and protect forest areas. Therefore, awareness and joint efforts have been made to protect and restore natural resources, with the details as follows:

a) Lesson review: Analyze and modify thinking methods, after being pressured by the government, both entering and setting up a unit of defense and suppression of forests in the area and also setting up development from government agencies. This allows the community to get to know and learn with the scholars, who are introduced into the community development process starting from self-learning, adopt new thinking method for development, learn and understand the principles of life. That must have natural resources as a base for their livelihoods and improve the quality of their life.

b) setting options and planning the community: The community analyzes its potential and specify operation guidelines as follows: 1) agricultural areas: carry out activities for cultivating a variety of agricultural products free from chemicals 2) Forest areas near homes: plant three types

of wood with four benefits such as rattan, bamboo, and local wood. 3) Watershed forests: Carry out rehabilitation and maintenance activities, including building dams, upstream, make a line to prevent forest fires and extinguish forest fires. 4) Management of groups in the community such as conservation and development groups, Agriculture for a life group, Occupation group, they operate by carrying out rules, regulations, and participation in various activities, in which, in the operation of each activity, government agency, academician in the organization unit, that continuously support the learning process in the community.

c) operating under wisdom and participation: Community leaders act on behalf of various groups, they act as Public relations officer in inviting other people and they also lead in that mission, resulting in various activities. Including the development of soil resource quality, forest water, career development, additional careers from conservation. Involving all sectors to promote and support in terms of materials, equipment, budget, knowledge, and others until they can become a learning centre and exchange experiences with other areas and people are coming for an excursion.

d) Networking and Learning Power: The learning network allows the community to develop their potential. share experiences and taught lessons from various networks in Mae Kuang River Basin. The River basins in the northern and all regions of Thailand use this development and continue them further into activities their various community. As well as building morale and encouragement for the community leaders to ignite the drive and strength to work harder in Ban Pa Sak Ngam community. There are also exchange and strength reinforcement on a large scale.

3) Guideline and Mechanism for Management of Sustainable Integration of Natural Resources and Environment.

According to the study from the representative in the community group, and the analyzes of data from the community referendum. We were able to design guidelines and mechanisms for the management of sustainable integration of natural resources and environment as follows:

a) Community development based on natural resources and environment: It is to make the best use of natural resources and biodiversity without affecting the environment. By carrying out conservation and rehabilitation activities to make natural resources abundant, including building dams creating a wet forest, fire prevention and suppression to inspect, patrol, prevent, suppress, etc., and support groups to manage and utilize resources in the community, such as natural fertilizer production, agroforestry group, forest seedling group, etc.

b) Center for Environmental Studies: This is a method knowledge dissemination and creating awareness of conservation to acts as a natural classroom and thereby, creating a working group consisting of community leaders, Educational institution different networks, to jointly manage the database system. Create a process for developing environmental education courses and support the learning of environmental education for learners at different levels appropriately.

c) The King's Philosophy Exchange Center: This is a way of spreading and dissemination of the King's philosophy in terms of natural resource conservation and improving the quality of life, by creating a curriculum for disseminating and expanding the concept of the theory in collaboration with the Mae Kuang River Basin Conservation Organization and Network, named as The Sustainable Development Model Course in Watershed, Wet forest, fire protection lines, etc., thereby using the community area as a learning centre for both theory and practice also extending the learning process to networks in other areas.

d) Health development center based on the natural environment: It is to promote and support the development of quality of life and health. By designing activities aimed at changing health behaviours such as nature walks, birdwatching, consumption of food and herbal drinks, and organizing learning about community lifestyles and natural systems in the homestay to support the service of the elderly society.

e) Center to support learning and research processes: This is to coordinate, cooperate and support learning and research processes for educational institutions by using the learning resources in the community, use of media in teaching and learning following the university course. For the integration of education and learners can apply the knowledge learned in the university to benefit the community and society, therefore creating a piece of new knowledge and innovations through the research work of lecturers and faculty members.

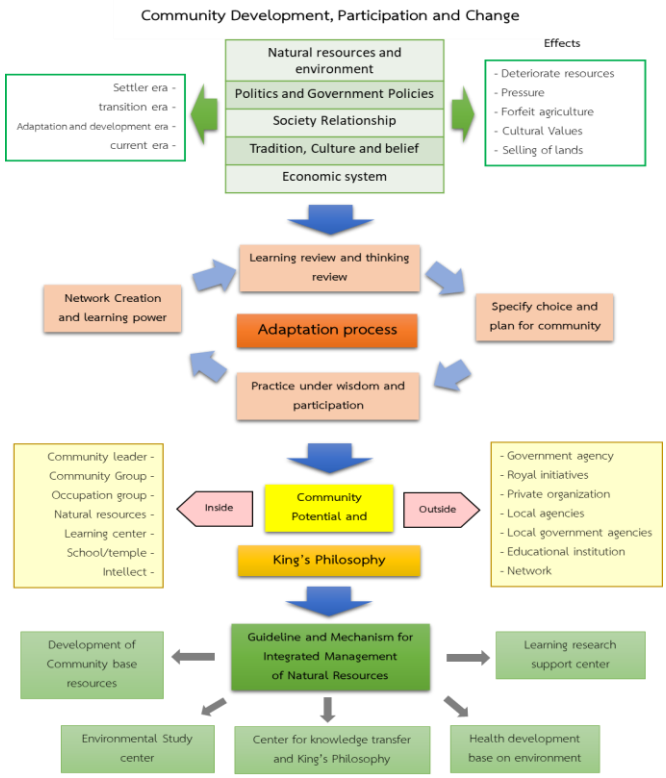


Figure 2: Dynamic public sector participation in sustainable integrated natural resources and environmental Management.

V. SUGGESTION

Based on the study the researcher has the following suggestion and recommendation.

1) Policy Recommendation

Current development policies affect the community's adaptive learning process, especially in terms of interaction with the management of the community relationship with a natural resource if there is some kind of policy power, which use rules and regulations, that do not prioritize the basic lifestyle value, tradition, culture, wisdom, and implementation of the policy. Taking advantage from the outside May cause conflict in the community. The lesson learnt by Ban Pa Sak Ngam community, such as forest concessions or setting up development policies that focus on economic benefits. Thus, the resource management relationship model will also focus heavily on taking advantage. Privatize every resource for income will be essential. Thus, expedite the mobilization for the community to use them regardless of the impact that might occur.

Adaptation development of Ban Pasak Ngam community will reflect in the policy of giving importance to the learning of the community. This community is a subject to excessive tightening, control or enforcement of government regulations. Changes for adaptation development to be able to live in the area in a supportive relationship with natural resources and community environment under learning conditions of being in harmony with the sustainable lifestyle of the community environment, however, the community - centred policy in the development process and participation of the community Hence, becoming a guideline as a development model according to the royal initiative of His Majesty King Bhumibol Rama IX "Development based on geospatial Society". Therefore, it should be an important guideline for leading to policy formulation for the management of forest resources with the participation of the community.

2) Suggestion from Workshop

The results of this research study, developers, researchers and staff in the agency both public and private organizations can be used to understand the lifestyles relationship of local communities that are dependent on natural resources and the environment. This will be useful in developing the process of working with the community in the field of production, conservation and development of natural resources and the environment following the community. The following are the thing to be held on high importance 1) in community development, we should emphasize the value system of knowledge and traditional wisdom and be consistent with community potential this will make the community stronger, and capable of being self-reliant 2) The development of the community learning process should be promoted by supporting the creation of a learning platform. Regularly stimulating or presenting new knowledge that will benefit communities in the management of natural resources and the environment. This will keep the community in line with the situation and lead to appropriate alternatives. 3) There should be a clear and continuous process for working with the community, make communities understand their potential, and community resources. It can be used to guide the creation of a participatory process in sustainable resource management, and support to raise the level of knowledge of the community. 4) There should be empowerment to strengthen the youth to inherit and develop communities for more powerful management

3) Academic Suggestion

Issues related to the management of natural resources and the environment; studies have shown that land ownership rights have been increasingly changed to outsiders. When the villagers have no land, that is a fundamental factor in the

agricultural production system there will be a process or phenomenon that affects their way of life, how to manage natural resources and environment and in terms of knowledge, How should the community develop knowledge to become a learning resource or a source of local wisdom that can manage natural resources and the environment effectively?

CONCLUSION

Ban Pasak Ngam is another community located in a vast forest area and rich in biodiversity. In the past era, production methods depend on the environment, natural resources, culture and beliefs. But nowadays it has changed with the flow of government development and interaction with outsiders, making the community way of life focus on production for the economy that satisfies outsiders thereby making use the resources in the forests. However, the community has only income as a factor for living and sustaining themselves, therefore, logging almost lost the value and meaning of cultural and natural resources. But under the community capital, the social relationship in the household is strengthened. Confidence in leadership as well as cultures, traditions and beliefs that have been passed down continuously to bring about adaptation, acceptance, support, reinforcement and participation in the learning process of leaders to drive the community to change for the better. From the change of natural resources in each time, it pointed out that under the situation of natural resource loss cause severe impacts on the ecosystems and livelihoods of the community , the actions of the community, together with people from outside the region, have been pressured by the government to suppress prevention. Forest resources and preserve forests to be maintained learning developed through the project due to the initiative gives communities an adaptation awareness and contribute together to revive the art of embroidery preserving natural resources for the better. The learning and adaptation process of the community are as follows: 1) lesson review, analyze and modify ways of thinking 2) Setting options and community planning 3) Wisdom and participation actions 4) Networking and learning power. As for the approach and mechanism for the integrated management of natural resources and environment, are as a result of the analysis on the strengths of the community in terms of natural resources and environment, Livelihoods, and community participation in all dimensions under the supervision of community leaders, who strictly adheres to the community rules for the successful operation to be achieved through the integration of all sectors. Also contributing to the management, maintenance and utilization of natural resources and the environment in the forest area of Ban Pa Sak Ngam community to be sustainably balanced

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Efficiency and Kinetic Rate of Nanoscale and Microscale of Zero Valent Iron and Zinc Oxide particles for Chromium, Cadmium, and Lead Removal from Pak Thong Chai Silk Dyeing Effluent, Thailand

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Abstract*—This present study involved the application and comparison of nanoscale particles in remediation for contaminated heavy metal effluent discharge. It aimed to investigate the removal efficiency and kinetic removal rate of the heavy metals including lead, chromium, and cadmium in silk dyeing effluent discharge by using nano and microscale of ZVI and ZnO particles. The contaminated samples were collected and later treated by one of the particles in the laboratory at 25 ºC. The mixtures were incubated for the required period before the heavy metal concentrations were measured. The overall results showed that the optimum dosage of all four particle types for heavy metal treatments was 60 mg/L with an optimal time of 60 minutes. The experiments with nZVI demonstrated the highest removal efficiency for all heavy metal types followed by that of nZnO, ZVI, and ZnO, respectively. The removal efficiency rate by all four type particles for Cr was higher than that of Cd and Pb, respectively. In addition to this, the kinetic removal rate of nZVI was also faster than that of nZnO, ZVI, and ZnO, respectively.

Index Terms— *Kinetic rate, Nanoparticles, Heavy metal, nZVI, nZnO, Wastewater treatment.*

I. INTRODUCTION

Several chemicals are currently used in industrial applications and everyday life. These chemicals are contaminated in environments, water, and soil [1]-[6]. As a consequence, the environments are contaminated with hazardous substances such as heavy metals. These heavy metals are widely used in many applications in both the industrial and agricultural sectors. For instance, lead and cadmium are used in battery manufacturing, metal smelting plant, metal plating factory, dyeing factory, and caustic soda production plant [7]. The textile dyeing industry is regarded as a medium-scale industry that involves a process of adding color to a yarn or fabric. It is later known to be a raw material for varieties of goods including garments. Chemicals and dyeing color reagents are used to add and stabilize the color. Wastewater quality from the textile dyeing industry sometimes fails to meet the effluent quality standard. For example, there are high organic substances, high BOD (100-1,000 mg/L) high COD (500-1,200 mg/L), high TDS, high TSS, and high heavy metal.

Lead and cadmium are known to be one of the major problems as pollutants that have effects on a human being. Industrial effluent discharge with higher lead concentration than effluent standards (0.2 mM per liter) has been previously reported. This wastewater discharge from factories certainly contains many types of heavy metals. Cadmium can be deposited in bones and kidneys. It leads to Itai-Itai Disease. The consumption of lead can result in anemia. It causes muscle weakness and paralysis.

Nanotechnology is involved in research, particularly in sciences and technology [8]. It is used to be an alternative method with higher efficiency [9]-[11] and a minimal time than that of biotechnology. Nanotechnology is well known as the process of creating or analyzing materials or products at the nanometer level (approximately 1-100 nm) [12]. Nanoparticles are increasingly involved in environmental concerns to remedy the contaminated environment. Nano-Zero valent iron (nZVI) is a type of nanoparticles that

are used to treat chemicals and hazardous contaminants in soil, water, and air [13]-[17]. Nano Zinc oxide (nZnO) is commonly known as the catalyst and photo-catalyst [18]-[20].

This current study focused on the possibility of nanotechnology (nZVI and nZnO) that can be applied for remediation of the effluent discharge from the silk dyeing process. The objective of this study involved the application and comparison of the efficiency of zero-valent iron (ZVI) and zinc oxide (ZnO) both at a micro (normal size) and nanoscale in the heavy metal removal from the effluent discharge of silk dyeing process. This research aimed to study the removal efficiency and kinetic removal rate of the heavy metals including lead (Pb), chromium (Cr), and cadmium (Cd) in silk dyeing effluent discharge by using nano and microscale of ZVI and ZnO particles.

II. Material and Method

A. The studies samples

The effluent discharge of the silk dyeing process was used as the studied samples contaminated with heavy metals. It was directly collected from one of the nearby textile dyeing factories in Nakhon Ratchasima province, Thailand, and transported to the laboratories for further experiments. The samples were treated by nanoscale zero-valent iron (nZVI), nanoscale zinc oxide (nZnO), microscale zero-valent iron (ZVI), and microscale zinc oxide (ZnO).

B. Chemical and Research Instruments

Nanoscale zero-valent iron (nZVI), nanoscale zinc oxide (ZnO), microscale zero-valent iron (ZVI), and microscale zinc oxide (ZnO) were used for treatments. Homogenizer (IKA: Disperser Model T25 digital Ultra-turrax (C-MAG HS7), pH meter (Index: ID 1000), Shaker (Forma Scientific: Model 4586), Microcentrifuge (Hettich: Model EBA 21), Atomic Absorption Spectrophotometer (Varian: Spectr AA 55B) were used for the experiments.

C. Research Methodology

The ability and efficiency of nZVI, nZnO, ZVI, and ZnO in the heavy metal removal from the effluent discharge of silk dyeing process was operated in volumetric flasks at 25 °C. The mixture between the effluent discharge and each type of those four particles was later incubated for a required period on the shaker.

The experiment was divided into 2 parts as described below.

I. Determination of the appropriate amount (Optimum dosages) of nZVI, nZnO, ZVI, and ZnO for heavy metal removal

The optimum dosages of nanoparticles were determined by varying concentrations of nZVI, nZnO, ZVI, and ZnO were prepared at 20, 40, 60, 80, and 100 mg/L. The contaminated samples were later added with one of these four particles at varying concentrations. The mixture was incubated in the volumetric flasks for a period of 60 minutes with gentle shaking while the controls were carried out without any particles. All samples were wrapped in aluminum foil. Then, the amount of residual heavy metals (Pb, Cr, and Cd) after the incubation was measured by Atomic Absorption Spectrophotometer (AAS). The experiments were performed with three replications. The results of the removal efficiency by particles with varying concentrations were calculated and presented using either bar or line graphs.

II.The removal efficiency and the kinetic removal rates of nZVI, nZnO, ZVI, and ZnO for heavy metal removal

The optimum concentration of particles from the previous experiment was used to study the removal efficiency and the kinetic removal rate. The contaminated samples were added with nZVI or nZnO, ZVI, or ZnO and incubated for a period of varying times. The incubation times with an hour interval were varied at 1, 2, 3, 4, and 5 hours. To obtain the optimum time, the experiments with incubation time at 10-minute intervals may be applied where appropriate. The samples were wrapped in aluminum foil. Then, the amount of residual heavy metals (Pb, Cr, and Cd) after the incubation was measured by Atomic Absorption Spectrophotometer (AAS). The experiments were performed with three replications. The results of the removal efficiency and the kinetic removal rates with varying times were calculated and presented using line graphs.

Kinetic Removal Rates were plotted as semi-log to determine the first-order reaction rate of removal degradation refer to (1) and (2):

(1) $-\ln(Ce/Co) = kt$

(2) $k = (-\ln(Ce/Co))/T$

where:

Ce is the concentrations in supernatant samples after reacting with nanoparticles (mg/L)

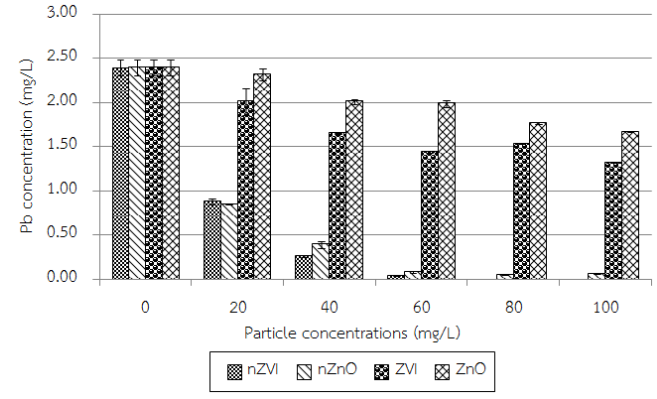
Co is the concentrations in supernatant samples before reacting with nanoparticles (mg/L)

k is the first-order reaction (min-1)

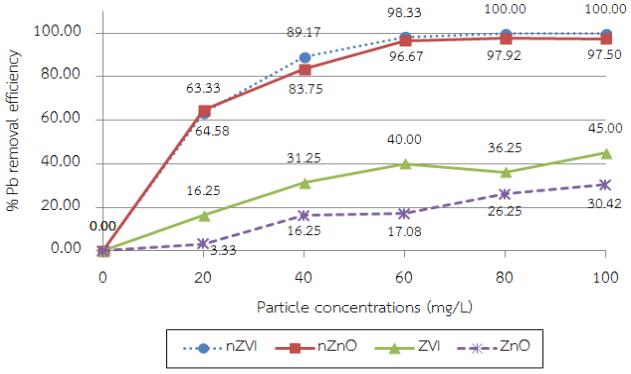
t is reaction time (min).

III. RESULTS

A. Determination of the appropriate amount (Optimum dosages) of nZVI, nZnO, ZVI, and ZnO for heavy metal removal



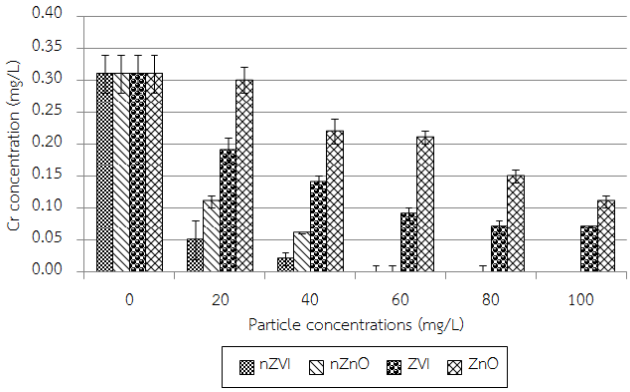
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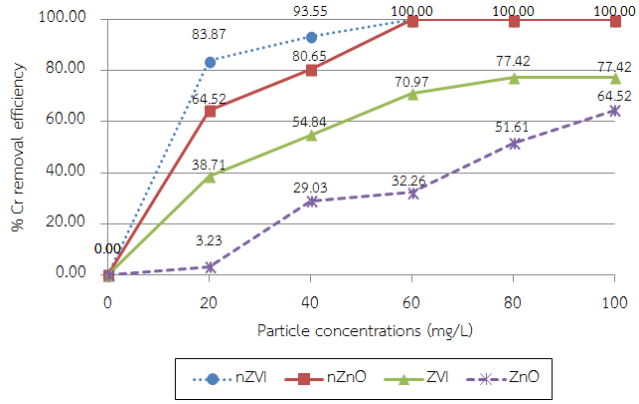
(b)

Fig. 1 Lead (Pb) treatments in the effluent discharge from the silk dyeing process by nZVI, nZnO, ZVI, and ZnO in the wastewater reactor (a) Concentrations of Pb (b) The efficiency (%) of Pb removal

The results of the removal efficiency of Pb by four types of particles with varying concentrations from 0 to 100 mg/L showed in Fig. 1. Generally, nZVI and nZnO demonstrated much higher efficiency than that of ZVI and ZnO. The overall results also indicated that the efficiency was increased according to particle concentrations. The efficiency by nZVI and nZnO with 60 mg/L concentration was found at 98.33 % and 96.67 %, respectively. Meanwhile, that with 80 mg/L and more showed 100 % removal efficiency. This efficiency was substantially higher than that of ZVI and ZnO. Though, the concentration of 60 mg/L was selected as an optimum dosage for Pb removal from the effluent discharge of the silk dyeing process.



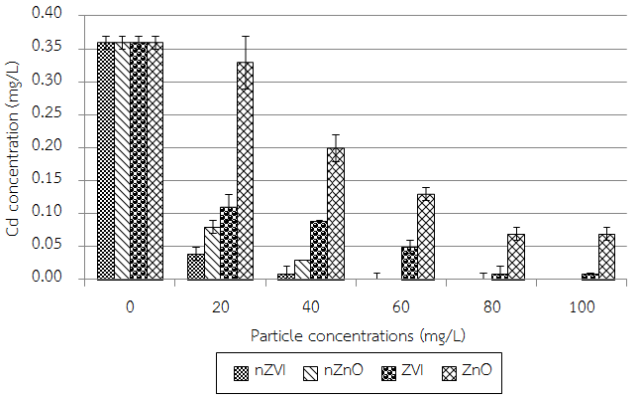
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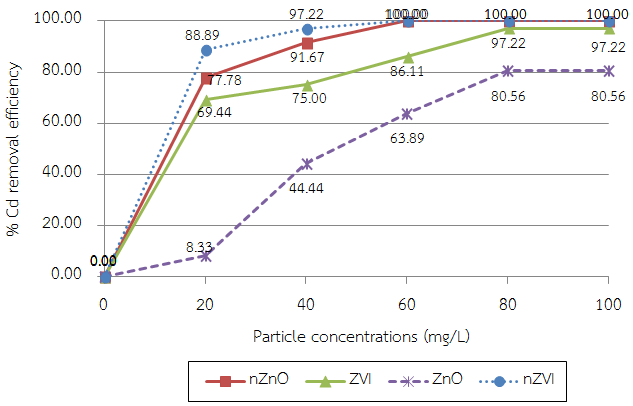
(b)

Fig. 2 Chromium (Cr) treatments in the effluent discharge from the silk dyeing process by nZVI, nZnO, ZVI, and ZnO in the wastewater reactor (a) Concentrations of Cr (b) The efficiency (%) of Cr removal

The results of the removal efficiency of Cr by four types of particles with varying concentrations from 0 to 100 mg/L showed in Fig. 2. Generally, nZVI and nZnO demonstrated much higher efficiency than that of ZVI and ZnO. The overall results also indicated that the efficiency was increased according to particle concentrations. The efficiency by nZVI and nZnO with 40 mg/L concentration was found at 93.55 % and 80.65 %, respectively. Meanwhile, that with 60 mg/L and more showed 100 % removal efficiency. This efficiency was substantially higher than that of ZVI and ZnO. Though, the concentration of 60 mg/L was selected as an optimum dosage for Cr removal from the effluent discharge of the silk dyeing process.



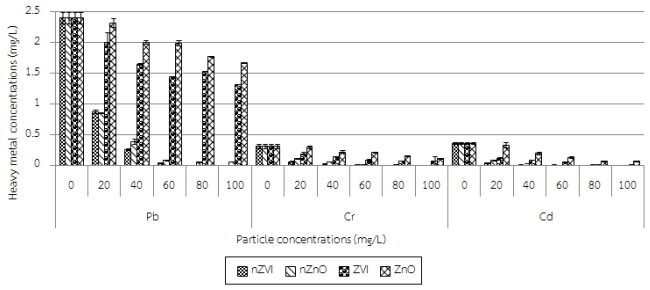
(a)



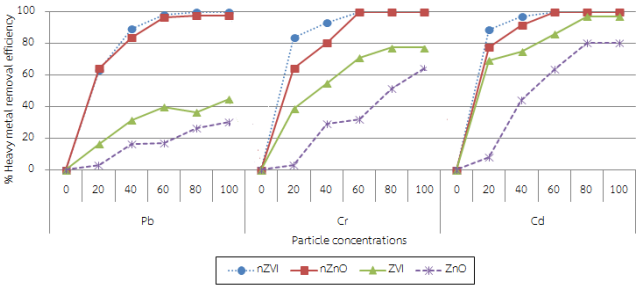
(b)

Fig. 3 Cadmium (Cd) treatments in the effluent discharge from the silk dyeing process by nZVI, nZnO, ZVI, and ZnO in the wastewater reactor (a) Concentrations of Cd (b) The efficiency (%) of Cd removal

The results of the removal efficiency of Cd by four types of particles with varying concentrations from 0 to 100 mg/L showed in Fig. 3. Generally, nZVI and nZnO demonstrated much higher efficiency than that of ZVI and ZnO. The overall results also indicated that the efficiency was increased according to particle concentrations. The efficiency by nZVI and nZnO with 40 mg/L concentration was found at 97.22 % and 91.67 %, respectively. Meanwhile, that with 60 mg/L and more showed 100 % removal efficiency. This efficiency was substantially higher than that of ZVI and ZnO. Though, the concentration of 60 mg/L was selected as an optimum dosage for Cd removal from the effluent discharge of the silk dyeing process.



(a)



(b)

Fig. 4 Heavy metal (Pb, Cr, and Cd) treatments in the effluent discharge from the silk dyeing process by nZVI, nZnO, ZVI, and ZnO in the wastewater reactor (a) Concentrations of Heavy metal (Pb, Cr, and Cd) (b) The efficiency (%) of Heavy metal (Pb, Cr, and Cd) removal

The comparison in the removal efficiency of three heavy metals (Pb, Cr, and Cd) with varying concentrations from 0 to 100 mg/L showed in Fig. 4. It was found that the initial Pb concentration (controls) in the effluent discharge of the silk dyeing process was highest (2.4 mg/L). The initial Cr and Cd concentrations (controls) were relatively similar and much less than that of Pb. The overall results also indicated that the efficiency was increased according to particle concentrations. The results of three heavy metals in terms of removal efficiency demonstrated the similar pattern. According to the experiments with micro-scale particles (ZVI and ZnO), the highest efficiency was found with Cd followed by Cr and Pb, respectively. The concentration with 60 mg/L was selected as an optimum dosage for heavy metals removal and used for future experiments.

B. The removal efficiency and the kinetic removal rates of nZVI, nZnO, ZVI , and ZnO for heavy metal removal

The removal efficiency at incubation time with an hour interval

The optimum concentration of 60 mg/L from the previous experiment was used to study the removal efficiency and the

kinetic removal rate. The samples were added with nZVI or nZnO, ZVI or ZnO and incubated for a period with an hour interval at 1, 2, 3, 4, and 5 hours.

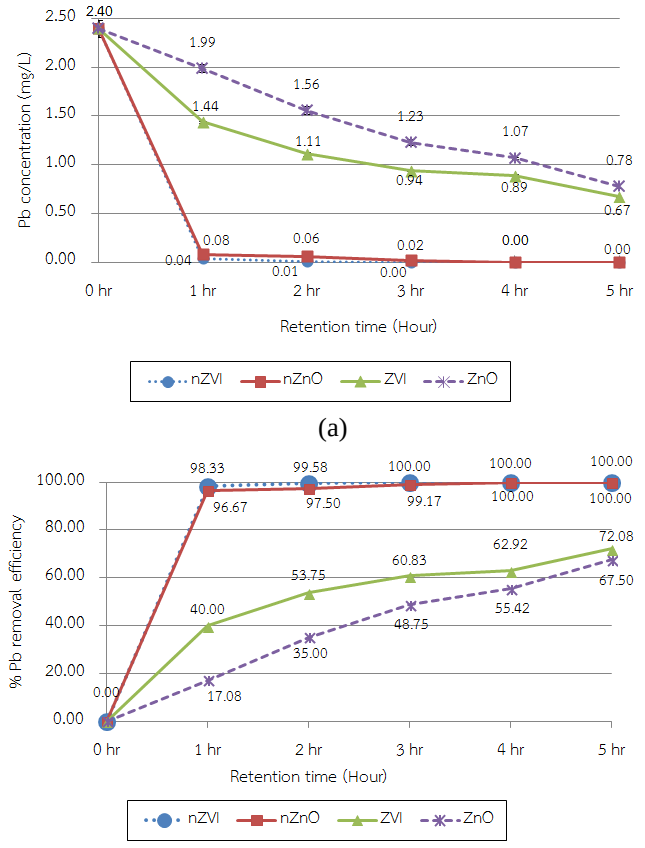


Fig. 5 Lead (Pb) treatments in the effluent discharge from the silk dyeing process by nZVI, nZnO, ZVI, and ZnO in the wastewater reactor at incubation time with an hour interval (a) Concentrations of Pb (b) The efficiency (%) of Pb removal

The results of the Pb removal efficiency with varying time showed in Fig. 5. About experiments with nanoparticles, it was found that the efficiency with hour incubation was 98.33 % and 96.67 % for nZVI and nZnO, respectively. It was up to 100 % at 3-hour incubation or more. In contrast, the experiments with micro-scale particles were found that the efficiency gradually increased from 1-hour to 5-hours. The maximum efficiency of ZVI and ZnO was found at 5-hour incubation with 72.08 and 67.50 mg/L, respectively.

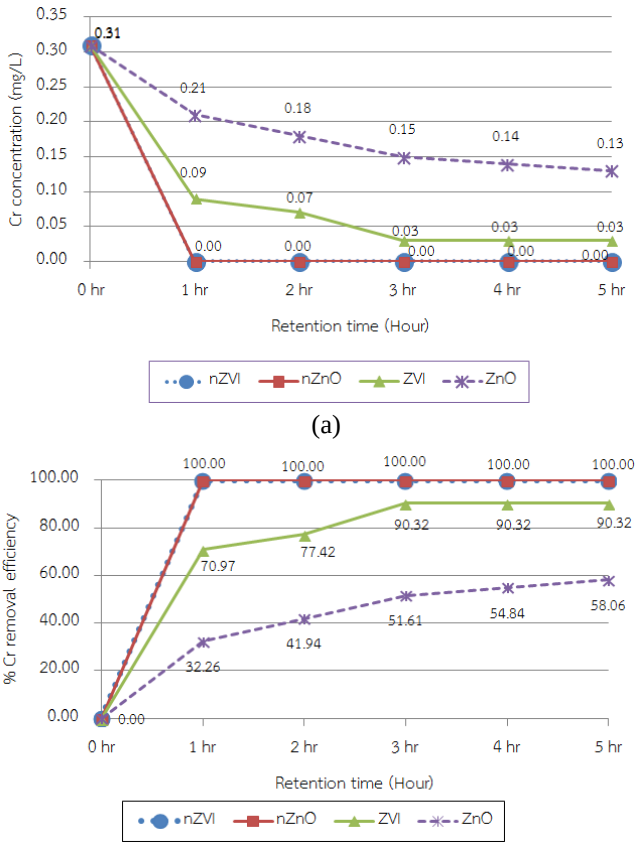
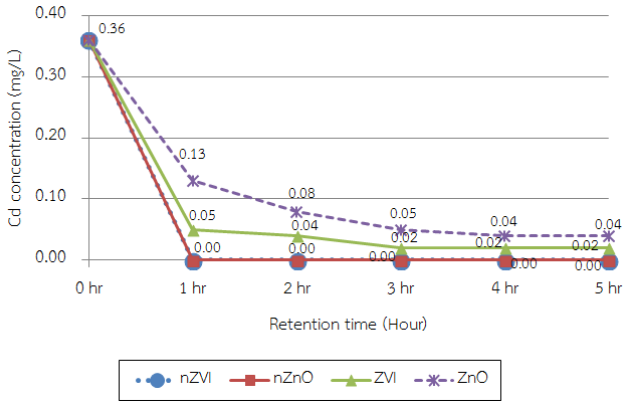
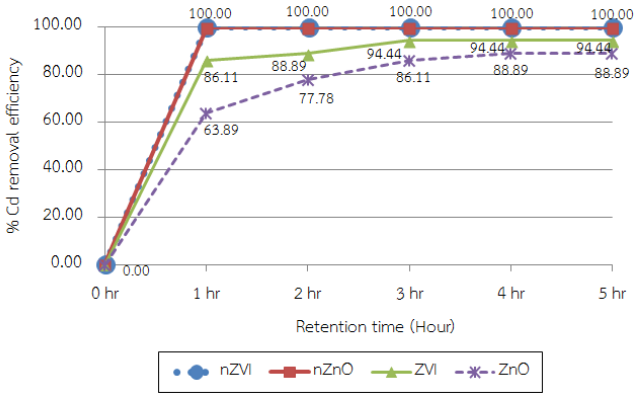


Fig. 6 Chromium (Cr) treatments in the effluent discharge from the silk dyeing process by nZVI, nZnO, ZVI, and ZnO in the wastewater reactor at incubation time with an hour interval (a) Concentrations of Cr (b) The efficiency (%) of Cr removal

The results of the Cr removal efficiency with varying time showed in Fig. 6. Concerning experiments with nanoparticles, it was found that the efficiency was up to 100 % within an hour of incubation for both nZVI and nZnO. In contrast, the experiments with micro scale particles were found that the efficiency gradually increased from 1-hour to 5-hours. The maximum efficiency of ZVI and ZnO was found at 5-hour incubation with 90.32 and 58.06 mg/L, respectively.



(a)

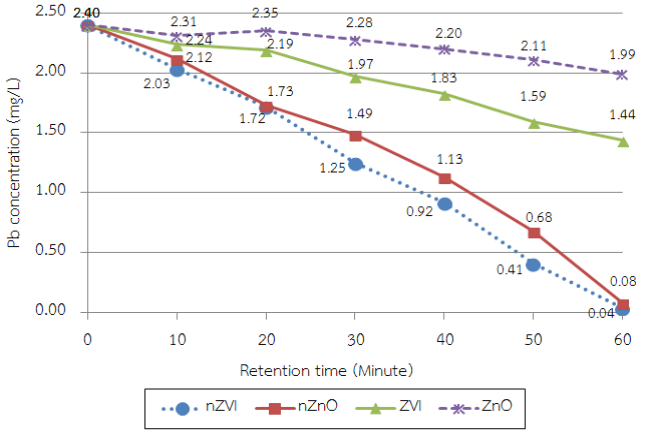


(b)

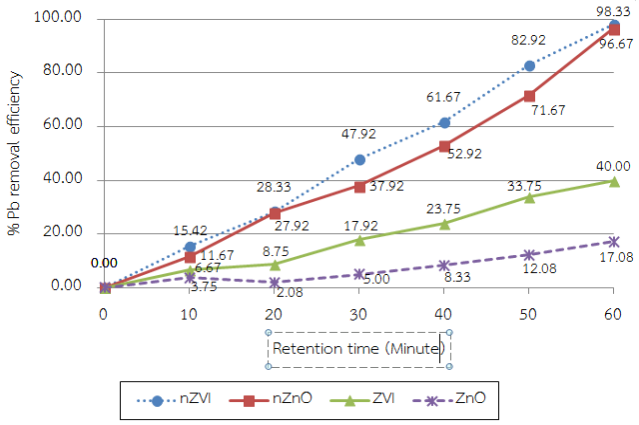
Fig. 7 Cadmium (Cd) treatments in the effluent discharge from the silk dyeing process by nZVI, nZnO, ZVI, and ZnO in the wastewater reactor at incubation time with an hour interval (a) Concentrations of Cd (b) The efficiency (%) of Cd removal

The results of the Cd removal efficiency with varying time showed in Fig. 7. Concerning experiments with nanoparticles, it was found that the efficiency was up to 100 % within an hour of incubation for both nZVI and nZnO. The experiments with micro-scale particles were found that the efficiency rapidly increased within the first hour. The maximum efficiency of ZVI and ZnO was found at 5-hour incubation with 94.44 and 88.89 mg/L, respectively.

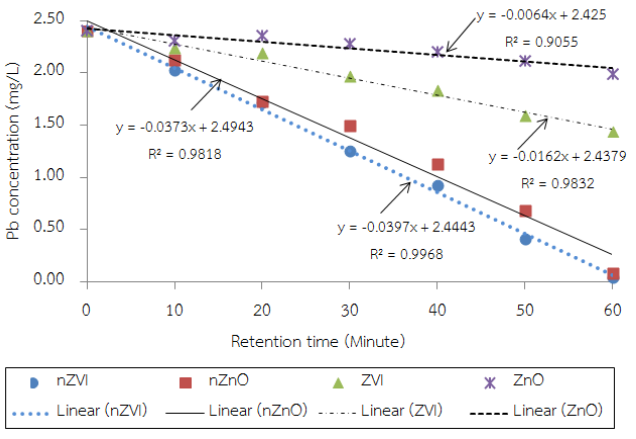
The removal efficiency at incubation time with a 10-minute interval



(a)



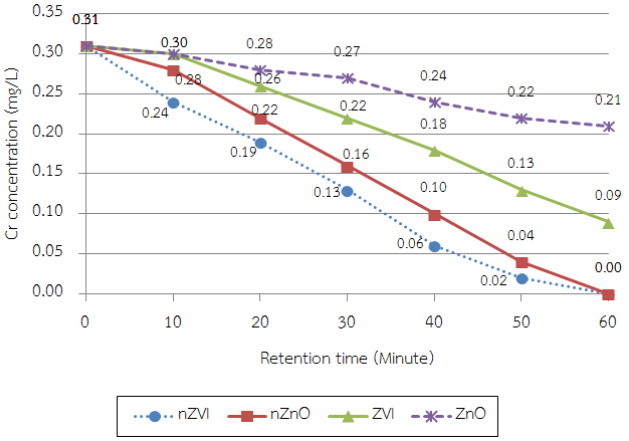
(b)



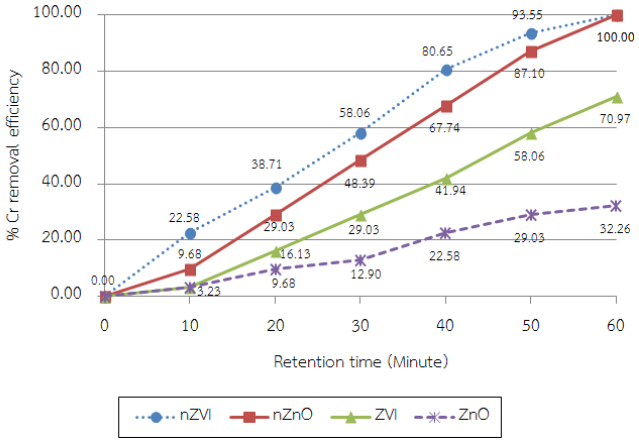
(c)

Fig. 8 Lead (Pb) treatments in the effluent discharge from the silk dyeing process by nZVI, nZnO, ZVI, and ZnO in the wastewater reactor at incubation time with the minute interval (a) Concentrations of Pb (b) The efficiency (%) of Pb removal (c) Linear equation of Pb removal

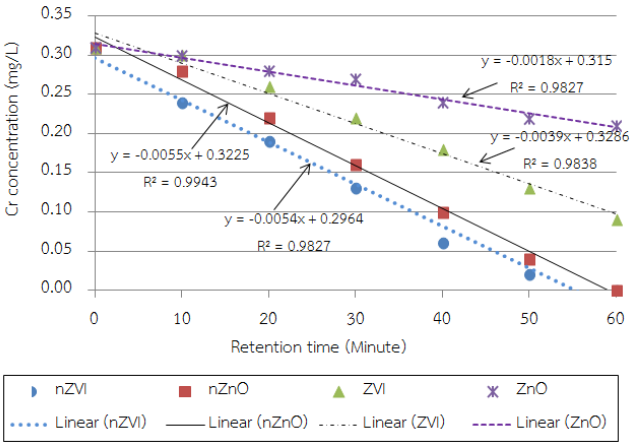
The results of the Pb removal efficiency with varying time from 0 to 60 minutes showed in Fig. 8. About experiments with nano particles, it was found that the removal efficiency gradually increased with the maximum of 98.33 % and 96.67 % at 60 minutes for nZVI and nZnO, respectively. The experiments with micro-scale particles were found that the removal efficiency gradually increased with the maximum of 40.00 % and 17.08 % at 60 minutes for ZVI and ZnO, respectively.



(a)



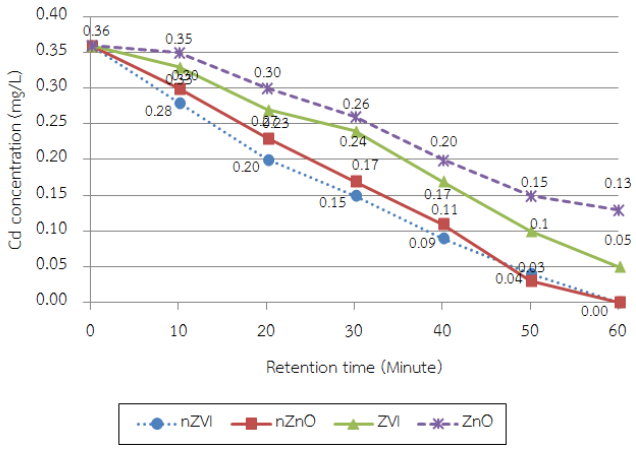
(b)



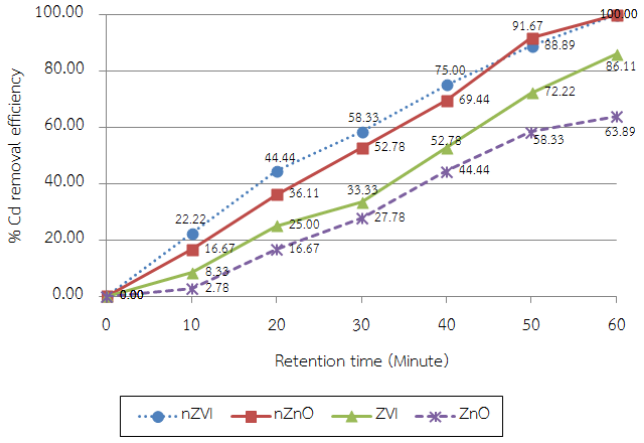
(c)

Fig. 9 Chromium (Cr) treatments in the effluent discharge from the silk dyeing process by nZVI, nZnO, ZVI, and ZnO in the wastewater reactor at incubation time with the minute interval (a) Concentrations of Cr (b) The efficiency (%) of Cr removal (c) Linear equation of Cr removal

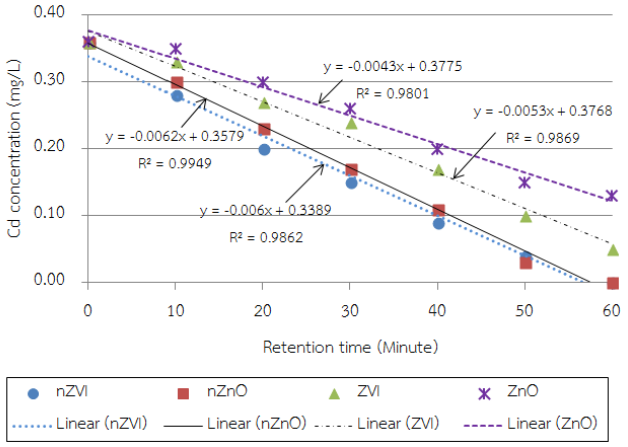
Fig. 9 showed the results of the Cr removal efficiency with varying time from 0 to 60 minutes. Concerning experiments with nanoparticles, it was found that the removal efficiency gradually increased with the maximum of 100 % at 60 minutes for both nZVI and nZnO. The experiments with micro scale particles were found that the removal efficiency gradually increased with the maximum of 70.97 % and 32.26 % at 60 minutes for ZVI and ZnO, respectively.



(a)



(b)



(c)

Fig. 10 Lead (Pb) treatments in the effluent discharge from the silk dyeing process by nZVI, nZnO, ZVI, and ZnO in the wastewater reactor at incubation time with the minute interval (a) Concentrations of Pb (b) The efficiency (%) of Pb removal (c) Linear equation of Pb removal

The results of the Cd removal efficiency with varying time from 0 to 60 minutes showed in Fig. 10. Concerning experiments with nano particles, it was found that the removal efficiency gradually increased with the maximum of 100 % at 60 minutes for both nZVI and nZnO. The experiments with micro-scale particles were found that the removal efficiency gradually increased with the maximum of 86.11 % and 63.89 % at 60 minutes for ZVI and ZnO, respectively.

The kinetic removal rates

Kinetic removal rates were plotted as semi-log to determine the first-order reaction rate of removal degradation refer to (1) and (2).

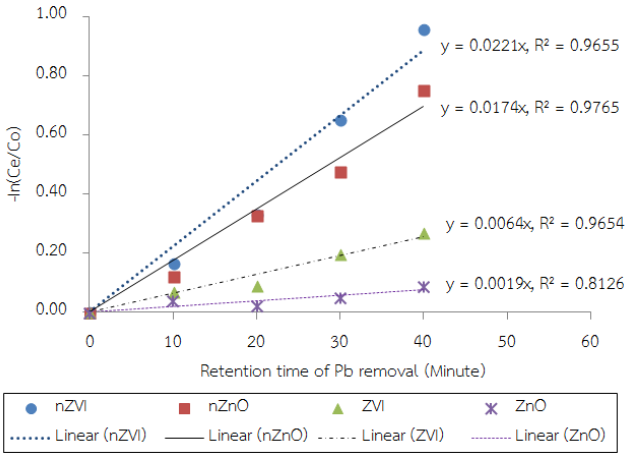


Fig. 11 Kinetic removal rates of Lead (Pb) in the effluent discharge from the silk dyeing process by nZVI, nZnO, ZVI, and ZnO in the wastewater reactor

The kinetic removal rates of Pb by four particles were showed in Fig. 11. The results demonstrated that the kinetic removal rate by nZVI was highest at 0.0221 min^{-1}. This was followed by nZnO, ZVI, and ZnO at 0.0174, 0.0064, and 0.0019, respectively.

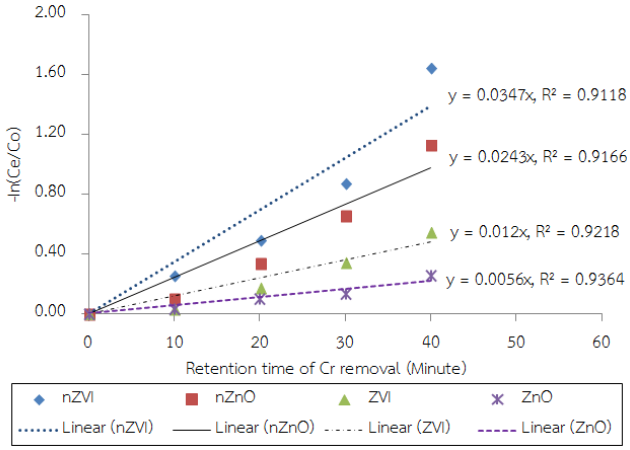


Fig. 12 Kinetic removal rates of Chromium (Cr) in the effluent discharge from the silk dyeing process by nZVI, nZnO, ZVI, and ZnO in the wastewater reactor

The kinetic removal rates of Cr by four particles were showed in fig. 12. The results demonstrated that the kinetic removal rate by nZVI was highest at 0.0347 min^{-1}. This was

followed by nZnO, ZVI, and ZnO at 0.0243, 0.0120, and 0.0056, respectively.

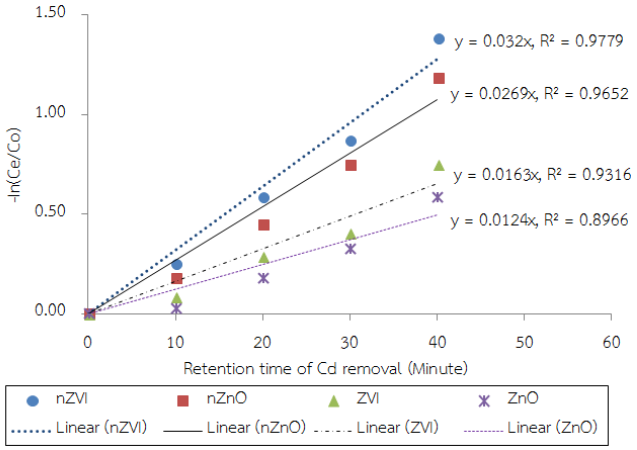


Fig. 13 Kinetic removal rates of Lead (Pb) in the effluent discharge from the silk dyeing process by nZVI, nZnO, ZVI, and ZnO in the wastewater reactor

The kinetic removal rates of Cd by four particles were showed in fig. 13. The results demonstrated that the kinetic removal rate by nZVI was highest at 0.0320 min^{-1}. This was followed by nZnO, ZVI, and ZnO at 0.269, 0.0163, and 0.0124, respectively.

IV. DISCUSSION

Generally, nZVI and nZnO demonstrated much higher efficiency than that of ZVI and ZnO. The results also indicated that the efficiency was increased according to particle concentrations. The results of three heavy metals in terms of removal efficiency demonstrated a similar pattern. According to the experiments with micro-scale particles (ZVI and ZnO), the highest efficiency was found with Cd followed by Cr and Pb, respectively. The concentration of 60 mg/L was selected as an optimum dosage for heavy metals removal. According to the results of the removal efficiency with varying time, it was found that the removal efficiency gradually increased. The results showed the optimal time at 60 minutes for all four heavy metals. The kinetic removal rate by nZVI was highest and followed by nZnO, ZVI, and ZnO for all four heavy metals.

V. CONCLUSION

The optimum dosage was found at 60 mg/L for all types of heavy metals and all types of particles. The highest efficiency and kinetic rates were found with nZVI followed by nZnO, ZVI, and ZnO, respectively.

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Factors Affecting Health Tourism Promotion for the Elderly in Nakhon Nayok Province, Thailand

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***Abstract*— *The objectives of this research were 1) to study health tourism behaviors of the elderly tourists and 2) to analyze factors affecting health tourism promotion for the elderly in Nakhon Nayok Province. The samples were 400 elderly tourists visiting health tourism attractions in Nakhon Nayok randomized by convenience sampling. The research instrument was a questionnaire and analyzed by frequency, percentage, mean, standard deviation, correlation coefficient, and multiple regression. The research results indicated that health tourism behaviors of the elderly were at a high level in all aspects: knowledge of health tourism, skills for tourism, and attitudes toward tourism. Tourism based on natural farming, organic farming, and the new theory agriculture in accordance with His Majesty's initiative were the most demanded. Moreover, the results revealed that there should be promoting tourist attractions of abundant nature and biodiversity, such as agro tourism attractions, culture attractions, creative tourism attractions, and natural health tourism. Regarding hypothesis testing, demographic differences, namely, age, education and income, affected health tourism promotion for the elderly at the statistically significant level of .05. Tourism behaviors of the elderly were positively related to health tourism promotion: knowledge of health tourism (r=0.480), skills for tourism (r=0.282), and attitudes toward tourism (r=0.517). Based on the results of multiple regression analysis, knowledge of health tourism and attitudes toward tourism affected health tourism promotion for the elderly, and the predictive equation was* $Y = 1.075 + 0.246X_1 + 0.370X_2$.

***Index Terms*— Health Tourism, Tourism Promotion, Elderly Tourists**

I. INTRODUCTION

Thailand is becoming an ageing society because in 2002 there was an increase of the population aged 60 years or over by 10% and it was predicted that in 2021 Thailand will be the super-aged society. Under this circumstance, public services will be greatly needed, especially health care and the government has to allocate a lot of budgets to support these services [1]. The deterioration of health in the elderly becomes progressively worse over time in terms of physical and mental conditions. Feeling of losing power and worthlessness of the elderly affects self-care and the quality of life. On the other hand, if the elderly keep doing the activities to maintain the social status, they will be raised in the sense of social acceptance resulting in an increase of reinforcement and confidence in self-care. According to Thailand's national strategy, tourism is one of important policies in the economic and social development plan. However, because of an increase of the elderly the population structure is changing; this affects the national development and tourism in the future [2]. Nowadays, health tourism is increasingly popular because it is a kind of special interest tourism that combines visiting tourist attractions and health activities involving with health healing, such as cosmetic surgery, dental care, and so on; or involving with health promotion, such as Thai traditional medicine, healthy food, natural agriculture, mineral bath, meditation, and so on [3]. Nakhon Nayok Province is not far from Bangkok, the capital city of Thailand that is rich in abundant natural resources and biodiversity, so there are many community-based tourism attractions. Consequently, tourism is integrated with Thai wisdom, for example, alternative medicine with healing herbs [4]. Although the businesses of health tourism keep growing, the services do not cover the tourists' interests because they are changing over time. Furthermore, the potentials of the traveling entrepreneurs do not respond to the needs of the tourists and do not connect with the producers resulting in loss of commercial opportunities. For these reasons, the researchers were interested in studying factors affecting health tourism promotion for the elderly in Nakhon Nayok Province in order to explore the elderly tourists' behaviors for the development of health tourism promotion for the elderly in the future.

.II. RESEARCH OBJECTIVES

The objectives of this research were 1) to study health tourism behaviors of the elderly tourists and 2) to analyze factors affecting health tourism promotion for the elderly in Nakhon Nayok Province, Thailand.

III. RESEARCH METHODS

A. Research Design

This research employed a quantitative method and the samples were 400 elderly tourists visiting health tourism attractions in Nakhon Nayok calculated according to the Cochran formula [5] with a 95% confidence level and an uncertainty of ± 0.05, and randomized by convenience sampling. The research instrument was a 5 rating scale questionnaire validated by 3 experts (IOC = 1.00) and tried out on the 30 elderly to measure the internal consistency ($\alpha = 0.964$). There were 4 parts of the questionnaire: demographic information, health tourism behaviors of the elderly, patterns for the elderly tourist activities, and health tourism promotion. The collected data were analyzed by mean and standard deviation; in addition, the hypotheses were tested by correlation coefficient and multiple regression.

B. Research Process

This research was divided into 4 steps as shown in Fig 1: literature review, creating the research instrument, conducting the research, and analyzing the research results.

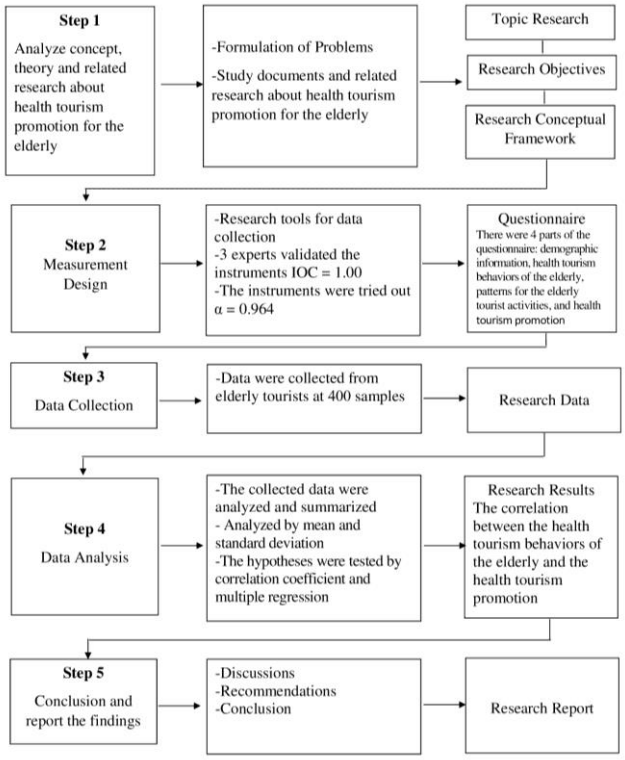


Fig.1 Research process

IV. RESULTS

The research results could be separated into 2 main parts: the findings from the questionnaire and the hypothesis testing. The first part of the questionnaire was about the demographic information. The results showed that the respondents were 260 female (65.00%) and 140 male (35.00%) and the most respondents were 157 elderly aged between 60 and 69 years old (39.25%). The education of most respondents was in primary level (206 elderly or 51.50%), and the salary of most respondents (271 elderly) was less than 10,000 baht/month (67.75%).

The overall health tourism behaviors of the elderly were at a high level ($\bar{x} = 4.32$, S.D. = 0.53).

Considering each aspect of the health tourism behaviors of the elderly, it found that every aspect was at a high level: attitudes toward tourism ($\bar{x} = 4.47$, S.D. = 0.52), knowledge of health tourism ($\bar{x} = 4.38$, S.D. = 0.58), and skills for tourism ($\bar{x} = 3.38$, S.D. = 0.79). The results were shown in Table 1.

Table 1 The health tourism behaviors of the elderly visiting Nakhon Nayok Province, Thailand

The health tourism behaviors of the elderly visiting Nakhon Nayok Province, Thailand	$\bar{x}$	SD.	Level	Ranking
knowledge of health tourism	4.38	0.58	High	2
skills for tourism	3.83	0.79	High	3
attitudes toward tourism	4.47	0.52	High	1
Total	**4.23**	**0.53**	**High**	

Regarding patterns for the tourist activities, the elderly visiting Nakhon Nayok Province, Thailand had the needs of health tourism at the high level ($\bar{x}$ = 3.79, S.D.= 0.58) as shown in Table 2. Wellness tourism and medical tourism were at a high level. The former was $\bar{x}$ = 4.00 and S.D. = 0.58; and the latter was $\bar{x}$ = 3.58 and S.D. = 0.79.

Table 2 The patterns for the tourist activities for the elderly

The patterns for the tourist activities for the elderly	$\bar{x}$	SD.	Level	Ranking
Wellness tourism	4.00	0.58	High	1
medical tourism	3.58	0.79	High	2
Total	**3.79**	**0.58**	**High**	

Since the wellness tourism was the highest, each aspect of wellness tourism was analyzed in details and it found that the most interesting activities for the elderly were visiting natural farming, organic farming, and the new theory agriculture in accordance with His Majesty's initiative at a high level ($\bar{x}$ = 4.34, S.D. = 0.79) following by experiencing healthy food and drinks ($\bar{x}$ = 4.25, S.D. = 0.68), and having traditional Thai massage ($\bar{x}$ = 4.24, S.D. = 0.81). The results were shown in Table 3.

Table 3 The needs of wellness activities

The needs of wellness activities	$\bar{x}$	SD.	Level	Ranking
1. Traditional Thai massage	4.24	0.81	High	3
2. Foot massage	4.09	0.89	High	6
3. Herbal compress massage and herbal steam	4.19	0.76	High	4
4. Aroma therapy	3.63	1.06	High	9
5. Water therapy	3.34	1.20	moderate	10
6. Meditation	4.12	0.75	High	5
7. Healthy food and drinks	4.25	0.68	High	2
8. Herbal health and beauty products	3.98	0.87	High	7
9. Natural farming, organic farming, and the new theory agriculture in accordance with His Majesty's initiative	4.34	0.79	High	1
10. Biodiversity and natural resources	3.86	1.00	High	8
Total	4.00	0.58	High	

The research results of health tourism promotion for the elderly were at a high level in all aspects ($\bar{x}$ = 3.93, S.D. = 0.59) as shown in Table 4. There were 8 aspects to be considered for the health tourism promotion: attractiveness, accessibility, facilities, tour itinerary planning, tourist activities, travel-related services, community participation, and public relations.

Table 4 The health tourism promotion for the elderly

The health tourism promotion for the elderly	$\bar{x}$	SD.	Level	Ranking
attractiveness	4.24	0.53	High	1
accessibility	4.03	0.74	High	2
facilities	3.91	0.75	High	4
tour itinerary planning	3.83	0.89	High	6
tourist activities	3.88	0.73	High	5
travel-related services	3.78	0.73	High	8
community participation	3.82	0.75	High	7
public relations	3.96	0.73	High	3
Total	**3.93**	**0.59**	**High**	

As can be seen in Table 4 above, the highest was attractiveness ($\bar{x}$ = 4.24, S.D.= 0.53) following by accessibility ($\bar{x}$ = 4.03, S.D.= 0.74), public relations ($\bar{x}$ = 3.93, S.D.= 0.73), facilities ($\bar{x}$ = 3.91, S.D.= 0.75), tourist activities ($\bar{x}$ = 3.88, S.D.= 0.73), tour itinerary planning ($\bar{x}$ = 3.83, S.D.= 0.89), community participation ($\bar{x}$ = 3.82, S.D.= 0.75), and travel-related services ($\bar{x}$ = 3.78, S.D.= 0.73).

Each aspect of attractiveness of the tourist attractions was analyzed and the results showed that the highest was tourist attractions of abundant nature and biodiversity, such as agritourism attractions, culture attractions, creative tourism attractions, and natural health tourism ($\bar{x}$ = 4.32, S.D. = 0.64) following by well-known and popular tourist attractions ($\bar{x}$ = 4.27, S.D. = 0.74), and clean and pleasant tourist attractions ($\bar{x}$ = 4.23, S.D. = 0.66) as shown in Table 5.

Table 5 The health tourism promotion for the elderly in terms of attractiveness

The health tourism promotion for the elderly in terms of attractiveness	$\bar{x}$	SD.	Level	Ranking
1. Well-known and popular tourist attractions	4.27	0.74	High	2
2. Abundant nature and biodiversity, e.g. agritourism attractions, culture attractions, creative tourism attractions, and natural health tourism	4.32	0.64	High	1
3. Standard healthcare services, e.g. hospitals, spa and massage establishments, etc.	4.19	0.71	High	5
4. Readiness of tourist attractions	4.19	0.63	High	4
5. Clean and pleasant tourist attractions	4.23	0.66	High	3
Total	**4.24**	**0.53**	**High**	

Next, the hypotheses were tested of the significant correlation efficient between the health tourism behaviors of the elderly and the health tourism promotion. The results were shown in Table 6.

Table 6 The correlation between the health tourism behaviors of the elderly and the health tourism promotion

Factor	X1	X2	X3	Y
X1 knowledge of health tourism	1.000			
X2 skills for tourism	0.498**	1.000		
X3 attitudes toward tourism	0.687**	0.538**	1.000	
Y the health tourism promotion	0.480**	0.282**	0.517**	1.000
**p < .01				

Table 6 showed that knowledge of health tourism and the health tourism promotion were at low correlation (r=0.480), skills for tourism were at very low correlation (r=0.282), and attitudes toward tourism were at medium correlation (r=0.517). Also, the results indicated that the health tourism behaviors of the elderly and the health tourism promotion were positively correlated at the statistically significant difference of .01.

According to Table 7, the hypothesis testing was also applied by multiple regression with enter method. The relationship between the health tourism behaviors of the elderly and the health tourism promotion were statistically significant at the difference of .01 ($F = 56.217$, $p < .01$). The predictor variables were knowledge of health tourism, skills for tourism, and attitudes toward tourism. The predictive power was 29.80 ($R=0.546$, $R^2 =0.298$) and the predictive equation could be formulated as $Y = 1.075 + 0.246X_1 + 0.370X_2$.

Table 7 The hypothesis testing with multiple regression

The health tourism behaviors of the elderly	Unstandardized Coefficients		Standardized Coefficient	t	Sig
	B	Std. Error	Beta		
(Constant)	1.075	.222	-	4.838	.000
knowledge of health tourism	.249	.060	.246	4.156	.000
skills for tourism	-.030	.038	-.040	-.782	.435
attitudes toward tourism	.421	.069	.370	6.068	.000
R = 0.546 R Square = 0.298, Std.Error of the Estimate = 0.496 F = 56.127, Sig = 0.000					

V. DISCUSSIONS

1. Health tourism behaviors of the elderly tourists

According to the research results, overall health tourism behaviors of the elderly tourists were at a high level as well as each aspect of the behaviors, namely, attitudes toward tourism, knowledge of health tourism, and skills for tourism. This is because the elderly agree that tourism can reduce stress, so they would like to look after the physical and mental health. Participating in health tourism can make the elderly healthier and raised in a sense of social acceptance. Also, Nakhon Nayok Province is rich in natural resources, very convenient to travel, with enough healthcare services, and potential for carrying the tourists. These factors satisfy and interest the elderly tourists resulting in the positive attitudes from travel experiences and the return of tourists in Nakhon Nayok Province [6],[7]. In addition, [8] said that the elderly tourists had the different tourism behaviors from general tourists because high quality tourism and hospitality greatly satisfied the elderly tourists by taking consideration of standard services, health care, and appropriate activities for age and health. This is consistent with the research of [7] that the elderly in Nakhon Nayok were healthy at a high level by self-care, and accessibility of health service.

2. The patterns for the tourist activities for the elderly Referring to the research results, it found that both kinds of the health tourism: wellness tourism, and medical tourism, were demanded at a high level. This is because health tourism becomes more popular among the elderly including there are many beautiful natural tourist attractions with local culture, and peaceful and delightful destinations. As [9] said earlier, health tourism, for example, visiting beautiful natural tourist attractions or culture attractions as well as learning lifestyles and relaxing were the activities for promoting and restoring health. But when considering each activity, it found that natural farming, organic farming, and the new theory agriculture in accordance with His Majesty's initiative were the highest because Nakhon Nayok Province is popular with natural tourist attractions and agritourism attractions and makes the elderly relaxed and amused with doing the activities and learning the agriculture concurrently. This is consistent with [6] that the top three tourist attractions for the elderly interested in were 1) Bhumirak Dhamachart Natural Center Project (the royal nature conservation center), 2) Suansriya (learning center with agritourism), and 3) Thung Yai Pak Phi (the natural learning center). Also, [10] said that the most favorite activity of the elderly was eating organic vegetables.

3. Health tourism promotion for the elderly

The overall health tourism promotion for the elderly in Nakhon Nayok Province was at a high level. Regarding each aspect, it showed that the attractiveness of abundant nature and biodiversity, such as agritourism attractions, culture attractions, creative tourism attractions, and natural health tourism, was the highest. [6] said that there were a variety of natural resources including forests, waterfalls, mountains, good weather, and abundant environment in Nakhon Nayok Province, so it was popular among tourists and these attractions were supposed to be suitable for the elderly. And [11] found that health tourism attractions the elderly were interested in were the natural tourist attractions. This is consistent with [12] that the attractiveness of health tourist attractions were natural tourist attractions, famous meditation retreats, spa and massage establishments.

4. The hypothesis testing

Regarding demographic information, the elderly with gender differences had no statistically significant difference in the health tourism behaviors and health tourism promotion related to [11] that genders did not affect decision-making to travel for health care as well as health tourism promotion. While the age differences influenced health tourism and health tourism promotion differently. This is because the elderly tourists under 80 years old are still healthier, more vigorous, and more independent than that over 80 years old. This is consistent with [13], and [14] the older people are more risky to physical and mental health problems. Also, the educational differences of the elderly affected health tourism and health tourism promotion differently because the elderly with higher education prefer learning new things resulting in having new visions and new experiences related to [15], and [16] that the tourists with different education had the differences of tourism behaviors. Furthermore, the salary differences of elderly differently influenced the health tourism and health tourism promotion because the higher the elderly had salary, the greater buying power they had, so that they had more opportunities to travel and participate in tourism activities related to [17] that the pensioners were more likely to participate in recreation and tourism activities than the elderly receiving the old age allowance. Moreover, [18] found that the elderly with different sources of income differently had health behaviors at the statistical significance level of .05.

According to the results of a multiple regression analysis by enter method between health tourism behaviors of the elderly and the health tourism promotion, the regression coefficients of knowledge of health tourism and attitudes toward tourism were .249 and .421 respectively and they were statistically significant at level of .01. This is because the elderly tourists with knowledge of tourism promote health tourism for the elderly because it is relaxing and fosters health improvement in terms of physical and mental health brought to positive attitude and then decision-making to travel for health care. Like [19], it found that attitudes influenced the decision-making to travel at the statistically significant level of .05.

VI. RECOMMENDATIONS

A. Recommendations for Practices

1. According to the research results, the activities that should be provided in the itinerary were different and interesting and meet the elderly's needs, for example, agritourism with biodiversity including with a silvan atmosphere, healthy food and drinks provided, traditional Thai massage, herbal steam, and meditation. Furthermore, there should be activities that the elderly could participate in the local communities or try to learn and do something new.

2. The health tourism attractions should be easy to get to, convenient, and safe for the elderly tourists as well as providing the tourism guideline on websites. And they should be improved and developed to carry the tourists.

3. The enough accommodations and facilities should be provided for the elderly in the tourism areas, also the quality of security and public utilities should be improved to support the future activities and elderly tourists.

4. The health tourism officers should be service-minded, skillful, able to organize a trip, and enough for a number of the elderly tourists.

5. There should be using social media for health tourism public relations, such as mobile applications, Facebook, YouTube, and so on in order to make the health tourism information available for everyone.

B. Recommendations for Further Research

1. There should extend the research results to study in terms of the marketing and public relations for the tourists making decisions for health tourism and participating in the health activities.

2. The qualitative research should be applied in the future research by in-depth interview. And the results would be used as a guideline to develop the health tourism attractions.

CONCLUSION

Getting insight of the health tourism behaviors of the elderly can be exploited to improve the strategic plans in order to meet the elderly's needs. The results from the analysis of knowledge of the health tourism and attitudes toward tourism of the elderly showed that they needed tourism for new experiences and learning new things including natural beauty, culture, lifestyles, and learning participation, such as knowledge exchange of health leading to self-care and transferring knowledge to the others. Consequently, the elderly would feel relaxed, relieve stress and improve their health. Moreover, Nakhon Nayok is aimed at tourism, so it has a lot of outstanding tourist attractions. It is also easily accessible with enough health care services. These factors can attract and satisfy the elderly tourists, so these results would be beneficial for health tourism entrepreneurs to adopt and adapt the strategic plans for customer-focused management of health tourism.

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The Diversity of Local Wisdom, Art and Cultural in Yangon, Republic of the Union of Myanmar

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Abstract— *The Republic of the Union of Myanmar has the largest territory in South East Asia, border with China, India and Thailand which results the diversity in local wisdom, art and cultural and also ethnic groups. This study aims to gather the knowledge and develop multimedia of local wisdom, art and cultural in Yangon. For data collection, both primary data (survey and interview) and secondary data are applied in this research. This study is the research collaboration between Thepsatri Rajabhat University and University of Yangon. The series of multimedia in "The Diversity of Local Wisdom, Art and Cultural in Yangon, Republic of the Union of Myanmar" are developed in 7 categories as 1) Myanmar..the land of rice field and river, 2) The local wisdom in performing art, 3) Yangon, 4) The local wisdom in art and craft, 5) The local wisdom in art and cultural, 6) The biodiversity and tourist attraction in Yangon, 7) The local wisdom in Myanmar cuisine. The evaluation of production quality by 5 experts reveals that the multimedia is attractive with useful and understandable content/sound, also appropriate to utilize as a learning resource.*

Index Terms— ***Local wisdom, Art and Culture, Yangon, Myanmar***

I. INTRODUCTION

Myanmar or the Republic of the Union of Myanmar, the largest country in South East Asia, boarded by China and India where Tenasserim hills is in between Myanmar and Thailand in their northern and central region. The richness of natural resource is the prominent point including agricultural land, mineral orc, and petroleum. The art and cultural of Myanmar are also of interesting aspect to investigate as a result of diversity in culture and racial. In present, western culture currently has an influence and changing society; such as technology advancement, living, clothing, cuisine, social manner, or education system which result in the risk of loss in traditional knowledge, culture, art, and local language [1]. For this reason, this research aims to study and gather data regarding "the diversity of local wisdom, art and cultural in Yangon, Republic of the Union of Myanmar" in purpose to protect precious knowledge from the loss. The collected knowledge would collect in the form multimedia which is attractive and easy to understand.

II. RESEARCH OBJECTIVES

Data gathering, analyzing in "the local wisdom, art and culture of Yangon, the union of Myanmar", developing into a series of multimedia and evaluate production quality are the main research investigation.

III. RESERCH METHODOLOGY

Materials and Methods [2,3]

1. Secondary research in related context which are socio-cultural context, local wisdom, and knowledge transferred.

2. Primary research is applied in this study using field survey and interview to gather wisdom of knowledge in Art and Cultural in research field.

3. Data Triangulation: to confirmed the validity and reliability of data before the production phase.

Film Production [4,5,6,7]

4. Pre-production

4.1 Develops the production schedule and define the location.

4.2 Prepares the movie script with quality, value, performance, ethic.

5. Production

Conducts video production followed by production schedule. The 57 episodes of multimedia are developed. The length of each episode is about 3 minutes.

6. Post-production

6.1 Audio post production and video editing using Adobe Photoshop, Adobe Illustrator, Adobe Premiere Pro, Adobe Audition, Adobe after Effects, DVD Encoder, Macromedia Flash, Stop Motion Pro 4.0 and Nero Express

6.2 Validation and correction.

7. Evaluation

Evaluates the quality of multimedia production in appropriateness, timeline, duration, attractiveness, and content with 5 experts in multimedia production.

8. Edits and Revises the multimedia.

9. Summarizes and develops the final report.

Data Analysis [8,9]

1. Content analysis is applied to summarizes and develops data into document and multimedia production.

2. Qualitative analysis is applied to evaluates the production quality of multimedia in 6 main issues.

IV. RESEARCH RESULTS

The results are presented into 2 parts;

(1) Multimedia production

The multimedia in "The Diversity of Local Wisdom, Art and Culture in Yangon, Republic of the Union of Myanmar" is developed 57 episodes. The length of each episode is approximately 3 mins, the appropriate duration to get audience attention. The content is divided in 8 categories as follows;

1. Myanmar…the land of rice field and river

Myanmar, officially the Republic of the Union of Myanmar is the country in Southeast Asia, is the country of great ancient civilization with the long mountain range and the large forest area as well as the distinctive style of pagoda, the Buddhist monk in dark red brown robe, and the city of artistic teak. Myanmar also considered as the country of ethnically diverse with more than 135 distinct ethnic groups with more than 242 different ethnolinguistic groups. In present, there are more than 60 million population. Mainly 8 major national ethic races as (1) Bamar, (2) Kachin, (3) Kayah, (4) Kayin, (5) Chin, (6) Mon, (7) Rakhine, and (8) Shan [10,11]. Myanmar is also known as a country of magnificent culture with the long history and grand architecture. A long great history the majority culture is influenced by Theravada Buddhism which manifested in their language, music, cuisine and the place of worship as a center of life. The faint in religion is on the mind of all people. There are variety in Myanmar cuisine, Way of Life, and Social Living in regard to the myriad of ethnic group. In this category, there are 18 episodes as follows; 1) Ways of Life, 2) The Great Faith, 3) History of Myanmar, 4) Tradition and Culture, 5) The Circle of Season, 6) The Land of Agriculture, 7) The Land of Mineral Resource, 8) the Ethnicity and Diversity, 9) Religion, Faith, Believe, 10) The Spirit of Myanmar, 11) Naming and Believing, 12) Sport and Recreation, 13) Clothing and Apparel, 14) TANAKA "the Secret of Beauty", 15) Betel Chewing, 16) "Longyi, the Traditional Style of Myanmar Wearing", 17) The Golden and Silver Multi-Tiered Umbrella, 18) the Blessing Card, the Key of Victory.




Figure 1(a) Myanmar…the land of rice field and river




Figure 1(b) Myanmar…the land of rice field and river

2. Myanmar Traditional Performing Art

Traditional music comedy and dance drama have a fundamental inspiration from myth as well the moral and religion precept of Buddhist and Brahman. Dancing is the main type of performing art during the festival in Myanmar

called "Pwe". The most famous is "Zat Pwe duet dance" which is all night performances which combine melodrama, slapstick, traditional dance, and even pop music. In addition, Myanmar puppet show or "Yokhe Pwe" is a special performance compared with the other performance as a set consists of at least 28 puppets. Some puppet has around 60 strings controller while each puppet has its own particular way of dancing, with accompanying music and song. In this category, there are 3 episodes as follows; 1) Myanmar Traditional Dancing, 2) Myanmar Traditional Dancing Drama, 3) Myanmar Traditional Puppet Show.



Figure 2 Myanmar Traditional Performing Art

3. Yangon…the City of History

Yangon or previously known as Dagon is Myanmar's largest city and a place of tourist destination as it is a historically important with ethnic diversity and religions which surrounded with the river as its traditional peninsula setting between Bago, Yangon, and Hlaing river. The upstream river is on the Pegu mountain range roundabout the west to the south of city through Shwedagon Pagoda and the gulf of Martaban. Yangon is a city of main trading port, 30 kilometers away from the deep-sea port, with wonderful array of colonial-era buildings. In this category, there is 1 episode: Yangon… the city of history.



Figure 3 Yangon… the city of history

4. Myanmar Local Wisdom of Art and Craft

Art and Craft of Myanmar are categorized into 10 types called "Pan Sel Myo" as Panchi (painting), Punpu (wood sculpture), Panbe (iron work), Panyun (handicraft), Panpoot (wood rubbling), Panyan (constructing), Pantaut (decorative floral design), Pantamaut (stone curving), Patain (making object with gold and silver), Pante (making material with copper bronze or brass). Myanmar traditional woven fabric is reflecting the ways of life and performs as the record of history. "Lun taya or Lun taya acheik" is a distinctive wave pattern of Myanmar textile. In this category, there are 7 episodes as follows; 1) Myanmar Traditional Craftsman, 2) Yun-The, Myanmar Traditional Lacquerware, 3) Myanmar Woven Fabric, 4) Metalware, 5) Wood Sculpture, 6) Wooden Figure Sculpture, 7) Needlecraft.



Figure 4 Myanmar Local Wisdom of Art and Craft

5. Myanmar Religion, Believe, Sanctity and Monastery

Myanmar also considered as the country of ethnically diverse with more than 67 distinct ethnic groups while the majority culture is influenced by Theravada Buddhism with strong faint and believe on the mind of people which affect in Myanmar cuisine, Way of Life, and Social Living in regard to the myriad of ethnic group. Shwedagon Pagoda, the great golden pagoda in Yangon is the one of five most sacred and impressive Buddhist site for the people of the Union of Myanmar as reflection of Myanmar religion, believe, sanctity and monastery. In this category, there are 16 episodes as follows; 1) Wisdom of Knowledge in Religion, Believe, and the Concept of Fine Arts, 2) Shwedagon Pagoda, 3) Sule Pagoda, 4) Kyauk Htat Gyi Buddha, 5) Botatuang Pagoda, 6) Bo Bo Gyi, the Myanmar Guardian Spirit, .7) Nan Oo, the Statue of Buddha, 8) Mya Nang New, the Myanmar Guardian Spirit, 9) Nga htat Gyi Pagoda, 10) Kaba Aye Pagoda, 11) The Great Cave..Maha Pasana Guha, 12) The Mable Buddha, Kyauk Taw Gyi Pagoda, 13) Swe Taw Myat Pagoda, 14) Royal White Elephant Garden, 15) Mahabandoola Park, 16) Colonial Architecture.



Figure 5 Myanmar Religion, Believe, Sanctity and Monastery

6. Biodiversity and Botanical Tourism in Yangon

Myanmar is one of the countries with rich of natural resources. Yangon is considered as the largest city in Myanmar. However, there is diversity of plants and animals. Kandawgyi lake and Inya lake are the main lake in Yangon to provide a clean water supply to the city during the British colonial administration. Also, Hlawga Wildlife Park is one of the best getaway spots where visitors can enjoy both the beauty of national park and the fresh air. The park was established in 1982 with joint-funding by the UNDP and the Burmese government in order to protect the forests and indigenous wildlife species in their natural habitats. In this category, there are 3 episodes as follows; 1) Kandawgyi Lake, 2) Hlawga wildlife park, 3) Mahabandoola Park.



Figure 6 Biodiversity and Botanical Tourism in Yangon

7. Myanmar Traditional Food and Cuisine

Myanmar has a variety of food and cuisine from different nationalities which is influenced by neighboring countries, including Thailand, Laos, India and China. Meat and fish product including fish sauce and ngapi (fermented seafood) are main ingredient of food, then served with fresh vegetables, rice while rice flour, coconut milk, granulated sugar, and sugar cane are main ingredient of dessert. In this category, there are 9 episodes as follows; 1) Myanmar Food and Cuisine, 2) Myanmar Food and Cuisine in region, 3) Samosa, 4) Nga Si Bryan, 5) Mo Hin Ga, 6) Laphet Thote, 7) Nangyi Thohk, 8) Sengpeh, 9) Halawa.



Figure 7 Myanmar Traditional Food and Cuisine

(2) The evaluation of multimedia production

In evaluating the multimedia production, close-ended questionnaire with 5 scales rating is applied in this research to investigate 6 major issues using qualitative technique. The series of multimedia production is evaluated by 5 experts who are specialize in multimedia production and tourism. The evaluation result is shown as follows;

Table1 the evaluation of multimedia production

Issue(s)	Satisfaction level		
	$\bar{x}$	S.D	Interpretation
1.the content is clear/ understandable	4.80	0.44	Highest
2. the content is present in a creative way and stimulate learning	4.80	0.44	Highest
3. the video is relevant with the information of movie script	4.80	0.44	Highest

Table1 the evaluation of multimedia production (cont.)

Issue(s)	Satisfaction level		
	$\bar{x}$	S.D	Interpretation
4. the video could enhance presentation information	4.60	0.54	Highest
5. the sound could enhance presentation information	4.80	0.44	Highest
6. the multimedia is effective and useful and able pass on knowledge to audiences	4.60	0.54	Highest

V. DISCUSSION

According to the research results, there are 7 categories with 57 episodes of a series in "the Diversity of Local Wisdom, Art and Cultural in Yangon, Republic of the Union of Myanmar". In production process, the production is conducted throughout the year, some part of episodes is able to perform during special event or festival yearly. Therefore, the production is required to design and manage carefully in

all necessary aspects such as documentary, financial budget, personnel, production equipment, and location. Particularly, in Myanmar which is considered as outbound and governed by military. Also, some of production requires drone camera to record video footage in bird's eye view. Therefore, all of productions are necessary to require a permission and verify the correctness of content. In addition, result of evaluation by experts in series of multimedia in *"The Diversity of Local Wisdom, Art and Cultural in Yangon, Republic of the Union of Myanmar"* in all 6 major issues; (1) clear and understandable content, (2) creative to stimulate learning, (3) the video is relevant to the information of movie script, (4) the video is enhancing presentation information, (5) the sound is enhancing the presentation information, (6) the effectiveness and usefulness to pass on knowledge to audiences, are in the highest ranking position in all aspects. In consequence, this series of multimedia is appropriated as a source of knowledge and material of learning.

VI. CONCLUSION

Local wisdom is a part of the cultural local knowledge that is formed through a process of learning which could be interpreted as a set of knowledge, values and norms of a particular form of adaptation and life experience of social. The knowledge could be integrated with modern education to understand local society and living sustainably. This research is a medium to gathers Myanmar local wisdom to protect the valuable knowledge from the risk of loss in the form of multimedia which is attractive and attain a deep understanding. The 57 episodes of multimedia in *"Diversity and Local Wisdom of Art and Cultural in Yangon, the Republic Union of Myanmar"* are developed. From the perspective of experts, the multimedia is attractive with useful and understandable content/sound, also appropriate to utilize as a learning resource.

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Prevalence of parasitic pathogens from *Macaca fascicularis* feces in Lopburi old town, Thailand

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Abstract— *At present, increasing in long-tailed macaques (Macaca fascicularis) population in the old town, Lopburi caused several problems in its community, in particular with sanitation problem. This study investigated the fecal parasite in the macaque population during October, 2018 to July, 2019. Feces samples were collected monthly from seven groups of the macaques, Prang Sam Yot shrine (G1), Malai Rama theatre (G2), Van station (G3), Chayowanich building (G4), Muang Thong hotel (G5), Manora market (G6), Sengheng building (G7), for 1,050 samples. Parasitic eggs were determined by using floatation and centrifugal sedimentation technique. The overall prevalence of parasites was 36.9%, and identified parasites were Strongyloides sp. (17.2%), Ascaris sp. (6.2%), Trichuris sp. (7.2%), Trichostrongylus sp. (4.2%), and unknown stronglids (2.0%). The prevalence of parasites was the significantly ($p<0.05$) highest in G6 group that had evident differences among macaque groups. However, no clear patterns of intestinal parasite prevalence were observed regarding seasonality of parasites. These data further provide guideline for macaque health care and aid for effective prevention strategies for human-macaque disease transmission in Lopburi old town, Thailand.*

Index Terms— ***Parasite, Monkey, Urban ecosystem, Zoonosis***

I. INTRODUCTION

Long-tailed macaque (*Macaca fascicularis*) in the old town of Lopburi province, Thailand was promoted for tourism, resulting in high income from tourism continuously [1]. They inhabited the old town regions and walk along the streets freely. The macaques were more easily seen in the downtown areas including the roadsides and railway station because they were always fed by people in this area. The macaques were almost entirely dependent on human provisioning for their survival. As a result, there was a very close interface between people and macaques. *M. fascicularis* in Lopburi old town [2].

Parasite infection patterns were shaped by multifaceted variables. Understanding the drivers of parasitism was a crucial to assess the impact of parasites and diseases on wildlife species inhabiting closely to human. Anthropogenic influence was described to promote helminth infection measures indirectly via different modes of intervention, such as provisioning of food resources leading to increased host contact and parasite transmission rates [3, 4]. Additionally, host age and developing immunity [5] as well as co-infection status [6] might affect parasite risk. Furthermore, hormonally mediated sex differences might lead to divergent infection patterns in different types of social groups like harem (one male-multi female) and bachelor (all male) units, as immunosuppressive steroid hormone levels were stated to cause a male bias in parasitism [7]. Moreover, it was shown that climatic changes might promote survival of specific parasite intermediates [8] and influence host susceptibility towards parasite infections [9].

There is little known about abundance and dispersion of parasitic pathogens of long-tailed macaque in Lopburi old town. The information in parasitic spread both within and among groups and to individuals of other species, including

human, are most important for controlling of disease outbreak and human-macaque disease transmission in the future. In this study, aims fecal parasites of free-ranging *M. fascicularis* in Lopburi old town were characterized.

II. RESEARCH OBJECTIVES

The fecal parasite prevalence of urban free ranging macaques (*M. fascicularis*) in Lopburi old town, Thailand was investigated.

III. RESERCH METHODOLOGY

Sampling sites

Fecal samples were collected monthly during beginning of the dry and the end of rainy season from October, 2018 to July 2019. The downtown region of Lopburi province has been extensively urban macaques. Boonkusol et al. [2] reported 2,080 individuals and classified in seven groups of *M. fascicularis* population in the old town, Lopburi. Fecal sampling was conducted for 5% of reported population number (n=105). The locations and geographical coordinates of sampling sites were shown in Figure 1.

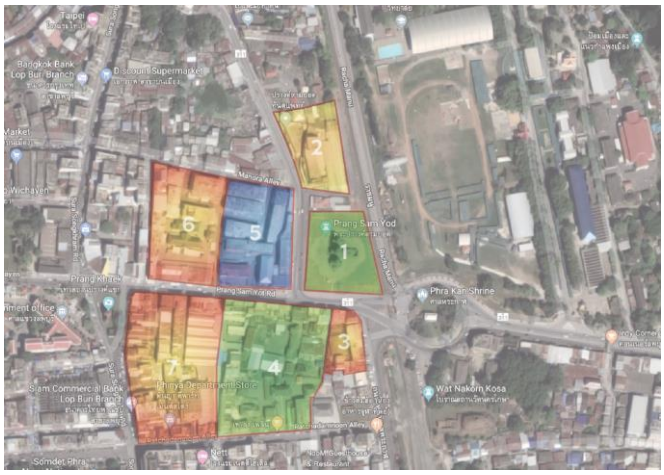


Figure 1 Sample collection sites in Lopburi old town, Thailand (Google Earth, N 14°48', E 100°36') included 7 sites: (1) Prang Sam Yot shrine (14°48'10"N 100°36'50"E), (2) Malai Rama theatre (14°48'5"N 100°37'1"E), (3) Van station (14°48'8"N 100°36'55"E), (4) Chayowanich building (14°48'10"N 100°36'54"E), (5) Muang Thong hotel (14°48'10"N 100°36'53"E), (6) Manora market (14°48'9"N 100°36'46"E) and (7) Sengheng building (14°48'3"N 100°36'49"E).

Fecal sample collection

A total of 1,050 fecal samples (5% of total population number reported by Boonkusol et al. [2]) were collected opportunistically and noninvasively from the soil immediately after defecation at the same time (6:00 h– 8:00 h local time) for parasitological examination. Samples were freshly collected from enclosure floors in less than 24 hrs after defecation using polyethylene sterile bags, clearly labeled by species and kept samples on ice packs until refrigeration at 4°C, and the laboratory analyses were performed within 48 h.

Parasitological determination

Examination of fecal samples for parasitic ova was conducted to study gastrointestinal parasites by using Floatation and sedimentation technique [10].

Floatation technique

Fecal sample weighing 2 grams was taken in a 100 ml beaker and was thoroughly emulsified with about 10 to 15 ml of saturated sodium chloride solution. The mixture was passed through a sieve to remove coarse debris. The filtrate was collected in a test tube till the mixture reached the brim of the tube and formed the meniscus. It was kept undisturbed for 15 to 20 minutes. A clean cover slip was taken and tip of the positive-meniscus was gently touched and then the cover slip was placed on a slide. Parasitic ova were inspected microscopically based on the descriptions provided by Soulshy [10].

Centrifugal sedimentation technique

Fecal material weighing 2 grams was taken in a 100 ml beaker and was thoroughly emulsified with 10 to 15 ml of water. The mixture was passed through a sieve to remove coarse debris. The filtrate was collected in a centrifuge tube. The centrifuge tubes were placed in a balanced state and centrifuged for 5 minutes at 3000 rpm and discarded the supernatant portion in a careful manner. Using a Pasteur pipette and bulb, small amount of top layer of sediment was transferred to a clean microscopic glass slide and a cover slip was placed on the drop of sediment. The slide was examined microscopically based on the descriptions provided by Soulshy [10].

Data analyses

Parasite risk was analyzed as parasite prevalence (number of infected individuals as percentage of the whole number of examined animals). A two-way analysis of variance (ANOVA) was performed to evaluate the effect of monkey groups on the prevalence. ANOVA was followed by a Tukey' s test as a post-hoc test to elucidate differences between social groups.

IV. RESEARCH RESULTS

Based on their egg morphology four nematodes, *Strongyloides* sp., *Ascaris* sp., *Trichuris* sp., *Trichostrongylus* sp., as well as some unknown stronglids were identified. Number of macaques infected parasites at different months and groups were shown in Figure 2. *Strongyloides* sp. was observed in all macaque groups, especially in Prang Sam Yot shrine, Malai Rama theatre, Chayowanich building and Sengheng building and was found maximally in May and July, 2019. *Trichostrongylus* sp. was mainly found at Sengheng building group in November, Manora market group in December and February, and Van station group in April.

Parasitic prevalence by different groups of macaques for 10 months was presented in Table 1. The overall prevalence of parasites was 36.9%, *Strongyloides* sp. (17.2%) was detected the most, followed by *Trichuris* sp. (7.2%), *Ascaris* sp. (6.2%), *Trichostrongylus* sp. (4.2%) and unknown stronglids (2.0%) respectively. The highest prevalence was shown in Manora market group that had evident differences significantly among macaque groups. Prevalence patterns of distinguished parasites from all macaques in seven groups at different months was shown in Figure 3. The patterns of parasitic prevalence were not apparently observed regarding seasonality of parasites related to seasonality (Figure 3).

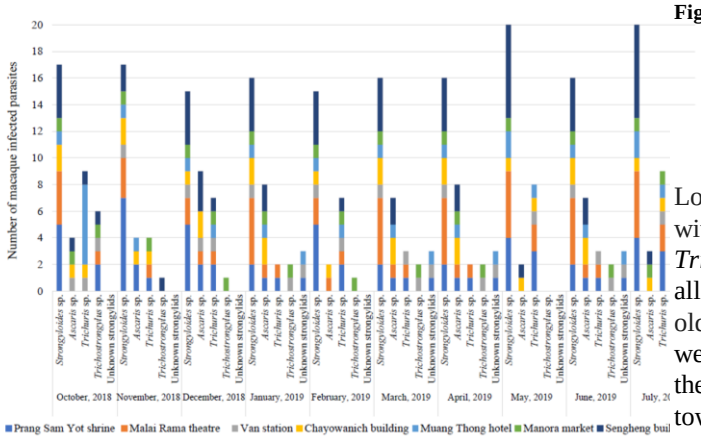


Figure 2 Number of macaques infected parasites from seven macaque groups at different months

Table 1 Parasitic prevalence by different groups of macaques in ten months period

Macaque Groups	n	Prevalence (%)				
		Strongyloides sp.	*Ascaris* sp.	*Trichuris* sp.	*Trichostrongylus* sp.	Unknown strongylids
Prang Sam Yot shrine	350	10.9^a	2.3^a	4.3^a	0.6^a	1.1^a
Malai Rama theatre	200	20.5^b	3.0^a	5.5^a	0.5^a	0
Van station	50	14.0^a	4.0^a	14.0^b	10.0^b	8.0^b
Chayowanich building	150	10.7^a	10.0^b	2.7^a	0	0
Muang Thong hotel	80	15.0^a	6.25^a	12.5^b	0	5.0^{ab}
Manora market	40	25.0^b	10.0^b	10.0^b	17.5^c	0
Sengheng building	180	24.4^b	7.8^{ab}	1.7^a	1.1^a	0
Total	1,050	17.2	6.2	7.2	4.2	2.0

n = 5% of total population number in each group * 10 months
Values with different superscript letters (a, b, c) in each column are significantly different

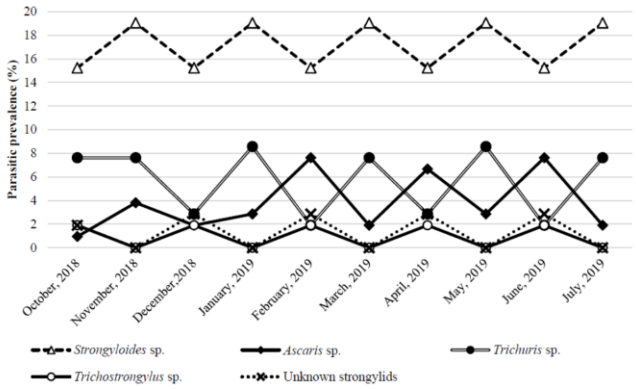


Figure 3 Parasitic prevalence of macaques in all groups at different months

VI. DISCUSSION

Study of parasitic infections of macaques in the old town, Lopburi province, a total of 1,050 samples revealed infection with protozoa, *Strongyloides* sp., *Ascaris* sp., *Trichuris* sp., *Trichostrongylus* sp., as well as some unknown stronglids. Of all the helminthic infections recorded in the macaques in the old town, *Strongloides* spp., *Ascaris* spp. and *Trichuris* sp. were dominant. Our results provide valuable information to the study of parasites in non-human primates in Lopburi old town because of zoonoses. It is essential to establish parasite species exclusive to non-human primates, and those that could be potentially shared between non-human and humans [11]. Our study supported the hypothesis that intestinal parasite risk was elevated in anthropogenically modified habitats [12]. Similar to the report of Pumipuntu et al. [13], the survey of the prevalence of parasitic infections observed in long-tailed macaques (*M. fascicularis*) at Kosamphee forest park, Kosum Phisai district, Maha Sarakham province. Buppan et al. [14] reported the infection rate of 27% *Trichuris trichiura*, 25.4% Hookworm, 58.7% *Entamoeba co*li, 22.2% *Entamoeba histolytica* 11.1% *Giardia lamblia*, 9.5% *Blastocystis hominis* and 6.3% *Endolimax nana*.

Strongyloides spp. was previously reported a common parasitic infection in macaques [15, 16]. Strongyloididae parasites can infect their hosts through skin penetration or by ingestion [17], and reproduces in the host's intestinal wall asexually, contributing to its high infection rates [18]. They are usually found in warm and humid climates [19], so they were frequently observed in April to July period in the present study.

Ascarididae and Trichiuridae were presented in all monkey groups and studied months. Eggs from this group of parasites persist in the ground for long periods of time and can remain infectious for years [20]. Strait et al. [21] state that this group of parasites is often found in the intestinal tract of non-human primates and transmission to humans is possible; therefore, infected non-human primates can be considered a potential zoonotic threat. Occurrence of *Ascaris* spp. infestations indicated unhygienic conditions maintained in animal enclosures. Infection with Trichiuridae is usually asymptomatic and can occur in primates of the old and new world [22]. This study also supports previous reports on Trichostrongylidae infecting new world primates [23].

In this study, finding slightly higher prevalence during May to July, however, there was no clear pattern. Okoye et al. [24] found higher prevalence of cat parasites in summer, probably due to the warm temperature that can favor eggs.

In our study, this factor could also explain the higher tendency of parasite prevalence found in May to July. Moreover, our findings revealed high parasite prevalence in different monkey groups. Host population density was documented to correlate positively with parasite prevalence [25]. It was shown that the risk of infection may rise with the presence of more social group partners within a group [26], but that larger groups may also disrupt direct transmission dynamics through fission as a counter-strategy [27, 28]. The variation in social interactions such as grooming can have profound implications for the patterns of transmission of parasites [29]. Poulin [30] states that there may be variations in the number of parasite species harboured by individual hosts from the same population, since individual characteristics such as their diet and foraging sites influence the probability of acquiring certain species of parasites. If these characteristics change over time, the presence/absence of parasite groups in each of the individuals might also change. Thus, appropriate sanitary management and deworming program should be adopted to reduce this infectious prevalence and generate good health of the urban monkeys in Lopburi old town.

VI. CONCLUSION

Prevalence of parasitic pathogens in the macaque community living in Lopburi old town had a slightly high in May to July, and had evident differences among monkey groups. However, no clear patterns of parasites prevalence were observed regarding seasonality. Especially through increased the macaque density in the town and feeding platforms, the macaques were at risk of parasitic infections. These data can be further used as a guideline for the macaque health care and controlling of human-macaque disease transmission in Lopburi old town. Thus, management strategies for these macaques should focus on regular parasite assessment, as well as consistent deworming procedures and sanitary practices.

ACKNOWLEDGEMENT

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Study on Efficiency and Development of Anti-Anthracnose Disease Products for Chili Peppers with Natural Substances, Nakhon Ratchasima Province, Thailand

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Abstract*—The anthracnose outbreak occurs during the rainy season or a long raining period that facilitates the growth of fungi. Anthracnose can be commonly found during chili pepper growing, and it has caused considerable damage to farmers resulting in reduced production. Most farmers use chemicals to prevent anthracnose disease-causing toxic residues in the environment. The chemicals are also expensive and dangerous to the environment. For the study on the development of anti-anthracnose disease products with natural substances for chili peppers, the researchers realized the importance of the purposes of 1) to study and develop natural substances and agricultural waste materials which are environmentally friendly products to prevent anthracnose disease in chili peppers and 2) to compare the efficiency between using chemicals substances that are commonly used at present. The study on efficiency and development of anti-anthracnose disease products on chili peppers employed the Completely Randomized Design (CRD) to study the efficacy of substances used to prevent anthracnose disease. There are 4 treatments used in this study includes 1) Control, 2) Natural product Formula I (Bio-fermented water No. I), 3) Natural product Formula II (Bio-fermented water No. II), and 4) Chemical Product (Mancozeb chemical). Research operates by spray treatment products on chili every 7 days. After spraying treatments for 24 hours, spray Colletotrichum spp. to infect anthracnose in the period of three weeks. The study indicated that the natural product formula I and the natural product formula II found the efficiency of preventing the disease in chili peppers in significantly at 95 percent. The natural product formula I was highest anthracnose disease prevention, followed by the Mancozeb chemical, natural product formula II, and control, respectively.

Index Terms—*Anti-Anthracnose Disease, Natural Products, Bio-Fermented water*

I. INTRODUCTION

Chili pepper is a plant in the genus Capsicum which is a member of the Solanaceae family [1]-[3]. The English names include chili peppers, chile, or chili. Chili is an economic crop that generates income and can be grown throughout Thailand. However, a problem with Chili peppers faced by many farmers is anthracnose, which is a common but very serious disease among pepper farmers. Anthracnose is a plant disease caused by fungi, namely Colletotrichum spp. Colletotrichum gloeosporioides, Colletotrichum capcisi, and Colletotrichum piperatum. C. gloeosporioides attack big chili peppers and C. capsici attack small chili peppers (bird's eye chili), while C. piperatum attack large chili peppers (bell peppers) [4]-[6]. A common symptom found in big chili peppers such as spur chili peppers is that C. gloeospoloides cause a wet spot with a slight dent on the chili's surface or a wet circular or oval spot which then becomes bigger as the fungus produces spores, noticeable by a black spot [7]-[10]. For small chili peppers, C. capcisi occurs during the rainy season causing a wet spot with a vague dent or without a dent. If the chili peppers get infected outside the rainy season, the shape of the dent will be unstable without a black wet spot. Anthracnose is sometimes called 'Dried shrimp disease' as it produces light orange slime shaped like a dried shrimp.

The anthracnose outbreak occurs during the rainy season or a long raining period that facilitates the growth of fungi. Anthracnose can be commonly found during chili pepper growing, and it has caused considerable damage to farmers resulting in reduced production. Most farmers use chemicals to prevent anthracnose disease-causing toxic residues in the environment. The chemicals are also expensive and dangerous to the environment.

For the study on efficiency and development of anti-anthracnose disease products with natural and chemical substances for chili peppers, the researchers realized the importance of using natural substances and agricultural waste materials to prevent the anthracnose disease in chili peppers and would like to compare with chemical substances that are commonly used at present. The researchers hope that this study will help to obtain environmentally friendly products.

II. MATERIAL AND METHOD

A. The studies areas

The research was conducted in a specific cultivation area in Nai Muang Sub-District, Muang District, Nakhon Ratchasima Province, and in the laboratory of the Environmental Science Department, Faculty of Science and Technology, Nakhon Ratchasima Rajabhat University.

B. The studies samples

The population and sample group included chili peppers. Chili pepper type was Chili spur pepper (Capsicum annuum Linn. Var. acuminatum Fingerh).

C. Chemical and Research Instruments

The substances used in the production are divided into 2 groups: natural products and chemical products. Chemical and substances were used in this research include:

1. Natural product Formula I: Bio-fermented water A (betel nutshell and banana tree)
2. Natural product Formula II: Bio-fermented water B (channeled apple snail and banana tree)
3. Chemical product: Mancozeb
4. The anthracnose pathogens (Colletotrichum spp.)

d. Research Methodology

The study on efficiency and development of anti-anthracnose disease products on chili peppers employed the Completely Randomized Design (CRD) to study the efficacy and production cost of substances used to prevent anthracnose disease and to provide anthracnose disease prevention guidelines for farmers.

The substances used in the production are divided into 2 groups: natural and chemical. The products tested for efficiency by the researchers consist of 3 products and 1 control product, namely: 1) Control, 2) Natural product Formula I (Bio-fermented water No. I), 3) Natural product Formula II (Bio-fermented water No. II), and 4) Chemical Product (Mancozeb chemical).

Cultivation of anthracnose pathogens, C. gloeosporioides, and C. capsici was separated from chili with anthracnose. The infected area was removed from the normal area, sanitized, placed on Potato Dextrose Agar (PDA) and incubated for 7 days at room temperature. Then, C. gloeosporioides and C. capsici were cultivated on the PDA petri dish for 7 days to produce spores. The spores were diluted to have a concentration of 10^5 conidia/ml.

Natural product Formula I: bio-fermented water A (betel nutshell and banana tree) was produced by mixing 5 kg of a cracked betel nutshell, 5 kg of chopped banana tree, 5 liters of molasses, and Microbial Activators PD2 solution (dissolve 2 bags of Microbial Activators PD2 powder in 5-liter water and leave it for 5 minutes) in a 20-liter tub with the lid slightly open for ventilation for 60 days. Then, filter the water. To use the natural product Formula I: bio-fermented water A, use 2 tablespoons per 20 liters of water and spray it on the chili every 7 days starting 2 weeks after the trees produce chili.

Natural product Formula II: bio-fermented water B (channeled apple snail and banana tree) was produced by mixing 5 kg of banana tree, 5 kg of chopped channeled apple snail, 5 liters of molasses, and Microbial Activators PD2 solution (dissolve 2 bags of Microbial Activators PD2 powder in 5-liter water and leave it for 5 minutes) in a 20-liter tub with the lid slightly open for ventilation for 60 days. Then, filter the water. To use the natural product Formula II: bio-fermented water B, use 2 tablespoons per 20 liters of water and spray it on the chili every 7 days starting 2 weeks after the trees produce chili.

Chemical product (Mancozeb chemical) is an ethylenebis chemical group. To use, dissolve about 70 grams of Mancozeb in 20 liters of water and spray it on the chili every 7 days starting 2 weeks after the trees produce chili.

The study on efficiency and development of anti-anthracnose disease products on chili peppers employed CRD by using 4 treatments, each of which was done in triplicate as follows:

T1R1	T2R1	T3R1	T4R1
T2R2	T3R2	T4R2	T1R2
T3R3	T4R3	T1R3	T2R3

The chili trees are 1 meter away from one another. T represents 4 treatments consisting of T1 Control, T2 Natural product Formula I, T3 Natural product Formula II, and T4 Chemical product. Also, R represents 3 replications: R1 First replication, R2 Second replication, and R3 Third replication.

e. Experiment Methods

Grow chili in a pot of 15cm height and 20cm diameter. When the chili is 2-3 months old or bears the fruit, spray 30ml of disease prevention product per one chili every 7 days. After

spraying for 24 hours, scratch the chili to create a wound and spray C. gloeosporioides and C. capsici to infect anthracnose at the concentration of 1 x 10^5 conidia/ml on all the 12 chili trees, 20ml each. When the chili trees bear the fruit, spray the anthracnose disease prevention product on them. After 24 hours, spray the pathogens on the chili trees. Count the number of chili peppers that do not have anthracnose 3 times on the 7th, 14th, and 21st days after spraying. Count the total number of chili peppers, the number of chili peppers with anthracnose, and the number of those without.

f. Data Analysis

Calculate anthracnose disease prevention using the percentage. Analyze and compare the differences of anthracnose disease prevention and compare the total differences using the CRD statistics

III. RESULTS

The study on efficiency and development of anti-anthracnose disease products with natural and chemical substances for chili peppers were found the results as follow:

A. The efficiency of natural products and chemical product to prevent anthracnose disease

Table I Percentage of anthracnose infection of chili pepper

Treatments Rep.	Week I		Week II		Week III	
	Infected (%)	Non-infected (%)	Infected (%)	Non-infected (%)	Infected (%)	Non-infect (%)
Control						
T1R1	100.00	0.00	100.00	0.00	100.00	0.
T1R2	100.00	0.00	100.00	0.00	100.00	0.
T1R3	100.00	0.00	100.00	0.00	100.00	0.
Natural product Formula I						
T2R1	0.00	100.00	33.33	66.67	33.33	66.
T2R2	0.00	100.00	25.00	75.00	25.00	75.
T2R3	20.00	80.00	20.00	80.00	20.00	80.
Natural product Formula II						
T3R1	77.78	22.22	77.78	22.22	77.78	22.
T3R2	25.00	75.00	25.00	75.00	25.00	75.00
T3R3	20.00	80.00	20.00	80.00	40.00	60.00
Chemical product						
T4R1	0.00	100.00	33.33	66.67	33.33	66.67
T4R2	0.00	100.00	33.33	66.67	33.33	66.67
T4R3	20.00	80.00	20.00	80.00	20.00	80.00

The results of the efficiency of natural products and chemical product to prevent anthracnose disease from Table I found the natural product formula I, the natural product formula II, and chemical product (Mancozeb) have the efficiency to prevent anthracnose disease when compare with control. There show the different results following Fig.1-Fig.4.

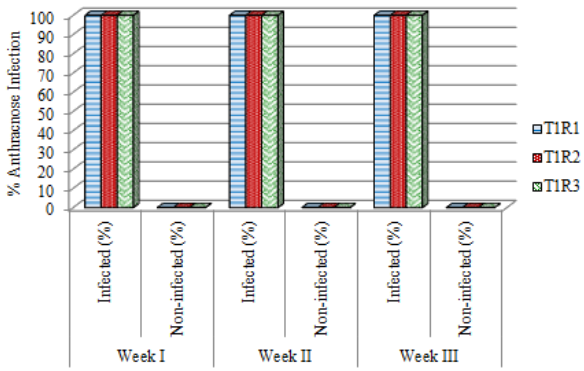


Fig. 1 Percentage of anthracnose infection and non-infection of chili pepper where control treatment using for prevention

The percentage of control treatment using found 100% of chili pepper infected anthracnose disease in a week I, II, and III (Fig. 1). There was mean the chili pepper cannot prevent anthracnose disease by themselves.

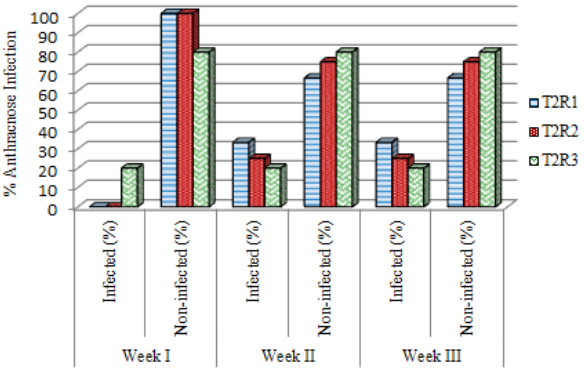


Fig. 2 Percentage of anthracnose infection and non-infection of chili pepper where natural product formula I treatment using for prevention

Natural product formula I was bio-fermented water A where betel nutshell and banana tree (two main ingredients) were mixed show the percentage of efficiency for anthracnose prevention 80-100% in a week I, 66.67-80% in week II and III. Moreover, the results show that the efficiency of anthracnose prevention were decreasing from week I to week II, but constancy from week II to week III as shown in Fig. 2.

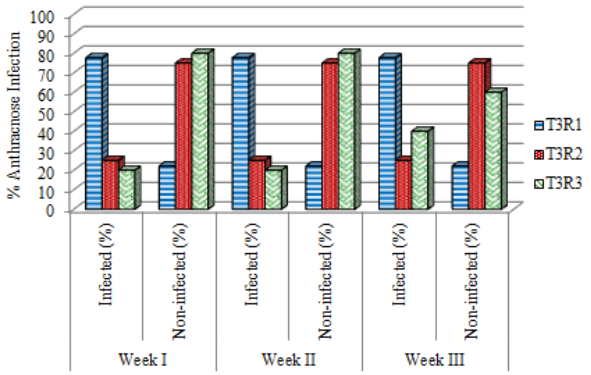


Fig. 3 Percentage of anthracnose infection and non-infection of chili pepper where natural product formula II treatment using for prevention

Natural product formula II was bio-fermented water B where channeled apple snail and banana tree (two main ingredients) were mixed show the percentage of efficiency for anthracnose prevention 22.22-80% in a week I, 22.22-80% in week II, and 22.22-75% in week III, whereas there found the chili pepper were anthracnose infection 20-33.33% approximately. Moreover, the results show that the efficiency of anthracnose prevention was decreasing from week I to week III, respectively. There means an increase of anthracnose infection in chili pepper as shown in Fig. 3.

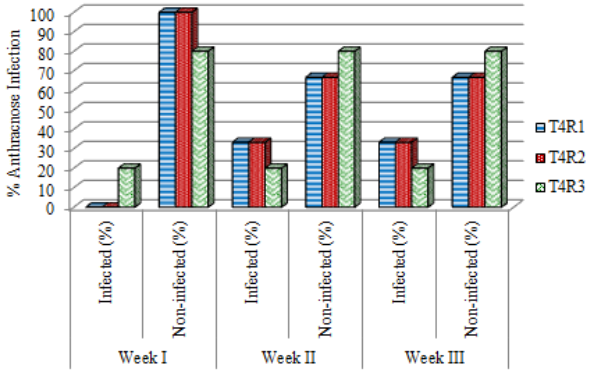


Fig. 4 Percentage of anthracnose infection and non-infection of chili pepper where chemical product treatment using for prevention

The chemical product was Macozeb show the percentage of efficiency for anthracnose prevention 80-100% in a week I, 66.67-80% in week II and week III, whereas there found the chili pepper was anthracnose infection 20-33.33% approximately. Moreover, the results show that the efficiency of anthracnose prevention was decreasing from week I to week II, but constancy from week II to week III as shown in Fig. 4.

Table II Percentage of non-infected chili pepper to anthracnose disease

Replication	Control	Natural product Formula I	Natural product Formula II	Chemical Product	
R1	0.00	66.66	22.22	66.66	
R2	0.00	75.00	75.00	66.66	
R3	0.00	80.00	60.00	80.00	
Total: T_1	0.00	221.66	175.22	213.32	GT = 610.20
Size (Rep.): n_1	3	3	3	3	N = 12
Mean	0.00	73.87	58.41	71.11	GM = 50.85

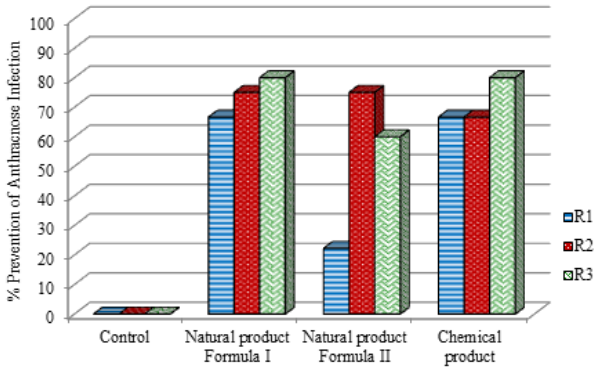


Fig. 5 Comparisons of natural products and chemical product for anthracnose infection prevention (%) in chili pepper

Table II and Fig. 5 show the trend of overall 4 treatments includes 1) Control, 2) Natural product Formula I: Bio-fermented water A (betel nutshell and banana tree), 3) Natural product Formula II: Bio-fermented water B (channeled apple snail and banana tree), and 4) Chemical products (Mancozeb). The results show that the average percentage of anthracnose disease prevention of Natural product Formula I was highest (73.87 %), follow by Chemical product (Mancozeb) (71.11 %), Natural product Formula II (58.41 %), and control (0.00%), respectively.

B. Cost-Benefit of natural products and chemical product

Cost-Benefit of Natural product Formula I: Bio-fermented water A (betel nutshell and banana tree), Natural product

Formula II: Bio-fermented water B (channeled apple snail and banana tree), and Chemical product (Mancozeb) in anthracnose disease prevention were calculated from product cost and dose (volume; ml) using per chili pepper tree.

Natural product formula I: the cost of bio-fermented water A, volume 30 ml is 0.0009 baht, in the trial using natural product formula I 3 times/chili pepper tree, which is 0.0027 baht. Normally, the farmer can grow about 3,200 chili pepper tree/1 rai, which is equal to 8.64 baht/rai of natural product formula I (140 liters/rai). The average percentage of anthracnose disease prevention of Natural product Formula I was highest (73.87 %).

Natural product formula II: the cost of bio-fermented water A, volume 30 ml is 0.0008 baht, in the trial using natural product formula I 3 times/chili pepper tree, which is 0.0024 baht. Normally, the farmer can grow about 3,200 chili pepper tree/1 rai, which is equal to 7.68 baht/rai of natural product formula II (140 liters/rai). The average percentage of anthracnose disease prevention of Natural product Formula I was 58.41 %.

Chemical product (Mancozeb): the cost of Mancozeb, volume 30 ml is 0.045 baht, in the trial using natural product formula I 3 times/chili pepper tree, which is 0.135 baht. Normally, the farmer can grow about 3,200 chili pepper tree/1 rai, which is equal to 432 baht/rai of Mancozeb (140 liters/rai). The average percentage of anthracnose disease prevention of chemical products (Mancozeb) was 71.11 %.

IV. CONCLUSION

The study on efficiency and development of anti-anthracnose disease products on chili peppers employed the Completely Randomized Design (CRD) to study the efficacy of substances used to prevent anthracnose disease. There are 4 treatments used in this study includes 1) Control, 2) Natural product Formula I (Bio-fermented water No. I), 3) Natural product Formula II (Bio-fermented water No. II), and 4) Chemical Product (Mancozeb chemical). Research operates by spray treatment products on chili every 7 days. After spraying treatments for 24 hours, spray Colletotrichum spp. to infect anthracnose in the period of three weeks. The results of the study indicated that the natural product formula I and the natural product formula II found the efficiency of preventing the disease in chili peppers in significantly at 95 percent significant. The natural product formula I was highest anthracnose disease prevention, followed by the Mancozeb chemical, natural product formula II, and control, respectively. These results were due to the reason of different main ingredients of each formula treatment. Two main ingredients of natural product Formula I (Bio-fermented water A) were betel nutshell and banana tree which were astringent plants and anti-mold properties. Natural product Formula II (Bio-fermented water B) has two main ingredients were channeled apple snail and banana tree, which channeled apple snail consist of Bacillus sp., Lactobacillus sp., and Streptococcus sp. There were anti-mold properties.

Cost-Benefit of Natural product Formula I: Bio-fermented water A (betel nutshell and banana tree), Natural product Formula II: Bio-fermented water B (channeled apple snail and banana tree), and Chemical product (Mancozeb) in anthracnose disease prevention were calculated from product cost and dose (volume; ml) using per chili pepper tree.

Natural product formula I: 8.64 baht/rai (73.87% Efficiency)

Natural product formula II: 7.68 baht/rai (58.41% Efficiency)

Chemical product (Mancozeb): 432 baht/rai (71.11% Efficiency)

Therefore, Natural product formula I (Bio-fermented water A: betel nutshell and banana tree) show the highest cost-benefit for the anti-anthracnose disease. This research realized the importance of using natural substances and agricultural waste materials to prevent anthracnose disease in chili peppers and environmentally friendly products. The natural products of this research can be alternative methods and products for the farmer in anthracnose disease control in chili pepper.

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Vegetation Structure Diversity and Value-Added Guideline Corresponding to Biodiversity for Phu Hung Community Forest, Thum Tong Subdistrict, Mueang Nan District, Nan Province, Thailand

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Abstract*— Phu Hung community forest, Thum Tong Subdistrict, Mueang Nan District, Nan Province, Thailand currently meets with the situation of "forest surrounded by houses", it may finally deteriorate and transform. Therefore, guidelines on increasing economic plants and utilization corresponding to vegetation diversity was analyzed. The survey on the area focused on the temporary sample plot of 1ha obtained by subjective sampling. Value added and forest conservation to make this area perfectly livable for humans with the forest should be implemented in compliance with planting promotion policy for 58 species and the royal remarks of H.M. King Bhumibol Adulyadej about 3 Forests, 4 Benefits. It was found that the study area was a secondary mixed deciduous forest with 3crown classes. There were 424 plants from 59 species, 52 genuses, and 29 families. Lamiaceae had the most species, particularly Vitex canescens, the plant with the highest relative density, relative frequency, relative dominance, and importance value indices up to 19.10, 14.49, 15.07 and 48.66%, respectively. This area had species diversity index = 3.28, evenness index = 0.80. Key plants that should be promoted for planting included Grewia paniculate, Lamiaceae, Cassia fistula, Pterocarpus macrocarpus, Albizia lebbeck, and Lagerstroemia floribunda, Dipterocarpaceae and all species of bamboos.

Index Terms— ***Community Forest Diversity, Mixed Deciduous Forest, Value Added, Forest Conversation***

I. INTRODUCTION

Forests are precious natural resources that generate, create diversity of creatures and non-creatures for living together, and give benefits to humanity of all races. Forests are also the sources of collected biodiversity to support community living [1]. Current rapid increase of world population brings change of forest areas across the world to become larger agricultural and inhabitance areas [2]. Similar to the world situation, the increase of Thai population also affects higher forest invasion. For the survey on forest areas, it was found that there were only 16.32 Mha or 31.58% of the total areas in the country of forest areas left in Thailand between 2015 – 2016 [3]. Besides, it was also found that there were 6.18 Mha or 64.37% of forest areas in the northern region covering 9 provinces during the past 55 years (1973-2019). Watershed forest areas were invaded most (0.16%) [4]. Related human behavior does not only cause reduced forest areas but also floods and effects on biodiversity.

Due to the situation as aforementioned, the government aims to increase forest areas up to 1.37 Mha within 20 years [5] and has the resolution to drive 20,000 communities of the valuable tree project within 10 years in order to increase overall forest areas of the country as well as income of people [6] by focusing on natural resource management as the cooperation between the government and people sectors for higher implementation efficiency. It is predicted that this implementation will bring exuberance and sustainability of natural resources, environments, and biodiversity [7].

The area of Phu Hung community forest, Ban Wang Khong, Thum Tong Subdistrict, Mueang Nan District, Nan Province, covers 14.40 Mha. The community forest was established in Nam Yao and Nam Suad National Forest. This forest currently confronts with the situation of "forest

surrounded by houses" as there are 100 households surrounding the forest (379 inhabitants) [8]. This situation causes this community forest to be gradually invaded and destroyed by inhabitants coming for more exploitation in terms of agriculture and foraging. It is predicted that if this area is still neglected, it may finally deteriorate and transform.

Therefore, this research studied plant diversity and analyzed guidelines on increasing economic plants and utilization corresponding to biodiversity so that the community will perceive the value, for conservation and cherish of the forest that still contains biodiversity. The guidelines obtained can be applied to plan for increasing economic plants so that the area of this forest will be utilized for future sustainability.

II. Research Objectives

This research aim to study vegetation diversity and analyze guidelines on increasing economic plants and utilization corresponding to biodiversity.

III. Research Methods

A. Area Scope

The study area covered 14.40 Mha of community forest area located in Ban Wang Khong, Thum Tong Subdistrict, Mueang Nan District, Nan Province. The area was in the west of the village and surrounded by utilized lands. The study of plant diversity chose the southeast of Phu Hung community forest (Coordinate: E 679232 N 2079285).

B. Data Collection

The 1 ha of the temporary sample plots established by subjective sampling as Fig. 1. The study plots randomized for 100 square sample plots (10 x 10 m) according to the method of Kiratiprayoon [9] were field data collection. It was to collect number, species, and physical characteristics of plants with height ≥ 1.30 m. and diameter ≥ 14.5 cm. in each sample plot.

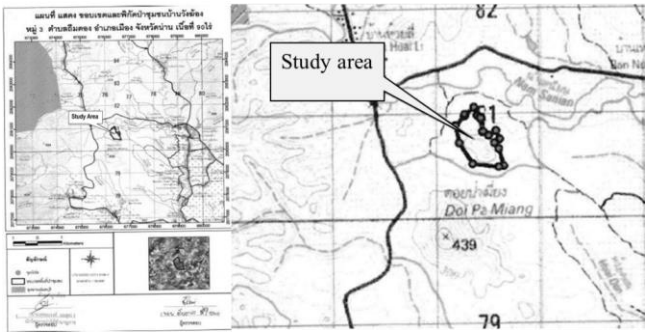


Fig. 1 Study Area

Data obtained from the field study was analyzed to find family level and species level, referred from the books called "Thai Plant Names" (botanical names – local names) [10] and "Northern Trees: Handbook for Studying Standing Timbers in Northern Forests of Thailand [11]. Physical characteristics of each species were also collected in the form of photos such as trunks, leaves, flowers, fruits, and canopy in order to prepare the name list of seedlings and to analyze species compositions.

For plant structuring and plant distribution analysis, it was to write stratification structure. The arrangement of the crown classes was presented based on height above ground level [12]. Total height, height to fresh branches, first branch, crown size, tree position, and tree characteristics were drawn. 20 x 50 m areas in the study plots were randomized. Vertical structure was acknowledged. Crown cover structure of every tree was written in horizontal structure.

C. Species Composition Analysis

Species composition analysis is to analyze quantitative ecological characteristics to find density, relative density, frequency, relative frequency, dominance, relative dominance, importance value index, species diversity index, and diversity [9, 13-14] as follows:

1. Density (D) and Relative density (RD)

$$D = \frac{T}{A}$$

When T = Total number of each species in the sample plots (number of vegetations)

A = Total units of the sample plot areas (ha)

$$RD(\%) = \frac{D_T}{D_{to}} \times 100$$

When D_T = Density of each species

D_{to}= Density of all species in the compositions

2. Frequency (F) and Relative frequency (RF)

$$F = \frac{P_t}{P_{to}} \times 100$$

When P_t = Number of the plots of each species (plot)

P_{to} = Total number of the plots (plot)

$$RF(\%) = \frac{F_t}{F_{to}} \times 100$$

When F_t = Frequency of each species

F_{to}= Frequency of all species in the compositions

3. Dominance (Do) and Relative Dominance (RDo)

$$Do = \frac{BA_t}{A}$$

When BA_t= Cross sectional area of each species (m^2)

A = Total units of the sample plot areas (Ha)

$$RDo(\%) = \frac{Do_t}{Do_{to}} \times 100$$

When Do_t = Dominance of each species

Do_{to} = Dominance of all species in the compositions

4. Importance Value Index (IVI)

$$IVI = RD + RDo + RF$$

5. Species diversity index

$$H' = -\sum_{i=1}^{S} (Pi\ ln\ P\ i)$$

When H' = Species diversity index of Shannon – Wiener

S = Number of species

Pi = Proportion of Species i / sum of all species in the compositions

6. Evenness indices (E)

$$E = \frac{H'}{ln(S)}$$

When E = Evenness of specie

S = Total number of species

C. Value Added and Conservation Guidelines

For guidelines on value added and conservation of Phu Hung community forest in this research, the analysis relied on the resolution of the cabinet [6] about driving the valuable tree project and on Forest Act, B.E. 2562 [7] about the cancellation of restricted trees in a land under ownership in compliance with the land code and lands permitted by the government for utilization, along with promoting the plantation of 58 species [7]. The selection of plant species was considered with correspondence of biodiversity in this forest and the royal remarks of H.M. King Bhumibol Adulyadej on 7 January 1980 about 3 Forests, 4 Benefits.

IV. Results

The survey on Phu Hung community forest, Ban Wang Khong, Thum Tong Subdistrict, Mueang Nan District, Nan Province, size 1Ha found 424 plants from 59 species, 52 genuses, and 29 families. The analysis of quantitative ecological characteristics of species compositions in this forest was in Table 1.

A. Importance of Plants

Vitex canescens was the plant with highest importance value index up to 48.66%, followed by Grewia paniculata, Canarium, Heteropanax fagrans, and Lamiaceae with the highest importance value indices up to 26.08, 20.21, 18.18, and 18.01%, respectively. As a consequence, all 5 species of these plants were the most important plants in this study area.

B. Distribution and Dominance

The importance value indices obtained were the sums from relative density, relative frequency, relative dominance. Despite the highest indices of these 5 plants as Fig. 2, when considering into separated parts, there were possibilities that these 5 plants would be dominant in terms of different relative density, relative frequency, relative dominance.

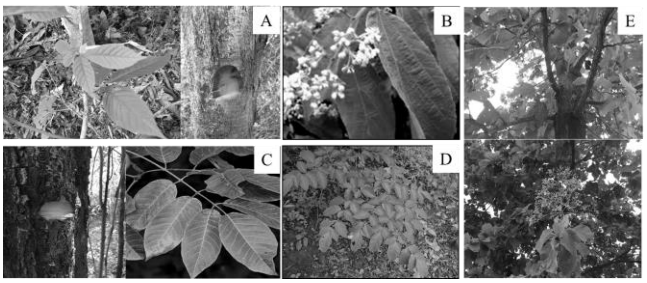


Fig. 2 Most Important Plants in The Study Area

(A = Vitex canescens, B = Grewia paniculate, C = Canarium, D = Heteropanax fragrans, E = Lamiaceae)

C. Density

Vitex canescens was the plant with the highest relative density (19.10%), followed by Grewia paniculata (10.61%), Heteropanax fragrans (6.13%), Paranephelium (4.72%), and Canarium (4.48%), respectively. Despite the importance of Lamiaceae in the top 5 ranks of the study area, the relative density was moderate (3.77%). Moreover, it was also found that Lamiaceae had the relative density in the top 5 ranks despite its less importance than the top 5 ranks. This revealed that Lamiaceae had less density per total density of all species in the study than paranephelium and the other 4 species as aforementioned.

D. Dominance

Despite the importance of Grewia paniculata and Heteropanax fragrans in the study area, when considering their dominance, it was found that both species were not included in the top 5 ranks of dominance. Those in the top 5 ranks were Vitex canescens, Lamiaceae, Canarium, Irvingia malayana, and Litsea glutinosa with their relative dominance of 15.07, 11.70, 11.02, 9.49, and 5.71%, respectively. Vitex canescens, Lamiaceae, and Canarium were the important and dominant plants in the study area. Despite the dominance of Irvingia malayana and Litsea glutinosa, they were not included in the top 5 ranks of importance due to their low relative density and relative frequency.

E. Diversity and Evenness of Species

Overall diversity index in the study area was 3.28 as well as this area had evenness of species = 0.80 of the area.

F. Plant Structuring

The study of crown cover and profile diagram as Fig. 3 revealed that the structure of the study area was in the form of distant crown, divided into 3 crown classes as follows:

1. Dominant

It was the crown class with height from 16 - 20 m. Plants in this class were branchless, with small density of crown cover. The key species were Canarium and Paranephelium longifoliolatum.

Table 1 Plant Name List

Family Name	Scientific Name	Habit	Number of species (tree)	Number of plots (plot)	D (tree/ha)	F (plot/plot)	Do (m^2/ha)	RD (%)	RF (%)	RDo (%)	IVI
ANNONACEAE	*Polyalthia viridis* Craib.	T	1.00	1.00	1.00	0.36	4.00×10^{-4}	0.24	0.36	0.02	0.62
APOCYNACEAE	*Wrightia tomentosa* Roem. & Schult.	ST	4.00	4.00	4.00	1.45	8.00×10^{-3}	0.94	1.45	0.35	2.74
	Holarrhena pubescens Wall. ex G. Don.	ST	1.00	1.00	1.00	0.36	8.00×10^{-4}	0.24	0.36	0.04	0.64
ARALIACEAE	*Heteropanax fragrans* (Roxb. ex DC.) Seem.	ST	26.00	22.00	26.00	7.97	8.00×10^{-2}	6.13	7.97	4.08	18.18
BIGNONIACEAE	*Stereospermum cylindricum* Pierre ex P. Dop.	T	1.00	1.00	1.00	0.36	6.00×10^{-4}	0.24	0.36	0.29	0.89
	Markhamia stipulata (Wall.) Seem. var. stipulate	T	7.00	5.00	7.00	1.81	1.00×10^{-2}	1.65	1.81	0.50	3.96
	Fernandoa adenophylla (Wall. ex G.Don) Steenis	T	2.00	2.00	2.00	0.72	2.00×10^{-3}	0.47	0.72	0.09	1.29
	Oroxylum indicum Vent.	ST	13.00	10.00	13.00	3.62	3.00×10^{-2}	3.07	3.62	1.46	8.15
BURSERACEAE	*Canarium subulatum* Guillaumin	T	19.00	13.00	19.00	4.71	2.40×10^{-1}	4.48	4.71	11.02	20.21
	Protium serratum Engl.	T	1.00	1.00	1.00	0.36	1.00×10^{-3} 1.00×10^{-3}	0.24	0.36	0.04	0.64
CELASTRACEAE	*Siphonodon celastrineus* Griff.	T	2.00	1.00	2.00	0.36	1.30×10^{-4}	0.47	0.36	0.06	0.90
COMBRETACEAE	*Terminalia nigrovenulosa* Pierre ex Laness.	T	6.00	3.00	6.00	1.09	2.00×10^{-2}	1.42	1.09	0.79	3.30
	Terminalia bellirica (Gaertn.) Roxb	T	3.00	1.00	3.00	0.36	3.80×10^{-2}	0.71	0.36	1.76	2.83
CRYTERONIACEAE	*Crypteronia paniculata* Blume	T	16.00	13.00	16.00	4.71	5.20×10^{-2}	3.77	4.71	2.38	10.86
DATISCACEAE	*Tetrameles nudiflora* R.Br.	T	1.00	1.00	1.00	0.36	1.40×10^{-3}	0.24	0.36	0.07	0.67
DIPTEROCAPACEAE	*Vatica cinerea* King	T	2.00	2.00	2.00	0.72	2.40×10^{-3}	0.47	0.72	0.11	1.31
EBENACEAE	*Hubera cerasoides* (Roxb.)	ST	4.00	3.00	4.00	1.09	4.20×10^{-3}	0.94	1.09	0.19	2.22

Family Name	Scientific Name	Habit	Number of species (tree)	Number of plots (plot)	D (tree/ha)	F (plot/plot)	Do (m^2/ha)	RD (%)	RF (%)	RDo (%)	IVI
	Chaowasku										
	Diospyros montana Roxb.	T	6.00	5.00	6.00	1.81	1.20×10^{-2}	1.42	1.81	0.54	3.76
	Diospyros fulvopilosa Fletcher	T	1.00	1.00	1.00	0.36	8.00×10^{-4}	0.24	0.36	0.04	0.63
	Croton oblongifolius Roxb.	T	1.00	1.00	1.00	0.36	1.00×10^{-2}	0.24	0.36	0.47	1.07
	Bridelia ovata Decne.	ST	1.00	1.00	1.00	0.36	2.60×10^{-3}	0.24	0.36	0.12	0.72
EUPHORBIACEAE	*Mallotus philippensis* (Lam.) Müll.Arg.	ST	2.00	1.00	2.00	0.36	1.20×10^{-3}	0.47	0.36	0.06	0.89
	Baccaurea ramiflora Lour.	T	2.00	1.00	2.00	0.36	9.00×10^{-4}	0.47	0.36	0.04	0.87
	Aporosa villosa (Wall. ex Lindl.) Baill.	ST	3.00	2.00	3.00	0.72	2.80×10^{-3}	0.71	0.72	0.13	1.56
HYPERICACEAE	*Cratoxylum formosum* Byer subsp. pruniflorum Gogel.	T	1.00	1.00	1.00	0.36	3.20×10^{-3}	0.24	0.36	0.15	0.75
	Macaranga gigantea (Rchb.f. & Zoll.) Mull. Arg.	T	10.00	6.00	10.00	2.17	1.40×10^{-2}	2.36	2.17	0.63	5.16
IXONANTHACEAE	*Irvingia malayana* Oliv. Ex A. Benn.	T	4.00	4.00	4.00	1.45	2.10×10^{-1}	0.94	1.45	9.49	11.88
	Tectona grandis Linn. f.	T	16.00	7.00	16.00	2.54	2.50×10^{-1}	3.77	2.54	11.70	18.01
LAMIACEAE	*Vitex peduncularis* Wall. ex Schauerr	T	2.00	1.00	2.00	0.36	8.00×10^{-4}	0.47	0.36	0.04	0.87
	Callicarpa arborea Roxb.	S/ST	2.00	1.00	2.00	0.36	7.00×10^{-3}	0.47	0.36	0.32	1.16
	Vitex canescens Kurz	T	81.00	40.00	81.00	14.49	3.30×10^{-1}	19.10	14.49	15.07	48.66
LAURACEAE	*Phoebe paniculata* Nees	T	1.00	1.00	1.00	0.36	9.00×10^{-4}	0.24	0.36	0.04	0.64
	Litsea glutinosa (Lour.) C.B.Robinson	T	17.00	9.00	17.00	3.26	1.20×10^{-1}	4.01	3.26	5.71	12.98
LEGUMINOSAE – CAESALPINIOIDEAE	*Albizia odoratissima* (L.f.) Benth.	T	19.00	14.00	19.00	5.07	1.10×10^{-1}	4.48	5.07	5.11	14.66
	Cassia timoriensis DC.	ST	3.00	3.00	3.00	1.09	1.30×10^{-2}	0.71	1.09	0.59	2.39
	Cassia fistula Linn.	T	6.00	5.00	6.00	1.81	2.70×10^{-2}	1.42	1.81	1.23	4.46
	Albizia chinensis Merr.	T	1.00	1.00	1.00	0.36	2.00×10^{-2}	0.24	0.36	0.94	1.54
LEGUMINOSAE – MIMOSOIDEAE	*Albizia lebbeck* (L.) Benth.	T	1.00	1.00	1.00	0.36	3.50×10^{-2}	0.24	0.36	1.63	2.22
	Adenanthera pavonina Linn.	T	5.00	4.00	5.00	1.45	2.40×10^{-2}	1.18	1.45	1.08	3.71
	Acacia catechu Willd.	T	1.00	1.00	1.00	0.36	4.00×10^{-3}	0.24	0.36	0.19	0.78

Family Name	Scientific Name	Habit	Number of species (tree)	Number of plots (plot)	D (tree/ha)	F (plot/plot)	Do (m^2/ha)	RD (%)	RF (%)	RDo (%)	IVI
LEGUMINOSAE – PAPILIONOIDEAE	*Dalbergia cultrata* Graham ex Benth.	T	4.00	4.00	4.00	1.45	4.80×10^{-3}	0.94	1.45	0.22	2.61
	Erythrina subumbrans Merr.	T	1.00	1.00	1.00	0.36	1.80×10^{-3}	0.24	0.36	0.08	0.68
	Pterocarpus macrocarpus Kurz	T	3.00	3.00	3.00	1.09	1.10×10^{-1}	0.71	1.09	5.08	6.88
LYTHRACEAE	*Lagerstroemia floribunda* Jack	T	8.00	6.00	8.00	2.17	8.70×10^{-3}	1.89	2.17	0.40	4.46
MALVACEAE	*Berrya mollis* Wall. ex Kurz	T	4.00	1.00	4.00	0.36	5.10×10^{-3}	0.94	0.36	0.23	1.54
MELIACEAE	*Sandoricum koetjape* Merr.	T	1.00	1.00	1.00	0.36	6.20×10^{-3}	0.24	0.36	0.29	0.89
MORACEAE	*Artocarpus heterophyllus* Lamk.	ExT	1.00	1.00	1.00	0.36	5.20×10^{-3}	0.24	0.36	0.24	0.84
	Ficus benjamina Linn.	T	3.00	1.00	3.00	0.36	4.80×10^{-3}	0.71	0.36	0.22	1.29
	Broussonetia papyrifera (L.) Vent.	ST	3.00	2.00	3.00	0.72	4.20×10^{-2}	0.71	0.72	2.02	3.45
	Ficus hispida L.f.	ST	14.00	12.00	14.00	4.35	3.00×10^{-2}	3.30	4.35	1.38	9.03
PHYLLANTHACEAE	*Cleistanthus gracilis* Hook.f.	S/ST	2.00	2.00	2.00	0.72	9.00×10^{-4}	0.47	0.72	0.04	1.24
RUBIACEAE	*Mitragyna brunonis* Craib	T	4.00	3.00	4.00	1.09	3.40×10^{-3}	0.94	1.09	0.16	2.19
	Oxyceros horridus Lour.	ST	2.00	2.00	2.00	0.72	1.70×10^{-3}	0.47	0.72	0.08	1.27
SALICACEAE	*Casearia grewiifolia* Vent. var.grewiifolia	ST	1.00	1.00	1.00	0.36	2.90×10^{-3}	0.24	0.36	0.13	0.73
SAPINDACEAE	*Schleichera oleosa* (Lour.) Merr.	T	1.00	1.00	1.00	0.36	1.10×10^{-3}	0.24	0.36	0.05	0.65
	Paranephelium longifoliolatum Lec.	T	20.00	7.00	20.00	2.54	6.60×10^{-2}	4.72	2.54	3.03	10.29
TILIACEAE	*Grewia paniculata* Roxb.	T	45.00	27.00	45.00	9.78	1.10×10^{-1}	10.61	9.78	5.69	26.08
	Colona flagrocarpa Craib.	T	10.00	4.00	10.00	1.45	2.90×10^{-2}	2.36	1.45	1.34	5.15
VERBENACEAE	*Gmelina arborea* Roxb.	T	2.00	2.00	2.00	0.72	1.60×10^{-2}	0.47	0.72	0.76	1.95

2. Codominant

It was the crown class with height from 10 - 15 m. Outstanding plants in this class included Lamiaceae, Litsea glutinosa, Gmelina arborea, Albizia odoratissima, Paranephelium longifoliolatum, Crypteronia paniculate, Terminalia nigrovenulosa, Colona flagrocarpa, Heteropanax fragrans, Cassia fistula, Grewia paniculate, and Lagerstroemia floribunda.

3. Overtopped/Suppressed

It was the crown class with height from 2 - 9 m. Most species in this class included Grewia paniculata, Tetrameles nudiflora, Litsea glutinosa, Paranephelium longifoliolatum, Heteropanax fragrans, Vitex canescens, Lagerstroemia floribunda, Macaranga gigantean, Markhamia stipulate, Protium serratum, Wrightia tomentosa, Ficus hispida, Holarrhena pubescens, Baccaurea ramiflora, Fernandoa adenophylla, Mitragyna brunonis, Aporosa villosa, and Oroxylum indicum.

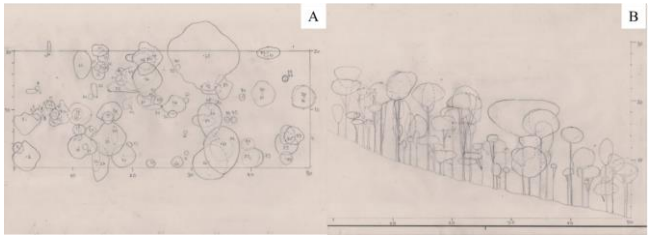


Fig. 3 Horizontal Structure (A) and Vertical Structure (B)

V. Discussions

A. Study Area Characteristics

Overall diversity index in the study area was higher than the mixed deciduous forest of Si Lanna National Park, Chiang Mai Province [15]. However, the study area had similar diversity index to the mixed deciduous forest of Chaloem Phrakiat Thai Prachan National Park, Ratchaburi Province, studied by National Park Research [16].

This area had evenness index revealed that plants with rather high distribution represented rather equal distribution of the number of trees of each species in this area. It also represented growth suitability of undergrowth plants. Fruits falling to the ground can grow.

Data of species compositions and plant structuring revealed that this study area was a secondary forest under recovery, with pioneer species that could grow in gaps. The ones found included 5 species: Tiliaceae (Grewia paniculate and Colona flagrocarpa); Euphorbiaceae (Macaranga gigantean); Leguminosae–mimosaideae (Albizia lebbeck and Albizia chinensis); Verbenaceae (Gmelina arborea); and Lamiaceae (Vitex canescens). This corresponded to the study of Sriwattanatham [17] on structures and components of species in the mixed deciduous forest of Doi Suthep-Pui National Park, Chiang Mai Province. Original species such as Vitex canescens, Lamiaceae, and Lagerstroemia floribunda were also found.

B. Value Added and Conservation Guidelines

For the preparation of species data and the analysis of species compositions in the area of Phu Hung community forest the basic data obtained could support participatory area management planning for utilization of precious community re

sources for sustainability, along with conservation of some engendered species.

The increase of economic plants in Phu Hung community forest in compliance with planting promotion policy for 58 species [4] corresponding to plants from the analyzed species compositions in the study area was found that key plants that should be promoted for planting included Grewia paniculate, Lamiaceae, Cassia fistula, Pterocarpus macrocarpus, Albizia lebbeck, and Lagerstroemia floribunda. However, because of the study area being the mixed deciduous forest, not only 6 species as aforementioned should be promoted but also a great number of economic species that can be promoted for planting in this forest as well such as Dipterocarpaceae and all species of bamboos.

The promotion can be conducted by planting in gaps, with local eatable mushrooms according to the methods of how to use Mycorrhizai Mushroom and Amanita citrine for improving the efficiency of Dipterocarpaceae planting [18] in order to correspond to the royal idea of "Rehabilitate Forest, Generate Income" [19]. It can be a food source for the community in the future. Bamboo planting promotion in the study area does not only to generate the food source for the community like planting trees with mushrooms, but the community can also sell them as construction materials, furniture production, and chopstick production [20]. They can also be brought for low-resistance biochar (≤ 100 ohm), with special property of generating and releasing negative ions and far infrared ray for input to cosmeceutical industry [21]. It is the assembly of community enterprise members for value added products, with linking production processes and interdependence in term of transport to external markets [22].

Furthermore, eatable fruit crop (Baccaurea ramiflora) can also be promoted, along with other plants for utilization (Holarrhena pubescens and Schleichera oleosa) and for construction (Lamiaceae, Pterocarpus macrocarpus, and Gmelina arborea), corresponding to 3 Forests, 4 Benefits according to the royal remarks of H.M. King Bhumibol Adulyadej on 7 January 1980.

VI. RECOMMENDATIONS

1. This research focus on only big vegetations, therefore, the next research should be designed for collecting all size of trees.

2. Value added and conservation guideline were considered with the royal remarks of H.M. King Bhumibol Adulyadej about 3 Forests, 4 Benefits. For the next research, the value of direct and indirect such as the abundance and value of economic species, of medical plants, of food plant species and of carbon stock should be investigated.

CONCLUSION

In brief, the study area according to Species composition analysis revealed that the study area was a secondary mixed deciduous forest with 3 crown classes. There were 424 plants from 59 species, 52 genuses, and 29 families. Lamiaceae had the most species, particularly, Vitex canescens, the plant with the highest relative density, relative frequency, relative dominance, and importance value indices up to 19.10, 14.49, 15.07, and 48.66, respectively. This study area had species diversity index = 3.28 and evenness index = 0.80. Value added and forest conservation should be implemented in compliance with planting promotion policy for 58 species and 3 Forests, 4 Benefits, i.e., Grewia paniculate, Lamiaceae, Cassia fistula, Pterocarpus macrocarpus, Albizia lebbeck, Lagerstroemia floribunda, Baccaurea ramiflora, Wrightia tomentosa, Schleichera oleosa, Lamiaceae, Gmelina arborea, all species of bamboo, and Dipterocarpaceae. These plants under the promotion corresponded to biodiversity of the study area.

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Historical Drama for the Dissemination of Government Policies

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Abstract*— This research aims to study historical drama for the dissemination of government policies. The scope of the study focuses on the dissemination of the government policies of Thai leaders in the Rattanakosin period, using a mixed research method. The results showed that, historical drama was a communication tool for leaders to create their identity and present the image of the leaders and the country. There are 2 types of drama: comedy and tragedy. The drama content presented mainstream history and alternative history, including the way of life of the protagonist, the confrontation with crisis, and the outcome. The theme of the drama includes the personality of the leaders, the leader's groups, the key situations, the ideals and practices of the leaders, and the contributions to the society. The role of historical drama in terms of policy dissemination is redundant and difficult to distinguish clearly. The prominent role of drama found in this study is for communication, education, entertainment, symbol of honor for royalties, public relations, image building, community identity, motivation, and treatment. The historical drama changed according to leadership, social, government, and government policies. The drama creation is based on historical data with modification according to the purposes of the creator and tastes of the audiences. Timely publishing will affect the popularity of the performance, and may lead to the changes that the leaders expect.

Index Terms— *Historical Drama ,Government Policies ,Dissemination of Government Policies, Thai Performing arts*

I. INTRODUCTION

Generally, studies were not widespread in the past. The communication between leaders and the people uses drama as a means of disseminating information, rules, practices, and requests. Commenting and resistance because it can show a realistic image and clearly reach the audience's mind.

Historical Drama shows the stories, experiences, events of a person, group, person, society that occurred in history. There may be a mix of content, forms of performances that may be interesting. Presentation at regular times and special occasions of individuals and society, such as celebrating Phra Nakhon Awakening, in times of war Acting in times of social crisis, etc. The roles of historical dramas are therefore diverse to be used. One of those roles is the dissemination of government policy.

As mentioned In Thailand The dissemination of governmental policies using historical dramas such as Ramayana Unrut Inao, including the chronicle. Such shows were more prevalent in the Rattanakosin period, such as Rachathirat,, Three Kok,, Phra Lor, Phraya Graok, Suphan laed, Chao Taksin, etc.

When the state of the country has changed until it has entered a crisis Historical dramas were exhibited frequently, such as the Si Pan Din, Sai Lo Hit, Rattanakosin, Buppesannivat, etc. The stories presented were events that were close to the situation of the society at that time, or could show the situation that they wanted to happen in society.

The popularity of historical dramas is an interesting issue. When considering the duration of the exhibition It appears that exhibits often take place in the event of a crisis or change in the situation. Which reflected the state of society at that time Needs of the show's creators As well as the needs of the audience arising at that time.

However, the study of historical drama to disseminate the government policy. Despite frequent exhibits but lack of information gathering The available information is scattered. In addition, the aforementioned studies lacked a link between the factors involved. Causing historical dramas to be considered to only play a role in creating entertainment.

Accordingly, researchers are interested in studying Thai historical dramas. And the development of historical dramas for the dissemination of government policy in Thailand. The scope of the study focuses on the Rattanakosin Era because the exhibits happen continuously. There are many exhibiting opportunities in society The results of the study will lead to an approach to creating historical dramas to disseminate government policy And use it in other occasions As well as being a further academic reference

II. RESEARCH OBJECTIVES

The objectives of this research article were 1) to study the Historical drama in Thailand, and 2) to study Development of historical dramas for the dissemination of government policy in Thailand.

III. RESEARCH METHODS

Research Design and Process

This research is qualitative research, conducting by gathering information form primary and secondary historical document; Tree Seals Laws, Public Policies, Thai Classical Dance Drama Program, and Thai Classical Dance Drama Texts books., formal and informal interview 2 groups of experts in performing arts: national actors in Thai Tradition performing arts and others are lecturer in Thai Tradition performing arts, and observing live performances, teaching performance skill and studying Video and Social media including YOUTUBE and Facebook. This study also applied historical methods to criticize information and interpreting information for evaluating the reliability, as well as paraphrasing the information by synthesizing and analyzing the Influence of the Ethnic in Thai Dance Drama. Steps were shown in Fig. 1.

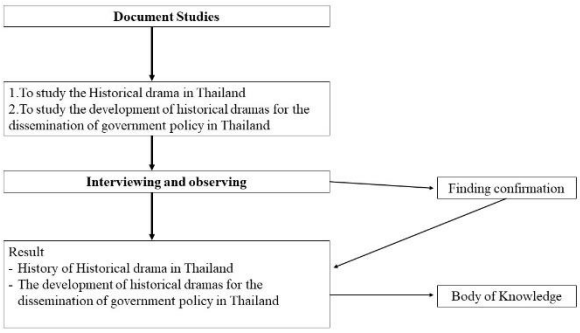


Fig.1 Research process for finding of Historical Drama for the Dissemination of Government Policies

IV. RESULTS

The results of the study showed that 1) Historical drama is the show of a person's story. A group of persons who have existed in history, chronicles, legends, tales, fables to express themselves identity image and society. There are 2 types of performances: short stories and long stories. A group of people who are important to society, the essence of which consists of lifestyle, experience, important events Outstanding performance. The concept and practice of that group or group of people For education, entertainment, class-specific utensils, socializing, and community identification Public relations and dissemination of the governing policy. 2) Historical drama in Thailand is the performance of a person's story. A group of real persons in the history, chronicles, legends, fables of Thailand to show themselves. Identity image and society. There are two types of performance: short stories and long stories. The performance presents realistic and fictional stories. The theme consists of lifestyles, experiences, milestones, outstanding performance, the concept and practice of that group or group of people for education, entertainment, class-specific utensils, socializing, and community identification public relations and dissemination of the governing policy. 3) Historical drama in Thailand as far as evidence was found, it was assumed that it occurred in the Ayutthaya period. The story is presented by the royal court which is the Ramayana and Unnarut. The people sector exhibited according to the beliefs of the community in ritual. The later, it appears that the Ramayana has a variety of editions. To shows the influence of the beliefs of Brahmin-Hinduism. This difference arises in relation to the gods they respect. To make the character's personality and the content of the play is different. In addition, it was found that the tales of the heroic Java Malay (present day Indonesia) were written by Princess Kuntol and the Princess crown is Da Lang and Inao (Big Inao and Small Inao) that shows borrowing character and storyline but the content belongs to Thailand. Manohra is a story in Phutthachatok (Panya Sa Chataka), a play recorded in the Old City (Ayutthaya), shows that at that time the spread of Buddhism entered Thailand as well. Krung Thonburi Era, Taksin brought the drama of the Ramayana to improve in 4parts: Phra Krathom Praamsorn, Hanuman Keaw Nang Warin, Thao Mali Wa Krom, and Thotsakan set up the acid sand ceremony. The content of the show presents the events that took place during his reign. In the Rattanakosin Era, King Phra Phutthayodfa Chulalok, please have the drama restored in the Ayutthaya period: Ramayana, Unnarut, Inao, Dalang, Rachathirat, Three kok, Khun Chang, Khun Phaen, etc. King Phra Phutthalerdlar Napalai improved some part of the dramas of Inao and Ramayana. In addition, His Majesty's new drama celebrates the performance of the female drama of Luang, namely Chai Chet Sangthong, Khawee Manee, Phichai Kraithong and Khun Chang Khun Phaen some parts. King Nangklao appeared some part of the Ramayana drama

of His Royal Highness Prince Bovorn Mahasak Phonla Save and a parody play of Phra Mahamontri Sap about "Raden Landai". King Mongkut wrote some parts of Rama Deon Dong, which are attached to the history that he entered the Buddhist priesthood. Prelude from the poem about the Ramayana. In addition, I wish that There is a staging of the Chao Phraya Mahindrasak Thamrong's drama Rachathiraj Three Kok and Arabian Nights of the Mom Tuan theater troupe. King Chulalongkorn give them frequent historical dramas, namely Phra Lor, who has the Royal Narumit Theater Troupe Preedalai Theater Troupe Causing such theater troupe to create historical dramas such as Phra Lor Phraya Gaeok, Phra Phrachao Sipamin, Ramayana, Inao, etc. King Vajiravudh Celebrates a play and staged many historical dramas such as Phra Ruang, Phaya Ratchawang, San Thao Saen Knot, legend of the grass, Dharma Dharma Songkhram, Narai Sipang Some parts of Ramayana etc. King Prajadhipok His Majesty wrote a script on the story of the King of China. Addition, during the reign of King Rama IX, historical dramas were staged on important occasions such as the Sua Masang. The reception of the royal guests and the celebration of the four bowls (the celebration of the King's Birthday And the door of the relatives in the year of the small snake corresponding to him), etc. During the reign of King Ananda Mahidol, there is a widespread drama and performance in historical dramas. By Luang Wichitwatakan Director-General of the Fine Arts Department. This is because it is a time of the change of the country in many ways, leading to the change of government. Causing the introduction of personal stories Groups of important people who are heroes of the people to exhibit, such as the lead Suphan, Naresuan Declaration of Independence, and Princess Sanwee. King Bhumibol Adulyadej The historical theatrical staging is more widespread than before because the country's situation was volatile some of the popular shows are Si Pandin, Ku Karm, Sai Lo Hit, Rattanakosin, Buppesanniwat, and ect. 4) The development of historical drama to disseminate the government policy in Thailand during the Rattanakosin period divided into 3 phases as follows:

Phase 1 Concept of Ayutthaya Art and Culture Development

The development of the country and the arts and culture follows the Ayutthaya style because the leaders had royal experiences from their service in the Ayutthaya period. Therefore, his wanted the country to have good livelihoods as if Krungsri Ayutthaya Era was the capital. Historical drama at this stage is the lead character and the plot are from the fairy tales, chronicles but the content of the presentation to the personality of the character is Thai or the author consists of a king, a boss and a government official. The popular story of the royal court is the Ramayana, Unrut, and Inao. The essence of which is the personality of the protagonist. The political situation and the concept of leadership practices as well as treating leaders to be an example of thinking, behavior, praise of leaders. Public relations at the end of the period, the situation of the country was in trouble, so there was a literary reflection on the show on the Land of Landai, which was a parody of the royal court.

Phase 2 Concept of Western Art and Culture Development

The development of the country and the arts and culture follows the western style because the leaders have prior experience from the royal personnel and education. Building alliances with western countries made aware of the world situation and want the state of the country to have a good life with art and culture equal to many civilized countries. Historical drama in this period has 3 characteristics: 1) To take the characters and plot from the chronicles, fairy tales but the content of the presentation to the personality of the character belongs to Thailand. 2) To bring the characters and plot from the chronicles,Thai folklore. 3) The storyline and the way of acting from the West, but the character content. Thai situation popular stories on display include Rachathirat, Ngampa, Phra Law, Saenkom, Phra Ruang, Phaya Ratchawangsan. The essence is the personality of the protagonist. The political situation and the concept of leadership practices as well as treating leaders to be an example of thinking, behavior, praise of leaders, and public relations. At the end of the show, there was more widespread due to His Majesty King Rama VI's royal writing, exhibiting and performing by himself. In addition to studying abroad Making the interest of the use of drama as an educational tool. As a result, He led the drama of Shakespeare and historical dramas to be used to disseminate the government policy and cultivating democracy.

Phase 3: Concept of integrated arts and culture development

The development of the country and the arts and culture follows a combination due to the highly volatile global situation. It affected Thailand as it appeared the economic downturn. The change of world war rule and the overthrow of the boss. Historical theatrical performances happen frequently by exhibiting the content that took place in

history and the chronicles of Thailand, including: King Naresuan, Bang Rachan, Lead Suphan, Si Pandin. In addition, there are some periods of history and the chronicles to present only important issues by assuming the characters in the action of historical events such as love and exchange, one world, one sky, and Buppesanniwat, etc. The style of acting is more diversified due to the development of technology and communication such as drama, dance, singing, talking, television and film. Historical dramas that have been previously exhibited, they are often form demonstrations, education and public relations for tourism because it shows the history that happened in the past.

V. DISCUSSIONS

Historical drama is a communication tool for leaders to spread the two forms of government: promote, resist, opposition can be a reflection of support or promotion because the performance that took place was an imitation of a person, a group of people formed to express themselves and the image of the person and society, then resistance can mimic or show what happened opposite.

Historical dramas in Thailand have changed according to social, economic and cultural conditions, especially leadership changes. Resulting in a change in policy which affected the format of showing the essence of the show interpretation and the role of the show.

The development of historical theatrical performances reflects the development of society. government showed the personality, taste, government policy of the leader and the situation that occurs at each stage.

Historical drama to spread popular government policies may arise from three reasons, which is learned from history Tired of living conditions and want to change to a new society.

The creation of historical dramas that are frequently occurring. To Show the fluctuation of the country's situation. The needs of leaders and people as shown in the stories that have been displayed, such as abolition of slavery, saving, change of rule, war, etc. The presentation of the story can be long or short, both realistic and fictitious, praising the leader or the three key figures: the prelude or the opening of the story. During the end of the story or ending the story appeared in the process of acting as a persuasion. Emphasize repeatedly. To bring about learning and absorb from watching the show and the idea practice to be the next routine.

VI. RECOMMENDATIONS

A. Recommendations for Practices

1. Historical drama is a communication tool for leaders to disseminate clear and realistic government policy that should be applied to the target audience and the right situation. It'll benefit the show manager, creator, performer and audience.

2. Historical dramas can be used in teaching and learning. Local publicity Travel and building international goodwill.

3. Leaders should give priority to showcasing historical dramas because the learning process from historical drama is a systematic tool for human resource development from finding information. Analytical thinking working with others present the reason, and character actions in a given situation. It can also cultivate the concept. Social practices that leaders want to emerge from the process. Including promoting the identity of the society which is the national heritage.

B. Recommendations for Further Research

1. The study of historical dramas for the dissemination of government policy. To change the scope of study. It is a specific study such as the Ramayana, Si Pandin Buppesannivat, or change the role of a drama such as public relations, education, created friendship Tourism, economy, etc.

2. The design of this research is a qualitative research. Interested parties can turn into quantitative or field research, or experimental or creative research.

3. The results of the research can be developed to be more precise by studying the concepts and theories as well as their relationship with relevant factors. In order to expand knowledge to be clear and applied it to other science in the future.



Fig.2 Lakhon Nai Inao [1]



Fig.3 Ramakien: Surapanakka tee Seda [2]



Fig.4 Ramakien: Praram Duen Dong [3]



Fig.5 Pra Law [4]



Fig.6 Si Pan Din [5]



Fig.7 Bubpaesanniwas [6]

CONCLUSION

Historical drama studies to disseminate government policy. Determine the educational scope in the Rattanakosin period. It was found that the leaders used historical dramas to be used as a tool for disseminating government policies because it gives a clear, realistic image and influences the persuasion of the person, group of all person. At the same time, historical drama is a tool that leaders and society use to reflect themselves. The image that took place at that time as well as for expressing opinions both support and against the being at that time. Historical theatrical exhibitions vary according to the leader, public policy and social conditions in which they lived. Therefore, if the country is volatile. To be often take place historical dramas. Therefore, leaders should pay attention to the management of education and a historical drama to society for the development of human resources and the country.

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Role of Inventory Management on Competitive Advantage of Small and Medium Companies in Thailand

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Abstract — The purposes of this research were to study the inventory management factors affecting the competitive advantage and confirm the inventory management factors affecting the competitive advantage. This research was a mixed methods research. First, the quantitative data was collected from the sample of 280 small and medium companies in Thailand. This research focused on 14 observable variables. Then, the qualitative data was collected from nine key informants who were the experts in the inventory management field. The results indicated that the structural equation model was consistent and harmonious with the empirical data with the model consistency indices as follows: χ^2= 106.32, df = 69, χ^2/ df = 1.54, CFI = 0.99, GFI = 0.95, SRMR = 0.042, RMSEA = 0.044. Furthermore, the inventory control systems had the greatest influence on the competitive advantage, followed by inventory control practices, and information technology, respectively.

Index Terms—Inventory Management, Competitive Advantage, Inventory Control Practices

I. INTRODUCTION

At present, Small and Medium Enterprises (SMEs) are start-ups in expanding into larger businesses. Therefore, to run a successful SMEs business, you must have the ability to do business or have to have experience with expertise in various businesses that will result in business growth. At present, the government sector supports new businesses as a solid foundation for further development into a profitable and competitive business on the global stage. In 2020, Thailand has divided the size of SMEs down to the next level, that is, small enterprises. In the manufacturing sector, the workforce must not exceed 5 people and the annual income is not more than 1.8 million baht, thus promoting many businesses. At present, business operations involve trading in raw materials, storing and processing raw materials into products to add value to raw materials before delivery to customers. Hence, the essential thing to have and invest in manufacturing is inventory. According to the Inventory Index Report [1] in 2019, the total inventory cost of Thailand was 967.40 billion baht, an increase of 924.60 billion baht from 2018 and a 4.6 percent growth rate. In 2019, the finished goods inventory index was 135.5 billion baht, an increase from 123.2 billion baht in 2018, reflecting an increase in the inventory of operators. This may result from selling fewer products than planned or producing more products than customers' requirements and may be the result of the slowdown in the domestic economy and the decline in imports and exports. While the Industrial Production Index was 101.6 billion baht, down from 105.4 billion baht in 2018, reflecting that operators have cut production due to the volatile situation of the world economy, which resulted in the contraction of exports. With the outbreak of COVID-19, companies that will be able to compete with competitors must have high competitive advantage. Therefore, reducing inventory or reducing inventory costs is a key factor in building competitiveness.

Inventory management is an integral part of company management or logistics management as inventory is a cost that is in every part of the production, for example, product manufacturing must have good raw materials, suitable and sufficient quantities for production and during production. Good production requires a reasonable period of time and no backlogs between productions. Consistent production results in low inventory. When the product is finished, it has to be delivered or prepared for the customer to pick up the product without the quantity of the finished product as it will affect the cost as well.

Inventory management is to find the right middle point in order not to have too much inventory because it will result in sunk cost. If the inventory is too low, it will affect production that may not be sufficient to produce. But if the raw material is purchased in large quantities, there may be a lower cost of purchasing raw materials. Therefore, inventory management is a sensitive matter and requires an understanding of the context and function of the inventory. The final aim of inventory management is to minimize the

cost of managing your inventory because inventory has both advantages and disadvantages as mentioned above. To increase the efficiency and reduce costs to improve competitiveness, inventory management is the first priority.

Inventory management nowadays has an inventory management information system to help manage inventory quickly and accurately such as the general use of computer systems and the use of various systems for taking notes or importing information into the system, various display of inventory quantity, usage, and demand forecast. The introduction of information systems to help manage inventory is indispensable [3, 4].

The researcher therefore studies the factors of information technology, inventory control systems and inventory control practices that influence the competitive advantage of small and medium enterprises in the manufacturing industry in Thailand. Research results lead to the development and application of inventory management to suit small and medium enterprises in order to reduce inventory management costs and increase the competitiveness of small and medium enterprises in Thailand.

II. Research Objectives

1. To study the inventory management factors affecting the competitive advantage
2. To validate the model and confirm the inventory management factors affecting the competitive advantage.

III. Literature Review

Small and medium-sized enterprises in Thailand are currently receiving tremendous government support in terms of business funding, business expansion loan and business recovery loan to be able to resume business and compete in the future. In Thailand, Small and Medium Enterprises (SMEs) are divided into 3 categories: micro businesses employ no more than 5 people and earn not more than 1.8 million baht per year, small businesses employ no more than 50 people and earn not more than 100 million baht per year and medium enterprises (Medium) employing no more than 200 people and earning up to 500 million baht per year. Small and Medium Enterprises (SMEs) accounted for 35.30% of gross domestic product, which is one third of Thailand's GDP [1]. Small and medium enterprises in manufacturing are required to operate in manufacturing either. A must-have item for every production is inventory. Today's large-scale businesses have a precise and stable manufacturing system. It defines the needs of small and medium enterprises to take on the burden of managing their inventory in terms of quantity, quality, and delivery to the company according to their needs. Therefore, the cost of the small and medium enterprises companies to bear the cost of their inventory is also responsible for the cost of owning the inventory

[5, 6] said inventory is a balancing act in the upstream to downstream supply chain. Maintaining proper inventory will not affect customer needs or the supply chain. Therefore, proper and effective inventory management has a direct and indirect effect on today's business profits.

[7-10] There are 7 types of traditional inventory: 1.Raw Material: the source material of production such as sheet iron, sheet rubber and material to be processed into goods 2. Work in Process: work in process or work waiting to be produced in the next step, such as unfinished phones and unfinished cars 3. Finished Goods: products that are finished and ready to be delivered to customers 4.Maintenance: parts or spare parts of machines that are prepared for replacement when the original machine part is broken or the part has reached the end of its life 5. Bought out parts: parts produced from one company are sent to manufacture to another, it is a finished product for one company, but is used as a raw material for another company, which can be found mostly in manufacture of printed circuit board electronic components 6. Packing Material: materials that must be prepared for packing products for customers such as cardboard boxes, boxes and plastic to cover products, cushioning material, adhesive or tape for product attachment and paper for labeling, currently added to the inventory category 7.Debris or broken parts: raw materials to be used or left over from production, are defective, of substandard quality, or cannot be utilized for their original purpose. These seven types of inventory are cross-dependent inventory ad must have in the production process, which occurs from the upstream to downstream of the downstream industry.

Information Technology

Today's small and medium enterprises have adopted information technology as an integral part of business development, for example, to develop a production system to be accurate, fast and keep up with demand and assist in the development of inventory management systems. Information technology is widely used in small and medium enterprises and plays a part in all areas of production, for example, using information technology to assist in production planning, enabling systematic planning and reducing management costs; transportation planning to provide transportation at the lowest transportation cost and human resource planning for the most efficient use of resources and the use of information in inventory

management in order to systematically know the quantity of inventory. To implement information technology, it must be compatible with software and hardware. The hardware is based on the RFID BARCODE EDI EPOS to provide efficient, fast and accurate inventory management [4, 11]Inventory management information technology comprises both software and hardware [12]. Nowadays, radio frequency identification (RFID) technology is used to facilitate data transmission to enable data recording to be transmitted quickly [13, 14 and makes stocktaking and inventory management more current and efficient [12, 15]. Inventory management software for small and medium businesses started with the introduction of a package program (Microsoft Office). Companies with a medium or heavy workload may need inventory management software such as Materials Requirement Planning (MRP) and Enterprise Resource Planning (ERP). Managing in technology is to balance software and hardware and align it with the company for maximum performance.

Information technology can be applied to inventory management in small and medium businesses. The use of this technology must take into account the cost and skill of the employees. Therefore, choosing the right information technology to manage inventory, it is a matter that every company has to pay attention to in order to increase the efficiency of the company. In this research, information technology factors were divided into 3 areas: 1. Use of software and hardware for inventory management such as Electronic Point of sale (EPOS), Electronic Data Interchange Technology (EDI), Radio frequency identification (RFID) and BARCODE. 2. Linking information with suppliers and customers. 3. Using computers to help manage inventory [2, 15, 16].

Competitive Advantage

Competitive advantage refers to differentiation or creating values that are unique and superior to competitors in the business. Satisfying customers requires a strategy that is consistent with the situation and low costs and differentiating products or services that are superior to competitors and quick response [17, 18]. It could be said that competitiveness at present is a must for SMEs to operate a business because competitiveness is the ability to differentiate a company's products or services. Differentiation has to be outstanding that it can attract customers to buy the company's products. Competitiveness can come from many things, such as product characteristics, product uniqueness, product quality, technology, superior functionality, maintenance and service. Therefore, competitiveness today focuses on three main areas [2, 19]1.Price - Since buying products nowadays have technology to help in buying or comparing prices easily, customers will choose to buy products at a similar price but with different functions. Customers tend to choose products with similar functions but at lower prices. In the same production, the raw material must be purchased with the lowest cost. 2. Quality - The quality of the product is another factor that the company gives as much importance as the price factor. This is because if the product is cheap but not of high quality, it will have to be bought in large quantities or multiple times in order to meet the objectives or production targets. Therefore, the quality factor is an important factor of competitiveness. 3. Delivery - The speed of delivery is an important factor in today's production. Most of today's production is based on the Just-in-Time Manufacturing (JIT) system. Because the JIT system is a system that does not store large volumes of inventory, but rather allows suppliers to store and deliver at a specified time. Therefore, delivery speed is an important factor to increase competitiveness, it can be concluded that competitiveness can be divided into 3 factors: 1) price, 2) quality and 3) delivery.

2.1 Information Technology and Competitive Advantage

Today's SMEs rely on modern information technology, easy access to information for a competitive advantage. Hence, to be able to gain a competitive advantage in time, it is necessary to rely on information technology that is accurate and fast in order to compete with low-cost competitive competitors including the production that requires information in production planning, planning of orders and effective inventory management in terms of lead time or inventory precision to reduce inventory management costs [2, 19].

H_1 Information Technology Influences Competitive Advantage

2.2 Information Technology (Information Technology) and Inventory Control Practices.

There are several inventory control practices, for example, a fractional possibility analysis involves finding a practice that is considered in terms of cost, opportunity loss and profit-loss, introduction of information systems to enable faster inventory management and profit-loss calculation, consistent approach to meeting customer needs by applying information technology to forecasting customer needs to be precise and meet the needs of many changing customers and the use of information technology for forecasting sales and customer satisfaction is another practical approach to inventory management. Due to the large sales volume, inventory management must be appropriate and sufficient to meet customer needs in order

for customers to be satisfied with the purchase of the company's products and services. Important factors of the inventory control practice: 1. Cost reduction 2. Profits 3. Customer satisfaction 4. Sales [4, 5, 20]

H_2 Information technology influences inventory control practices.

2.3 Inventory Control Practices and Competitive Advantages

Inventory control practices focus on satisfying customers in terms of price responses that are competitive with competitors and cost management to be lower than competitors, including managing to be able to continuously profit in order to increase competitiveness.To be competitive today, SMEs rely on efficient inventory management in terms of cost, profitability and cost effectiveness and the ability to meet customer satisfaction as much as possible [2, 5, 17, 21].

H_3 Inventory control practices influence competitiveness

2.4 Inventory Control Systems and Inventory Control Practices

Inventory Control Systems is a system that is used to control inventory in the warehouse most effectively such as increasing the quality of production in order to order raw materials in the right quantity without having to order for production, shortening the production cycle to reduce the size of the raw material order to reduce the cost of raw materials for each order and a reduction in storage space, as well as a reduction in inventory levels to a minimum, but still sufficient for production including a reduction in the delivery time to have a suitable delivery to ensure the inventory turnover appropriately. Therefore, there are 4 important factors in the inventory control system: 1.Increasing production quality 2. Reducing cycle times 3.Reduce the stock level 4. Shorten the delivery time. The aforementioned factors influence inventory control practices in terms of shortening the cycle times leading to lower production costs and the production of quality products makes it possible to sell at a higher price and more profitable, as well as having a positive effect on the satisfaction of customers who get quality products at affordable prices [22-24].

H_4 Inventory control systems influence inventory control practices.

2.5 Inventory Control Systems with competitive ability

Inventory control systems can greatly enhance competitiveness as inventory control systems focus on quality enhancement. If SMEs produce quality products and are different from competitors, it will increase their competitiveness over competitors. Having a good inventory control system for SMEs will help in reducing inventory levels and resulting in lower inventory management costs and continued business capital. It also increases the competitiveness and shortening the production time in order for the products to be produced faster, which increases the competitiveness because there are products that are released to customers quickly and continuously [2, 21]

H_5 Inventory control systems influence competitiveness.

The research variables can be summarized: 1. Information Technology (IT) 1.1 Using the software Inventory management hardware (IT1) 1.2. Information Links with Suppliers and Customers (IT2) 1.3. Using computers to assist in inventory management (IT3) 2. Inventory control system (ICS) 2.1 Increasing Production Quality (ICS1) 2.2 Reduction of Production Cycle (ICS2) 2.3. Downgrade of Stock Levels (ICS3) 2.4. Reduce Time Delivery (ICS4) 3.Inventory control practices (IP) 3.1. Cost reduction (IP1) 3.2 Profitability (IP2) 3.3 Customer Satisfaction (IP3) 3.4. Sales (IP4) 4. Competitiveness (CA) 4.1. Price (CA1) 4.2. Quality (CA2) 4.3. Fast delivery (CA3). It can be shown as Figure 1.

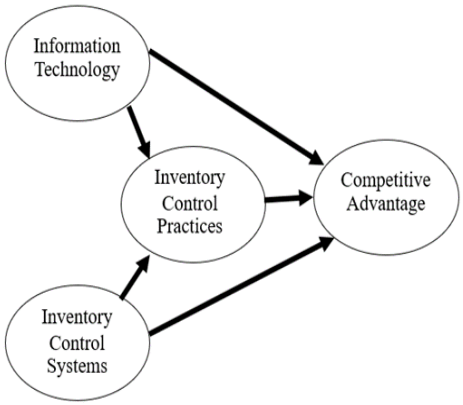


Figure 1: Concept model

IV. Research scope

The quantitative data was collected from the sample of 280 small and medium companies in Thailand[25]

V. Research Methods

This research was a blended research using quantitative research from collecting 280 samples of 517,899 Thai SMEs

[1] and 14 observable variables [25]. From the SMEs industry in Thailand, the manufacturing sector used a five-point Likert scale questionnaire with IOC = 0.8-1.00 and Cronbach's alpha = 0.89. This questionnaire was self-answered and electronic. Qualitative research was a focus group from 9 experts working on inventory at supervisory level upwards using judgment sampling. The selection criteria were supervisor level or above and at least 10 years of inventory work experience as validation of the model researched through quantitative research.

VI. RESEARCH RESULTS

Research results from 280samples of SMEs were collected, including micro businesses, 21 companies (7.5%), small businesses, 216 companies (77.14%)and medium enterprises 43 companies (15.36%). In the analysis of structural equations (SEM), there were 4 latent variables and a total of 14 observable variables. The interpretation of the results by Lisrel confirmed the consistency of the empirical data from the questionnaire to the model. The results showed that χ^2= 106.32, df = 69, χ^2/ df = 1.54, CFI = 0.99, GFI = 0.95, SRMR = 0.042, RMSEA = 0.044 passed the criteria of [25] and had a predictive coefficient of 57%,shown in Figure 2.

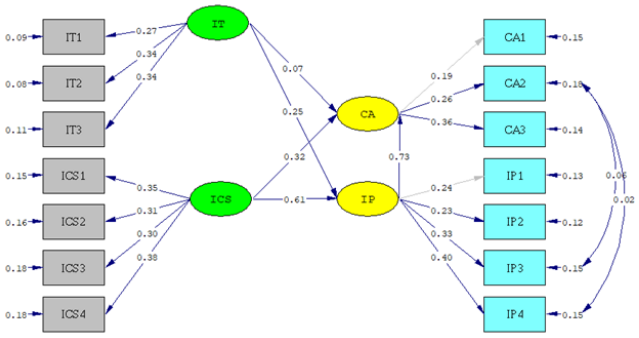


Figure 2: A causal model affecting competitiveness

From Figure 2,it was found that the causal model affecting competitiveness was consistent and harmonious with the empirical data and the total effect as shown in Table 1

Table 1: The total effect of the hypotheses

Hypothesis	Direct Effect	Indirect Effect	Total Effect	Decision
H_1 Information technology influenced competitiveness.	0.0700	0.1825	0.2525	No Accepted
H_2 Information technology influenced inventory control practices.	0.2500	-	0.2500	Accepted
H_3 Inventory control practices influenced competitiveness	0.7300	-	0.7300	Accepted
H_4 Inventory control systems influenced inventory control practices.	0.6100	-	0.6100	Accepted
H_5 Inventory control systems influenced competitiveness.	0.3200	0.4453	0.7653	Accepted

From Table 1, there were 5 assumptions and 4 qualified hypotheses with descending influence as follows: 1. H5: Inventory control system influenced competitiveness and had influence = 0.7653 and had direct influence = 0.3200. And indirect influence = 0.4453, 2. H3: Inventory control practice influenced competitiveness and direct influence = 0.7300, 3. H4: Inventory control system influenced inventory control practices and has direct influence = 0.6100, 4. H2: Information technology influenced inventory control practices and has direct influence = 0.2500 and the hypotheses that are not passed were H1: Information Technology influenced on Competitiveness and Influence = 0.2525; direct influence = 0.0700 and indirect influence = 0.1825.

The qualitative research was focus group from 9 inventory management experts to verify empirical model. The focus group results were in the same direction, they agree with this model. As a result, most of the focus groups focused on managing inventory control practices, as it controlled cost, profit and sales, as well as customer satisfaction that is critical to competitiveness. The focus group also focused on information technology influencing competitiveness, but this was an unqualified hypothesis. This was because information technology in inventory management will be information technology that relies on warehouse management in order to make inventory management more efficient and affect its competitiveness.

VII. Conclusion

This research was a research on inventory management factors affecting competitiveness through a combination of research. The research examined the influence of information technology factors, inventory control practice factors, and inventory control factors influencing competitiveness. The relationship could be summarized as follows:

Information technology had no influence on competitiveness because information technology had no direct influence on competitiveness. The information

technology used in the inventory management system could not be effectively operated without a guideline for practice that is consistent with [2]. However, information technology is an indirect factor affecting competitiveness because to be competitive with competitors, the speed and accuracy of information technology was still necessary.

Information technology influenced inventory control practices that were aligned with [4], this is because information technology was a key factor in driving effective inventory control practices such as reducing costs or increasing profits, using information technology to use resources efficiently, selection of low-cost raw material sourcing technology and use of information to find products or raw materials in real-time and with accuracy

Inventory control practices influenced competitiveness, consistent with [21] because inventory control practices focused on reducing costs and maximizing profitability in order to gain competitive advantage. Much of the competitive advantage was focused on cost, quality and delivery, in line with inventory control practices because inventory management can be improved or developed within the company from the implementation of guidelines that are appropriate to the context of each SMEs.

Inventory control systems influence inventory control practices. These two factors were consistent. The inventory control system was an improvement in warehouse practices that manage inventory effectively, Instead, inventory control practices focused on the results of inventory control operations by measuring costs and profits. Therefore, an effective inventory control system would lead to lower costs and further profitability, which is consistent with [24].

Inventory control system had an influence on competitiveness. Inventory control systems focused on quality control and delivery timing, in line with quality-focused competitiveness in order to provide customers with quality products at the time required by the customer. Moreover, reducing cycle times could deliver products to customers more quickly and efficiently. It was indispensable to reduce inventory levels, which was a reduction in inventory levels to meet demand. This downgraded in stock was a direct cost reduction and allows for an effective increase in competitiveness, in line with [2, 21].

This research had made a new discovery that information technology has no influence on the competitiveness of SMEs in Thailand. This was because information technology may not directly affect competitiveness but indirectly affect competitiveness. Due to the fact that information technology must be used in conjunction with appropriate inventory control practices, including the use of information technology appropriate to the context of each SMEs inventory in Thailand.

VIII. SUGGESTIONS

1. Further research should increase the variables related to inventory management and competitiveness such as organizational efficiency and supplier performance, etc.

2. This research did not categorize SMEs in the research, so further research should be compared between micro businesses, small Business and medium business for greater clarity of research.

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The Model for Managing T-Sports Channel on the Internet

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Abstract

Abstract--- *The objective of the study is to propose the proper management model and the T Sports Channel's content for the Thai context by using the qualitative research by the means of studying the document research and focus group among 20 key informants. The purposive sampling was also used for selecting the criteria of those key informants which are as follows: The governor of Sport Authority of Thailand, the director of T Sport Chanel, and those people who are the stakeholders of the T Sport Chanel procedure, such as creative directors, organizer and moderators, producers, production technology supervisors, reporters, moderators, the successful sport channel administrators, media academician, sport marketer. The tools for collecting the data were the document analysis and focus group, and analyzed by content analysis.*

The result found that the best practices for processing 5 T Sport channels on digital TV and the internet system both domestic and international was processing the T Sport channels, they should manage the channel for fitting to the sport content, using massive budget for developing the interesting contents, buying the copyright of broadcasting, broadcasting the popular sport from their own variety channels for approaching most of the target customers.

Index Terms --- ***Management, Channel's content, T- sport channel on the internet.***

I. INTRODUCTION

Sport Authority of Thailand (SAT), Ministry of Tourism and Sports is the organization for driving the strategy in developing the national sports. This organization provided the sixth national sport development plan (2017 – 2021) by raising the human potential in order to support the country growth, and creating the quality elder society which is the issue that relates to the Sport Authority of Thailand under the twelfth national economic and social development plan (2017 – 2021) for framing the national sport development by having six sport development strategy by defining the vision which was "Developing sport for excellence and professional sport to create the happiness and the economic value for society by the standard management system" The sport authority of Thailand has been processing T- sports Channel which is one of the important channels for spreading the sport news since 2002. This channel's objectives are for spreading, supporting and awareness people across the country to have the physical exercise for having the good life quality. (1). After setting sport channel mission has been completed, the sport authority of Thailand launched the information service website setting in order to use the benefit from the technology as the motto that "The sport channel for people through the Ku Band, C Band satellite, and TV cable all over the country." This setting is not only create the sustainable sport community, but also increase the economic value in sport industry in Thailand. (2) In the present day, there have been increasing of the private competitors in the digital market, so developing and administrating are the needed, such as the channel of presenting the event show, the channel network, and so on. However, T- sports channel found some obstacles and the limitation, especially in the aspect of the personnel which are as follows; allocating the budget in the organization, the rerun in broadcasting, and the variety of the show. With those reasons, the researchers are interested in studying for the development as the channel's objective, supporting the sport development, and to serve the people with effectiveness. The purpose of this study is to

present the management model and the T- sport channel's content for fitting to Thai context.

II. RESEARCH OBJECTIVES

This study utilized a qualitative design by using the document research, best practices and focus group.

III. RESEARCH METHODS

Participants. The 20 participants with the television show producers. Participants were recruited using purposive sampling.

Procedures The focus group interview guided the interview.

IV. RESULTS & DISCUSSION

The result of the study and the analyzing for the good best practices

In the operational process of the digital TV system and the internet system both domestic and international level from the study of 5 sport TV stations found that the TV station management for having the sport content used lot amount of budget for developing the interesting TV show. The direction was so clear in the issue of buying the favorite live broadcasting copyright for making live broadcasting in their own station with the variety patterns for approaching most of the customers.

PPTV TV station

PPTV is the ground TV station in digital TV system which was produced by Bangkok and broadcasting company limited on 2013. PPTV has the sport TV show in proportion of 21%, drama and TV series 15% by creating the difference contents. (3). The audience target were the audiences those who were living in Bangkok, the main and the second cities across the country.Although the operating result in 2017 was loss about 2,028 million baht, the expenses was the investing cost for increasing the interesting contents by setting the PPTV's new goal " PPTV world class TV". PPTV bought many more entertainment TV shows copyright because they wanted to expand the audience base to the women and teenager target, and for creating more various from the Football world class show which most audiences were men (60%) (3,4) and in 2019 found that buying the live broadcasting in Premier league was started in Thailand (5,6)

True Vision

True Vision is the TV station under the operation of True vision cooperation company groups. They have 9 sport channels for 24 hours which are as follows; True sport 2 (channel no. 682, 45), True sport 5 (Channel no. 684), True sport 6 (Channel no. 685), True sport 7 (Channel no. 686), True sport HD (Channel no. 666), True sport HD2 (Channel no. 667), True sport HD3 (Channel no. 668), True sport HD4 (Channel no. 669), True tennis HD (Channel no. 670), and True vision. True vision group considered the importance of developing the channel's content by buying the live broadcasting right of the three season of Premier league 2019/20-2021/22 in the type of "All rights" the full version from Premium league in England through all medias and platforms both TV and online. (380 matches) (7,6)

BEIN Sports

BEIN Sports is the sport channel that has just come recently. The result found that their strength is the sufficient budget for managing and developing the content, and also they are able to broadcast the popular sport in their channel. (8). In this issue might not relevant to T- sports channel due to the limitation of the budget, so T- sports channel should increase the internet channel for having the ability of broadcasting many channels at the same times.

ESPN

ESPN is the cable TV station which produces and broadcasts about the sport in 24 hours which most of broadcasting are from the studio in Bristol and Connecticut. They are doing the marketing as if they are as "The Worldwide Leader in Sports". Most of the show from ESPN and their connection are live broadcasting in sport event such as Sports Center, and the rest are talk show such as Around the Horn, Jim Rome is Burning, Outside The Lines and PTI, and the sport documentary (9)

FOX Sports

FOX Sports is the organization which is the representative of Fox corporation in term of the sport property in US. They are consisted of FOX

Network ; FS1, FS2, FOX Soccer Plus ,FOX Deportes by FOX Sports, FOXSports.comม FOX Sports App. Fox Sports have networks in many continentals by the biggest network is Fox Sports. FOXSports tries to explore the big event in the areas in order to buy the live broadcasting, for example Basketball and Football. They also analyze the matches both before and after the game which is the value added strategy that they use. (10)

The result found that the model of administration and appropriate content for T- sports channel should be as follows;

1. Developing the content for matching with the T- sports channel audience in term of the diversity for every groups of the audience is the must for them to make the priority. They should approach all aspect of sports such as the sport science, the sport for health such as Boxing, Football, Volleyball, and Golf and so on. They should develop the content for the difference target group such as the professional sport player, amateur, coach, and family in term of analyzing the matches, the situation, and the trend of sport both in the present day and in the future including with the guideline for developing the successful professional sport player.

Therefore, they should propose the sport content from the oversea or bringing the live broadcasting into the station in order to increase the attracting more audiences which is related to the work of ESPN which is the sport station which produces and live broadcasting abouT- sport show in 24 hours (10)

2) The operational structure of T- sports channel is not so clear which is the consequence of lacking in operational flexibility and direction. They should define the structure and the responsibility for being professional. They also should adjust themselves to be the organization where can earn their own income such as making the live broadcasting from oversea, and open the advertising space for people to rent.

3. Focusing on Online platform is the technology advancement which covers all areas, high speed connection and inexpensive cost. It increases the opportunities for approaching the station. They should develop the content and the model for the operational effectiveness in the future.

CONCLUSION

From the result found that T- sports Channel have the online channel through three main channels as follows, YouTube channel, Facebook Fan page, and Application. Nevertheless, following and examining the number of the audiences who were watching through online channel found that there were less number of audiences than they were expected, so the model of broadcasting online should focus are as follows;

1. They should invest and increase the potential production for the target market by focusing online channel such as investing for good commentators those who have experiences in sport.

2.They should develop the model for approaching the variety audiences, such as the kid content show, the sport analysis, the sport inspiration, the coaching etc.

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Integrated communication model for the propagation of Buddhist principles in Thailand

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Abstract— The objective of this research (1) is to study the factors affecting the integrated communication for the propagation of Buddhist principles and (2) to establish and verify the consistency of a causal relationship model with empirical data, integrative communication that influences Buddhist philanthropy. Using quantitative and qualitative research methods, It starts with the examination of empirical data from real experiences with the theoretical framework established by the researcher from the principles, concepts and theories in order to obtain important findings in the study of the Integrated communication model for the propagation of Buddhist principles in Thailand. Data were collected by questionnaires from 400 Buddhist subjects who practice Dharma at the provincial religious practice bureau. The data were used for structural equation modeling (SEM) analysis and in-depth interviews with 9 experts to confirm the study results.The results show that (1) the results of the study showed that the Brand Orientation, Market Orientation and Consumer Characteristics have a positive influence on integrated communication for the spread of Buddhist principles and the merit making of Buddhists. (2) Integrated communication for the spreading of Buddhist principles has a positive influence on Buddhist merit-making. (3) The model was consistent with empirical data based on the six indexes that met the acceptance criteria: 2/df =1.319, P = 0.058, RMSEA= 0.028, SRMR=0.017, GFI=0.975 และ AGFI= 0.952. The model consists of 5 main components and 14 sub-elements as follows: (1) Brand Orientation has 3 components: Shared brand vision, Brand value-adding capability and Shared brand positioning (2) Market Orientation has 3 components: Customer Orientation, Competitive Orientation and Interfunctional Coordination. (3) Consumer Characteristics has 3 components: Motivation, Ability and Opportunity. (4) Integrated communication has 2 components: Traditional media and newer online media and (5) Performance has 3 components: Giving Alms, Precept undertaking and Bhavana.
Keywords: communication model, dissemination of principles, Buddhism in Thailand

I. INTRODUCTION

Continued economic and social change, as well as advances in various fields of technology that have evolved to become more efficient, especially in the field of information technology in the late 1980s and early 1990s (Kliatchko, 2008), communication services companies consolidation, media and product consumption behavior change, traditional ad cost increase, global business competition, reduced effectiveness of legacy media, reduction in customer database costs, as well as other factors such as zapping, media fragmentation and message credibility, these changes are the key factors and pressures that have made IMC increasingly play a role in marketing communications (Duncan & Everett, 1993). This is because traditional advertising or public relations alone would not work under the ever-increasing competitive environment and at the same time, consumers are increasingly active in seeking information on brands / services from different sources. In particular, social media sources, both from Facebook and consumer-generated content or opinions after consumers use products and services in various posts on the Internet. It gives consumers more power to choose goods and services than ever before. Integrated marketing communication will be a new method of planning that is driven by technology, customers, consumers and organizations such as giving importance to information and interaction and a customer-centric focus (Eagle, Kitchen, Hyde, Fourie, & Padisetti, 1999). According to the National Statistical Office (2016), in terms of consumer behavior that preferred to be more technology-dependent, it was found that during 2012–2016, there was a 47.5% increase in Internet users, smart phone users rose 50.5 percent and this was the main use of social media networks, accounting for 91.5 percent.

The increasing trend of the use of information media plays an important role in the spread of Buddhism for others to understand and practice. Buddhists are increasingly

using technology, the Internet, and social networks. As a result, the Buddhist organization has to adjust the communication style of Dharma to be in line with the changing behavior of Buddhists by integrating various communication methods appropriately. Duncan (2005) states that the marketing model needs to be adjusted according to various environmental factors in order to be appropriate for this change, especially, changes in information technology systems that have transformed the power of marketing channels. Finally, communication will provide entrepreneurs and consumers with the same understanding and help consumers gain trust in the product or service (Xue & Zhou, 2011). Therefore, if you consider that the principles in Buddhism are commodities and Buddhists are consumers, integrated communication is necessary as a means of bringing messages to Buddhism. Integrated communication, both the traditional and the new online media used by marketers today, are the key drivers for boosting short-term sales and long-term branding (Luo & Donthu, 2006; Osinga et al., 2011; Reid, Luxton & Mavondo, 2015). It is the performance that every organization needs. As with Buddhist organizations, if the propagation of Buddhist principles in an efficient and effective manner, the present method of propagation should be integrated with new communication methods. Factors related to an integrated communication should be considered, including brand focus, marketing focus, and consumer attributes. These factors are directly related to integrated communication, which will determine and influence the future operations of the organization. This will allow Buddhists to develop devotion and faith in the principles. Buddhist teachings received through communication and change the behavior turn to merit by giving alms, observing the precepts and praying, which is a practice that is more in line with the principles of Buddhism. (Phra Sophon Samadkhun, 2016)

From the above problems, researcher was interested in this issue and reviews the literature and presents an integrated communication model for the dissemination of Buddhist principles in Thailand, based on the principles of system theory of Lunenburg & Ornstein (2008) and Coulter & Robbins (2007). In the research study of Figure 1, which, from literature review, the factors affecting the propagation of Buddhist principles in Thailand consisted of Buddhism focus (Baumgarth, Merrilees, & Urde, 2013; Schmidt & Baumgarth, 2014; Spyropoulou, Skarmeas, & Katsikeas, 2011), propagation of Buddhism (Kitchlew, Bajwa & Shahzad, 2018; Abu-Salih, 2017; Mardiyono, 2018; And Oluwatoyin, Olufunke & Salome, 2018), Buddhist attributes (Maia, C. et al, 2017; Leung & Bai, 2013; Ou-Yang, Ariphongphokin & Trung, 2014) and integrated communication (Schultz & Kitchen, 2000; Duncan, 2005; Oluwafemi & Adebiyi, 2018; Luxton, Reid & Mavondo, 2014). From this study, it will help to determine the structural relationship and influence of factors on integrated communication and Buddhist merit-making. It can be used for the improvement / development of various related factors as mentioned above. This will be a guideline for Buddhist organizations, especially places of practice, to spread the Buddhist principles effectively and efficiently.

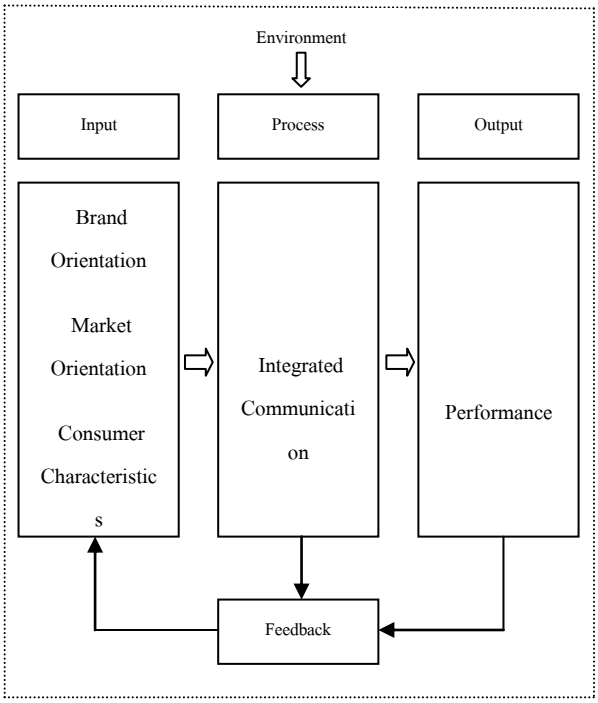


Figure 1 Systems theory and applications

II. RESEARCH QUESTION

What and how do the causal factors lead to integrated communication for the propagation of Buddhist principles and Buddhist philanthropy?

III. RESEARCH OBJECTIVES

1. To study the factors affecting the integrated communication for the propagation of Buddhist principles and Buddhist merit-making.
2. To create a causal relationship model that affects integrated communication for the propagation of Buddhist principles and Buddhist merit-making.
3. To analyze and verify the consistency of the causal relationship model and empirical data in the integrated communication affecting the merit of Buddhism.

IV. BENEFITS

1. It gives knowledge of a linear structural relationship and the influence of integrated communication for the propagation of Buddhist principles and Buddhist merit-making. It can be used to improve / develop relevant factors for the dissemination of Buddhist principles effectively and efficiently.

2. It is a guideline for Buddhist organizations. In particular, Dharma Practice can predict Buddhist merit from the integrated communication model for the propagation of Buddhist principles in Thailand.

V. RESEARCH METHOD

This research is mixed methods research using quantitative research and qualitative research.

Population and sampling

1. The population was Buddhists who practice Dharma at the provincial Dharma practice center.

2. The researcher used stratified random sampling as stratified proportional sampling from the provincial religious practice bureaus in each region to obtain a total of 400 representatives of Buddhism from each group.

Tool research and quality verification

1. Quantitative research

The questionnaire was used as a questionnaire that was examined for the quality of the content validity from 9 experts using IOC (Index of Item Objective Congruence) technique. The evaluation results were consistent between 0.78-1.00 and reliability analysis was carried out by using a questionnaire to try out. The validity of the Cronbach method was obtained from the calculation of the alpha coefficient, a confidence factor of 0.972.

2. Qualitative research

Researchers set qualitative target groups to conduct In-depth Interview for 7 persons. It was a request for interviews with those in the positions of administrators and scholars related to the communication of the temple or the Dharma Practice Center and the Buddhists who practice it. The results from the in-depth interviews were then used to write a briefing to confirm the quantitative results.

Data analysis

Quantitative research used Structural Equation Modeling (SEM) and qualitative research used content analysis.

Research procedure

This research consists of 10 steps:

Step 1: Procedures for the study of concepts, theories and relevant literature reviews from secondary sources.

Step 2: Draft a research questionnaire.

Step 3: Synthesis of research variables.

Step 4: Creating a research tool or questionnaire in a quantitative study.

Step 5: Qualitative testing of the research tool.

Step 6: Reliability testing of questionnaire.

Step 7: Data Collection and Analysis

Step 8: Presentation of the quantitative analysis results.

Step 9: qualitative research

Step 10: Summary and Discussion of Research Results

The research operation process can be shown in figure 2 as the research operation process.

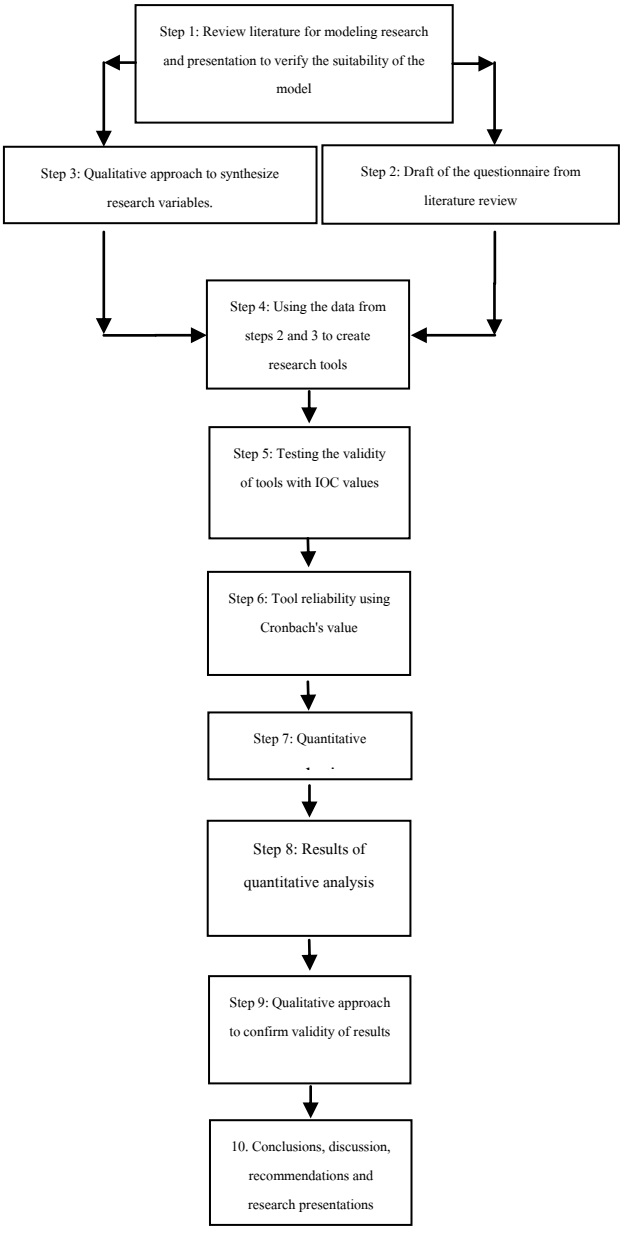


Figure 2 Research procedures

VI. RELATED LITERATURE REVIEWS

In this research, the researcher aimed to study an integrated communication model for the propagation of Buddhist principles in Thailand. The researcher reviewed relevant literature and gained the knowledge gained from the review and developed it as a conceptual framework for the research study. The researcher studied the components of integrated marketing communication and Buddhist merit. Integrated marketing communications included (1) traditional media and (2) new online media (Trusov, Bucklin & Pauwels, 2009; Katona Zubcsek & Sarvary, 2011; Danaher & Dagger, 2013; Draganska, Hartmann & Stanglein, 2014; Khajeheian, 2015; Batra & Keller, 2016) and Buddhist merit-making included (1) giving alms (2) observing the precepts and (3) prayer (Phra Prayudh Payutto), 2016; Wong, 2017). In addition, the researcher studied the factors that influenced the Buddhist merit which included (1) Buddhism focus (Baumgarth, Merrilees, & Urde, 2013; Schmidt & Baumgarth, 2014; Spyropoulou, Skarmeas, & Katsikeas, 2011) (2) Buddhism propagation focus (Zhou, Brown & Dev, 2009; Ahmed, Kitchlew, Bajwa & Shahzad, 2018; Abu-Salih, 2017; Mardiyono, 2018) (3) Buddhist attributes (Maia, C. et al., 2017; Leung & Bai, 2013; Ou-Yang, Ariphongphokin & Trung, 2014) and integrated marketing communication (Schultz & Kitchen, 2000; Duncan. , 2005; Oluwafemi & Adebiyi, 2018; Luxton, Reid & Mavondo, 2014).

VII. RESEARCH HYPHOTHESIS

Hypothesis 1: Buddhism focus influences integrated communication for the propagation of Buddhist principles.

Hypothesis 2: Buddhism focus influences Buddhist merit-making.

Hypothesis 3: Buddhism propagation focus influences integrated communication for the propagation of Buddhist principles.

Hypothesis 4: Buddhism propagation focus influences the merit of Buddhists.

Hypothesis 5: Buddhist characteristics influence integrated communication for the propagation of Buddhist principles

Hypothesis 6: Buddhist attributes influence Buddhist merit-making.

Hypothesis 7: Integrated communication for the propagation of Buddhist principles influences Buddhist philanthropy.

VIII. RESEARCH FINDINGS

1. The results of the study of an integrated communication model for the propagation of Buddhist principles in Thailand were found that

1.1 Results of the Buddhism hypothesis test focus has a positive direct influence on integrated communication for the propagation of Buddhist principles, influence size = 0.675, statistically significant at the .01 level

1.2 Buddhism focus has a positive direct influence on Buddhist philanthropy, influence size = 0.460, and indirect influence through integrated communication, influence size = 0.239, statistically significant at the .01 level.

1.3 Buddhism propagation focus has a positive direct influence on integrated communication as for the propagation of Buddhist principles, influence size = 0.522, statistically significant at the .01 level.

1.4 Buddhism propagation focus has a positive direct influence on Buddhist philanthropy, influence size = 0.344, and indirect influence through integrated communication, influence size = 0.185, statistically significant at the .01 level.

1.5 Buddhist characteristics have a positive direct influence on integrated communication for the propagation of Buddhist principles with an influence size of 0.338, statistically significant at the .01 level.

1.6 Characteristics of Buddhists have a positive direct influence on Buddhist philanthropy, influence size = 0.202, and indirect influence through integrated communication, influence size = 0.120, statistically significant at the .05 level.

1.7 Integrated communication for the propagation of Buddhist principles has a positive direct influence on Buddhist philanthropy with influence size = 0.354, statistically significant at the .01 level.

3. The results of the development of an integrated communication model for the propagation of Buddhist principles in Thailand, the researcher developed the model using Confirmatory Factor Analysis (CFA) found that

3.1 Buddhism temple model focus (BRAO) has 3 elements: establishing a vision for the propagation of Buddhist principles (BRAVI), the ability to build faith in Buddhism (BRAVA) and determining the position of Buddhism as a way of living (BRAPO)

3.2 The Buddhism propagation focus (BUDD) measurement model has 3 components: Buddhist focus (CUSO), past Buddhism strategy focus (COMO) and intra-organization coordination (INTC).

3.3 Model for measuring Buddhist characteristics (CHAB) has 3 components: motivation (MOTI), Talent (ABIL), and Opportunity (OPPO)

3.4 Integrated communication measurement model (INTCOM) has 2 components: traditional media (TRAM) and new online media (NEWO)

3.5 Buddhist merit-making measurement model (MERI) has 3 components: giving alms (GIVI), observing the precepts (PREC) and prayer (BHAV).

The analysis of the Goodness of Fit Index of the overall model showed that the model had Goodness of Fit with empirical data, with all 6 Goodness of Fit Indexes that passed the acceptance criteria: ดัชนี χ^2/df =1.319, P = 0.058, RMSEA= 0.028, SRMR=0.017, GFI=0.975 และ AGFI= 0.952, as shown in Figure 3.

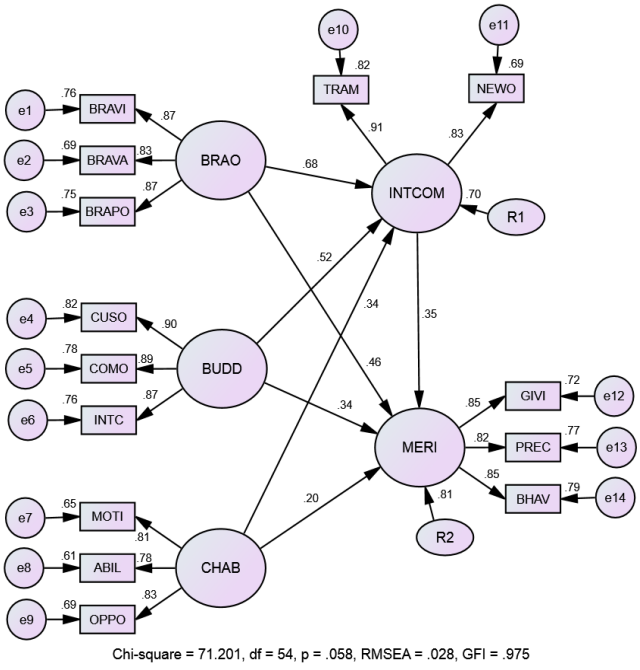


Figure 4 Goodness of fit analysis of the hypothesis model (Hypothesis Model)

4. In-depth interviews

The researcher interviewed experts and was directly involved with the propagation of Buddhism and 7 administrators of the provincial Dharma Practice Center / person. The results of the in-depth interviews can be summarized into 2 issues as follows

- Issue 1: Most of the interviewees agreed with the research framework, explaining that the concept was consistent and appropriate to the current situation and has passed the study and review of the literature according to academic principles

Point 2: Most of the interviewees agreed on the relationship of the variables in the model with the goodness of fit of the research model and the empirical data for each aspect as follows:

(1) Buddhism focus influences integrated communication for the propagation of Buddhist principles: Nowadays, temples and Dharma schools have improved the presentation of Buddhist content via social media to emphasize participation in expressing opinions for Buddhists. It has also improved the presentation of Buddhist content via social media that emphasizes asking, answering questions and presenting the content of principles by the person or information technology without distorting the teachings of Buddhism. It can truly help religion be the way of life of Buddhists.

(2) Buddhism focus has an influence on Buddhist merit making: temples and Dharma practices have organized activities for the propagation of Buddhist principles by trying to use Dhamma media in spreading Buddhism to reach Buddhism through a form and applied method to be consistent with the era. Buddhists are easily accessible.

(3) Buddhism propagation focus influences integrated communication for the propagation of Buddhist principles, whereby the propagation of the principles is based on the principles of benefits and happiness of Buddhists. There is an effective use of social media that makes it reachable and using traditional media such as knowledgeable personnel and monks to present simple content and easy to understand language along with the application of the principles of living more than in the past, Buddhists pay more attention to the principles.

(4) Buddhism propagation focus has an influence on the merit making of Buddhists. This is because temples and Dharma schools support or facilitate the entry of Buddhists to practice by allocating quality Buddhism personnel and have the knowledge and ability to transmit correctly along with providing a dining room, a dharma pavilion, a dormitory, and a bathroom with regard to hygiene and clearly proportionate to facilitate the Buddhists who come to make merit or practice. This makes Buddhists more inclined to follow the "bases of meritorious action3" principle.

(5) Buddhist characteristics influence integrated communication for the propagation of Buddhist principles: the Dharma practice house or the person involved in the propagation of Buddhism must take into account the characteristics of Buddhism to meet the needs of the production of Dharma media in accordance with the needs and suitable for Buddhists.

(6) In the aspect of Buddhism, it influences Buddhist merit making, issue of motivation and opportunity will be

the motivating factor for more Buddhists to visit temples to practice meditation depending on the person's environment such as family, co-worker and Buddhists themselves. However, individual Buddhists have different preferences, such as some people like to give alms, some like to keep precepts, and some people like to pray.

(7) Integrated communication for the propagation of Buddhist principle influences Buddhist merit: regardless of traditional media or new online media, they are all encouraging factors for Buddhists to pursue their "bases of meritorious action" - giving alms, keeping precepts and more prayer.

IX. DISCUSSION

In a research study on the integrated communication model for the propagation of Buddhist principles in Thailand, the results of the research hypothesis can be discussed as follows:

1. Buddhism focus influences integrated communication for the propagation of Buddhist principles, which can be explained as determination of the vision in the propagation of Buddhism, the ability to build faith in Buddhism and determining the position of Buddhism as a way of life influences integrated communication for the propagation of Buddhist principle, that is, the form and method of propagation of Buddhism at present can be applied and adjusted accordingly to the era. There is an improvement in the presentation of Buddhist content via social media or modern media that emphasizes participation, opinion or response and through traditional media with regular activities for the propagation of Buddhist principles as well as presenting Buddhist content by person or information technology without distorting the teachings of Buddhism. It will help religion to be the way of the life of Buddhists truly. Therefore, a Buddhist focus or a focus on branding, brand identity and internal marketing through the use of integrated communication will lead to the development of a stronger brand in the future (Reid, 2005; Dawar, 2004; Salehi & Ekhlassi, 2017; Selvakumar, 2014).

2. Buddhism focus influences Buddhist merit-making, which can be described as vision of Buddhism, the ability to build faith in Buddhism and the position of Buddhism as a way of life influences the merit of Buddhists, it is expected that this is the result of patterns and methods of propagation of Buddhism that have been adapted appropriately to the era. The content of Buddhism is presented via social media that emphasizes participation and opinions. This allows Buddhists to be able to access and use as a spiritual anchors for a happy life by giving alms, observing precepts and prayer. The Buddhism, or brand focus, is a useful strategy that can ensure corporate growth and profitability (Gromark & Melin, 2011; Rugman & Verbeke, 2001). Therefore, effective brand development and continuous monitoring of the brand has become the most important aspect of management issues (Hirvonen, Laukkanen, & Reijonen, 2013; Rao, Agarwal, & Dahlhoff, 2004).

3. Buddhism propagation focus influences integrated communication for the propagation of Buddhist principles. Buddhist focus, past Buddhism strategy focus and intra-organization coordination influence integrated communication for the propagation of Buddhist principles. At present, integrated communication for the propagation of Buddhist principles, modern media such as social media have been considered to effectively reach Buddhism along with presenting content in a simple and easy to understand language. The traditional media used are staff / monks with knowledge of the principles, capable of transferring and using easy-to-understand language in the spread of Buddhism with the application of the principles in life more than in the past. A missionary focus or a marketing focus is what marketing executives will need to focus on by fostering a market-driven vision, building enterprise cooperation and paying attention to the market to achieve a successful integrated communication strategy (Ngamsutti, Jhundra-indra & Raksong, 2018).

4. Buddhism propagation focus influences the merit of Buddhists, which can be described as Buddhism focus is a past propagation strategy and internal coordination influences Buddhist merit-making. In the propagation of Buddhism based on the principles of Buddhism and happiness, social media can be used effectively to reach Buddhists with content that is simple and use language that is easy to understand including personnel / monks who have knowledge and ability to spread Buddhism by focusing on applying more principles in life. Doing so will help Buddhists gain access to the principles and teachings and use them as an anchor in their lives by giving more alms, observing precepts and prayer. Therefore, the focus on the propagation of Buddhism or a competitive marketing focus must create a market advantage in terms of perceived customer satisfaction. It can provide an opportunity to create value that is superior to competitors and leads to better market performance (Zhou, Brown & Dev, 2009; Ahmed, Kitchlew, Bajwa & Shahzad, 2018; Oluwatoyin, Olufunke & Salome, 2018).

5. Buddhist characteristics influenced integrated communication for the spread of Buddhist principles. Motivation, ability and opportunity all influence integrated communication for the spread of Buddhist principles. Integrated communication is essential to integrate Buddhist characteristics in implementing an integrated communication strategy. In addition, there must be support for the learning of Buddhist doctrines that will create an understanding of

Buddhist doctrines and build the ability to bring that doctrine into life through modern media such as social media and web sites and the original media used are personnel / monks along with creating opportunities for Buddhists to be able to access. However, Buddhist attributes or consumer attributes with incentives, talents and brand sponsorship opportunities will help the organization save costs. It is born from an effective and effective marketing communication message that reaches the target audience as well (Joseph, 2009). Understanding your customers, especially those who are loyal (loyal) and most profitable (buy in large quantities), is covered in terms of attitudes, habits and behaviors that result in greater customer loyalty. Such a database can assist in setting up a communication channel and when to use it without the need for all of the available communication tools (Kitchen & Burgmann, 2004).

6. The characteristics of Buddhists influence the merit making of Buddhists, which can be described as motivation, ability and opportunity influence the merit of Buddhists. Buddhists' faith in the doctrine of the Lord Buddha used in life, the ability to apply the doctrine with modern media will help Buddhists better understand the Buddhist doctrine and regular participation in religious events. The support and encouragement of family members to follow the doctrine and the time to study Dhamma and practice Dharma, these are all factors that support more Buddhism merit. Buddhist attributes or consumer attributes of trust, perception, benefit, and quality of information are key motivators, abilities and opportunities (MAO). These are consumer attributes that influence consumer behavior in social, commercial or corporate performance (Maia, C. et al., 2017; Leung & Bai, 2013).

7. Integrated communication for the spread of Buddhist principles influences Buddhist merit (performance), which can be described as traditional and new online media integrated communication will influence Buddhist merit-making. Spreading the teachings of the Lord Buddha using traditional media such as newspapers, journals, television and radio and communication with new online media via YouTube, Facebook, Instagram and Tweeter, these factors will help support and encourage more Buddhists to make merit. Integrated communication is a strategic tool for setting goals to support and maintain consumer loyalty and support the organization's performance. Therefore, the organization should pay more attention to budget allocation for public relations and integrated advertising (Khizar et al, 2016; Oluwafemi & Adebiyi, 2018).

X. RECOMMENDATION

1. Suggestion

1.1 Academic suggestion

Academically, it was found that the context of integrated communication for the dissemination of Buddhist principles in Thailand was not much different from that of foreign contexts. It is the context of integrated communication to strengthen market competitiveness. Creating an integrated communication strategy, executives focus on branding, marketing and consumer attributes to be used in defining and presenting information, public relations and advertising, this makes it able to reach the needs of the target group effectively and the performance of the organization is in good condition. However, academically, there could be some observed variables in terms of integrated communication from traditional media such as television, radio, print and online media and may add observed variables such as Facebook, YouTube, website and Twitter. Management is aware of the weights of the extracted observation variables, which allows for a clear determination of the integrated communication strategy and accurately weight each marketing communication tool within a limited budget.

1.2 Recommendations for implementation

(1) Religious organizations should apply the integrated communication model for the dissemination of Buddhist principles in Thailand and apply it to temple policy formulation or religious practice center. The degree of significance of each component of the variable influencing the formulation of an integrated communication plan for the dissemination of Buddhist principles was also taken into account.

(2) Buddhism focus influences integrated communication for the propagation of principles, showing the importance of Buddhism focus. The administrators of the temple or Dharma practice center should set a vision for the propagation of Buddhism by focusing on applying adjustments that are appropriate to the era and emphasizing access to Buddhism as a spiritual anchor in life and to build faith in Buddhism at the same time. However, there must be an improvement in the presentation of the Buddhist content via social media that emphasizes participation, expressions and opinions and asking-answering questions including organizing activities for the propagation of Buddhism according to Buddhist traditions and must be done regularly. It must be based on the teachings of Buddhism to make religion truly the way of life of Buddhists.

(3) Buddhism focus has an influence on the merit making of Buddhists. The position of Buddhism is a way of life that emphasizes the presentation of Buddhist content by the person or information technology that does not distort

the teachings of Buddhism. It will help religion to be the way of living and the true spiritual bond of Buddhists. Buddhists have a more careless and philanthropic lifestyle, withholding their stinginess by giving alms, observing the precepts and having more prosperity.

(4) Buddhism propagation focus influenced integrated communication for the propagation of Buddhist principles. To enable effective integrated communication and the dissemination of principles, the administrators of the temple or Dharma practice center should adhere to the principles of the benefits and happiness of Buddhists. In addition, social media must be used to reach more Buddhists, including personnel / monks with knowledge of the principles and the ability to spread Buddhism. This requires more emphasis on applying the principles in life than in the past.

(5) Buddhism propagation focus has an influence on the merit making of Buddhists. The doctrine should be presented in a simple and easy-to-understand language by using staff / monks who have knowledge of the principles and have an interesting sermon style and changing to use more online media to spread Buddhism to be modern and accessible to Buddhists. Temples / religious establishments must support or facilitate access to Dharma by providing a well-hygienic and well-proportioned cafeteria and toilets. It will be an important part that will help attract Buddhism to the people to make more merit.

(6) The characteristics of Buddhists influence the integrated communication for the propagation of Buddhist principles. The researcher found that the administrators of a temple or practice site should set up an integrated communication strategy for the spread of Buddhist principles by focusing on the core doctrines of Buddhism, the application of Buddhist principles in life and the use of modern media helps Buddhists better understand the Buddhist doctrine, this creates motivation, ability and opportunity for Buddhists to reach the essence of the principle and to be able to apply it in their life.

(7) Buddhist attributes influence the merit of Buddhists. In order to encourage Buddhists to make more merit by giving alms, observing precepts and prayer, the administrators of the temples or religious centers should emphasize the teachings of the Lord Buddha to build the faith of Buddhists by promoting the learning of the core Buddhist doctrines of Buddhism through modern media and through regular events on religious days.

2. Suggestions for further research

2.1 Additional qualitative studies on the issue of integrated communication for the dissemination of Buddhist principles in Thailand should be appropriate and in line with the current situation and able to support the characteristics of Buddhists in the areas of motivation, competence and in-depth opportunities so that the doctrine can be accessed effectively and efficiently. Buddhists will be able to use them as a spiritual anchor in their life in terms of giving alms, keeping the precepts, and increasing their prayers. This will make the society as a whole to live together happily.

2.2 There should be an in-depth study of the content and activities of a temple or Dharma practice center for propagating Buddhism by using personnel / monks. This must be a presentation of content and activities that do not distort the teachings of Buddhism, emphasizing the practical application of principles in life. A combination of both quantitative and qualitative research studies may be used with a focus group to obtain complete data. Religious organizations can use this information as a guideline for teaching practitioners to truly liberate and eliminate desires in accordance with the teachings of the Lord Buddha.

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An Analysis of Buddhist Principles to Promote the Livelihood of Single Mothers in Thipphasot Community

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Abstract *- The purposes of this research were 1) to study the livelihood of single mothers in Buddhist scriptures, 2) to analyse the Buddhist principles to promote the livelihood of single mothers in Thipphasot community. This research was qualitative research. The data were collected from documents, field work, in-depth interview, and to have empirical data, the descriptive analysis was used for data analysis. The livelihood of single mothers in Buddhist scriptures: after prince Siddhatha ordained monk in Buddhism, his wife (princess Bimba Devi) spent her life alone to look after her son. However, she could adjust herself to join the society. Her duty was to take care her son (Rahul Kumar). She accepted what happened. It could be reduced anxiety, indignation, and could adjust to the social environment. She was ready to face things, and accepted reality. The most importance of her duty was to take care her son completely. Analysis the Buddhist principles to promote the livelihood of single mothers in Thipphasot community: it maintained a family and took care their children in the society normally and happily. The principle of parents' duty was used which consisted of reasoned attention (Yonisomanasikara), bases of sympathy (Sangahavatthu) which could be adopted in real life. Single mothers in Thipphasot community faced many problems until they could get through those obstacles, raised up the life to the development of life nicely, fed their children to the achievement. When they got through problems, they could become valuable single mothers. It was a model for learning for those who decided to pursue the life of a single mother in accordance with Buddhism.*

Keywords: *Buddhist Principles, Promotion of Livelihood, Single Mother*

I. INTRODUCTION

Family is the main institution; it is regarded as the standard of society. This because people learn to develop to be a perfect human from their family and understand the concrete and the abstract such as basic economy, culture, politics, conscience, attitude and education, etc., so, if the family can produce a quality member, it can also perform normal duty in society. Knowing of "giving" and "receiving" of the balance can lead to coexistence of the people in society, social members with the quality, including the effect on the security of the nation.

The current situation has changed for the reason of imitation of livelihood of western culture or social cultures in livelihood that a man or woman prefers to live together before marriage. All of these factors have brought about changes that show a lack of family security that is imperfect family, single-parent family. It means a family has only a father or mother who is responsible for feeding his/her child such as a mother feed her child alone, broken family. What is shown that the imperfection of a family is divorce, broken family, parentless, or only have a mother. Most of the increase in divorce is caused by both women and men become less tolerant. It makes the father or mother feed his/her child alone, the family has only the father or mother and child. This is because of the divorce, widow. The model of family has an increasingly the single fathers or the single mothers in the family. This is because the divorce rate has risen continuously, and from the death of a spouse. Particularly the family has increasingly only the single mothers as the head of the family and feed her child alone. The family has a guardian who is an only single father or the single mothers, he/she must be responsible for his/her work and child increasingly. Single-parent family is burdened in the economy, faces stress, it is causing to have no time to teach his/her child and help children in learning appropriately (Prathumwadee Payathamsiri: 2007). (1)

The rise of the single-parent family has resulted in various sectors since from Office of the Prime Minister, Office of Women's Affairs and Family Development under Ministry of Social Development and Human Security, Thai health promotion foundation, Family network foundation including organizations related to family institutions and network partners play an important role in promoting and building stability for a single-parent family. This is included in the twelfth national economic and social development plan 2017- 2021. The essence of the story is; the result of changes in population, socio-economic structure affects family to become more a diverse model. Such as family has only couple but no children, single-parent family, same-sex family, skipped-generation family, family alone. In particular, the single-parent family is regarded to be more vulnerable than other families. The general assembly consults with the government in finding ways to help in the economic and social dimensions by requesting the provision of single-family welfare in Thai society, support for access to legal rights, the responsibility of government in the change of child care, together with other welfare related to economic dimensions. The above requests are already included in the international economic development plan. However, in addition to economic issues, the issues of mind are another one that society has to be aware of. The main problems are found as follows; the problems from sorrow, problems in feeding child, family and livelihood, stress or anxiety towards to insecurity and the new role to be both father and mother in the same time, the problem with feeding child, and the problem of being questioned by the society which is regarded to be the overall problem faced by single-parent family inevitably (Policy and planning office, Policy and strategy for the development of family institutions 2017- 2018: 2017). (2)

Singgle mother that appears in the Buddhist scriptures is Yasodhara or Phimpha, Phra Nang Yasodhara was born in Sakya family of Koliyawong, Devdaha municipality. She was the daughter of Suppabuddha and Amita. When she was young at the age of 16 years, she got married to Prince Siddhartha (Buddha). When she was 29 years old, she gave birth, named by King Suddhodana was called Rahul (Khu.A. 8/1/175-180). (3) After Prince Siddhartha ordained a Buddhist monk, Yasodhara did her duty as the mother in feeding her son called "Rahul" without any failures and be able to stay in the society.

Buddhism has long played an important role in the culture and well-being of people in Thai society. The Buddha's doctrine can be applied every time (Akaliko). There is one group of the single mothers interview of the secret to the happiness of the single-parent family is mentioned that "When we face with a single-parent family situation, we think that what will happen must not be prevented, we need to have mindfulness, be able to solve the problems, know how to leave the problem, look at the real problem. All problems can be solved. Suffering or happiness is only in our heart". It can be seen that the single mothers families adopted Buddhist principles as a guide to life. (Atthakatha Tipitaka Mahachulalongkornrajavidyalaya Version 2017.) (4)

The purpose of this research aims to study the livelihood of the single mothers in Buddhist scriptures and analyzes the Buddhist principles to promote the livelihood of the single mothers from the moment of confrontation until the end of the critical point of life, telling and passing on experiences with a good story in life, the guideline to feed child, living in society amid various problems until the success of the single mothers to grow her child to be a good person, self-responsibility, be able to stay with other people in the society by using the principle of Buddhism. However, the purpose of this research is not intended to encourage women to decide to become the single mothers, but it is a study the lesson learned by experience, perspective, attitude, livelihood from a group of the single mothers, strong hearts, fighters, which the single mothers is a model for learning for those who decide to enter the life of the single mothers, be able to lead their own family to deal with the problems in life, self—responsibility, be able to feed their child, livelihood in society happily, have a good quality of life according to the Buddhism guidelines.

II. RESEARCH OBJECTIVES

1) To study the livelihood of the single mothers in Buddhist scriptures.

2) To study the analysis of the principle of Buddha's doctrine to promote the livelihood of the single mothers.

III. RESEARCH METHODS

This research aims to study the livelihood of the single mothers in Buddhist scriptures and study the analysis of the principle of Buddha's doctrine to promote the livelihood of the single mothers. It aims to study the specific contents of the Buddhist principles to promote the livelihood of the single mothers in the understanding of the matter as follows;

3.1) Documents

It can be divided into 2 steps as follows;

1) Primary sources consisting of Thai Tipitaka Mahachulalongkornrajavidyalaya Version 1996, Thai Atthakatha Tipitaka Mahachulalongkornrajavidyalaya Version 2017, and Supreme court.

2) Secondary sources consisting of books, academic textbooks, articles, research documents related, and information related.

3.2) Contents

This research aims to study the livelihood of the single mothers in Buddhist scriptures and study the analysis of the principle of Buddha's doctrine to promote the livelihood of the single mothers in Thipphasot Community, Maha Sarakham province.

4) Research methodology

The presentation of the essence regarding research methodology consisted of document research, interview, fieldwork, observation of informant group. This research was qualitative. To achieve the objectives of the research, researchers determined research methodology as following;

1) Collected primary sources from Thai Tipitaka Mahachulalongkornrajavidyalaya Version 1996, and Thai Atthakatha Tipitaka Mahachulalongkornrajavidyalaya Version 2017.

2) Collected secondary sources from research-related topics consisting of books, academic textbooks, articles, research document-related, and information-related.

3) Collected from the interview, fieldwork, observation of informant group. The observation could be divided into 2 types that are; participant observation and non-participant observation.

4) Analyse the conclusion of the data derived from the interview, fieldwork, observation of informant group, and suggestions.

5) Benefits

1) Know the livelihood of the single mothers in Buddhist scriptures.

2) Know the analysis of the principle of Buddha's doctrine to promote the livelihood of the single mothers in Thipphasot Community, Maha Sarakham province.

IV. RESEARCH RESULTS

The livelihood of the single mothers in Buddhist scriptures: After Prince Siddhartha ordained monk in Buddhism. His wife (princess Phimpha Devi) spent her life alone to feed her son. But she could adjust herself to join the society. Her duty was to feed her son (Rahul Kumar). She accepted what happened. The livelihood of the single mothers reflects the result of her dedication, physical energy, spiritual energy, that went through difficult times, an ability in which oneself could stand to be self-reliant, live a life free from the belief that men were the breadwinner of the family, right livelihood, well behaved, morality and ethic, feed children with love, attention, sacrifice, persistence until the child has been educated, good career, well behaved, be a good member in society. Besides, they could develop themselves as the single mothers who could serve others and society, be able to reduce anxiety, indignation, be able to adjust oneself appropriately in the social environment, be ready to face things around, accepted the reality, but it is important to complete the duties of the mother.

6.2) The analysis of the principle of Buddha's doctrine to promote the livelihood of the single mothers: The problem of the single mothers is; 1) divorce 2) the death of spouse 3) broken spouse and 4) abandon. The divorce was the main problem. The effect of the single mothers came from 1) problem of the burden to feed family 2) problem of sadness 3) problem of being questioned from society 4) problem of feeding child. The livelihood of the single mothers will be able to maintain the family and take care of the child to have a normal life and happy in social life by adopting Sangahavatthu 4 (Bases of sympathy) as a means of spiritual anchor that is; 1) Dana (giving): it is willing to forgive when it's wrong, sacrifice the time to build family relationships, do not become obsessed with creating a commitment to the things that you love and cherish 2) Piyavaca (kindly speech): when negotiating, words must be used to create unity. There is no stabbed speech even though it hurts repeatedly. Do not scare away in the past 3) Atthacariya (useful conduct): making oneself useful, value oneself in the society in which you live, train oneself to be a well-established person 4) Samanattata (participation and behaving oneself properly in all circumstances): stay in a middle way, do the work properly, focus on their position in society, behave consistently towards people.work, machine tool work, etc.

V. DISCUSSIONS

The livelihood of the single mothers in Buddhist scriptures: In the case of Phra Nang Phimpha is regarded that she is the single mothers because, after Prince Siddhatha ordained a

monk in Buddhism. His wife (princess Bimba Devi) spent her life alone to feed her son. But she could adjust herself to join the society. Her duty was to feed her son (Rahul Kumar). She accepted what happened. The livelihood of the single mothers reflects the result of her dedication, physical energy, spiritual energy, that went through difficult times, an ability in which oneself could stand to be self-reliant, live a life free from the belief that men were the breadwinner of the family, right livelihood, well behaved, morality and ethic, feed children with love, attention, sacrifice, persistence until the child has been educated corresponding to the result of the study of (Siriphon Changkhiew: 2007), her topic was "Single mothers, the life to fight: a case study of service recipients of Sahathai foundation, Ban Bang Kluay Nok, Nakha sub-district, Sukh Samran district, Ranong province". The results were found that most the single mothers needed to be a breadwinner of their occupation in order to generate income and spend in the family and physical strength was an important aspect that would be used in a career. The single mothers needed to maintains their health by eating nutritious food, do exercise, regular rest, and checkup body. Psychological part, most of them had accumulated stress before they had to take care of their children alone, and most of them were able to adapt and accept the truth that happened over time. Because god helped those who helped themselves and they needed to take care of their children. Their thinking and attitudes needed to be adjusted for the better. They could work to feed their family until it came to prevent children for the family.

The analysis of the principle of Buddha's doctrine to promote the livelihood of the single mothers: The livelihood of the single mothers will be able to maintain the family and take care of the child to have a normal life and happy in social life by adopting Sangahavatthu 4 (Bases of sympathy) as a means of spiritual anchor that is; 1) Dana (giving): it is willing to forgive when it's wrong, sacrifice the time to build family relationships, do not become obsessed with creating a commitment to the things that you love and cherish 2) Piyavaca (kindly speech): when negotiating, words must be used to create unity. There is no stabbed speech even though it hurts repeatedly. Do not scare away in the past 3) Atthacariya (useful conduct): making oneself useful, value oneself in the society in which you live, train oneself to be a well-established person 4) Samanattata (participation and behaving oneself properly in all circumstances): stay in a middle way, do the work properly, focus on their position in society, behave consistently towards people corresponding to Onuma Asampinnawat, her entitle was "A model of the single mother's livelihood in the integrated Buddhist perspective" was found that take care of physical and mental health: Single mothers adopted the principles of Buddhism as the basis of life. It commenced from easy Dhamma until it has developed to advanced Dhamma such as entering the temple to make merit in order to purify the mind that was enough, observed five precepts, developed oneself to be a good person, chanting Pali text every day, meditated to keep the mind calm, and some people could develop themselves to practice Vipassana. However, all these approaches are under the Buddhist principles for self-development in Buddhism.

9.1) Policy suggestions

1) Should stipulate to be government policy about laws for controlling divorce.

2) Establish regulations about marriage to control both men and women more than what is available now.

9.2) Academic suggestions

1) There should be an academic presentation through the media and documented in the dissemination to educate the society in the future.

2) Research results should be taken to organize explicit knowledge and published for the benefit of those interested in studying.

9.3) Benefit suggestions

1) Arrange to have a person responsible for monitoring and evaluating activity continuously and implementing results for further action.

2) Public relations documents in administrative should be established appropriate contact procedures.

3) This research result should be used to spread the benefit to the public for the benefit of society in the future.

9.4) Further research suggestions

1) Should study the principle of morality regarding divorce in Thai society.

2) Should study the social problems of the risky group in divorce.

3) Should study the vulnerability of the third precepts and divorce.

CONCLUSION

the livelihood of the single mothers in Buddhist scriptures need to be patient, live a life free from the belief that men were the breadwinner of the family, right livelihood, well

behaved, morality and ethic and the analysis of the principle of Buddha's doctrine to promote the livelihood of single mothers need to follow Sangahavatthu 4 (Bases of sympathy) as a means of spiritual anchor that is; 1) Dana: giving 2) Piyavaca: kindly speech 3) Atthacariya: useful conduct 4) Samanattata: participation and behaving oneself properly in all circumstances.

VI. ACKNOWLEDGEMENT

The research entitles "An Analysis of Buddhist Principles to Promote the Livelihood of Single Mothers in Thipphasot Community" can be acknowledgement as follows;

Buddhadhamma to promote the livelihood of the single mothers	
Single mothers of Thipphasot Community	**Dana (Giving)**
Had experience of living in the family	- forgive when you are wrong
sacrifice oneself	- sacrifice oneself for other public benefits
Experience to feed the child	- do not commit to the things that you love and cherish
Diversity of career	**Piyavaca (Kindly speech)**
divorce	- negotiations to create unity
The death of a spouse	- There is no stabbed speech even though it hurts repeatedly
Broken spouse	- save time when negotiations
abandon	- consideration of reasons for thinking
	- do not regret when you go away
	Atthacariya (Useful conduct)
	- making oneself useful
	- value oneself in the society in which you live
	- train oneself to be a well-established person
	Samanattata (Participation and behaving oneself properly in all circumstances)
	- stay in a middle way
	- do the work properly
	- focus on their position in society
	- behave consistently towards people

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Strategic Management Education of Thai Sangha

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Abstract*—This research was the objectives as follow, to study the educational administration of the Thai Sangha, to study the educational management strategies of the Thai Sangha, and to propose educational management strategies of the Thai Sangha. This research was an integrated research which had an interview tool and uses descriptive and inferential statistics to analyses data according to the quantitative research process. There were the amount 25 persons and took the results. The research obtained from quantitative research, conducted in-depth interviews of 5 specific for question and content analysis. The results of the research revealed that the educational administration of all 4 Thai Sangha. They were appropriate at a high level, namely general administration, academic administration budget management, and personnel management, respectively. The studying of the educational management strategies for Thai Sangha, there were all 4 aspects namely, 1) organizing the curriculum in accordance with the core. Curriculum was organizing learning-cantered learning and continuously. 2) The develop for an educational quality assurance system made a budget plan. There was recruiting budgets through multiple channels and meeting for expenditures once a month. 3) Developing human resource was developed plans an establish personnel according to knowledge, ability, and carry out the government. 4) There were regulations administrators have Dharma principles that set goals according to the school's policy, and then stimulating desire through temptation. Strategies for educational administration of the Thai Sangha consisting of self-management, human resource management, and management with the aim of adjusting one's own attitudes and attitudes of colleagues, establishing working networks, developing personnel to meet competency, and planning management in all 4 areas through the PS-GANPPI MODEL to the efficiency of educational administration of the Phrapariyattidhamma schools General Education Department, model of sustainable from Thai Sangha.

Index Terms— ***Strategic Management Education, Thai Sangha***

I. INTRODUCTION

Thailand had respected Buddhism for a long time by mean main and identity for Thai people. It counts on mind for Thai people long time too. Because of Buddhist doctrine gather around with cause and effect, then survival by happiness. [1] But at this present, Thai environment had more different before population were dwell with family Buddhism moral then based on an attitude and value for making living in societies with happiness. However, the increasing of population and economy were higher including taking technology to concern with their living. So that, they turn to admire with more material than moral by without moral and important for more Thai society to assign by happiness, because of some people in society lake of from moral, although those societies will have been full with economics then rare from happy and difficult to develop [2]. There were group of children and teenage who were personnel to develop national in future, it will concern them abdicate to bring moral to be practices to effect for moral development and quality for mental then found that some Thai children without discipline taking drug then start with quarrel and fight [3].

Background and significance of problems studying was the important factor for national development. If some country could manage studies for their people over and properly then their country should be getting success all parts event economic political or social and culture. Therefore, national development must be having man power for main point, because of the best development were man an education. So that, some country try to do education management as good as possible, by mean of doing as focus for taking learners to know and cultivate about moral and ethics with good behavior according to king's speech of king Rama 9 as said that "In addition to education push man got an excellent then cultivate them to be good as long as together, then our country will get good quality both excellent and good to be good factor and for creating to be supporting country and goodness was the factor to maintain

good and excellent were afford along by objective" [4]. Because of the researcher had participate with the present education all most try to cultivate metal for children to know and responsivity for more good. Therefore, to cultivate moral in school that look like packthread which restrain and take their mental to get happiness for them then when consider for primary level all over country. There were many local's education management and were governor's duty that running for people mean primary education.

Though, we regarded primary education was the best on and important for to country development then when consider some character of learners in each level will find that the fundamental education for developing desirable ethics for moral should be emphasize for primary level.

Temple was center of development "House" or Thai societies in ancient time "Temple" was center for mental conclusion activities or advantage activities for society "House" or society will join with "Temple" by getting important support from "School or government" cooperate by 3 combination as follow "House Temple School" or summary call "BTS" that king Rama 9 realized for important role of "House Temple School" according to his thinking for establish with counterpart temple and societies to have religion places for doing monks actives inherit and for Buddhist propagation [5].

The moral creation for teenagers must have been cooperate with all direction including house temple school or sort word as "BTS" to be concern to cultivate moral then including with media and VIP in social surroundings must have create and support moral. Therefore, the process for learning management as effect for student's development to get their purpose by attention, so that, education management according to Threefold Training must be form all really occupation [6].

Temple was the center of societies from antient time. Buddhist influence was the cause for folkway of Thai lives especially there were places for collection art belonging academic and several sciences until the worthy arts such as historic site and antiquities mural which all of these were the worthy inheritance and look like Thai sambal. Nowadays, temples have more role for societies that mean place for tourist and important religion place, because of in temple has consist of arts and cultural that effect to know civilization and then national headways that conclude and go back to study history archeology culture arts architecture then conclude and concern with societies culture and settlement of societies by mean have monks governors since up to the abbot go on [7].

The strategy for Thai Sangha, as regarded for important factor because of if we have good administration and pollical then religion must be growth and stable, so good administration must have been form and process to manage or model that depend on work and assignments to cover over all the let them respond by their handy and then development for all parts, because of admonition of monks right now, it has some governor power and tradition to cover then when there were some allegations or case took place then must be dwell the monks act to be rules for managing so that, monks administration regard to be core value pollical for them as follow, politic education housing education propagation utilities and public assistance to concern with fair discipline law monks' act reason regulations or monks' order and command from primate [8].

The strategy Education Management for Thai Sangha, then nowadays according to abide of fair discipline for charter political by dwell authority for governor and tradition to be support when have some problems in group of monks until cause of objection then dwell governor then use dwell authority for governor for solving according to King Asoka period and monks activities has been running by this concept and by cooperation from all others people event chief of other country. Because of monks were used all their activities and religion for others benefit for group and national and so on. At condition for king Rama 5 he was offer his authority. The 1st political for monks according to the Act of monks in Rattanagosin Era 121 a group of monks had dwell governor power to manage until King Rama 8th had given an appalment for monks on B.E. 2484 then canceled the 1st Act to adjust new political for monks as look like rule over with democracy as same king on leader. But when King Rama 9th had given an appalment the Act for monks on B.E. 2505 and the revise on B.E. 2535 until the present time.

Then the stable existence of Buddhism because of monks on behalf of Buddha's disciples working on their duties for propagation Buddha's words as set to bring those who respected Buddhism can take Buddha's words to be use in their everyday lives and push to both advantages. Though, propagation Buddha's words that must be regarded for their duties as must be serve for discipline they could be create faithful the admire for all Buddhism also motivate them to know their duties behalf of Buddhism.

Then, when they have for Buddha faithful then can be act more happiness on behalf of Buddhism since the antiacne time. Therefore, Buddhist boys should be selected chance to be join to be novices and monks in Buddhism to studies moral discipline. When they have more the ordinate then a greater number of and then when they have more members also, they must be having process for administrate to manage for rule over as necessary and orderly because of political has as one of administrate for monks and religion to progress then religion stable will give more benefit for both of monks and people surround. So that, the study to deep understanding for academic for political meaning of political introduction of political and the conclusion to use power model for discipline according to governor's power that had

given for more than monks Act and develop political in each time as change politics by orderly. Then, it brings up for good understanding good benefit for monks' administration to calm and cool smoothly and to be good ensample for more monks' societies the got admire on behalf of all good quality persons.

The strategy Education Management for Thai Sangha in present time, if we comparing with other provinces the it should be high level than some province. However, the researcher want to study to push development for monks, so Bangkok must be the most perfect also right now monks activity have been more the take them adjust to be active to motivate monks working more than quality especially for governor monks who has role for take political. Then, it will be effect to monk's administration, also some time maybe without efficiency plan for develop material and persons, although, reply books management or connect to another's politics do not manage by smoothly because of some monks cannot write officious letter or cannot understand about documents then reflect to inform order of monks too late, that reason to become for monks' governors should be give close up looking.

II. RESEARCH OBJECTIVES

The purposes of this research were to study the educational administration of the Thai Sangha, to study the educational management strategies of the Thai Sangha, and to propose educational management strategies of the Thai Sangha.

III. RESEARCH METHODS

A. Scope for Content

To study of strategy Management Education of Sangha Thai then for monks' governors according to Act and the order of Synod Council in total 4 provinces as follow, Bangkok Nonthaburi Pathum Thani and Samutprakarn which have the position for rule over since dean of district/ area up to. They emphasize matter according to Act and the order of Synod Council in center and then they assigned to Phrabormmuni Phrabormmôli and Phrabormbandit have managed by setting according to Buddhist reform 6 + 1 parts as follow, 1) Political 2) Religion education 3) Housing education 4) Propagation 5) Utilities 6) General housing and 7) Development Buddhamontol to be center of Buddhism.

B. Scope for populations

Researcher had set scope of populations and key performance according to sequence of research as follow,

1) The key performance had an important for interviewing by mean of Purposive Selection. They were governors' monks for sector 1 then consist of 4 provinces as namely, Bangkok Nonthaburi Pathum Thani and Samutprakarn of the position for their rule over since dean of district/ area up to as number 7 temple/ persons.

2) The group of those who answer questionnaires as namely monks and novices in rule over area for sector 1 for 4 provinces as number 100 persons which researcher using looking method by amount example group of Krejci, R. V. & Morgan, D. W. by purposive Selection as number 100 persons.

C. Scope for area

Researcher choose the area rule over for Maha Nikaya in 4 provinces for sector 1 area of monks' governors as follow, Bangkok Nonthaburi Pathum Thani and Samutprakarn.

Definition of Term Used in the Research

An approach of administration means the attribute of leader organization that effect and push organization to get successful which consist of (1) they should have wide vision which found from main point organization philosophy to run at the same direction (2) they should have good moral then give the emphasize with equality for all human being the should have been responsible for social and environment too.

Strategy for education means education management for Thai monks that concern with their everyday lives, because of all monks where been under Act and the order of Synod Council which set and managed order for monks rule over by sequence of all monks' political event those for Maha Nikaya and for wrong end of sect. They managed and commanded temple then monks and novices for those sects such as for wrong end of sect had their governor to do and then for Maha Nikaya they have classify into 4 chiefs as namely, dean of center occasion, dean of north occasion, dean of north-Eat occasion and the dean of south occasion.

Participate means all people in some organization have to participate and learning management for monks such as monks of administrator dean who rule over for monks' novices' parents and society.

The group of monks mean Thai monks and those of them who got the ordain from preceptor accordance with the Monks Act B.E. 2505 and reform (2nd Act) B.E. 2535.

Expected Benefit of the Study

1. To cause and achievement for fundamental studies about Strategic Management Education of Thai Sangha.

2. To cause and know some fundamental data analyze as concern with Strategic Management Education of Thai Sangha.

3. To cause and give some suggestion for model of fundamental data analyze as concern with Strategic Management Education of Thai Sangha.

III. RESEARCH METHODS

The research was "Strategic Management Education of Thai Sangha". It was Mixt methods written by Survey Research and the by Descriptive Research by mean of using Delphi Technique and have the sequence of research as

consist of 1) Model of research 2) Population and example group 3) measuring tools 4) Data collection as follow the show 2 only,

A. Model of research

For this research was "Strategic Management Education of Thai Sangha". It had to write with as namely by Survey Research and the by Descriptive Research then using with Interview Research too.

B. Population and example group.

The populations as namely monks and dean's abbot in sector 1as follow, Bangkok Nonthaburi Pathum Thani and Samutprakarn that have position for their rule over since dean of district/ area up to as number 7 temple/ persons. The example group as researcher used by mean of Purposive Sampling and then had according to property as set by take from benchmark as set from populations 7 temple /persons by using absolute scale of R.V. Krejci and D.W. Morgan to analyze the most for correct data.

IV. RESULTS

This research was "Strategic Management Education of Thai Sangha". Researcher had collected data from questionnaires and from data analyze by using window program to analyze for detail of mean percentage standard Deviation the present result of data analysis as researcher had to declare as follow,

1. Result from personnel factor from answer questions by analyze by looking for mean percentage and transfer meaning to be percentage.

2. Result from data analysis concern by over all about concept for Strategic Management Education of Thai Sangha was over all as parts as follow, 1) Political 2) Religion education 3) Housing education 4) Propagation 5) Utilities 6) General housing and 7) Development Buddhamontol to be center of Buddhism by using mean standard deviation and then translate meaning according to benchmark concept for 5 levels were more medium few and then least as have set.

3. Result from each part data analysis about concept for Strategic Management Education of Thai Sangha by each part as follow 1) Political 2) Religion education 3) Housing education 4) Propagation 5) Utilities 6) General housing and 7) Development Buddhamontol to be center of Buddhism by using mean standard deviation and then translate meaning according to benchmark concept for 5 levels were more medium few and then least as have set.

4. Result from interview and some suggestion for Strategic Management Education of Thai Sangha by using content analysis then to compile according to flame of concept management for Strategic Management Education of Thai Sangha as follow, 1) Political, 2) Religion education, 3) Housing education, 4) Propagation, 5) Utilities, 6) General housing, and 7) Development Buddhamontol to be center of Buddhism. There were tables to show and conclusion for general questions analysis that classify according to age year level of education (Dhamma Division) and level of education (Pali Division) as follow.

Table 1 Show the amount percentage of those who answer question

(n = 100)

Status of those who answer question		Number of persons	Percentage
1. Age			
	Age 20 – 30 years	31.00	12.00
	Age 31 – 40 years	22.00	31.00
	Age 41 – 50 years	21.00	22.00
	Age 51 – 60 years	14.00	21.00
	Age 61 year up	14.00	14.00
	Total	**100**	**100.00**
2. Year			
	Year 1 - 5	18	18.00
	Year 6 - 10	29	29.00
	Year 11 - 15	31	31.00
	Year 16 - 20	11	11.00
	Year 21 up	11	11.00
	Total	**100**	**100.00**
3. level of education (Dhamma Division)			
	Dhamma One	8	8.00
	Dhamma Two	18	18.00
	Dhamma Three	74	74.00
	Total	**100**	**100.00**
4. level of education (Pali Division)			
	Pali Dhamma One (Cause 1- 2, Pali cause 3)	35	35.00
	Pali Dhamma Two (Cause 4 - 6)	50	50.00
	Pali Dhamma Three (Cause 7 – 9)	15	15.00
	Total	**100**	**100.00**

V. DISCUSSIONS

From table 4.1, result of general data analysis of those who answer questions and classify according to age year level of education (Dhamma Division) and level of education (Pali Division) as follow.

Age those who answer questions by more over all have age on 31-40 years as number 31 persons then calculate as 31.00 percent then next below age 41 – 50 years as number 22 persons then calculate as 22.00 and next below have age 22.00 then next below age 51 – 60 years as number 21

persons then calculate as 21.00 and next below have age at 61years up then calculate as 14.00 and lowest have age at 20 -30 years as number 21 persons then calculate as 12.00.

Years those who answer questions by more over all have age on 11 -15 years at number 31 persons then calculate as 31.00 percent then next below have years for 6-10 years as number 29 persons then calculate as 29 percent and next below have 1-5 years at number 18 persons the calculate as 18.00 percent and lowest have 16 -20 years at number 11 persons then calculate as 11.00 percent and then they have 21 years up as number 11 persons then calculate as 11.00 percent.

Level of education (Dhamma Division) those who answer questions as they have the level of education (Dhamma Division) on the level of Dhamma Three as number 74 persons the calculate as 74.00 percent then next below on the level of Dhamma Two as number of 18.00 persons then calculate at 18.00 and then the lowest on Dhamma One as number 8 persons the calculate as 8.00 percent.

Level of education (Pali Division) those who answer questions as they have the level of education (Pali Division) on level of Pali Dhamma Two (Cause 4 - 6) as number 50 persons then calculate as 50.00 percent then next below on level of Pali Dhamma One (Cause 1- 2, Pali cause 3) at number 35 persons and then calculate as 35.00 percent and the lowest on level of Pali Dhamma Three (Cause 7 – 9) at number 15 persons then calculate as 15.00 percent.

VI. RECOMMENDATIONS

A. Recommendations for Practices

Governor or administrator should be giving supporting for doing research as concern with R and D by continually.

B. Recommendations for Further Research

Researchers or students who want to know in-depth for academic substance, and must be learning by doing and so on.

CONCLUSION

This research was "Strategic Management Education of Thai Sangha". Researcher had collected data from questionnaires and from data analyze by using window program to analyze for detail of mean, percentage, and standard deviation the present result of data analysis as researcher had to declare for academics as well.

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Public Welfare in Buddhism

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Abstract *- This article is about public welfare in Buddhism, the purposes of this study were divided into two issues, 1) to study the background of public welfare in Buddhism 2) to study the scope of the duty of monks' welfare towards society. The background of public welfare in Buddhism: It occurred from the feeling of people that they were in trouble. In the doctrine of Buddhism, the Lord Buddha said about Buddha's doctrine that the public welfare could be interpreted as follows; it was the service, happiness for angel (Deva) and humans. It also provided the facilitation of consumer products and created harmony.The scope of the duty of monks' welfare toward to society was found that there were different perspectives such as Dhamma was a contribution to society by giving Dhamma to have initial, mid and utmost beauty. Discipline (Vinaya Dhamma) was welfare that did not conflict with the discipline and did not have self-dealing. From the point of view of Thai society, there were two views which consisting of agreement and disagreement which had an interesting reason. However, public welfare must merely be for promotion to disseminate the Dhamma.*

Keywords: *Public welfare, the scope of the duty of monks*

I. INTRODUCTION

Public welfare plays an important role for monks as community leaders for donations to help the victims. Because monks are the center who try to link between poor people and rich people. The money is donated, monks use it for public benefits and to help the unprivileged people. When people are in trouble, it is a duty that the temple will help them. Monks and temples should help people to have intelligence, to solve problems, to have morals, seeing with spiritual insight, to have a sufficiency economy, provide Dhamma rather than the object, to have strength. Giving between monks and laypeople is from the relationship to society. It is regarded that it is a duty to practice with the support and dependence on each other. Thailand suffers from natural disasters many times such as outbreaks, storms, floods, etc. causing victims to suffer from a shortage of consumer products and damaged housing. These are the cause of suffering. In each event, the government urgently helps them, but the procedure of government takes several times, therefore, it is a cause to delay to help the victims. With the common sense of humanity, who is still round of rebirth together, when people are in trouble, the foundation, independent agency, villagers nearby who do not suffer from disasters, including the monks will help them rapidly according to a supportive capability. Particularly, the group of monks visits the area to distribute consumer products to the villagers to relieve the suffering. During helping the victims, monks also capture a photo to go viral on social media to make people know the suffering of victims. Some people agree what monks support this; some people disagree with it. This has been criticized widely until it is wondering that "Are monks and public welfare eligible to help the villagers?". If it is available to do that, what can the scope of public welfare be done by monks? Therefore, researchers try to present public welfare in Buddhism. The purpose of this research can be divided into 2 issues 1) to study the background of public welfare in Buddhism. This topic have to study the scope of the duty of monks' welfare towards society.

II. RESEARCH OBJECTIVES

The objectives of this article can be divided into 2 issues 1) to study the background of public welfare in Buddhism 2) to study the scope of the duty of monks' welfare towards society.

III. RESEARCH METHODS

This article aims to study the Public Welfare in Buddhist scriptures and study the duty of monks' welfare towards

society. It aims to study the specific contents of the Buddhist scriptures in the understanding of the matter as follows;

1) Primary sources consisting of Thai Tipitaka Mahachulalongkornrajavidyalaya Version 1996, Thai Atthakatha Tipitaka Mahachulalongkornrajavidyalaya Version 2017, and Supreme court.

2) Secondary sources consisting of books, academic textbooks, articles, research documents related, and information related.

IV. THE BACKGROUND OF PUBLIC WELFARE IN BUDDHISM

In this point, researchers define the essence to be presented, namely the concepts and principles regarding public welfare in Buddhism which is shown from Mahapadana Sutta and the relevant Sutta together with the concepts of the important person in Buddhism as an example in the study.

Public welfare or social work derives from caring in society between humans and humans who suffer from things until they cannot help themselves. In the early stages, the term social work is not shown clearly, it is just the thought of devoting to the public. It is influenced by the doctrines of Buddhism. Therefore, social work is started. In Buddhism, The Buddha used to speak to public welfare in Mahapadana Sutta as follows;

"caratha bhikkhave carikam bahujanahitaya bahujanasukhaya lokanukampaya atthaya hitaya sukhaya devamanussanam ma ekena deva agamittha bhikkhave dhammam adikalyanam majjhekalyanam parisosanakalyanam satathamsabayanjanam kevalapripunnam parisuddham prommacariyam pakasetha santi satta apparajakkhajatika assavanata dhammassa parihayanati bhavissanti dhammassa annataro...." (Ti.Ma. (Pali) 10/52/51-52, Vi.Ma. (Pali) 4/32/39-40). (1)

"All bhikkhu! You must roam around to relieve the suffering of the villagers, to help humans, to provide benefits to Deva and humans. You do not need to go 2 persons in the same way. You provide Dhamma which consists of initial, mid, and utmost beauty. You spread my doctrine together with good speech and texts. In this world, there are a lot of people who have roots of bad actions, those who cannot listen to the Dhamma. But other people can attain Dhamma..." (Ti.Ma. (Thai) 10/86/46-47, Vi.Ma. (Thai) 4/32/40). (2).

In the words of the Buddha, it can be seen that he wishes to provide social welfare to society which consists of 3 issues as follows;

Atthaya means the benefit that is Dhamma is mentioned about the truth of world and lifestyle in this world. It is the truth that the monks attempt to convey Dhamma by guiding, telling, showing the audience to understand, life practice. Dhamma is practiced, it will result in the practitioner to get benefit from practicing Dhamma until the quality of life can attain in 3 aims respectively which consist of 1) Ditthadhammikattha means benefits is seen by sight, benefits obtainable here and now which is called "human prosperity" 2) Samparayikattha means spiritual welfare, it is called heavenly prosperity 3) Paramattha means the highest good that is; access to the state of the removal of the cold of defilement, it is called "successful attainment of Nibbana". This is a goal that is unique only in Buddhism.

Hitaya means the support that is Dhamma is practiced in a way of life until the practitioners receive the benefit initially by having a good way of life directly. In other words, Dhamma supports practitioners to get benefits more and more. Besides, they also need to support other people too. The way of life of practitioners is therefore to support the surrounding people and community both in-depth and width. Dhamma is also the community that receives benefits from the Dhamma too.

Sukhaya means happiness that is people who follow the way of life in the right way, it will support them and the community to get a better way of life and expand the outcome of lifestyle both in-depth and width. This can lead them to attain goodness. It is happiness that comes from the benefits of Dhamma. Then it supports themselves and others and expands the initial happiness called "human prosperity" to all people in society while the journey of life before the life will achieve the goals to a higher level is called "heavenly prosperity" and "successful attainment of Nibbana". (The Buddha and public welfare, [online]. Source: phansons.blogspot.corn [1/08/60]). (3).

Public welfare management of monks comes from the duty and social relationships that monks need to have four requisites offered by laypeople. It is stated that in society, there is always an effect on the practicing Dhamma and virtue that is; loving-kindness and compassion will support others from the cessation of suffering, it focuses on donation and welfare of Dhamma or mental development.

In Singhalaka Sutta, The Buddha talks about the duty of Bhikkhu in welfare to children of the family (Kulabutara) who support them with 6 duties 1) do not do evil 2) to do good thing 3) support by heart 4) to hear things that have not been heard 5) explain clearly what has been heard 6) tell the way to heaven (Ti.Pa. (Thai) 11/272/216). (4). Public welfare also means spiritual anchor to convey to the community to unite the group or society gathering each other. Therefore,

the aim of social work is not just to bring them things, not service them, not provide money to them but it means making people unite and stay together (Phradepvedi, Prayudh Payutto: 1983: 32). (5).

It can be seen that public welfare or social work derives from caring in society between humans and humans who suffer from things until they cannot help themselves. In the early stages, it is influenced by the doctrines of Buddhism. Therefore, social work is started. Social work is to help fellow humans without expecting anything return, accept "merit" is required. Public welfare can be divided into 2 meanings 1) It provides the facilitation of consumer products 2) It creates harmony.

3) The scope of duty of monks' welfare

The second objective, researchers define the issues as follows; 1) The duty of the monks in Buddhism 2) The duty in public welfare of the monks in Dhamma and Vinaya (discipline) 3) Monks and public welfare in Thai society 4) Is the duty of public welfare of the monks appropriate or not? The details are shown below;

1) The duty of the monks in Buddhism

The duty of the monks who ordain in Buddhism can be summarized into 3 issues.

1) The duty along Vinaya (discipline), Buddha talks to Mahabala Thera when he comes to ask about Dhura (burden) that "what is Dhura in Buddhism?" The Buddha says that there are only 2 Dhura (Burdens) in Buddhism consisting of Gantha-dhura (burden of study) and Vipassana-dhura (burden of insight development. Mahapala Thera asks again that how is Gantha-dhura? and how is Vipassana-dhura? After that the Buddha explains Dhura is learning other Nikaya (sect), two sects, finish learning Buddhavacana (the word of the Buddha) or Tipitaka, depending on one's intelligence. He also says that Buddhavacana is Gantha-dhura. For the beginning to set the end and the deterioration in personal circumstance and practicing insight development, and the power of connection is regarded that Buddhist saint is good behavior, good practicing is called Vipassana (Khu.Dha. Vol. 1/4). (6).

2) The duty along with the king's offering, derives from the commissioned symbol which is signed by the king. He is appointed as Phra Khru or Phra Raja or over and says that "please burden in Buddhism, teaching Dhamma, settling a legal question that has arisen, support monks and novices in temple". This is a duty that the king requests to monks who can deserve the burden in this duty (Somdejphrabuddhacarya (Sanit Chuanpanyo): 2017). (7).

3) The duty of Sangha Act and sangha supreme council law is issued by the government and Sangha supreme council in chapter 3 is explained by Sangha government as follows;

Section 20 The Sangha must be under the rule of Sangha supreme council, the Sangha government management is according to the rule of the Sangha supreme council law.

Section 20 bis, for the benefit of the Sangha government of the central and the region. The chief superintendent occupies Sangha administrative area. The appointment and determination of the authority of the chief superintendent shall be according to the rules and the methods in Sangha supreme council law.

Section 21, regional Sangha government can be divided as follows; 1) Region, 2) Province, 3) District, and 4) Sub-district

The number and government area shall be according to the Sangha supreme council law.

Section 22, regional Sangha government allows monks as ruler in the following order;

1) The ecclesiastical regional governor
2) The ecclesiastical provincial governor
3) The ecclesiastical district officer
4) The ecclesiastical commune-chief (The ecclesiastical sub-district head)

When Sangha supreme council can consider appointing deputy of the ecclesiastical regional governor, deputy of the ecclesiastical provincial governor, deputy of ecclesiastical district officer and deputy of ecclesiastical sub-district head. And the burden of the abbot is to follow the rules according to section 37 which is explained as follows;

1) maintaining the temple, organizing the Buddhist activity, save the property in the temple well.

2) Government and take care monks, novices, and laypeople who stay in the temple, teach them to follow the Dhamma Vinaya, respect to Sangha supreme council law, rules, regulations, the order of Sangha supreme council.

3) to engage in the provision of education, training, and teaching Dhamma and Vinaya (Discipline) to monks and laypeople.

4) to provide convenience as appropriate in charity.

If we analyse the duty in item 1, the word "Organizing is a duty that will be made in the temple. A form is laid into 6 parts that are; 1) government 2) education 3) dissemination 4) construction 5) public welfare 6) educational welfare (textbook of the meeting of an ecclesiastical official: 2010; 10-11). Only public welfare is meant to help both in the temple and outside the temple, in the temple such as to

facilitate laypeople who come to make merit or who are in trouble and stay in the temple, outside the temple such as helping the villagers who are suffering as much as possible, do not let it pass.

The scope of public welfare or social work can be summarized into 8 parts (Temple and community welfare, [online], source: www.buddhismth.com [2/08/63]).

1) Build school or other institutions.

2) Establish health center, hospital, or priest hospital.

3) Establish library, museum, book center, broadcasting.

4) Allow having district council for the meeting of villagers and government office.

5) Provide water, freshwater, water supply for village, the water source for agriculture.

6) Allow to have public activities as much as possible, do not obstruct to practice Dhamma and Vinaya, and do not lose the image of monkhood.

7) Relieve natural disasters such as fire, floor, etc.

8) Help when people face problems, that is when they are dead, monks will organize everything.

Therefore, Monks in Buddhism have several duties, it can be summarized into 3 things: 1) duty of Vinaya (discipline) is Gantha-dhura (burden of study) and Vipassana-dhura (burden of insight development) 2) duty of appointed from the king, this will be written in honorific rank credential and 3) duty of Sangha Act. Duty of Vinaya (Discipline) is monks' duty, but the rest duties are legal duty which is only available to certain monks.

2) The duty in public welfare of the monks in Dhamma and Vinaya (Discipline)

Social work in Buddhism, since the time of Buddha has been conducted on the basis of charity (Dana) along bases if sympathy (Sangahavatthu 4) and bases of meritorious action (Punnakiriya-Vatthu 10). The Buddha and his followers give Dana in the form of Dhammadana (spiritual gift) in order to help people through spiritual to relieve their selfishness. For lay people give Dana in the form of objects in order to worship, to support Buddhism, to help human in society, particularly when they are in trouble. In Thailand today, there are many monks who have started doing social work continuously. It is to help fellow human who are in trouble in the society together with dissemination in Buddhism. This action is from a sense of social responsibility, to have volunteer and spirit by spending money from the devotees' donation. It is partly beneficial in helping to solve the life problems of fellow human in society for a better quality of life. As the Buddha's doctrine is said to remind followers to think of benefactors who support them by four requisites, and try to repay those people by providing Buddhist sermon consisting of initial beauty (Sila), mid beauty (Samadhi) and utmost beauty (Panna) as follows;

"All Bhikkhu! All Brahma, wealthy person who support you by the eight requisites of a Buddhist monk, medical equipment is regarded that they support you a lot. You spread my doctrine to be initial beauty, mid beauty and utmost beauty together with good speech and texts to them. It is believed that all Brahma, wealthy person will receive from what you have done for them. "All Bhikkhu! Bhikkhu and lay people must help each other..." (Khu.Iti. (Thai) 25/107/486). (8). This is a view of Dhamma, therefore monks will have social work, but the welfare must be in the scope, that is welfare by Dhamma in order to be initial beauty, mid beauty and utmost beauty as mentioned.

If it is the part of Vinaya (Discipline) or Sila of monks, it is found that there are a lot of Sila (Precepts) both from Tipitaka and others. But there are some Sila that are considered to the obstacle to social welfare or not. It is known that the attention of obtaining the percepts is to develop oneself in the basic level or develop verbal level to a higher level. Particularly, the monks who ordain in Buddhism need to attain Nibbana (the extinction of all defilements and sufferings), therefore they are framed by their conduct with strict discipline to lead them to attain Nibbana quickly. Hence, any actions are made by monks without attaining the Nibbana, they will be forbidden by Vinaya (Discipline) such as right livelihood of monks. In Buddhism, monks are not allowed to have the right livelihood, that is they will be supported with four requisites by villagers or society. That is because monks will have the full time to study, develop themselves, help society. The principle of Santosa (contentment) is taught by the Buddha to support the way of life of monks. Therefore, any actions are made by monks to the right livelihood or working, it is regarded that they misconduct the precepts. There are two reasons; 1) doing the right livelihood as laypeople 2) to act as laypeople, not monkhood who want to stay a simple life. There is one example is called "Mahasila" (Great precepts), there are 7 items, this group of Sila is told about the monks obtain the right livelihood and a bestial subject such as predictions, fire worship, calculate an auspicious time, horoscope symbols, pledge, votive offering, exorcism,

compounding pharmacy, etc. These actions are considered to be a bestial subject and the right livelihood in the right way. Examples are shown that "Bhikkhus who have the right livelihood is considered to be a bestial subject such as monks who are invited to have foods to be offered by laypeople and support them by a bestial subject that is telling them auspicious ceremony, auspicious wedding, worshiping the sun and Brahma, fire, blessing ceremony..." (Ti. Si. (Thai) 9/210/71). (10). Interestingly, the way of the right livelihood of monks by using a bestial subject, even though monks do not have the right livelihood is considered to be wrong. But it is interesting with the message is written that "Monks who are invited to have foods to be offered by laypeople and support them by a bestial subject". This message is being told that the way of life of monks can be lived by the villagers. No need to have the right livelihood by a bestial subject at all. This is the view of Vinaya (Discipline).

In conclusion, The Buddha and his followers give Dana in the form of Dhammadana (spiritual gift) to help people through spirituality to relieve their selfishness. For laypeople give Dana in the form of objects to worship, to support Buddhism, to help humans in society, particularly when they are in trouble. Monks in Thailand work in social work along with the dissemination of Buddhism. It can be seen that Dhamma means to give Dhamma to society to be initial beauty, mid beauty, and utmost beauty, Vinaya (Discipline) means welfare must not be to take advantage for oneself in the right livelihood as laypeople, but it must be simple way, does not obstruct practicing the way of life of monks.

3) Monks and public welfare in Thai society

The work of public welfare in Thai society is rooted in Buddhism. It is social work that is unconsciously natural and supports by giving without expecting anything return. Temple is part of society, the temple will be supported by the village, and the village will be supported by the temple. Temple is the center of society. The monks are a refuge for people. When they are in trouble in one matter, it is the duty of the temple need to support them. Public welfare is, therefore, the duty of temples and abbots to conduct public welfare management for people in the scope that the temple can be organized (Phrarajaratanamuni (Chaiwat Pannasiri): 1995:14) (11). without obstacle to Dhamma Vinya, respect to Sangha supreme council law, rules, regulations, the order of Sangha supreme council and the laws. The outstanding monks of social work in Thailand could be spotted from the past to the present for an example, like a case of road construction to Doi Suthep (Mountain in the north of Thailand) by Kruba Sriwichai (The devotee of Lanna), Chiangmai province, rice cooperation project by Phrakhubibidhprajanath (Luangphor Nam), Surin province, people living with HIV/AIDS by Phraadonprajanath (Lungphor Longkot), What Phrabat Nam Phu, Lop Buri province, rehabilitee care project for patients with cancer by herbs by Phra Paphonpat, What Kam Phramong, Sakon Nakhon province, truth money-saving project by Phra Subin Panito, Wat Phai Lom, Trat province, vocational career project for unemployed people by Phra Payom Kalyano, Wat Suan Kaew, Nonthaburi province, etc. (Phramahasomboon Vuddhikaro: 2011:1). (9).

In conclusion, the temple is part of society, the temple will be supported by the village, and the village will be supported by the temple. Temple is the center of society. The monks are a refuge for people. When they are in trouble in one matter, it is the duty of the temple need to support them without obstacle to Buddha's doctrine and related laws.

4) Is the duty of public welfare of the monks appropriate or not?

Does the work of public welfare of the monks currently be considered a bestial subject according to the principle of 7 Mahasila (Great precepts)? It cannot easily be judged along with the texts. We should know that the Buddha legislates Mahasila by protecting the monks who need to bring the bestial subject as a tool for livelihood. Because the monks' life is designed to provide livelihood by four requisites that the villagers offer, to save time and energy to be used in the study of Dhamma practice and Dhamma is used for society. Even though a bestial subject is a magic subject that is useful in helping the villagers, but it is not a duty of the monks to interfere with those subjects. It will waste time and obstacles to attaining the Dhamma. The monks help the villagers by offering food and survival bags in the registration spot in the event of a natural disaster such as an outbreak, flood, which are natural disasters that have occurred in many provinces in the past. Is it wrong? Is it a duty of the monks? If the action is considered to be wrong or not, it should be considered what the monks exactly help the villagers by intention or doing welfare for their own business. If it is done in intention, relaxation, and the cause of Dhamma dissemination, it is not considered to misconduct the precepts. Otherwise, they misconduct the precepts. Because it is considered to be wrong in the right livelihood of the monks. The next issue is, is it a duty of the monk or not? If it looks at the surface situation, it is not a duty of the monks because the ordained monks must study the Dhamma Vinaya and understanding both Dhura

(Burdens) consisting of Gantha-dhura (burden of study) and Vipassana-dhura (burden of insight development), and follow to Sikkha (the threefold learning) consisting of Sila-sikkha (training in higher morality), Citta-sikkha (training in higher mentality), Panna-sikkha (training higher wisdom). Then let it be, face the problems that happen as a matter of the law of Kamma. If it is considered along the Buddha doctrine "caratha bhikkhave carikam bahujanahitaya bahujanasukhaya lokanukampaya atthaya hitaya sukhaya devamanussanam..." "All bhikkhu! You must roam around to make people happy, to help humans, to provide the benefits to Deva and humans...". It is regarded as the Buddha orders to Bhikkhu who roam to places for relieving the suffering of the villagers that occur in both physical and mental suffering. In case of an outbreak or natural disaster is physical suffering because they lack living, food, consumer product. Therefore, monks are helping people that should not be anything wrong and it is a duty along with the Buddha's doctrine. However, the action must be considered by the intention of the monks who work in public welfare in many ways. If monks only help them without Dhamma dissemination, it is not appropriate. But if they help them as a bridge in Buddhism dissemination, then it is considered to be appropriate. The right or fault of the monks depends on one point of view.

In conclusion, the duty of public welfare of the monks should be judged in intention to release the cause of suffering to the villagers, not for their benefit. It is regarded that it is directly duty along Buddha's doctrine said "caratha bhikkhave carikam..." and most importantly, the welfare is to a base for the Buddhism dissemination.

CONCLUSION

The concept of social work derives has been taken place for a long time, it starts from caring in society between humans and humans who suffer from things until they cannot help themselves. In the early stages, social work is influenced by the doctrines of religions including Buddha's doctrine. Particularly, the Buddha's doctrine is said that "caratha bhikkhave carikam...". It is also shown in Mahapadana Sutta regarding social work as well. The Buddha said that "All bhikkhu! You must roam around to make people happy, to help humans, to provide the benefits to Deva and humans...". It is regarded as the Buddha orders to Bhikkhu who roam to places for relieving the suffering of the villagers. It emphasizes providing the Dhamma that is suitable for the situation. It emphasizes relieving mental suffering. Some scholar interprets the social work that it is to help fellow human without expecting anything return, accept "merit" is required. From the point of view of Thai society, there were two views which consisting of agreement and disagreement. The agreement, monks should be praised by others as full of compassion for a fellow human, who does not abandon society that supports four requisites. For example, in the era of the dissemination of communist in the society, monks who do not have social work are often criticized for being parasitic society because they are only a consumer not productivity.

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Public Welfare in Buddhism had to durned a crisis of political violence, there is some group calling for the Sangha to make sure which side they will stand. Those are some examples of social work that are to be expected by society. Social needs monks to do social work. Disagreement, they claim that monks should not relate what is not concerned with monkhood. It means monkhood avoids doing any activities that belong to the world. The monks who ordain in Buddhism need to attain Nibbana (the extinction of all defilements and sufferings). It can be said that the expectations of Thai society to the work of social work of the monks stand on the opposite side. It is difficult for the monks to act in favor of both sides because no matter where they turn to any side, they will be criticized.

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The model of religious education management of monks in Udon Thani province

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Abstract*—The purposes of this research were 1) to study religious education management of monks in Buddhism, 2) to study religious education management of monks in Udon Thani Province, and 3) to propose the model of religious education management of monks in Udon Thani Province. This research was qualitative research. The data were collected from primary sources and secondary sources and interview. The descriptive analysis was used to analyze. Results found that for religious education management of monks in Buddhism, it aimed to Sikkha (the threefold learning) in the Buddha era. Buddha's doctrine was said that it was the principle of the conduct and Buddhism dissemination. Later, it was divided into Gantha-dhura (burden of study) and Vipassana-dhura (burden of insight development). Since Buddhism has been spread to Thailand, religious education management of monks has evolved respectively to the present. Religious education management was divided into Dhamma division, Pali division and general education division. Religious education management of monks in Udon Thani province could be divided into three divisions 1) Dhamma Studies consisting of Dhamma curriculum and Dhamma studies, Sunday Buddhism curriculum, 2) Pali division consisting of Pali curriculum and Pali studies. The measurement and evaluation are in accordance with the Sanam Luang national Dhamma studies-Pali studies. 3) Phrapariyattidhamma general education division. The curriculum is in accordance with Ministry of Education. The model of religious education management of monks in Udon Thani province, Dhamma division and Pali division should have a short curriculum for monks and lay people. Teaching should be taught through online. The measurement and evaluation should have retest for Dhamma, and general education division should organize curriculum for lay people to learn in the class. Vocational curriculum should be provided. Teachers should be appointed as regular instructor and provided welfare, and supported scholarship for higher education.

Index Terms— ***Model, religious education management, monks in Udon Thani province, Phrapariyattidhamma school***

I. INTRODUCTION

Education is the creation of people to have knowledge and abilities, to have necessary basic skills, good character, goodhearted, ready to fight for themselves and society. It can also help people to flourish both intellectual and mental development. Besides, the need for shelter, almsfood, robs, and medicine. It is the fifth factor of life that will help to solve all aspects of life. Education has even more roles and needs. Therefore, the promotion of the study of Phrapariyattidhamma is to develop the potential of monks and novices under the rules to require the knowledge and abilities that exist in themselves as much as possible to be the spiritual principle for the people. The educational model of Sangha (the group of monks) in the past is divided into 2 models; 1) Gantha-dhura: it is the study of the Buddha's doctrine consisting of Dhamma Vinaya (Vism. (Thai), 2339: 4/32/40.) [1], 2) Vipassana-dhura: a study of mind training without the defilement. From the above 2 levels of education, it has developed continuously from the Buddha era to the present. The education of Buddhist monks and novices of Thailand from ancient times like to study Pali language called the study of Phrapariyattidhamma which they have learned. Therefore, it appears that there are monks and novices who have knowledge of Dhamma Vinaya who can help religious work in the area of education, governance, dissemination, the teaching of the people thoroughly (Patarapon Sirikanchana, 2002:52) [2].

Nowadays, there is a study of Phrapariyattidhamma, general education division which is the educational management of the Sangha (the group of monks) that gives religious heirs the opportunity to have knowledge of Phrapariyattidhamma that is; Dhamma-Pali along with general education that is the Office of the Basic Education Commission (OBEC), Ministry of Education, Phrapariyattidhamma general education division. It is established along section 12 of Education Act B.E. 2542 (1999), revised Issue 2, B.E.2545 (2002) which is stipulated that besides the state, private and local government organization allow person, family, community organization, private organization, professional organization, religious institution, and other social institutions have the right to provide the basic education. In this regard, it is according to the stipulation of the ministerial regulation by the Sangha proceeds to issue a ministerial regulation since 2005 (Education Act, B.E. 2542 (1999): 1) [3].

Regarding the education of Phrapariyattidhamma of Sangha in the present is about the education of Monks and

novices. They must learn 2 parts; (1) Education of Phrapariyattidhamma, Dhamma division is divided into 3 classes; 1) Dhamma for primary level (Dhamma level I), secondary level (Dhamma level II), and advance level (Dhamma level III). There are 4 subjects for Monks and novices; 1) Life of the Buddha 2) Dhamma 3) Vinaya (Discipline) and 4) Dhamma essay (2) Education of Phrapariyattidhamma, Pali division is divided into 8 classes: 1) Pali scholar, level 1-2, and Pali scholar, level 3-9. It focuses on the Pali language and the Dhamma's principle of the Tipitaka Atthakatha etc. (Sermsin Juthaisong et al., 2005: 10) [4].

The promotion of the education of monks is very important to bring Buddhism into the study by applying the teaching of Buddhism to be integrated into various subjects. It is regarded that the Education of Sangha plays an important role in Thai education respectively in the part of the way of life, way of thinking, and way of learning are also affected. Therefore, when the government has the policy to reform education under the Education Act B.E. 2542 (1999), it should consider the condition of Sangha's educational management both in the current and future how education should be organized to be appropriate and support education reform to achieve goals according to the ministerial regulations on the provision of the Basic Education of Buddhist Institution that it will make Phrapariyattidhamma, Dhamma division, and Phrapariyattidhamma, Pali division is a basic education of Monks and novices and clansman who are interested in studying Buddhist doctrines to solve problems for society in another way (Phra Debsobhon (Prayoon Dhammacitto), 2004: 20) [5].

The problem of Sangha's education takes place without unity, lack of direct responsibility that is the government doesn't have explicit support in the teaching of Phrapariyattidhama, Pali division, Dhamma division, and Dhamma studies. It lacks budget, teachers, educational personnel on academic standards. The existing curriculum is outdated, not keeping up with the changing conditions of today's society. It is a problem waiting to be solved. Therefore, the educational mission must be done is to create a quality population for the country and Sangha must create quality educational personnel by reforming education, providing education for the religious hires of the Sangha. The condition of Thai Sangha, both Phrapariyattidhamma, Dhamma division, Pali division, often faces similar problems in many ways such as the standard of curriculum, teachers, learning process, teaching materials and equipment, measurement, and evaluation. All 5 aspects are guidelines for the education of Phrapariyattidhamma, Dhamma division, Pali division. This issue, it will support Buddhism (Phra Debsobhon (Prayoon Dhammacitto), 2004: 2).

Therefore, researchers are interested to study the model of Religious Education Management of monks in Udon Thani Province to promote the study of Phrapariyattidhamma, and will develop a new model of promotion of the study of Phrapariyattidhamma to be suitable for the monks as a person who teaches people in society to have quality, morality.

II. RESEARCH OBJECTIVES

The purposes of this research were 1) to study religious education management of monks in Buddhism, 2) to study religious education management of monks in Udon Thani Province, and 3) to propose the model of religious education management of monks in Udon Thani Province.

III. RESEARCH METHODS

The research title "The model of Religious Education Management of Monks in Udon Thani Province" by conducting the research in the following order;

A. Research design

The research title "The model of Religious Education Management of Monks in Udon Thani Province". Researchers determined the research methodology as follows;

1) Documentary study was collected. The primary source is collected consisting of Tipitaka text (Thai version), Mahachulalongkornrajavidyalaya 1996 Version, the secondary source is collected consisting of books, texts, research report related, and a document showing the relationship that demonstrates the model of religious education management of monks in Udon Thani Province.

2) In-depth Interview, target group from the group of religious studies

B. Population and Samples

In this research study, researchers studied population that was a target group. The informants for the interview as follow;

1) Religious Scholars 6 monks/persons
2) Head of Institution 9 Monks
3) Teachers 9 monks/persons
4) Students 5 monks
Total 29 monks/persons

C. Limitations

Researchers studied and defined the research areas as follows;

1) Phrapariyattidhamma School, Pali division 2 schools
2) Phraoariyattidhamma School, Dhamma division 6 schools
3) Phrapariyattidhamma School, general education division 6 schools
Total14 schools

D. Research instruments

Creating Interview form as follows;

1) Study and research information related, and population and samples and creating interview form.

2) Creating interview form along with research objective.

3) Bring the interview form to interview of target groups to collect data.

E. Data collection

1) Collect data from a primary source by collecting from Tipitaka text (Thai version) , Mahachulalongkornrajavidyalaya 1996 Version, and documents related to religious education management of monks in Udon Thani Province.

2) Collect data from a secondary source by collecting from books, academic books related to religious education management of monks in Udon Thani Province.

3) Data analysis, researchers analysed the data obtained from textbooks, and the descriptive analysis was used to offer the model of religious education management of monks in Udon Thani Province, then summarized the research results.

F. Data Analysis

Researchers conducted a systematic analysis, convenient, and easy to find the information. Creating a file for the benefit of finding information consisted of data files obtained from the in-depth interview and focus group discussion or focus group and descriptive analysis is used.

G. Research presentation

Researchers presented data in the descriptive presentation by photo and the description of events related to the concept, theory, principle, background to see the model of religious education management of monks in Udon Thani Province and it will be academic presentation work that will be useful to the public.

IV. CONCEPTUAL FRAMEWORK

Researchers will present the conceptual framework used in the research with details as shown in the following chart.

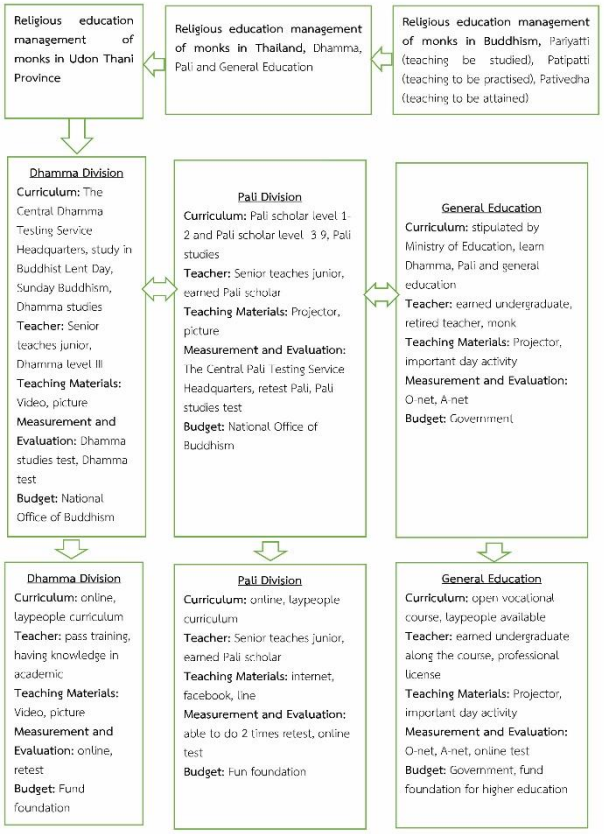


Fig.1 Conceptual framework

V. RESEARCH RESULTS

In Udon Thani Province" were 1) to study religious education management of monks in Buddhism 2) to study religious education management of monks in Udon Thani province 3) to offer the model of religious education management of monks in Udon Thani province. This research was qualitative. The results are as followers;

5.1) Religious education management of monks in Buddhism was found that in the Buddha era, it aimed to Sikkha (the threefold learning) by following the Buddha's doctrine which was the principle of the conduct and Buddhism dissemination and living according to the principle of Dhamma Vinaya. Later, it was divided into Gantha-dhura (burden of study), a study of Dhamma Vinaya and Vipassana-dhura (burden of insight development), applying the knowledge gained from the study until to attain enlightenment or Nibbana. When Buddhism has been spread to Thailand since the Sukhothai, Ayutthaya, and Rattanakosin period until now Sangha's education is divided into Dhamma division, Pali division, and general education division. Currently, the religious education management in

Thailand is divided into 3 divisions: 1) Dhamma division: course available Dhamma for primary level (Dhamma level I), secondary level (Dhamma level II) and advance level (Dhamma level III) 2) Pali division: course available Pali scholar level 1-2, to Pali scholar level 9 and 3) General education division: course available lower secondary level and upper secondary level

5.2) Religious education management of monks in Udon Thani province was found that it could be divided into three divisions: 1) Phrapariyattidhamma, Dhamma division 2) Phrapariyattidhamma, Pali division 3) Phrapariyattidhamma, general education division. The details are as follows;

5.2.1) Religious education management of monks in Udon Thani province, it organized along with the map of the Central Dhamma Testing Service Headquarters according to the Act of Buddhist Scripture Studies (Pariyatti-Dhamma) B.E. 2562 (2019). It could be divided into 5 parts;

1) Curriculum: it followed the Central Dhamma Testing Service Headquarters plan, there is the curriculum for the general public that is, Dhamma studies and Sunday Buddhism curriculum.

2) Teachers: Teachers are monks who earned Dhamma level III to teach students.

3) Teaching Materials and Learning Activity: It was video, picture.

4) Measurement and evaluation: It would have the test of Dhamma level, and Dhamma studies along the Central Dhamma Testing Service Headquarters schedule was stipulated. And Sunday Buddhism curriculum would be evaluated by the center director.

5) Budget: It was supported by the National Office of Buddhism

5.2.2) Religious education management of monks in Udon Thani province, Pali division: It commenced from Pali scholar level 1-2 to Pali scholar level 9. It opened according to the Act of Buddhist Scripture Studies (Pariyatti-Dhamma) B.E. 2562 (2019). It could be divided into 5 parts;

1) Curriculum: it followed the Central Pali Testing Service Headquarters was stipulated, and there was Pali studies for the general public.

2) Teachers: Monks who earned higher Pali scholar level came to teach who earned lower Pali scholar level.

3) Teaching Materials and Learning Activity: Learning by recitation.

4) Measurement and evaluation: There would be an exam every year in the month of March and it would have retest after the actual exam was completed for about 1 month for those who passed the exam in any subject.

5) Budget: It was supported by the National Office of Buddhism.

5.2.3) Religious education management in Phrapariyattidhamma school, general education division: Educational management was organized by the school manager and school director, and the class was taught by monks teachers, and laypeople teachers. It was divided into 5 parts:

1) Curriculum: The curriculum of religious education management of Phrapariyattidhamma school, general education division was according to the curriculum of the Ministry of Education was stipulated.

2) Teachers: Most of the teachers who came to teach in the Phrapariyattidhamma, general education division were contact teachers and retired teachers as well as monks who had knowledge and ability in each course.

3) Teaching Materials and Learning Activity: At present, teaching materials are used in the form of projector, picture, video throughout important day activity.

4) Measurement and evaluation: It followed according to The Ministry of Education was stipulated. There were final tests and midterm tests throughout O-net, B-net test.

5) Budget: It was supported by the National Office of Buddhism.

5.3.) The model of the religious education management of monks in Udon Thani Province was found that religious education of monks in Udon Thani province was divided into 3 parts: 1) Dhamma division 2) Pali division 3) general education division. It was offered the model of the religious education management of monks in Udon Thani Province which was divided into 5 parts;

5.3.1) The model of the religious education management, Dhamma division of monks in Udon Thani province was divided into 5 parts;

1) Curriculum: It should be organized online Dhamma learning management throughout the curriculum of the regular course. Teachers and teachers responsible for the course are available clearly.

2) Teachers: Teachers who teach Dhamma should finish Dhamma level III and undergraduate, programme in Buddhism.

3) Teaching Materials and Learning Activity: It should have teaching materials such as the use of event illustrations images, or teaching assistant video, teaching video recording, etc.

4) Measurement and evaluation: It should have an online Dhamma test, the evaluation exam of Dhamma should have retest like the Pali test.

5) Budget: The establishment of a foundation or fund for education for organizing training before the test or fund for further education at higher education.

5.3.2) The model of the religious education management, Pali division of monks in Udon Thani province was divided into 5 parts;

1) Curriculum: It should have an additional online curriculum for people who need to study Pali language.

2) Teachers: Teachers must pass Pali scholar level 5 throughout the passing training course.

3) Teacher Materials and learning activity: set up online learning group, online communication media is used to exchange ideas, throughout the use of materials to explain the students can better understand the lesson.

4) Measurement and evaluation: it must follow the Central Pali Testing Service Headquarters was stipulated, or arrange evaluation exam in 2 rounds per year of learning Pali scholar level 1-2 by grammar subject will be tested in the first six months, after passing the exam, translation subject will be arranged the test accordingly.

5) Budget: Pali course should be supported by the government, as it is not sufficient for management which the budget management in various parts is only supported by Buddhist laypeople.

5.3.3) The model of the religious education management, General education division of monks in Udon Thani province was divided into 5 parts;

1) Curriculum: It must follow the Ministry of Education is stipulated in the learning of the lower secondary level and upper secondary level.

2) Teachers: Teachers must have a clear teaching guideline for each course throughout know how to use teaching materials for students to understand the lessons. Teachers must hold professional teachers' license.

3) Teaching Materials and Learning Activity: Teaching Materials are needed to be used in a particular course to increase knowledge and understanding for students, and doing activities together.

4) Measurement and evaluation: It must follow the Ministry of Education is stipulated.

5) Budget: It should be allocated to provide teaching materials and provide scholarships for monks and novices.

VI. RECOMMENDATIONS

A. Recommendations for Policy

1) It should be allocated the budget to support the education of monks both in learning management and religious education administration.

2) Public relations to attract the general public to study in religious education both in Dhamma, Pali, and Phrapariyattidhamma, general educational division.

3) Scholarships are available to students who come to study Dhamma, Pali, and Phrapariyattidhamma, general education division.

B. Recommendations for Utilization

1) Arrange an online learning curriculum for the general public.

2) Arrange an online evaluation exam.

C. Recommendations for Utilization

1) The model of Buddhism dissemination in Udon Thani province.

2) An analysis of the model of religion practise center's dissemination in Udon Thani province.

CONCLUSION

The model of religious education management of monks in Udon Thani Province provides education management into 3 levels consisting of 1) Dhamma division 2) Pali division 3) Phrapariyattidhamma, general education. There are different managements regarding education of 3 levels that are, Dhamma division and Pali divisions are organized according to the Central Dhamma and Pali Testing Service Headquarters, but Phrapariyattidhamma, general education is organized according to the Ministry of Education.



Fig.2 Model of religious education management of monks in Udon Thani Province

ACKNOWLEDGEMENT

The research entitles "The model of Religious Education Management of Monks in Udon Thani Province". The purposes of this research were 1) to study religious education management of monks in Buddhism 2) to study religious education management of monks in Udon Thani province 3) to offer the model of religious education management of monks in Udon Thani province. This research was qualitative. The data were collected from primary sources, secondary sources, and interviews. The

descriptive analysis was used to analyze. The explicit knowledge is shown in the chart below.

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Learning Ecosystem using New Normal Active Administrative Innovation in Thai Society

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***Abstract*—** *Learning ecosystem has been using in educational context in different areas to enhance the development of leaning ability in current situation. The purpose of this article was to propose learning ecosystem using new normal active administrative innovation in Thai society. Documentary study and qualitative research synthesis were used for the study. Results showed that 1) there are four aspects to consider of setting learning ecosystem that consisted of learning differently, supportive collaborative learning, self-directed learning, and thinking utilization. 2) New normal active administrative innovation is an active administration applying constructivism concept that consisted of knowledge, persuasion, decision, implementation, and confirmation. The nature of innovation should have relative advantage, compatibility, less complexity, divisibility, and visibility. 3) e-Learning Ecosystem will be applied in new normal active administrative innovation with 3 aspects consisted of (1) content providers offer content for learning solutions that is linked to competency development and personal development, (2) consultants which are strategy consultant, compensation consultant, information technology consultants, and implementation consultants, and (3) Infrastructure which are learning content management system, content delivery system and tools. Learning ecosystem is not started from how teacher design the lesson, but it will start from acceptance the difference of learners, teachers, parents, and community by performing roles of giving and taking knowledge from learners on supportive collaborative learning.*

Index Terms— *Learning Ecosystem, New Normal, Active Administrative Innovation*

I. INTRODUCTION

The 21st century is an era of knowledge-based economy in which the factors of production and competition are changing to more intangible factors such as knowledge, information technology and cross-country trade that relies on culture as a medium. Therefore, the development of innovation is one way to help all organizations build a strong stand. It is an innovation organization with the goal of survival, and the growth and creating sustainable competitiveness.

Concept of active administrative, also known as active learning, which is a learning management process based on the concept of intellectual creativity (Constructivism) that focuses on the learning process rather than the subject matter to help students connect knowledge or create knowledge in oneself by taking action through teacher-directed learning activities, encouraging or facilitating learning through analysis, synthesis, and evaluation of what is gained from learning activities. Learners' learning will be meaningful and apply in other situations. This enables students to create innovations from learning that will be in line with new ways in Thai society.

Educational administrators, as educational leaders in the technology era or e- Leadership is important and roles in the educational mission to be successful, clearly view, especially creativity far-flung imagination emphasize the integration of technology in administration and management as well as

teaching and learning. 2) Enable education administrators to have administrative and management abilities by integrating technology into the school curriculum administrative system performance in school. 3) Empowerment education administrators must understand and understand the competence of school personnel as well. 4) Energize education administrators must keep the power and spark at all times to provide the power to work. 5) Engage educational administrators must be focused and focused on their work, with a strong commitment to success and high hopes and a gradual lead to the organization's goals. 6) Enhance education administrators must enhance their performance for continuous progress and the benchmarking is clearly defined. 7) Encourage education administrators in the globalization era. It is very important to motivate people to cooperate with each other and to perform their duties happily, and creating a friendly and working environment will support the work to be successful. 8) Emotion educational administrators must have emotional quality, have the ability to intuit the minds of personnel and can read other people's minds including emphasizing the satisfaction of both sides, both oneself and the employees who work together, create positive attitudes, humor, prudence. 9) Education administrators must focus on concrete work and focus on tactile goals or works. Whether it is planning performance, communication, monitoring and evaluation, and a concrete approach should be used, and 10) Eagle study administrators are more like an eagle with far-sightedness and greater overall focus than detail. Executives should look at the goals and performance as the main as for the details, it is the duty of the owner to make their operations more efficient. E - Leadership or management in the globalized era is truly a new generation of management. Study administrators who are considered to be in charge of the mechanism and drive education towards the goal of educational reform. Whether at the level of ministry of education, universities, offices including the school administrators have to change the important paradigm. It emphasizes the integration of technology into the education system, taking into account in administration and management. In particular, education quality should be the highest aim. It is hoped that the quality of the learners both in knowledge, competence, morality, ethics and can compete with other countries with stability [1].

This article contains three key concepts: 1) the learning ecosystem, 2) innovative learning methods, and 3) proactive educational administration in Thai society. In this article, the 3 concepts and principles will be applied to be integrated and applied for further benefit in the education industry.

Thailand's Minister of Education is vowing to create an ecosystem that will bring education into the 21st century and make students ready and adaptable to the rapid changes taking place in industry and society.

"The 21st century has presented itself as an era where growth in knowledge is rapidly changing at an exponential rate. Consequently, the global supply of skilled labor becomes more competitive to meet new expectations," said Nataphol Teepsuwan, the Minister of Education.

"The need for individuals to become adaptive in afast-paced environment becomes critical. The problem is straightforward: Thai education has yet to move," he conceded.

Thailand achieved near-universal literacy decades ago. Since then, reforms in education have moved at a more gradual pace and significant progress on modernizing the education system, geared for the current and future environment, has been increasingly emphasized in the Kingdom's strategy for more advanced development.

"Thai education must shift in a way where students depart from their 'fixed mindset' of the past and begin to incorporate a 'growth mindset' in their daily lives. This is what the Education ecosystem strives to achieve. This is the modern Ministry of Education that I plan to establish," the Minister said.

Nataphol said that the Ministry would focus on a new evaluation process for new teachers and students. Students would rely less on tests, while teachers would depend more on self-growth to advance in teaching. Education officials will develop a new curriculum and guidelines to produce quality teachers and administrative bodies that require greater management skills.

To achieve these goals, the Ministry of Education will establish a Human Capital Excellence Center (HCEC); Digital Education Excellence Platform (DEEP); and Excellence Individual Development Plan (EIDP)" [2].

Schools are living environments that allow for interactions between learners, educators and the community of people surrounding the environment. The nature of these interactions is crucial to stimulate creativity, trust and the freedom to evolve and transform. The more internal and external stakeholders engage in the maintenance and development of the entrepreneurship education ecosystem, the more dynamic and attractive education will become. To say it with the words of Taddei (2009), the environment is considered to be the "third teacher" (after the parents and the human teachers) which should be designed so as to foster new experiences, exploration, initiative, and creativity.

Acting in an ecosystem thus demands us to (i) be aware of its existence; (ii) be aware of all actors involved – inside and outside school – that may potentially impact on entrepreneurial learning; (iii) build a collaborative project – with and between all these actors - in which lecturers will play a facilitating and/or accelerating role; and collectively and regularly evaluate the results of these collaborative actions – regarding both learning outcomes and the development of an entrepreneurial culture at the school.

Hence, ecosystem cannot be created or developed entirely in a top-down approach. There is a clear facilitator role for public policy, but it is the interaction of all internal and external actors that will be a key success factor for effective entrepreneurship education ecosystem.

II. ADMINISTRATIVE INNOVATION IN NEW NORMAL

According to the article called "Augmented Reality Technology: Challenges for the Development of Teaching in Thailand in the 21st Century" [4] states that the vast transformation of information and communication technology in today's world, and future trends World economic, social and political basis including Thailand causing the population of the modern world to have new skills, to be ready for living in this modern world, and education can be one of the tools for building skills. Therefore, education must be transformed and it must be developed for tangible results. The use of educational innovation has become a vital learning tool for most learners to be involved in, particularly in the way of bringing technology into a virtual classroom used in teaching especially called technology "Augmented reality technology", which is now widely applied, studies of using augmented reality technology to develop education in Thailand have been found to have very high potential, namely 1) able to improve the learning achievement of learners, 2) to help encourage learners to have observation skills and classification skills. 3) Build students' satisfaction towards teaching materials using augmented reality technology. In many subjects 4) it is used to help build interest and appeal to learners, and 5) be able to explain things that are difficult to understand and abstract in concrete.

Considering to the article called "Skills of the 21st Century: Challenges in Student Development" [5] discussed the rapid advancement in information technology that make every region of the world able to get information quickly, connected without boundaries affecting the student's life under the changing society. It poses a great challenge in student development which emphasizes both the 21st century learning skills and important attributes for the future. The Higher Education Quality Assurance 2014 edition recognizes the importance of developing learning skills in the 21st century, which is essential and important for students in this era innovation, information, media and technology skills, life and occupational skills. In addition to learning skills in the 21st century, students are able to live and stand up in the future world happily, both in their lifestyles and in their professional career, be able to adapt to the changes needed in this century to survive, be a qualified graduate and achieve success need to strengthen the student's qualifications new futuristic skills develop awareness of nature and the environment be conscious of citizenship and make the society more livable in the future. There are five attributes in the future: 1) the proficient mind, 2) the synthetic mind, 3) the creative mind, 4) the respectful mind, and 5) the ethical mind.

According to the Research Fund (TRF) report on "Challenges of the 21st Century with Modern Learning," discusses the issues of educational movement and innovation for the future that the global education movement is in a grand process of adaptation to prepare people to meet challenging trends and uncertainties, to capture trends and innovations in the management of education and youth development (Innovation and Trends in Education and Child). Development; INTREND) with the support of the Research Fund (TRF) in 2015 and the work to capture the movement and trend of child and youth development of the Ramchitti Institute in 2017, highlighting interesting educational ideas. In many matters since an important issue that many countries have tried to drive education for all in new definitions through various philosophical concepts both education for the future (Future-Oriented Education) that focuses on learning and designing the future. Education to create change (Transformative Education) focuses on motivation & inspiration as well as the issue of "faith" to create a stable life and mind force to a lifelong learning that connects and integrates. Learning with context and real life (lifelong learning & life-wide learning) or even education and communication concepts. Educommunication has become one of the worlds of education and digital society. The image of international movement reflects interesting educational ideas, directions and innovations both in terms of methodology learning process Subject matter to the management system to support new learning such as concepts, methods and learning management since the discovery of new knowledge in neuroscience (neuroscience) that became the basis for human development. This resulted in a dramatic reform of the lifelong learning paradigm both in terms of changing the "Pedagogy" teaching methods for school age children "Andragogy" for adult education to the subject of "Gerontology and geriatrics Education" to promote education for the elderly. The new learning process does not just need to build 21st century skills, which include the essential skills of "3R 7C 2L", "Reading, Writing, Thinking" and "Group of skills essential to living the future" and "Learning and leadership" since childhood all over the world are also keen to develop future work skills, a wide variety of skills necessary for the life of modern people to be smart in life at different ages and ready to enter the world of work that is very dynamic up as well as being able to learn and develop themselves throughout all ages of life. In many countries, efforts are made to develop and create new knowledge or knowledge necessary for future life. An interesting set of knowledge, for example in the school-age

group, found a knowledge set of 3 characteristics, the first being new knowledge to face changes and uncertainty in the future, such as future study, scenario planning alternative energy disaster education in Europe, Japan, Indonesia, the Philippines, etc.

The STEAM (Science, Technology, Engineering, Art, Maths) group that has been pushed into more important subject sets than just STEM in the United States and the West. The second characteristic is knowledge sets that focus on enhancing life skills for learners, such as sex education, media education, conflict resolution, which are strengthened to cover needs or problems of more modern learners. This includes citizenship education, civic education, and history, which have gained more substantial importance in countries such as Hong Kong, Japan and many European countries. The third appearance, focus on building work skills to prepare you for a career in a "career-oriented curriculum" style that learns important careers linked to the market and the manpower needs of each country. Each area focuses on "Learning partner" (Work-Based Learning & Experiences) to build working skills for learners from youth to working age, such as life economics course, investment money Technology and Communication Course Film and animation production courses learned through innovative studio classroom design and innovation classes. A group of mechanics usually based on a factory in the management of learning the management of learning based on real farmland called "Farm-Based Learning" or "Wild-Based Learning" forest, which is often linked to local learning resources, is often integrated into a holistic environment. While creating a "pathway" of connected and interconnected learning new management system knowledge messages. It is another outstanding message from the experiences of many countries who have tried to drive the reform of the educational administration system seriously. Emphasis is placed on education decentralization, reform of public administration systems including the downsizing of government management (government reform and downsizing) to management of area-based education, which believes that it can better meet the needs of people in each area in terms of opportunities and equality coupled with the dimensions of the quality and the usability of the study. In addition, it emphasizes the promotion of public participation in participating in the criticism of education budget allocation in order to balance the state budget allocation method. Many countries are also investing in education unit costs to provide information on allocating equitable budgets especially with target groups in poor areas and disadvantaged children as well as building a mechanism to promote public participation through educational policy activities in the areas that affect each target group.

However, amidst educational movements and innovations in both the aforementioned learning and management dimensions. It can be seen that the education management needs to adapt to the diversity of the target group. Learning process model to measurement methods and results that believe in everyone's potential to find and develop themselves. In the learning process, therefore, there is no "Ready-made formula" is fixed, but can be variable and flexible according to individual conditions, economic and geospatial context based on participation in education management of all sectors in the area and community.

It is important that insights and lessons from the international community emphasize that tackling these burgeoning challenges requires a "community force, human power" with the capacity of the societal system that keeps up with trends and risks, work together to create a good education for people in the future.

All of these will be challenging education and research problems in the next decade that will use research as a tool to create knowledge and drive future development of education [6].

III. NEW NORMAL ACTIVE ADMINISTRATION INNOVATION

For the introduction of innovative ideas to be applied in school administration, we can apply Rogers' Diffusion of Innovations [7], which is said to be the dissemination process through communication through different channels. For a period of time between members who are in the social system or here is the school, the learning process and innovation are established. The steps are as follows: 1) Knowledge (Knowledge) is a step to perceive that innovation has occurred and find news until they have an understanding of that innovation, with factors relating to the recipient of the innovation. 2) The innovation should have five characteristics: (1) more useful than the original (Relative Advantage), (2) consistent with the culture of the society that is accepted (Compatibility), (3) not complicated, complicated very much (Less Complexity), (4) can be adopted from time to time. (Divisibility), and (5) visibility and understanding (visibility). 3) Decision is the stage where people are interested in participating in activities that lead towards behavior change and decide whether to accept that innovation or not. In general, the decision is not permanent and may change later. 4) Implementation is a step to be used as a step-by-step trial or periodically. If good results are achieved, they will be recognized quickly. 5) Confirmation is the final step of the process which is to find information to support his decision may last for a long time until accepting new ideas permanently.

IV. E-LEARNING ECOSYSTEM

E-Learning ecosystem is the term used to describe all the components required to implement an e-learning solution. These components fall into three categories:

content providers, consultants, and infrastructure from Brodo [7].

1) Content Providers: Content providers offer content for learning solutions that is typically linked to competency development, personal development, or a critical business issue requiring improvement. The learning can be delivered through different methods, such as classroom-based, synchronous online-learning and asynchronous online learning. The term Blended Learning is used to describe a combination of these methods. According to Brodo [8], there are three types of content providers: Branded Content Provider; Commodity Content Provider and Custom Content Provider. Many elearning solutions utilize a combination of all three. A brand name content provider that is typically associated with a leading publisher or business school. A Commodity Content Provider is content aggregator that offers hundreds of titles, courses and modules in a variety of formats. Custom Content Provider is an organization that will tailor internal content and/or develop new content based on a specific requirement. Each group of content providers provides a different value proposition. There really is no right or wrong way to choose one of these groups. Your decision to choose a company from one or more of the groups should be based on your strategy, budget, organizational structure and size, overall training direction, and the relationships and confidence you have in the content provider.

2) Consultants: Brodo [9] suggested that there four different types of consultants in the e-learning ecosystem (some companies perform more than one of the following functions). A strategy consultant helps an organization to develop a new business strategy. Strategy consultants typically begin with a model and tailor it to the specific circumstances. They are usually very good at the process of designing a new e-learning structure, but weak when it comes to implementing it. Compensation Consultant specializes in developing compensation strategies designed to ensure employees are motivated to achieve business goals. Although compensation is often not directly linked to the other parts of the ecosystem, it should be reviewed to ensure people are motivated to help meet business goals. For example, an organization may have a strategy for developing and launching new products, but compensate employees on their ability to manage costs and assets. Information Technology Consultants help organizations set up the infrastructure required to perform e-business and the processes to operate efficiently and seamlessly. Implementation consultants help organizations put new systems, strategies and plans in action. They work with IT teams and strategy groups to successfully implement a new system.

3) Infrastructure: Brodo [10] defines infrastructure as the "plumbing" for the management, delivery and tracking of e-Learning. It consists of learning content management system; content delivery system and tools. A learning content management system (LCMS) is a software solution that enables organizations to efficiently manage the process of training and development. The benefit of LCMS is its ability to be online, providing instant access to data and information regarding the usage and effectiveness of training. The LCMS also allows organizations to generate reports specifying who has been to what programs, how they did it, what else they are signed up for, and much more. A good LCMS must be able to manage all forms of learning, including instructor-led, asynchronous and synchronous e-learning. A content delivery system (CDS) is online software that allows training to be delivered over the Internet. The two types of content delivery systems are asynchronous and synchronous. Asynchronous content delivery systems use open platforms and development standards to physically design and deliver the content for anytime access. Asynchronous content delivery systems provide many interactive features that leverage the full power of the Internet, such as chats, peer counseling, communities, coaching and document sharing. Synchronous content delivery systems enable the simultaneous online delivery of content to a group of people at a specified time. Tools transfer core intellectual property into a learning object. For example, Flash is an authoring tool from Macromedia that is used to develop interactive online content. These tools are used to create content that fully engages the learner and increases memory. Digital ecosystem varies distinctively in a different context. In an educational context, digital learning content is produced, administered and manipulated in an intricate and changing environment [11].

V. RELATED CONCEPTS AND LITERATURE

The four principles of learning ecosystems are [12] 1) different life and different learning methods. That in fact it is not a learner with impaired or not able to learn because in fact, students have different ways of learning, understanding and expressing. What are the various learning methods associated with? Thai education may have to go into more understanding this point. In a process that we select or endeavor to promote a wide variety of learners. How do we use it? Do we accept learning differently or are we still caught in the trap of learning disabilities? Not a student with impaired or not able to learn but the learning method has a different nature. Many times, we tend to focus on what we have to say or the learning outcomes that we set. We may have to come back and ask that question. 'What is the thing that the learners can learn by themselves?' because it is based on the students' preferences, and he will do well but we never search for and promote this thing to be developed

further. 2) Supportive learning, learning is like a tree that cannot grow at all. This is called the feedback loop such as nature cannot grow all the time at the same rate or increasing more all the time, and nature has a rhythm for its growth in its own way. The question is, in that learning process. How can we accept this phenomenon among learners? Do we have too many requirements to grow learners in our context? 3) Good teaching is not saying that 'How to grow in steps', but if we prepare the soil prepare points that is conducive to growth, and the roots of learning can glide and grow. Learning is like a tree that cannot always grow but with different rhythm and speed. 4) There is no waste of thought in the classroom. There is a lot of information or knowledge that may be in the learner's head, but never been used or it may have been mentioned and then been forgotten and disappeared. Subsequently, students could be punished for littering the thought in the classroom but in a good learning environment no idea waste or leftovers for learning and we need to come up with a process for digesting seemingly useless things [13]. It is comparable to the fact that education may require a vulture of learning. In which nature, dead animal carcasses have the potential to spread disease, but the vultures will be able to handle these carcasses that learning ecosystem did not begin. How do teachers design teaching and learning? However, it must start from accepting the diversity of the learners and accepting that teachers, parents or the community can be both a giver and a recipient of knowledge from learners on a mutually supportive relationship.

The article "Artificial Intelligence Digital Learning Ecosystem for Smart Learning" [14] discusses the Artificial Intelligence Digital Learning Ecosystem for smart learning as a space for learning and learning various contents through artificial intelligence or AI in the teaching process will use artificial intelligence to support teachers, support learners, meet the needs of many different learners at the same time, personal assistance automatic rating and identify weaknesses in the classroom. This is divided into 3 learning areas according to the nature of the area: 1) the classroom, 2) outside the classroom, and 3) the home. Artificial intelligence plays four main roles: 1) the intelligent creator, 2) the virtual teacher, 3) the intelligent tutor, and 4) the intelligent system administrator.

The development of an artificial intelligence learning ecosystem empowers learners to use digital technology to make intelligent learning at any time and in any location. Be responsible for both oneself, the teacher, and the course content.

In the 21st century, it is time for Knowledge-based-Economy where factors of production and competitive factors are changing and become intangible. Thus, development of innovation is one way to help every organization to create a stronger standpoint and turn into innovative organization. Their goals are to survive, grow and build sustainable competitive performance, turning into innovative era is consistent with the Royal Act of Education B.E. 2542 as revised (No. 2) B.E. 2544 Section 9 of educational technologies. It has been stated that State shall promote and encourage the production and development of academic books, textbooks, media, materials, and other educational technologies by accelerate development of production capacity, provide funding and provide incentives to producers and educational technologists. Therefore, it is necessary that schools must develop their innovations or use innovations to improve quality of education. In order to build, develop or use innovation in education, leader or educational administrator must rely on innovative thinking which basic skills to generate innovation in organization are. Their Innovative leadership must be implemented with cooperation from teachers and staffs to improve student's quality by innovative product. The continuation of this whole process will lead the schools stepping towards innovative organization.

From the article on "Innovation in Academic Management of Basic Educational Institution Administrators" [16]. This research aims to 1) study innovation in academic administration of basic education institution administrators, 2) study innovation of appropriate academic administration of basic education institution administrators. The population used in this research is: 1 school administrator, 1 deputy director of education or academic teacher, and one teacher responsible for the subject matter group, including 3 from 100 educational institutes, divided into sub-district office 50 educational institutions and under the Primary Educational Service Area Office of 50 educational institutions, including 300 data providers. The research tools were questionnaires. The statistics used in data analysis were frequency, percentage, mode, and the Kendall Coefficient of Concordance. The results of the research showed that 1) the academic administration innovation of basic school administrators, there were 50 innovations in various educational institutions. Therefore, it can be seen that each educational institution can and has the potential to create innovation by themselves, and 2) appropriate academic administration innovation of the basic education institution administrators, there are 12 innovations including (1) school administration innovation, (2) participatory management innovation, (3) teaching model management innovation, (4) individual student teaching innovation, (5) management innovation according to educational quality assurance principles, (6) administrative innovation integrated, (7) management innovation using technology and communication, (8) Management innovation using network partners, (9) team management innovation, (10) management innovation according to Tip Co, (11) Management innovation a form to develop the quality of

distance education through information technology, and (12) innovation in the management of computer learning center.

Therefore, innovative education management is proactive by the administrators, in addition to being a test of leadership, but also as educational management, prepare yourself for a learner-centered learning process with the goal of promoting teaching and learning management to have potential in order to be a part of the creation of the standard of higher education of the nation in the future.

VI. BODY OF KNOWLEDGE

Body of knowledge from the study of this article can be summarized as the following figure.



Fig. 1 Body of knowledge from the study

CONCLUSION

Education administrators are important people in providing quality education and influencing internal personnel, having a role in setting policy direction and leading the school to success and achieving the quality goals of education, that is for quality learners, be human of quality and potential by having important skills. The new normal educational administrators must therefore be highly competent persons related to the changing circumstances that have occurred, the world of competition, the development direction and guidelines for the country's educational reform. Developing educational institutions is to be able to provide teaching and learning and to adapt to the changes. Therefore, the education administrators in the new normal must be ready for outstanding features. There is a quest for knowledge in theory, skills, roles, duties, morality, ethics and experience from educational administration to develop educational institutions to become a learning organization and to build educational institutions to be a new generation of innovative organizations in response to Competition and keep up with the world change effectively [17]. It will guide learners to develop new thinking skills [18], and it is a way of development and a new paradigm shift that is from the original paradigm that the teacher gave knowledge to students in various institutions. It is also changing to help design a collaborative learning process between teachers and all children and youth in society, that is, the learning process is more important than knowledge. In addition, the teacher is not the one who gives knowledge but is the designer of the learning process at the same time with children and youth because the knowledge itself is too vast to be able to give to the student. Students in the new century also have a way to find knowledge for themselves everywhere, both in the environment and on the internet. If Thai education is still stuck with the original paradigm, which means giving knowledge as a course, it will not be in time to catch up with the world situation. What should be done is to have a new paradigm to develop children and youth into lifelong pursuers. What children and youth will learn depends on their individual context, but what everyone should have is the ability to learn at all times throughout life and constantly develop oneself. The next paradigm development is learning and innovation skills; information, media and technology; life and work skills and the educational support system of the 21st century, arguing that it is caused by the forces that force education to inevitably change: the world is changing both economically with the emergence of industry and new world professions arising from the advancement of information technology, however, the development of people of the future should complete 5 dimensions in which the characteristics related to human beings are person to person, which is considered a better dimension to look at people as machines, which are proficient minds, creative mind, the mind knows synthesis, the mind knows respect and the mind knows ethics. Therefore, education administrators should make major policy adjustments to guide the development of schools for a new world by harmonizing curriculum standards, teaching methods and assessments, build professional strength among teachers and school administrators without neglecting the role of the professional learning community and towards the advancement of new world skills, changing schedules, allowing teachers to be more involved in professional decision making and allocate resources to educational institutions equally administrators should focus on teachers to be able to shift the curriculum from a unilateral approach to teaching that allows students to participate in problem-solving and questioning. which can be used by students of all ages and all skill levels. Therefore, technology and innovation that are important to learning in the new age that is to bring ideas into concrete or to visualize democracy and a culture of participation in learning that will lead the Thai education system to advance internationally.

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A Learning Model of Environmental Education to Enhance Environmental Ethics Behavior for Undergraduate Students in a University

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Abstract— *the purpose of this research was to develop a learning model of environmental education to enhance the environmental ethics behavior of undergraduate students in a university. A qualitative research design was employed 3 steps; firstly, the documentary review was used for investigating the theoretical definition of environmental ethics behavior. Then, an in-depth interview was used to keep a practical definition. Lastly, a focus group discussion was employed to confirm the component of a learning model. Data were collected by 20 experts for interviewing and 8 experts for focus group discussions, using a semi-structured interview, discussion recording form, and were analyzed together by content analysis and analytic induction later. The research findings revealed that 1) the environmental ethics behavior comprised of 4 characteristics. Those were: (1) Right conception as a basic understanding of the environmental issues or nature of reality (2) Right consumption was claimed to use the natural resources as long as needed and efficient use of resources (3) Right conservation was referred to the appropriate preservation, protection, and management of the environment and natural resources. (4) Right conduction was expanded the three previous characteristics for our sufficiency economy living and well-being. 2) A learning model of environmental education to enhance environmental ethics behavior of the undergraduate students in a university was a process model namely SWU-E. Those were (1) Starting (S), it is the openness of mind for receiving new situation and preparing for learning. (2) Worldviewing (W), as the evaluation of the value of the environment to create realistic opinions and a new perspective of their own. (3) Utilizing (U), applies a new perspective to create a balance of life with the environment. (4) Evaluating (E), assessing the value which is generated by their practice with the environment from a new perspective and keep improving. Interestingly, SWU-E model was proposed for cultivating the environmental ethics behavior of undergraduate students who are the next generation people to save our planet.*

Index Terms— ***Learning Model, Environmental Ethics,/ Environmental Education***

I. INTRODUCTION

There is a consensus within the research community regarding the problems of natural resources and the environment as a result of human beings used not the resources carefully and leads to environmental pollution, natural disasters, extinction of species, resources depletion, climate change, global warming, waste, and other problems which affect human life and well-being [1]. Population growth brings to more demand and supply of natural resources whereas consumerism drives excessive consumption together. Human beings are both the creator and the destroyer of natural resources and the environment at the same time. Therefore, scholars and professionals have sought solutions especially focused on human consumption behaviors [2].

Over several decades, various approaches are applied to solve them such as scientific, economic, sustainable development, and psychological approaches. Even if the different solution methods are applied continuously; the environmental problems persisted and escalated. In the late twenty century, UNESCO has mentioned Environmental Education (EE) which should be a new

alternative to solving environmental problems as well because it was suggested for solving environmental problems by changing human behavior from human insight [3]. In contemporary, it continues to be recognized and discussed in the concept of Sustainable Development Goals: SDGs, as follows "*…Education as a driver of sustainable changes…"* [4]. According to EE, it focuses on raising environmental awareness and concerning first and then constructs environmental knowledge and understanding for participatory environmental problem-solving. However, EE does not concern with the issue of ethics which should affect environmental ethical behavior; that will contribute to the right solving and sustainable managing of the environmental problems [5]. The Environmental Ethics Behavior (EEB) is a key to environmental conservation and management because the right action in facing the challenges of the 21st century aspire the seamless integration of science and ethics [6]. EEB means moral norms that control the human behavior to the environment. In practically, there are 3 types of EEB: 1) Technocentrism is a concept that focuses on logic, technology and disregards the value of environment, 2) Anthropocentrism as a concept of subjectivity; humans are only one aspect of the greater ecosystem, one species among many. 3) Ecocentrism agrees that human beings are part of nature and living by interdependence. Academically, ecocentrism concept has been considered to apply the environmental problems solving nowadays because it is consistent with the guidelines of UNESCO [7]. In summary, EEB still be essential behavior of people especially the new generational students who are ready to live with the changes in the modern era.

In psychologically, Kohlberg's theory of moral development was identified that young people aged between 18-20 years will develop morals and ethics with their judgment before sticking to it as a practice [8]. Most undergraduate students who are active and pursues their own should treat the environment based on their ethical behavior for saving our planet. Moreover, there were some research results revealed that young students have more environmental knowledge and collaboration in environmental conservation than adults as well as they can apply the new technology for effective learning and transferring their knowledge to other people [9]. Certainly, environmental ethics should be developed with youth especially undergraduate students for changing their behavior as a preliminary to create a seed for conserving the environment to be extended.

As mentioned above, EE is an educational process promoted by UNESCO in solving environmental problems because it focuses on human behavioral change. However, it also ignores the importance of ethics to be integrated into behavioral control. Absolutely, we need to incorporate ethics into the teaching and learning process of EE to enable students to change behavior in a positive environmental worldview. In the same way, we should consider and promote the learning of the undergraduate students in the first group due to corresponding to their age and competency. Therefore, researchers have realized the importance of EEB to cultivate it into undergraduate students and the development process of activities. According to a model, environmental awareness, knowledge, understanding, and environmental ethics will be absorbed in the students lead to EEB and the right participatory environmental problem-solving.

Researchers believe that people who practice EEB will affect to change their environmental behavior and bring to living in harmony with the environment and wellbeing. As the reason, researchers are therefore interested in studying "a learning model of environmental education to enhance environmental ethics behavior for undergraduate students in a university."

II. RESEARCH OBJECTIVES

The objective of this research article was to develop a learning model of environmental education to enhance the environmental ethics behavior of undergraduate students in a university

III. RESEARCH METHODS

A. Research Design

A qualitative research design was employed [10] and research tools were semi-structured interview form and focus group discussion form. Data were collected from the in-depth interview which will provide deep information and relevant to the point [11] and focus group discussion which will provide the collective perspective and synthesis in the validation of ideas and concepts. Qualitative data from 20 key informants for an in-depth interview and 8 participants in focus group discussion was analyzed by using content analysis and analytic induction. The process of conduction consisted of 1) documentary study from secondary sources include textbook, research articles, and other related documents for investigating of characteristics of EEB, 2) define a theoretical definition of EEB, 3) design the power questions of semi-structured interview form by analyzing a theoretical definition, 4) in-depth interview 20 experts; the conservationist, professor in environmental education, professor in environmental management, and the monk who has experience in preservation, 5) define an operational definition of EEB by analyzed both theoretical definition and the information from in-depth interview 6) current situation analysis for the design of a learning model includes learner characteristics, prior knowledge, skills, and learning tasks from operational definition of EEB, 7) design a learning model of environmental education to enhance EEB for

undergraduate students, 8) confirm a learning model by focus group discussion.

B. Research Process

The research process of this research has developed into 3 steps consisted of investigating theoretical definition, analyzing practical definition, and designing a learning model. Steps were shown in Fig. 1.

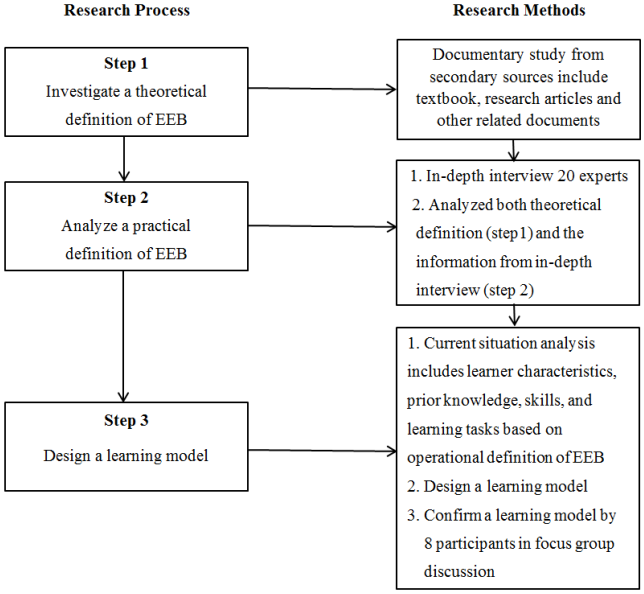


Fig.1 Research process for the development of a learning model of environmental education to enhance EEB for undergraduate students

IV. RESULTS

Results indicated that 1) EEB comprised of 4 behaviors. Those were: (1) *Right conception* as a basic understanding of the environmental issues or nature of reality for using and caring the environment, interrelationship analyzing, and environmental evaluating. It can be cultivated through moral critical thinking, system thinking, and self-reflection, (2) *Right consumption* was claimed to use the natural resources and environment as long as needed and efficient use of resources, and to waste management, based on right conception (3) *Right conservation* was referred to the appropriate preservation, protection, and management of the environment and natural resources with moderation ethics, (4) *Right conduction* was expanded the three previous behaviors for sufficiency economy living and well-being of oneself and society,

2) A learning model of environmental education to enhance environmental ethics behavior for the undergraduate students in a university was a process model namely *SWU-E.* as shown in Fig.2.

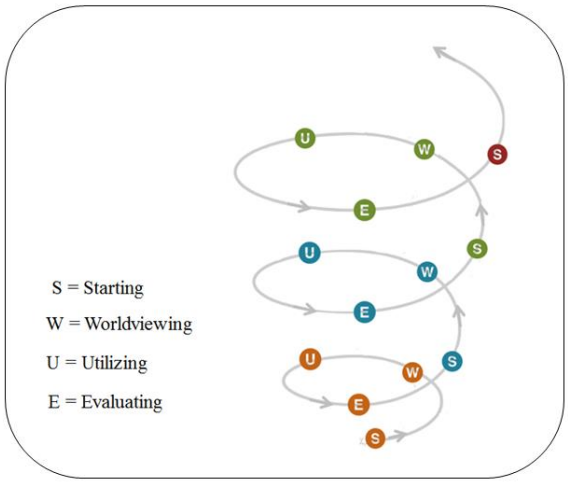


Fig.2 A spiral model of SWU-E to enhance EEB for undergraduate students

From Fig.2 can be explained to a spiral model of SWU-E to enhance EEB for undergraduate students that consisted of 4 steps. Those were (1) *Starting (S),* it is the openness of learners' mind for receiving new situation and preparing for learning, calmness and inspiration are motivated for their good prompting, (2) *Worldviewing (W),* as the evaluation of the value of the environment to create realistic opinions and a new perspective of their own, this step is a basis to effort into next step, (3) *Utilizing (U),* applies a new perspective to create a balance of life with the environment based on right worldview. (4) *Evaluating (E),* assessing the value which is generated by their practice with the environmental concerning from a new perspective and keep improving. Consequently, this model is a process model (content-free) so it can be modified and integrated with the other subjects or curricula, especially; its process can be gradually learned moved as a spiral for growing up to wisdom.

V. DISCUSSIONS

The findings of literature review in the conservation paradigm revealed that almost all approaches of environmental problem solving were developed from the conservation concept which was formulated for a long time. In the early period, specific disciplines were used and led to the other problems to follow, so UNESCO promoted Environmental Education which is a holistic and interdisciplinary approach that is the highlight. Environmental education can foster a way of creating awareness of sustainable environmental issues and enhancing knowledge and skills to work individually and collectively for the solution and prevention of environmental problems. Whereas, Aldo Leopold who is the father of conservationists stressed that the principles of conservation are appropriate

consumption, attention to preserve and restore at the same time, and obtaining ethics as the baseline [12]. Therefore, environmental education and ethics were integrated by researchers to be a new method for environmental problem-solving. The objectives of environmental education will be expanded to cover EEB. Through exposure to EEB in the classroom; students become aware that human activities have an impact on the environment, and other species can be affected by humans. They develop a disposition for ethics and will consequently apply ethical thinking when faced with environmental dilemmas. They can continue to think of the environment in ethical ways long after they learn ethics in the classroom. Similarly, Eubios Ethics Institute shared the idea of environmental ethics should be considered an essential component of environmental education [13].

Moreover, the result indicated that EEB was consisted of 4 behaviors; 1) right conception is cognitive behavior called wisdom that controls human actions, 2) right consumption is moderate utilization of natural resources and environment, 3) right conservation is the intelligence environmental management, protection, and preservation for sustainability, and 4) right conduction refer to create a sufficiency economy along with conservation. This result meets the concept of ethical behavior in the psychological field that consists of 3 behaviors; cognitive behavior with knowledge and reasoning thinking, sensitive behavior with attitudes, and physical behavior with action. It is clear that behavior does not refer only to physical activity, but rather represents a complex intermingling of affective and cognitive processes that guide decisions in the short- and long term. To fully understand the mechanisms behind behaviors, to more effectively move people toward EEB, it is critical to explore the interplay among the cognitive and affective components, which are nearly inseparable [14]. In the same way, Buddhist ethics was mentioned in the middle way concept which consists of right view, right thought, right speech, right action, right livelihood, right effort, right mindfulness, and right concentration; some of these can be analyzed to seamless EEB such as right view and right though match right conception, right speech and right action match right consumption and right conservation, and right livelihood matches right conduction [15]. In the point of right conduction, this corresponds to King Rama IX, the great have presented his royal speech "...promoting the development of self-reliance needs graduality and it starts with the ability to earn a living first, then other demands..." [16]. Likewise, the results of the in-depth interview are stated that "…if the people are starving, the conservation will not conduct, but if the people are well-being, the conservation will happen spontaneously...". Consequently, the element of EEB has to keep the right conduction for expanding to earn a living.

As a result of a learning model synthesis known as SWU-E, there are some points to be discussed. In contemporary, the concept and approach of student-centered, outcome-based, interdisciplinary, self-knowledge construct, projected-based, problem-based, activity-based, and place-based are used in instructional design. Those lead to be self-constructed of cognitive, affective, and skill processes,[17] as same as SWU-E model is promoted for self- development of attitudes and values that motivate students to archive the environmental consciousness and EEB, then become involved in environmental problem-solving. The EEB is the main outcome of SWU-E model so it is necessary to follow up the constructivist learning theory, based on the idea that students actively construct their knowledge, and that reality is determined by their prior knowledge and experiences, according to learning approaches such as problem-based, and project-based are applied in SWU-E process too.

Insight SWU-E process, it starts with opening the mind up to new experience, and then use that to create the right environmental conception for moderate utilizing the natural resource and environment, lastly, evaluate the EEB for continuous improvement. In the classroom, SWU-E process will be repeated over and over again as spiral movement. This is consistent with Kolb's learning model based on experiential learning theory [18] suggested that this process is a learning circle or spiral where the student touches all the bases; experiencing, reflecting, thinking, and acting in a recursive process that is responsive to the learning situation and what is being learned. Concrete experiences are the basis for observation and reflection. These reflections are assimilated and distilled into the abstract concept from which new implications for action can be drawn. These implications can be actively tested and serve as guides in creating new experiences. In summary, the comparison between SWU-E and Kolb's experiential learning model as follows; Starting (S) as experiencing, Worldviewing (W) as reflecting, Utilizing (U) as thinking, and Evaluating (E) as acting (active testing). Besides, SWU-E and Kolb's experiential learning model process were designed to resemble brain processes, that is, concrete experience come through the sensory cortex, reflection involves the integrative cortex at the back, creative new abstract concept occurs in the frontal integrative cortex, and active testing involves the motor brain [19]. In this way, SWU-E is the brain's natural greasy learning process so it is easy and effective to apply in the classroom.

The correspondence of the SWU-E model to the religious human development model can be explained; by adhering to the Buddhapochana (Buddha's Teaching) that:

" Buddhist monks, these 4 things are indeed for the prosperity of wisdom, those are, the dialogue of a sublime person, the Buddha' Teachings listening, systematic attention

and analytical thinking (yonisomanasikāra), and Dharma practice " [20]

The Buddha's Teaching shown that the process of human development was consisted 3 steps as follows; 1) Perception is the beginning of the learning process that be obtained from the dialogue and listening to the truth (good and right thing), perception from external factors, including information, knowledge, and internal factors, namely the ability to perceive, 2) Thinking *(yonisomanasikāra)* is the application to analyze, organize, and further enhance the wisdom, and 3) Practices include Dhamma, which is considered a main part of the learning process. The three phases of perception, thinking and practices are cyclical. Because when practicing correctly that brings to think correctly and the right practice leads to creating the right worldview (wisdom); this process focuses on practice. As mentioned above, the learning process in a SWU-E model is consistent with the learning process in Buddhism; Starting (S) corresponded to Perception, Worldviewing (W) is matched in Thinking *(yonisomanasikāra),* and Utilizing (U) and Evaluating (E) is the same direction as Practices, Both models are the cyclical and spiral movement. In summary, SWU-E model is therefore reliable to be used in learning to effectively effective EEB.

VI. RECOMMENDATIONS

A. Recommendations for Practices

1. An individual with a different style in construct knowledge and cultivate wisdom. Such as student with learning diverging style has broad interest, need to gather information, prefer to work-group whereas a student with assimilating style is more interested in ideas and abstract concept. For this reason, a teacher should carefully instructional design; activities, technologies, classrooms, motivations, and evaluating methods. Personal-based learning may be applied in SWU-E model for great beneficial learning outcomes.

2. Because the goal of SWU-E is ethics, learning and teaching strategies are key points for effective EEB. The ethical development theories and models always are considered to learning strategic planning before implementation, and the maintaining of EEB should not be ignored. Activities that are practicable and tangible results should be an effort to motivate their challenge learning more than academic knowledge.

3. Learning spaces are essential for learning constructed of student in the digital age who prefer to learn with modern technologies, a self-paced approach, and social group more than learning in the classroom. To construct EEB, should be practiced in the real world for perceiving the various environmental issues and design thinking in effective outcomes. In the classroom and university have to set the space for EEB learning such as environmental seminar, ethical conference, and public spaces for practice, those are essential.

B. Recommendations for Further Research

1. In the variable point, EEB is affected by various psychological variables such as self-efficacy, self- control, and ethical reasoning. Therefore, further research should be identified these variables to study for comparing the results with this research and expanding the body of knowledge in environmental ethics issues.

2. Methodologically, the research reliability depends on the appropriate research design; population and sampling group, research process, and research methods. In this research, the qualitative design is deployed only for deep studying corresponded with the desired point. However, the credibility of some points may be enhanced by quantitative methods, according to further research should be applied the structural equation model (SEM) method examine the theoretical factors and confirm a model.

3. In this paper, theories and concepts are related to environmental education concept, ethics, behavioral sciences, and constructivist learning theory; those are a guideline to instructional design of SWU-E model. For theoretical comparison and confirmation we would like to suggest the other one such as transformative learning theory or connectivism learning theory to be deployed next studies.

CONCLUSION

The article showed that a practical SWU-E model focuses on transformative potential EEB for students. A "SWU-E" model is the content-free approach so that it can be integrated with the other subjects or curricula appropriately. The key of this article is the EEB change: right conception, right consumption, right conservation, and right conduction in the students and in their ability to influence others. Moreover, EEB should be considered an essential component of environmental education which is found in both formal and non-formal education and is critical to integrated ethics for implementing in the Sustainable Development Goals (SDGs).

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The Creation of Model for the Rehabilitation of Buddhist Way Workers

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Abstract *- The purposes of this research were 1) to study the rehabilitation of workers in the industrial rehabilitation center region 4, 2) to study the rehabilitation of Buddhist way workers, 3) to create the model for the rehabilitation of Buddhist way workers. This research was qualitative research. The data were collected from documents, field work, in-depth interview. The descriptive analysis was used for data analysis. Results showed that the rehabilitation of workers in the industrial rehabilitation center region 4: Mostly, there was some limitation on rehabilitation due to disabled people or family of disabled people. Mostly, they were not accepted from family or not allowed to have rehabilitation by oneself. The rehabilitation of Buddhist way workers. It was found that the principle of mental development (Bhavana) was the doctrine that was worth to practice for self-development, to purify the mind without defilement. It was the doctrine that created the morality in one's mind. The principle for promoting behavior in life are appropriate. The creation of model for the rehabilitation of Buddhist way workers was found that 1) physical development, disabled people who underwent physical rehabilitation by housework activity hobbies etc. 2) Emotional development, emotional rehabilitation of people who had problems on mental and mood affective disorders by organizing Pali text chanting activity, 3) Social development, social rehabilitation provided disabled people to show their ability such as field trip activity, etc. 4) Wisdom development and educational rehabilitation were to provide additional education by learning the life and wisdom development through experience, 5) Occupational or employee development. This aim was to help disabled people had a job along preparatory courses and vocational training courses by having various job modules such as office, computer repair, etc.*

Keywords—*Creation of Model, Rehabilitation of Workers, Buddhist Way*

I. INTRODUCTION

The way of life of the people of this world must seek their own form or style. However, they still need a spiritual anchor. For this reason, they must seek a spiritual anchor according to their characteristic behaviour. The Buddha's doctrine is another way for them to gain knowledge and building their faith, belief and hold it as a spiritual anchor. The teaching of all religion on earth will guide the concept, principle and rule of human life in every status. At the same time, Buddhism has taught people to consider from birth to death particularly in the area of self-reliance life and living in the society in order to live together in peace, have a good relationship, peace both in physically and mentally. Religion is therefore very important to the daily life of mankind. Another aspect of the human in this earth is the physical impairments, state of disability that occur physically and mentally. National Statistical Office, Ministry of Information and Communication Technology (Institute for Health Promotion of Disability: 2007) (1). conducted a survey of disabled people in 2007 with approximately 1,871,860 persons or percentage was at 2.9 of the total population of 65,566,359 persons. The proportion of females was a little higher than males, which was at 3 percent and 2.7 percent respectively. Most of them were the age group 75 year or over was at 30 percent. It could be divided into regions as follows; The northern region had the population with a disability was higher than other regions at 4.4 percent, the northeastern region was at 3.5 percent, the southern region and central had similar rates which were at 2.3 percent and 2.2 percent respectively. Each human cannot choose to be born, some people are born normal, some people are born with a partial organ disability, which the cause can be explained in many issues. disabled people are part of Thai society. Although the numbers of disabled people are relatively small in comparison with entire population of the

country. But disabled people are members of society that is no less important than normal people or other members in Thai society. National Development Plan for the Quality of Life of the Disabled people, No. 5, 2017-2021 stipulated the vision "Disabled people access to the rights, independent life in society, stay cool together sustainably" under the strategy of equality that is empower disabled people and disabled people's organization to have potential and strength (Empowerment), improve management administration quality, eliminate discrimination so that disabled people actually have access to their rights (Quality Management), make understanding and constructive attitudes towards disabled people and disability (Understanding), create an environment and public service that everyone can access and use (Accessibility), promote network integration and create participation in sustainable development of the quality of life of disabled people (Linkage) as follows; The constitution of the Kingdom of Thailand B.E. 2540 (1997) and revised in B.E. 2550 (2007) contains provisions on the elimination of discrimination on the basis of physical or health conditions and giving disabled people have the rights to receive social welfare and services. Empowerment of Persons with Disabilities Act B.E. 2550 (2007), (The constitution of the Kingdom of Thailand B.E. 2540 (1997)) is a law to fully protect the basic rights of disabled people and contains provisions on the elimination of discrimination. This law replaces The Rehabilitation of Disabled Persons Act B.E. 2534 (1991) which is the first law related to disabled people of Thailand. The new Act is to make the establishment of National Committee for Promotion and Development of the Quality of Life of Disabled People in place of the Office of Disabled People Rehabilitation Committee. It also creates a new office that takes the recommendations of the committee into action and creates funds of this office to manage for the rehabilitation of disabled people. National Development Plan for the Quality of Life of the Disabled people, No. 3, 2007-2011 guides for disabled people for all concerned agencies. Education Management for Disabled People Act B.E 2551 (2008) enhances unprivileged people's group to have equal educational and vocational training. Declaration on the Rights of Thai Disabled people 3 December 1998 was approved and signed by former Prime Minister. It was a contract that Thai people give for the disabled people. It is currently used as a reference for providing services to disabled people. Phradhammapitaka said that "We jus think that people who are disability, unable to help themselves or doing little, to be burden of others and society. (Phradhammapitaka, (P.A. Prayudh Payutto; 1999:37). (2). Buddhadasa Bhikkhu stated in the philosophy of belief in the potential of disabled people in the human handbook that belief in human potential is at the essence of Buddhism, including disabled people too. Buddhism believes that human beings can develop unlimited abilities. This belief helps disabled people show their abilities to the fullest potential of the individual (Buddhadasa Bhikkhu; 2009: 70). (3). It is seen that disabled people have the potential to evolve into intelligent in society, providing an opportunity and support. It appears that disabled people are able to develop themselves, to help themselves and to do things that being benefit to society. Particularly, disability may have extraordinarily good development potential on the others. This allows disabled people who are trained to develop themselves to be able to do something better than normal people. Perhaps, if the society is supportive, it may train a group of disabled people to do some part of the job for a society that they have never done before. Belief in human potential is the essence of Buddhism that applied to the general public. Buddhism believes that human beings can develop unlimited abilities, and the development of ability uses the principle of mental development that is physical development, emotional development, social development, intellectual development and vocational development in order to achieve the development of life and be able to live in a condition of disability and accepting the status.

Buddhism is a science that can be studied through lifelong education with the belief that every human being has the potential to cultivate and improve their quality of life. The process of developing human potential and quality of life appears in several the Buddha's doctrines and the process according to the principle of Bhavana 4 (Development) or training, improvement, rehabilitation of disabled people to complete all aspects consisting of physical development, moral development, emotional development and intellectual development (Phradhammapitaka, (P.A. Prayudha Prayutto); 1999: 22)). (4). It is also a process that can be applied to rehabilitation improvement and quality of life in rehabilitation disabled people to have high potential for self-reliance and to live happily with common people in Thai society. As the rehabilitation disabled people are disabilities that were born after birth and affect their lifestyle, they become dejected, bored, and hopeless for life.

The rehabilitation of workers is the physical and emotional development of employees and their insured persons who are injured or disability from work, to have good health and able to work in supporting themselves and their families through holistic rehabilitation that is doctor,

career, mind, and society. It is integration in all aspects. The concept of principle of Buddhism is clearly stated, which is the issues of PhraBrahmakunapon (Pinit Lapthananon; 2013: 22) (5). stated that Buddhist holistic well-being is a system of factor relationships where all elements are interrelated, called Bhavana 4 (development) which consists of; 1) Kaya-bhavana: physical development is the development of relationships with the physical environment in a reciprocal and effective way by knowing each other and having good results 2) Sila-bhavana: Moral development is the development of social relationships, to have good behaviour in society, to have relationship with fellow human, to stay with others by being in discipline, to help and support each other, to create society and promoting peace 3) Citta-bhavana: emotional development is making the mind grow in virtue, goodness and cheerfulness, peace, complete with mental health, kindness, compassion, respect, honesty, gratitude, strength, mindfulness, concentration, perseverance 4) Panna-bhavana: intellectual development is the training of building knowledge, thinking, understanding, recognizing, considering, solving, diagnosing problems.

Therefore, researchers are interested in studying the model for the rehabilitation of Buddhist way workers with the process of rehabilitation of disabled people by creating the model for the rehabilitation of workers according to the principles of Theravada Buddhism by taking the principle of Bhavana 4 (Development) as a development pattern for the rehabilitation of workers in the industrial rehabilitation center region 4 to create the model for further development.

II. RESEARCH OBJECTIVES

1) To study the rehabilitation of rehabilitation disabled people of workers in the industrial rehabilitation center region 4.

2) To study the rehabilitation of Buddhist way workers.

3) To create the model for the rehabilitation of Buddhist way workers.

III RESEARCH METHODS

This research is qualitative, fieldwork. It is applied research to bring the results to use with the rehabilitation of workers or disability from work who are employees and insured persons in the social security system with the scope of research as follows;

3.1) Scope of documents

1) Primary sources: collect data from primary sources consisting of Thai Tipitaka Mahachulalongkornrajavidyalaya Version 1996, Handbook of Occupational Competency Assessment.

2) Secondary sources: it consists of books, textbooks, articles, published material, and research related.

3.2) Scope of contents

This research aims to study the model for the rehabilitation of rehabilitation disabled people of workers in the rehabilitation of workers in the industrial rehabilitation center region 4, the rehabilitation of Buddhist way workers, and creating the model for the rehabilitation of Buddhist way workers.

3.3) Scope of areas

This research conducts the industrial rehabilitation center region 4, social security office, Ministry of Labour, Khoksri sub-district, Mueng District, Khon Khaen province.

3.4) Scope of populations

Target population, because this research is qualitative, fieldwork, and applied research, is purposive sampling consisting of officers, and rehabilitation disabled people who are disabled from work and insured disabled people during the rehabilitation, under the industrial rehabilitation center region 4, Khon Khaen province. There are 45 persons as follows;

Director	1 persons
Group leader	5 persons
Operation officer	9 persons
Rehabilitation disabled people	30 persons
Total	45 persons

4) Benefits

1) Know the rehabilitation of rehabilitation disabled people of workers in the rehabilitation of workers in the industrial rehabilitation center region 4.

2) Know the rehabilitation of Buddhist way workers.

3) Know the model of the rehabilitation of Buddhist way workers.

IV. RESEARCH RESULTS

The results of "the creation of the model of the rehabilitation of Buddhist way workers" was found that

5.1) The rehabilitation of rehabilitation disabled people of workers in the industrial rehabilitation center region 4: Mostly, there was some limitation on rehabilitation due to disabled people or families of disabled people. Mostly, they were not accepted by family or not allowed to have rehabilitation by themselves according to the rights of service of employees who were injured or disability from

work and disability insured. At present, there is the rehabilitation of workers centers open in all regions of the country and the law that are conducive to development in all areas such as health, occupation, information to provide rehabilitation disabled people with opportunities for self-development. It could be summarized into 5 parts from the research as follows;

1) Physical part: Rehabilitation disabled people were interviewed overall were in poor health and there would be some people who had health problems or some had a medical condition such as hypertension, diabetes, heart disease, and rehabilitation participants or disability who sat in the wheelchair. Therefore, physical rehabilitation was to help rehabilitation disabled people to treat, prevent, solve, rehabilitate their condition or physical disability, not only the use of heat, cold, electrical stimulation, massage, manipulation, pulling, exercise, and housework therapy, various work activities in free times or recreation and hobby, etc.

2) Emotional part: Rehabilitation through psychotherapy was a method used to rehabilitate the emotional state of a person with problems of mental and emotional Bipolar with verbal communication methods and did not use words to the patient. It required a good relationship between the rehabilitation disabled people and the psychologist. It was reinforcement through a way to grievances, emotion, and replacement, motivation, and attitude that would help the patient got better such as activity for chanting Pali text in the evening, invitation monk to provide knowledge of Dhamma, alms blow activity in the morning of every month, relaxation activity by using music therapy for rehabilitation.

3) Social part: Rehabilitation disabled people were interviewed, there were both with family and those who did not yet have a family. Most people who had family were divorced and lived with parents or relatives. Social part or community, most of them would look at people with impaired disability and there were still few opportunities to participate in social activity. Social rehabilitation provided the opportunity for disabled people to show their ability and potential by providing activities that would remove obstacles or promote disabled people to play a role in society as they would normally do such as field trips activity, cleaning volunteer in Buddhist important day, alms blow activity and others traditional activities, etc.

4) Intellectual part: educational rehabilitation was the provision of additional education to rehabilitation disabled people who lost the opportunity to continue their study in the non-formal education system for rehabilitation disabled people, short-term vocational training, and learning to do sufficiency agriculture according to the philosophy of sufficiency economy to living after the end of rehabilitation.

5) Vocation and employment: Occupational rehabilitation, vocational training was part of the rehabilitation process that continued with the process together with physical and mental rehabilitation. This included occupational counseling, physical, mental and emotional preparation, vocational training, probation.

Conclusion, it can be seen that the rehabilitation of rehabilitation disabled people of workers in the industrial rehabilitation center region 4 was a vocational training and job placement for the disabled people. It aims to help disabled people find jobs, help themselves, and contribute to society as well as to have pride and dignity of oneself and to have the rights and freedom as other people.

5.2) The rehabilitation of Buddhist way workers: Researchers used the principle of Bhavana 4 (Development) as a guideline for the rehabilitation of workers was found that it was confirmed that the principle of Bhavana is a doctrine that was valuable to adapt and practice, develop oneself, purify from the defilement more. However, the person who follows according to the principle of Bhavana 4 was still one who deserved to be respected with virtue in the mind as well as lifestyle behavior was more appropriate. So that, the development process commenced during the educational process which was divided into the following aspects:

1) Kaya-bhavanaya (Physical development): It was physical training, developing a healthy body, know how to deal with all physical environments in a supportive way, benefit without any problems, consumption of the four requisites. Besides, it was also trained to know internal sense-fields that is Cakkhu: eyes, Sota: ears, Ghana: nose, Jivha: tongue, Kaya: body, Mana: mind or using various equipment, technology, and experiences to study and learn, not just consume to be fun only.

2) Sila-bhavanaya (Moral development): It was behavioral training, physical and verbal development in social behaviour without harassment harm to others. It had a relationship with the natural and social environment with others appropriately, contribute to creativity, promote peace, the self-discipline of public society.

3) Citta-bhavana (Emotional development): It was emotional training. Developing a person to have complete mental health consisting of quality, competence, and good mental health. The quality of mind was faithful, loving-kindness, compassion, generosity, sympathetic joy, respect, industrious, submissive, grateful, sacrifice, ashamedness, competence. The good mind was strength, stable, industrious, diligence, responsibility, mindfulness, and concentration. Good mental health was cheerful mind, joyful, overjoyed, peaceful.

4) Panna-bhavana (intellectual development: It was intellectual training. It was the training of personal development to think, diagnose, solve problems and manage by wisdom, understanding, reason, look at everything according to cause and factor, unbiased, without defilement, know the ordinary truths of the world and life, access freedom, free from suffering.

5.3) The model for the rehabilitation of Buddhist way workers was found that was created through group activity as follows;

1) Physical development: Rehabilitation disabled people were poor in health and there would be some people who had health problems or some had a medical condition such as hypertension, diabetes, heart disease, and participants who sat in the wheelchair. It needed to lift the body from the wheelchair every 15 minutes and the illnesses occurred during rehabilitation that required medical treatment for cleaning the wound every day according to the appointment of the nursing work. Including that they were sent to examination and treatment to the government hospital in Khon Khaen province. Therefore, physical rehabilitation was to help rehabilitation disabled people to treat, prevent, solve, rehabilitate their condition or physical disability, not only the use of heat, cold, electrical stimulation, massage, manipulation, pulling, exercise, and housework therapy, various work activities in free times or recreation, sport and hobby according to the timetable was stipulated, etc.

2) Emotional development: Rehabilitation through psychotherapy was a method used to rehabilitate the emotional state of a person with problems of mental and emotional Bipolar with verbal communication methods and did not use words to the patient. It required a good relationship between the rehabilitation disabled people and the psychologist. It was reinforcement through a way to grievances, emotion, and replacement, motivation and attitude that would help the patient got better such as every day in the morning after honoring the national flag, everyone chants Pali texts, in the evening, everyone chants Pali text and do meditation for 10 minutes, invitation monk to provide knowledge of Dhamma, alms blow activity in the morning of every month, including relaxation activity by using music therapy for rehabilitation.

3) Social development: Rehabilitation disabled people were interviewed, there were both with family and those who did not yet have a family. Most people who had family were divorced and lived with parents or relatives. Social part or community, most of them would look at people with impaired disability and there were still few opportunities to participate in social activity. Social rehabilitation provided the opportunity for disabled people to show their ability and potential by providing activities that would remove obstacles or promote disabled people to play a role in society as they would normally do such as field trips activity, cleaning volunteer in Buddhist important day in the temple area, participating in the Buddhist Lent candle parade, alms blow activity and others traditional activities, etc. including the acceptance of their disability condition as well as providing education to the society, organizations, to accept disabled people and employ them and to agree on the rights of disabled people to live in the same society.

4) Intellectual development: Intellectual part: Educational rehabilitation was the provision of additional education to rehabilitate disabled people who lost the opportunity to continue their study in the non-formal education system in Khon Khaen province. It was reinforcement through a way to grievances, emotion, and replacement, motivation and attitude that would help the patient got better such as every day in the morning after honoring the national flag, everyone chants Pali texts, in the evening, everyone chants Pali text and do meditation for 10 minutes, invitation monk to provide knowledge of Dhamma, alms blow activity in the morning of every month, including relaxation activity by using music therapy for rehabilitation by it was training activity such as cooking bread, coffee, soap, and learning how to do sufficient economy according to the philosophy of sufficient economy, vegetable gardening, farming, mushroom cultivation, and cricket farm for additional occupations, after the end of rehabilitation.

5) Vocation and employment: Occupational rehabilitation, vocational training was part of the rehabilitation process that continued with the process together with physical and mental rehabilitation. This included occupational counseling, physical, mental and emotional preparation, vocational training, probation, finding a job for disabled people. This aim was to help disabled people had a job along with preparatory courses and vocational training courses by having various job modules such as office, computer repair, mental work, machine tool work, etc.

V. DISCUSSIONS

The research entitles "The creation of the model for the rehabilitation of Buddhist way workers" can be discussed as follows;

1) The rehabilitation of rehabilitation disabled people of workers in the industrial rehabilitation center region 4 was a vocational training and job placement for the disabled people. It aimed to help disabled people find jobs, help themselves, and contribute to society as well as to have pride and dignity of oneself and to have the rights and freedom corresponding to Naruthai Kethom, her research entitles "Receiving welfare in disability of disabled people in

Bo Thong sub-district, Chonburi province" was found that it was the disability welfare of disabled people that could access according to their rights more effectively and efficiently.

2) The rehabilitation of Buddhist way workers was an opportunity for disabled people to build self-confidence in doing any jobs as well as it is also about learning one's body and mind to understand the reality of life. Although most disabled people have developmental limitations, they were not discouraged from improving their lives. Currently, some laws are conducive to development in all areas such as health, mind, education career and the accessibility of this information is an opportunity for them. The results of this research are similar to Chonthicha Jirapakpong et al., her research entitled "Buddhist monk's well-being: A development of well-being promotion the model on Buddhist way by community public health integration for good life quality in Lampang province". The results were found that 1) The model on Buddhist way by community public health integration for good life quality in Lampang province was the process of monk's health care and their integration with the public health system, the role of local government organizations in promoting monk's health and the process of monk's health care management with the partners 2) A development of monk's well-being promotion the model on Buddhist way by community public health integration for good life quality in Lampang province. There are components as following 1) Bhavana 4 (Development) 2) Health care according to the public health system consisting of health promotion, prevention medical treatment, rehabilitation 3) Participatory management process 4) good monk's well-being

3) The model for the rehabilitation of Buddhist way workers was created through activity with group or projects was organized by the center to accommodate the physical and mental condition of disabled people through the form of activities such as every day in the morning after honoring the national flag, everyone chants Pali texts, in the evening, everyone chants Pali text and do meditation for 10 minutes, invitation monk to provide knowledge of Dhamma, alms blow activity in the morning of every month, including relaxation activity by using music therapy for rehabilitation corresponding to Samart Ratanasakorn, his research entitled "A study of independent living skills of visually impaired persons in Bangkok and vicinities". According to the study, it was found that 72.0% of the sampling had the skills of familiarization with the environment and the movement of computer skills correctly and to the full potential of the machine. Problems and obstacles in life were occupations. Problems using public transportation were inconvenient. It can be seen that self-development through activities is a great confidence building for disabled people.

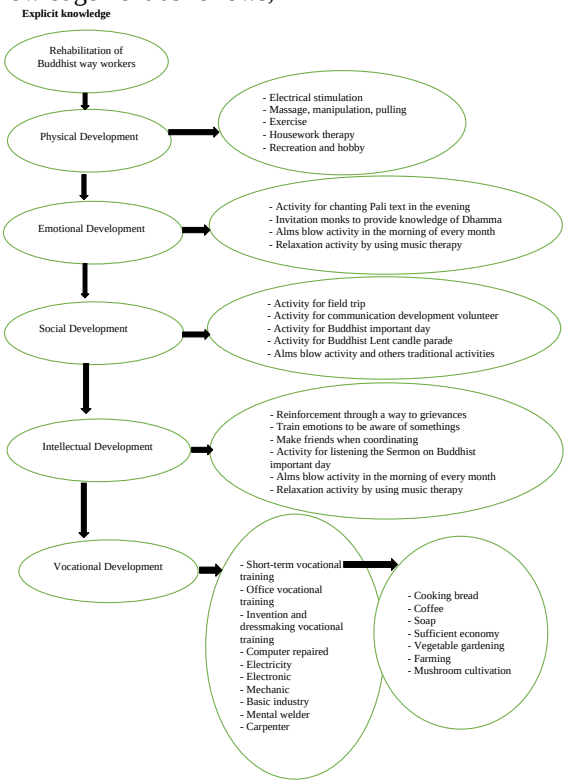
CONCLUSION

therefore, when a person has completed self-development, it can be seen that the rehabilitation of Buddhist way workers is to create for disabled people to gain self-confidence in doing any jobs as well as it is also about learning one's body and mind to understand the reality of life.

, the Creation of the model of the rehabilitation of Buddhist way workers is to develop the potential of disabled people to live on their own, not to be a burden of the family, society and country. On the other hand, disabled people can show their potential to society that they can also work like normal people.

VI. ACKNOWLEDGEMENT

The research entitles "The creation of the model for the rehabilitation of Buddhist way workers" can be acknowledgement as follows;



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Social Work of ASEAN Women's Association in Kalasin Province to Buddhist Integration

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Abstract *- The purposes of this research were 1) to study the concepts and principles of social work in Thai society today, 2) to study the work of social work of ASEAN women association in Kalasin province, 3) to study social work of ASEAN women association in Kalasin province to Buddhist integration. This research was qualitative research. The data were collected from documents, field work, in-depth interview, key informants. Its aim was the concepts and principles of social work. Analysis model of work of ASEAN women association in Kalasin province were found that the concepts and principles of social work in Thai society today was a social work that took place as a form of practice in Thai society of being concrete. This social work was established on the principle of the four bases of sympathy (Sangahavatthu) consisting of 1) charity, generousness, sacrifice, 2) kindly speech, a speech was connected to society, 3) useful conduct to society, creating happiness, the relief of suffering, and 4) participation and behaving oneself properly in all circumstances, acting as a role model for society. The work of social work of ASEAN women association in Kalasin province was social work in the sense of giving benefits to society, exchanged knowledge and experience between groups of successful business people, collaboration for development to expand various project as well as promoting cooperation and working as a network, cultural exchange and tradition between community to community and country to country including organizing joint activity and exchanged for both public and private sectors. Social work of ASEAN women association in Kalasin province to Buddhist integration was consistent with research of donation to support community activity, which was to share happiness with the community, to create benefits for the public consistently, gave equality for everyone, treated everyone as a relative.*

Keywords: *Social Work, ASEAN Women Association, Buddhist Integration*

I. INTRODUCTION

Social work of ASEAN women's association is a group of volunteer society. The word "social work" has different meaning depending on society and culture context. For religion and history are a common basis for cultivating public mind to a member in society. Public mind for doing welfare work is the mind that is full of Metta (loving-kindness), Karuna (compassion) to others. It supports them for the cessation of suffering without expecting anything return. The current state of Thai society has deteriorated significantly. There are many problems such as material prosperity etc. It is the cause of society in general that provides the importance of value to pursuit money, power, virtue rather than the importance of metal development. Hence, the society with giving and sharing each other, maintaining the benefits of the community, cultivating consciousness in community, self-responsibility should take place in society. Volunteer allows everyone in society to live together. It is the creation of consciousness to help others and the public in accordance with the Buddha's doctrine. It focuses on physical, mental and intellectual development. If it is complete, it will lead to live in the society effectively, value, benefits to the society as the motto "A giver is always be loved by receiver". Giving also expresses consciousness of the sacrifice, great-hearted, generous by the giver. The self-development with Buddhism principles focuses on self-development to benefit in three steps; 1) self-development for one's benefit 2) self-development for others' benefit 3) self-development in advance level. It is self-development for the society and public. Those who can develop themselves in this world, they are known to be accepted by others. It can be said that there is a countable number. Therefore, the creation of consciousness for helping others and public is extremely needed for Thai society (Phra Brahmpundit, 2018: 10). [1].

"International women's day 2016)". It is regarded to be good for Thai women, it encourages society aware of the values and the importance of women with great power. From

the United Nations conference in September 2015, Prime Minister Phrayut Chan-o-cha said that promoting the equality of women is not a duty of women, but it belonged to people of all ages in promoting a positive attitude and reducing violence against women and children, and appreciate the differences and the potential of women. The national council of women of Thailand under the royal patronage of her majesty the queen is an organization that shows the potential of women and it will be an important force in the development of the country, to jointly spread to various organizations. It is a national organization, collaboration with the government, national women, and international women. It is essential to drive the policies in the country. Women are the main force to keep the country stable and sustainable (Strategy for women development, 2017-2021:12) [2].

ASEAN Women's Association in Kalasin province is a member of ASEAN Association Thailand and a member of the national council of women of Thailand under the royal patronage of her majesty the queen. I was established to promote the role of women in Kalasin province. There was connection in 10 countries including the network in many provinces of Thailand. The role of the ASEAN women's association in Kalasin was established from the founder of the volunteer with the principles of organizational management. There was a committee to set policies and made decisions without any profits. They gathered to help each other within the organization and society. The key was members were volunteer, public welfare for helping the society, happy when doing good deeds, blessing others, thinking to help others from the cessation of suffering, including kindness and public consciousness who sacrificed physical, mental and intellectual strength to serve society (Thammasat University Research and Consultancy Institute, 2017: 3) [3].

The Association Foundation is to promote friendship, good relations, understanding of the cultural way of life, ASEAN Socio-Cultural for women in Kalasin province, Thai women and women in ASEAN countries are united, to promote the culture and knowledge of ASEAN among the general people, especially children and women to ASEAN women members (Community Development Department, 2019: 1-9) [4]. ASEAN women member in Kalasin province is aware of their duty to the nation and the world situation, working together for the public and public benefits, to promote language learning and development of career for Thai women in Kalasin province, to prepare to welcome the ASEAN Economic Community (AEC), to support the unity among the groups and help each other, to coordinate with the government, agency, organization, club, both public, and private that have similar purposes both in the country and abroad, to occur the benefits both education and career in the future of members and their family, to spend free time for the members, to exchange attitudes in various fields of knowledge between fellow members. Working and living together of members who come from different family might face the problem from their habits. They might have conflicts. These issues what researchers are interested to study how women organizations come to be a member to take individual advantage, to take advantage for the others, or to take advantage for the public.

Guidelines of the work of ASEAN Women's Association in Kalasin province aimed at work for the benefits of society and the public to creating a good people for society by cultivating consciousness to people to be responsible for themselves and society. Moreover, they have created moral and ethical people to serve society. The cooperation of members of the ASEAN Women's Association in Kalasin province was, therefore, united cooperation in making benefits and created good things to happen in society and the public. The gathering of the ASEAN Women's Association and the social work of the ASEAN Women's Association in Kalasin province was significant that was to bring the Buddha's doctrine to fill in various activities to be more complete.

Therefore, researchers are interested in studying the social work of the ASEAN Women in Kalasin province based on the concepts of Buddhist principles, to create happiness for society. It is expected that the results of this research will inspire the society that aims for Women's organizations in the future.

II. RESEARCH OBJECTIVES

1) To study the concepts and principles of the foundation of the ASEAN Women's Association of Thai society in the present.

2) To study the social work conditions of the ASEAN Women's Association in Kalasin province.

3) To study the social work of the ASEAN Women's Association in Kalasin province to Buddhist integration.

III. RESEARCH METHODS

This research is to study the concepts and principles of the foundation of ASEAN Women's Association of Thai society in the present, to study the social work conditions of ASEAN Women's Association in Kalasin province, to study

the social work of ASEAN Women's Association in Kalasin province to Buddhist integration.

3.2) Scope of documents

1) Primary sources: Thai Tipitaka Mahachulalongkornrajavidyalaya Version 1996 and Thai Atthakatha Tipitaka Mahachulalongkornrajavidyalaya Version 2017 and in-depth interview.

2) Secondary sources: Books, Academic textbooks, Media, Academic articles, and related research.

3.3) Area of studies

Kalasin province is selected by researchers. It is the site of the ASEAN Women's Association in Kalasin province. They have continued the social work. There are processes and forms of working in social work. And the research of volunteers has not been studied in this area before.

3.4) Scope of key informants

1) Advisors	10	persons
2) Administrations	4	persons
3) Members	23	persons
Total	30	Persons

4) Expected benefits

1) To know the concepts and principles regarding volunteers in Thai society in the present.

2) To know the social work conditions of ASEAN Women's Association in Kalasin province.

3) To know the social work of ASEAN Women's Association in Kalasin province to Buddhist integration.

IV. RESEARCH RESULTS

1) Concepts and principles regarding social work in Thai society in the present were found that social work trends have become a form of practice in Thai society. The social work is based on the principle of the four Sangahavatthu (bases of sympathy) consisting of 1) charity: generousness, sacrifice 2) kindly speech: encourage each other 3) Society leading to happiness and the cessation of suffering 4) behaving oneself properly in all circumstances and being a good role model.

2) The social work conditions of ASEAN Women's Association in Kalasin province were found that it played an importance functional role in social service, particularity social in Kalasin province and it was giving with happiness, motivation as well as building cooperation with the community, exchange the knowledge and experience in women's organization or women's organization network, exchange the knowledge and experience between groups of successful business people and network of entrepreneur in Thailand, coordinate for development and expansion of various projects as well as promoting the cooperation and work as a network and exchange the culture, customs between community to community and country to country including organizing joint activities, exchange the visit between ASEAN member countries of the people sector, or civil society as a center for coordinating of other organization but not the government and society, culture, science education, environment, disaster mangemange, public health, development, human rights and others.

3) The social work of ASEAN Women's Association in Kalasin province to Buddhist integration. It was found that

1) donate money to support community activities, which was to share happiness with the community along with the Buddha's doctrine "Dana" was the sharing of happiness and care to reduce the conflicts, or prevent future conflicts with consideration of the goodness to each other.

2) communicate with kindly speech, sweet speech "Piyavaca" was able to coordinate in the ten directions by the principle of Dhamma called "Vacasubhasitta" was the root of any speech, it was believable, not a sweet breath but hidden a weapon. Member of the ASEAN Women's Association in Kalasin principle has practiced corresponding to the principle of Piyavaca (kindly speech), truthful word. Only words were usefully used for further action in social work.

3) Creating benefits to public "Atthacariya", members of the association aimed at doing benefit to others. Besides, creating benefits for oneself, they also worked as a volunteer. The first starting point was to help the family. Making oneself useful was to put yourself in my shoes and well behave for the family. Especially the family was society, therefore, the mind adhered to volunteer work for society.

4) Behaving oneself properly in all circumstances "Samanattata" was to give equality to all people, to think, to do, to create for society happy. Members of the ASEAN Women's Association supported everyone like a relative, not haughty, behave towards other people until becoming a spiritual anchor and good friendship to each other.

This social work was established on the principle of the four bases of sympathy (Sangahavatthu) consisting of 1) charity, generousness, sacrifice 2) kindly speech, a speech was connected to society 3) useful conduct to society, creating happiness, the relief of suffering 4) participation and behaving oneself properly in all circumstances, acting as a role model for society alone the Buddha's doctrine.

V. DISCUSSIONS

Concepts and principles regarding social work in Thai society in the present were found that social work trends have become a form of practice in Thai society. The social work is based on the principle of the four Sangahavatthu (bases of sympathy) consisting of 1) charity: generousness, sacrifice 2) kindly speech: encourage each other 3) Society leading to happiness and the cessation of suffering 4) behaving oneself properly in all circumstances and being a good role model corresponding to the result of the research of Suthathip Kaewklieng mentioned above, she said that Buddhist principle aimed at people were generous, to help each other, sacrifice for the public benefits that were four Sangahavatthu (bases of sympathy), to make people aware to help other people and create public benefits. The importance of the social work had to have the Dhamma for the practice corresponding to the research of Jaiphet Klajon (Mor Khiew) that practice meditation, reduce and avoid doing sin, charity, cheerful, healthy.

The social work conditions of ASEAN Women's Association in Kalasin province were the social work in the sense of giving benefits to society, exchanged knowledge and experience between groups of successful business people, collaboration for development to expand the various project as well as promoting cooperation and working as a network, cultural exchange and tradition between community to community and country to country including organizing joint activities, exchange the visit between ASEAN member countries of the people sector, or civil society as a center for coordinating of other organization, etc., corresponding to Suphalak Suwanklue, she stated that the social work of the ASEAN Women's Association in Kalasin province was eligible for four Sangahavatthu (Bases of sympathy) which resulted in social work were successful. It was an association that was believed in contributing benefits to society. Its' aim was for peace, being a good role model for the general public as well as a good form for Buddhists to support money and power to society for others to be happy.

The social work of ASEAN Women's Association in Kalasin province to Buddhist integration was found that 1) charity, generousness, sacrifice 2) kindly speech, a speech was connected to society 3) useful conduct to society, creating happiness, the relief of suffering 4) participation and behaving oneself properly in all circumstances, acting as a good role model corresponding to the research of Suthathip Kaewklieng to be found that four Sangahavatthu (Bases of sympathy) wat to help each other, sacrifice for public benefits. Therefore, social work is aimed at volunteer for self-development and society.

Suggestions

4) Policy Suggestions

1) Should stipulate as a provincial policy by the support from the government in the operation of Women's Association both country level and province level.

2) The ASEAN Women's Association in Kalasin province should have a personal development plan, provide training to prepare for the performance of new personnel.

4.1) Academic Suggestions

1) Should have a comparative study on the administration and management of welfare women's association in the region and great region to apply the results of the study to the services system for efficiency in the bureaucracy.

2) Should have a qualitative study of the activity to gain in-depth data for real improvement in problem-solving.

4.2) Suggestions and Benefits

1) Arrange to have a responsible person for monitoring the evaluation of activity and implementing the results for future action.

2) Public relations brochures in administration should have appropriate contact procedures.

3) This research will be used to spread the benefit to the public for society.

4.3) Suggestions and further research

1) Should study the service achievement of the ASEAN Women's Association in Kalasin province.

2) Should study the problem of service or administration of the ASEAN Women's Association in Kalasin province.

3) Should have a comparative study of administration and management of the ASEAN Women's Association in Kalasin province.

4.4) Suggestions for the use of research results

Although the model for the application of the volunteer that appear in the work of the ASEAN Women's Association in Kalasin province to strengthen the organization to achieve peace is Buddhist way to reach the happiness of the people in the organization that can be applied to reach the happiness of the members of the ASEAN Women's Association in Kalasin province. The researchers recommend the study of the context of the ASEAN

Women's Association in Kalasin province to analyse the service for working in the organization and outside society to know the guidelines for proper implementation of the model to achieve the true peace of organization.

4.5) Suggestions

The study might be useful as information as a basis for those who are interested in studying which dimensions can the study of Buddhism be studied? In this research, researchers studied some areas. Initially, researchers view that there are some issues to be studied in the further research as follows;

1) Should study the application of the principle of four Sangahavatthu (Bases of sympathy) for the organizational management and an assessment of the relationship between the participants and the ASEAN Women's Association in Kalasin province that how to create happiness and lead to raising the association with continuous development.

2) Should have a comparative study between groups of the ASEAN Women's Association in Kalasin province and other organizations that how the leaders use the principle of four Sangahavatthu (Bases of sympathy) in organizational administration and how there are differences among the members of the organization.

3) Should study the application that derives from the research to create a tool to strengthen the organization for peace in the association where the leaders use the four Sangahavatthu (Bases of sympathy) that how the basis for work is corresponding to the qualifications of the association members.

CONCLUSION

this social work was established on the principle of the four bases of sympathy (Sangahavatthu) consisting of 1) charity, generousness, sacrifice 2) kindly speech, a speech was connected to society 3) useful conduct to society, creating happiness, the relief of suffering 4) participation and behaving oneself properly in all circumstances, acting as a role model for society according to the Buddha's doctrine.

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Model of Community Leadership Development of Local Fishing Villages in the Central Region

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Abstract— *The objectives of the research were to (1) study the community leadership components of local fishing villages in the Central Region, (2) create the model of community leadership development of local fishing villages in the Central Region, and (3) assess the model of community leadership development of local fishing villages in the Central Region by applying the Mix Methods Research with in-depth interviews of 15 local experts and Sampling Survey from 400 residents of local fishing villages. The research analyzed and synthesized the data with statistical data analysis methods i.e. Exploratory Factor Analysis—EFA, and used Descriptive Statistics such as Mean—$\bar{x}$, Standard Deviation—SD, to assess the adequacy and practicability of the model. The results of the research were as follows:*

1. There are 6 areas of the community leadership components of local fishing villages in the Central Region including (1) behavior and management of community leader for building workplace relationship, (2) confidence and trust building, (3) creativity and ability to solve the community's problems, (4) fair, transparent, and honest management of the human resource, work, and community, (5) creation of community leader's credible image, and (6) the governance that corresponds with community's goals.

2. The model of community leadership development of local fishing villages in the Central Region, conclusion, is that the leaders must develop the leadership in these areas including (1) development on behavior and management of community leader for building workplace relationship, (2) development on confidence and trust building, (3) development on creativity and ability to solve the community's problems, (4) development on fair, transparent, and honest management of the human resource, work, and community, (5) development on the creation of community leader's credible image, and (6) development on governance that corresponds with community's goals.

3. The assessment of the model of community leadership development of local fishing villages in the Central Region found that the overall model is adequate and practical for developing the community leadership of local fishing villages in the Central Region the most.

Keyword— *The Model Of Development, Community Leadership, Local Fishing Villages In The Central Region.*

I. INTRODUCTION

Thailand is a country rich in both aquatic and land natural resources, especially the Gulf of Thailand and the Andaman Sea that located next to Thailand's coast. Thailand ranked as the world's leading exporter of aquatic animals. With export value for product categories like chilled and frozen shrimp, squid, and fish, also including tuna products worth over thirty thousand million Baht, this agricultural product is deemed one of the top exports that generates the highest revenue for the country. Therefore, fisheries is essential to the economy because it is the source of income, employment and origination of various related industries. Aquatic product is also the source of protein for local population and can export and generate revenue into the country (Department of Fisheries, 2012, p.1).

Thailand's development on fisheries, especially the local fisheries, has been progressing and expanding considerably. Fisheries is thus the important business sector for the country's economy and society. It is important food source and helps elevate people's well-being. Then, fisheries has been utilized to meet more demands from people and society which led to the issues regarding the practice of destructive fishing (such as electric generators fishing vessel and trawl and push nest to catch small aquatic animals), the degradation of natural resources, the scrutinized inspection of fisheries and the illegal fishing vessels that violates European Union (EU) human right laws. These issues affect the local fishermen, as they are at a disadvantage in the competitive fishing market and capacity. The local fishermen feel pressured and resort to the destructive fishing methods and highly effective fishing equipment which is inappropriate and illegal under Section 34 of Emergency Decree on Fisheries, B.E. 2558 (2015) that forbids the licensed local fisherman to fish in the Offshore seas (forbidden to go further than 3 nautical miles) (Udomsak Sinthipong, 2016).

The current state of society has changed; there is more prosperity within the community especially in the tourism business such as the increase of many hotels, resorts,

homestays, and restaurants, and including the factories. The location of these businesses is at coastal area, which is fishermen's workplace. These changes have affected local fisheries in various coastal provinces within Central Region such as Samut Prakan, Samut Sakhorn, Samut Songkhram, and Phetchaburi, which have been fishery communities for over 100 years with a simple and sustainable livelihood. However, now they have to confront structures encroachment within mangrove forest and fishing areas, discharges of solid and water waste into the sea, water and noise pollution, crowded housing, etc. These problems gradually destroy lifestyle of people inside the communities until there may not be any virtue of good livelihood left for the local fishery community in the Central and other Regions. (Koson Siriboon, individual interview, 23 August 2020; Chailai Hariboot, individual interview, 16 August 2020; Suparb Kongraksa, individual interview, 30 August 2020; Atcharee Sermsab, individual interview, 12 August 2020).

Therefore, the researcher was interested in studying the model of community leadership development of local fishing villages in the Central Region to promote and develop better leadership and potentials of community leaders for fostering and managing stronger communities. Because the researcher realized that human resource is one of the important factors to gear up the communities and societies towards overall sustainable development. The community leaders must instill morals, ethics, and social responsibilities onto people's recognition so that they can adapt them into their daily lives such as making a livelihood with honest and trustworthy occupations, using the society and community's resource effectively and beneficially, the preservation of marine animals which are rarer and decline in population, etc. So that the people inside the community can truly live together peacefully and harmoniously.

II. RESEARCH OBJECTIVES

1.To study the community leadership components of local fishing villages in the Central Region.

2.To create the model of community leadership development of local fishing villages in the Central Region.

3.To assess the model of community leadership development of local fishing villages in the Central Region.

III. SCOPE OF RESEARCH

1. Area of research: local fishing villages located in the Central Region of Thailand including 8 local fishing villages that have registered with the Department of Fisheries, as follows: (1) Baanchaitalay Panthai Norasing fishing village (100 Year Fishing Village), Tambon Baanchaitalay Panthai Norasing, Amphoe Mueang, Samut Sakhon, (2) Baanchaitalay Bang Krachao fishing village, Tambon Bang Krachao, Amphoe Mueang, Samut Sakhon, (3) Ban Rang Chan Coastal Community, Tambon Nakhok, Amphoe Mueang, Samut Sakhon, (4) Klong Khon Fishing Village, Tambon Klong Khon, Amphoe Mueang, Samut Sakhon, (5) Banchuchi Coastal Fishing Village, Tambon Bang Chakreng, , Amphoe Mueang, Samut Sakhon,
(6) Ban Khlong Sala Daeng Fishing Village, Tambon Thai Ban, Amphoe Mueang, Samut Prakan, (7) Klong Koh Toh Rak Thongtin Fishing Village, Tambon Bang Pu Mai, Amphoe Mueang, Samut Prakan, and (8) Laem Phak Bia Fishing Villange, Tambon Laem Phak Bia, Amphoe Ban Laem, Phetchaburi.

2. Scope of contents: concepts and theories related to the model; concepts, and theories related to leaders and leadership, concepts and theories related to community leadership; knowledge about local fishing villages in Central Region, and the local and foreign literature related to the model of community leadership development local fishing villages in Central Region.

3. Area of population: 15 experts who have knowledge, expertise, and experience in 3 areas including leadership, community leader, and local fisheries, 400 residents who live within the fishing villages in Central Region, and 15 senior experts.

IV. LITERATURE REVIEW

The researcher had studied concepts and theories related to leaders and leadership (Netpanna Yawirat, 2013; Rattikorn Jongwisan, 2013; Wirot Sarnrattana, 2014; Adair, 2005; Barnard, 1962; Goleman, Boyatzis, & McKee, 2002; Kouzes & Posner, 2017; Stogdill, 1948; Tead, 1963; Weihrich & Koontz, 1993; Zenger & Folkman, 2002) and concepts and theories about community leadership (Uthai Parinyasutthinan, 2016; Koontz & O'Donnell, 1959; Morphet, Johns, & Reller, 1967), also including other related literature as follows:

1. Loew and Wentworth (2013) studied Leadership: The State of Development Programs. The findings found that model of leadership development should have these following components: (1) external influencers, (2) strategic alignment, (3) organizational climate, (4) employee experience, (5) integrated leadership development process cycle, (6) governance, (7) communication technology, (8) tools creation, (9) specialized expert, and (10) ability to lead the team to success.

2. Chanunthron Buasook, Chawit Chitwicharn, Manat Suwan, and Sman Foosang (2016) studied "Improvement of Community Leadership in Development and Dissemination of Knowledge Concerning the Water Resource Management: A Case Study of Mueang Ngai Sub-District, Chiang Dao District, Chiang Mai Province". The findings found that (1) the water resource management at the rice field level based on an irrigation system, which was traditional wisdom; there was

the dam committee to govern and manage the water using technical knowledge, which was the modern wisdom, and there was the water users committee that took care of management, (2) the integration of traditional and modern wisdom was an amalgam of knowledge /contemporary wisdom that was suitable for, and consistent with, the context of the issue, which was the water resource management in the watershed area down to the course of its middle and end, (3) the good and effective leadership in development and dissemination of the aforesaid wisdom consisted of promoting and creating a learning source in the community; supporting its members to participate and encouraging the formation of the same water group network, applying the principle of good governance to management, and accepting a diversity of the modern technology for developing and applying it appropriately to the context thereof.

3. Siripan Hutachok (2019) studied Fishermen's Way of Life Samut Sakhon Province within Sufficiency Economy. The findings found that fishermen's way of life can be incorporated by sufficiency economy concept; however, it does not cover all aspects in fishermen's community. This was because of the lack of fishermen's appropriate knowledge and understanding about sustainable sourcing of aquatic animals and the phenomenon of freshwater mixed up with saltwater, which affected a great deal on fishermen's way of life. Therefore, there should be water situation monitoring groups and government organizations that educate fishermen's awareness about the sustainable use of resources.

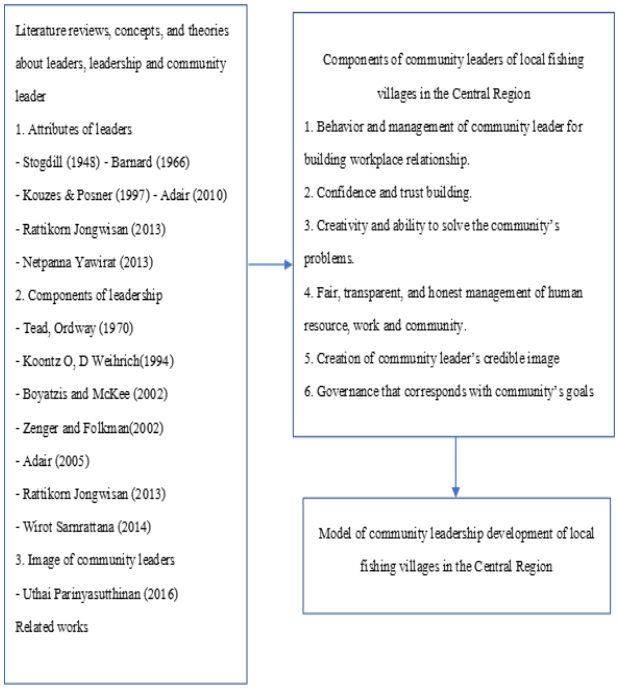


Fig. 1 Conceptual Framework

V. RESEARCH METHODOLOGY

1. Studied the components by applying Mix Methods Research with in-depth interviews regarding the opinions towards the components of community leadership of local fishing villages in the Central Region from 15 local experts equipped with knowledge, expertise, and experience in three areas including leadership, community leader, and local fisheries. With the use of semi-structured interviews, the researcher gathered data about local fishermen's way of life from past to present and components of community leadership of local fishing villages required to improve the livelihood of community residents, etc. Additionally, the researcher used the Sampling Survey tool to survey the opinions regarding components of community leadership of local fishing villages in the Central Region from sampling subjects within 8 local fishing villages from 4 provinces, for a total of 400 residents.

2. Created the model using the data from the surveys to uncover the components by implementing Exploratory Factor Analysis—EFA method in conjunction with the analysis and synthesis of data gathered from interviews. The researcher then created the drafted model and employed 5 experts to consider the suitability of the drafted model by implementing the assessment for the drafted model for further adjustments to achieve the most complete model of community leadership development of local fishing villages in the Central Region.

3. Assessment of the aforementioned model by 15 experts. The researcher had laid down the selection criteria of experts as follows: 4 professors from educational institutions, 1 official from the Department of Fisheries, Ministry of Agriculture and Cooperatives, 5 community leaders, and 5 local fishermen. This design of assessment is to assess the adequacy and practicability of the model.

4. Data analysis included content analysis, Exploratory Factor Analysis—EFA, which considered the numbers of components from Eigen Values that are greater than 2 and factor loading of each variable in components that are greater than 0.5, and Descriptive Statistics i.e. Mean—$\bar{x}$, Standard Deviation—SD, to assess the adequacy and practicability of the model.

VI. FINDINGS

The findings from this research on the topic of the model of community leadership development of local fishing villages in the Central Region may conclude on each objective as follows:

1. The result from studying the components of community leadership of local fishing villages in the Central Region had yielded Kaiser-Meyer-Olkin Test value = 0.855, which indicated that data was suitably intercorrelated enough to be

analyzed using Exploratory Factor Analysis—EFA. When setting the conditions to analyze the main components at Eigen Values that are greater than 2, found that 6 significant components can describe over 55.79% of community leadership of local fishing villages, data shown as follows (see Table 1).

Table 1 Initial Eigen Values to assess groups of Factor

	Initial Eigen Values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	20.529	30.640	30.640	20.529	30.640	30.640	10.080	15.045	15.045
2	6.831	10.195	40.835	6.831	10.195	40.835	9.155	13.664	28.709
3	2.991	4.464	45.299	2.991	4.464	45.299	5.402	8.062	36.771
4	2.726	4.068	49.367	2.726	4.068	49.367	4.673	6.975	43.746
5	2.303	3.438	52.805	2.303	3.438	52.805	4.223	6.302	50.048
6	2.002	2.988	55.794	2.002	2.988	55.794	3.849	5.745	55.794

From Table 1, each component was analyzed through feature extraction using Principal Component Analysis and Varimax Rotation then considered for Factor Loading values that are greater than 0.5 to arrange suitable variables for each Factor, along with naming each component as (1) Behavior and management of community leader for building workplace relationship, (2) Confidence and trust building, (3) Creativity and ability to solve the community's problems, (4) Fair, transparent, and honest management of the human resource, work, and community, (5) Creation of community leader's credible image, and (6) Governance that corresponds with community's goals. Data is shown here (see Table 2).

Table 2 Factor Loading values of each components

Model of community leadership development of local fishing villages in the Central Region	Component
1. Behavior and management of community leader for building workplace relationship component	
1.1 speak politely, softly	0.780
1.2 seek more knowledge	0.738
1.3 benevolent	0.709
1.4 healthy	0.687
1.5 clean appearance	0.687
1.6 researching on local fisheries	0.660
1.7 know appropriate timing	0.658
1.8 positive thinking	0.657
1.9 seek new strategy for community	0.609
1.10 effectively decentralize authority and responsibility	0.585
1.11 Cheery	0.574
1.12 highly patience	0.574
1.13 govern with Dhamma principle	0.547
1.14 always have creativity	0.525
1.15 adhere to righteous rules	0.518
2. Confidence and trust building component	
2.1 sympathetic	0.719
2.2 popular with people in community	0.700
2.3 self-confidence	0.663
2.4 attentive towards others	0.662
2.5 stable	0.648
2.6 keep own words	0.639
2.7 trustworthy	0.619
2.8 attentive to other's speech and opinions	0.614
2.9 calm	0.603
2.10 pay attention to community's problem	0.572
2.11 positive attitude towards others	0.568
2.12 good self-regulation on emotions	0.552
2.13 express appropriate emotions	0.545
2.14 have relation skill	0.514
3. Creativity and ability to solve the community's problems component	
3.1 fair, unbiased, unprejudiced	0.736
3.2 have plans to achieve the goals	0.708
3.3 have communication or persuasion skill	0.654
3.4 take the work seriously	0.651
3.5 work as a team	0.633
3.6 progressive management	0.512
4. Fair, transparent, and honest management of human resource, work, and community component	
4.1 show their potentials to others	0.717
4.2 have expertise towards their work	0.708
4.3 honest	0.642
4.4 assertive	0.591
4.5 protect community's benefits	0.544
4.6 encourage harmony with community	0.526
5. Creation of community leader's credible image component	
5.1 approachable	0.700
5.2 a person that received respects from people within community	0.696
5.3 brave and decisive	0.677
5.4 closely monitoring the progress	0.628
6. Governance that corresponds with community's goals component	
6.1 have enough working experience	0.797
6.2 have expertise in their occupations	0.744
6.3 have work discipline	0.721
6.4 have broad vision and point of views	0.701
6.5 effective problem solver	0.650

The data, i.e. (1) Behavior and management of community leader for building workplace relationship. (2) Confidence and trust building. (3) Creativity and ability to solve the community's problems. (4) Fair, transparent, and honest management of the human resource, work, and community. (5) Creation of community leader's credible image, and (6) Governance that corresponds with community's goals. Each component has Factor Loading value as shown above (see Table 1).

2. The analysis and synthesis results, literature reviews, and analysis of components through Exploratory Factor Analysis—EFA had generated the model of community leadership development of local fishing villages in the Central Region, as presented in Picture 2.



Picture 2 Model of community leadership development of local fishing villages in the Central Region.

3. The assessment result for the model of community leadership development of local fishing villages in the Central Region found that the model is adequate and practical for developing the community leadership of local fishing villages in the Central Region at the maximum level. Moreover, both main components and subcomponents are also adequate and practical for adaption at the maximum level. Data is shown below (see Table 3).

Table 3 Overall Mean— $\bar{x}$ and Standard Deviation—SD values of components and subcomponents

Model of community leadership development of local fishing villages in the Central Region	Adequacy of model			Practicability of model		
	$\bar{x}$	SD	Meaning	$\bar{x}$	SD	Meaning
Overview of model	4.93	0.258	Maximum	4.80	0.414	Maximum
Main components	4.93	0.258	Maximum	4.93	0.258	Maximum
Subcomponents	4.80	0.414	Maximum	4.87	0.351	Maximum

VII. CONCLUSION

The model of community leadership development of local fishing villages in the Central Region had uncovered 6 important components which included (1) behavior and management of community leader for building workplace relationship, (2) confidence and trust building, (3) creativity and ability to solve the community's problems, (4) fair, transparent, and honest management of the human resource, work, and community, (5) creation of community leader's credible image, and (6) the governance that corresponds with community's goals. These components are essential to the elevation of the ability and potentials of community leaders to govern and manage fishing villages effectively. Because each component will prescribe the procedures, processes, and guidelines that can adapt to the development of community leaders that would better correspond with the roles and responsibilities. Moreover, the components will also provide indicators to assess the accomplishment that is a direct result of the development of community leadership of local fishing villages in the Central Region.

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External and Internal Environmental Scanning Towards Strategic Design and Manufacturing a New Safety Car

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Abstract*— The automotive industry is among the prominent industry contributing to the Malaysian GDP rose by 3.6%, with a value of RM 40 billion in 2016. The automotive industry is one of the fastest-growing economic sectors in all other sectors with the primary purpose of providing safe and accessible transportation for the world's increasing population. The vehicle owner and demand increase, but in the same way, road traffic accidents reported higher each year even though ASEAN NCAP has been introduced to improve the car safety level. Thus, this study aims to investigate further the technology shift and design features as external and internal environmental scanning towards car safety design and manufacturing from car manufacturer perspectives.

Index Terms— ***External and Internal Environmental Scanning, Technology, Design, Car Safety, Automotive Industry*.**

I. INTRODUCTION

The government has recognized Malaysia's motor vehicle industry as an essential contributor to the economy with its expected contribution of 10% to our GDP in 2020. According to the Motor Trader and the Star Online, vehicle sales in ASEAN will reach 4.7 million units in 2018, compared to 2.4 million units in 2011. In turn, this brings ASEAN place the 6th rank the most prominent automotive market by 2018 [15]. Thailand, Indonesia, and Malaysia are dominating the ASEAN auto market, and the number of the car in ASEAN road is estimated reach to 55 million units [4]. However, according to the WHO world's report, road accidents have brought public health and development problems, killed more than 1.2 million people a year, and injured or disabled between 20-50 million people. Moreover, the impact of such injuries, on average, costs about 1% to 2% of their national GDP [14].

Recent statistics from the Malaysian Ministry of Transport report that total road accidents increase gradually from 363,319 cases in 2007 to 521,466 cases in 2016. This suggests a further study by looking backward on the automotive industry as one element in the automotive ecosystem [11], particularly in the stage of designing and manufacturing a new car with the concern of continuous research and development (R&D). R&D and technology must come together, and it is a must to gain a competitive advantage and also to fulfill the ASEAN NCAP requirement [1].

Hence, the study to analyze how car manufacturers improve vehicle safety is crucial. Moreover, there is a dearth in the

literature exploring the issue of car safety from a manufacturer's perspective. Thus, this study explores car engineers' perceptions and attitudes towards car safety and how they transform their understanding of establishing policy and design and manufacture a new car. Moreover, this study also intends to investigate how a safety car is considered one of strategy to improve companies' competitive advantage.

This is because enhancing vehicle safety will benefit the customer in the short term, and the long term will help reduce road accidents significantly.

Complementary to this research problem and the aim of this research, the proposed objectives for this study are as follow:

- To investigate the level of car safety and ASEAN NCAP understanding among car manufacturer
- To investigate how car manufacturer embedded/implement the technology shift into the designing and manufacturing stage of new car safety
- To investigate how car manufacturer embedded/implement the design features into the designing and manufacturing stage of new car safety

II. LITERATURE REVIEW

A. Car Safety

Car safety has become one of the growing issues in the world. WHO proves it, and World Bank reported that more than 50% are killed during the traffic accident are youth from 15 to 44 years old which most of them are breadwinners of the family [14]. Hence, the proposed recommendations actions for each country's government to reduce the prevalence of road accidents.

The accident basically can be influenced by three main factors : (1) human factors, such as drunk driving, driving experience, or restraint use; (2) vehicle factors, such as mandated and non-mandated equipment or vehicle design; or (3) the driving environment such as traffic signal, weather condition, road condition [9]. The main challenge in promoting road safety recently is closely related to motor vehicles' remarkable growth across the world. Moreover, due to car production relocation, there is also the extraordinary growth of automotive production in countries where the road safety management system is not fully developed. Recently, six of the top ten car producers are now middle-income countries such as China, India, Brazil, Russia, Mexico, and Thailand [19]. As a result, the road death per 100,000 population in the middle-income countries is still high, about 20.1, compared to low-income countries and high-income countries, 18.3 and 8.7, respectively [19]. This is because the safety net of global standards is gradually undermined by car production's high growth, which cannot pass the United Nations minimum crash test. Moreover, major car manufacturers in middle-income countries are fiercely competing with other companies, and the demand for mobility often exceed consumer awareness of the risk of road injury. Hence, improving car safety need the actions taken by all parties, especially for vehicle manufacturers [19].

Vehicle safety has been enhanced for the last thirty-five years. A study conducted by [12] proposed the advanced technology implemented by automotive industries in Malaysia to reduce the car accident in Malaysia. However, how the automobile producers in Malaysia implement such a recommendation is still questionable. This suggests studying how the companies perceived safety cars and how they transform this perception and attitude in designing and manufacturing a new car.

B. External Factor – Technology Shift

The technology shift and car design features are essential factors in the automotive industry's internal and external environmental scanning stage. This is important when the technological shift may influence the advancement and refinement of the latest devices, systems, and associated software that automotive manufacturers can use to conduct their business [13]. As business players in the automotive industry, the automotive manufacturer must be alert to all opportunities to stay competitive in the local market and be competitive in the global economy market.
A variety of current new technology in the automotive industry such as Intelligent Transport Systems (ITS) for alcolock and seatbelt lock, GPS, braking and steering system are fuelling innovation impacting strategic planning decisions to better determine market trends to enhanced car safety strategy decisions by Malaysian OEM car manufacturers [3].

The technology shift becomes the essentials for OEM car manufacturers to create new competitive advantages and stay competitive in the current market. For example, a proudly Malaysian national brand, PROTON plant located in Tanjung Malim, uses robotic technology and is fully automated to perform efficiently with a high volume of production [17]. Therefore, the implementation of lean manufacturing processes in the Tanjung Malim plant was an excellent PROTON decision.

The rapid growth in the automotive industry has been the opportunity for Malaysian economy development when the government provides an educated and skilled labour force through education institutions and skill institutes by implementing Technical and Vocational Education and Training (TVET). This education training provides knowledge and skills for employment. This situation currently allures the leading international automotive players and other related stakeholders, such as vendors for automotive, to support the industry through investment in Malaysia further.

C. Internal Factor – Design Features

As a business entity, one of the main factors of success is the product itself. A product with the latest and exciting feature will help a business entity to boost its appeal to potential buyers. According to [7], there are few factors to influence product launch success: 4P's product, price, promotion, and place.

Moreover, any product produced is compulsory to fulfil the market needs and buyer's taste [5] in terms of design features that meet their specifications needs, especially the design concept and features that manage to offer the safest car for customers [2], [6]. The safest car might help the automotive industry formulate a good product marketing strategy by highlighting the safety car awareness to targeted potential buyers in their promotion.

Design features such as autonomous system, Intelligent Transport System (ITS), color, passive safety design, materials and component used, and body design are the specification required by car manufacturers to ensure the product offered is safe for their customers. These are a few elements that need to be stressed by the automotive industry at the designing and manufacturing stage to reduce road accident rates due to several causes. Safety must become the priority for car manufacturer another cost, and car manufacturer need to make sure the materials and components used have a significantly less environmental impact if a road accident happens as well as the body car design must incorporate with the standard of safety, size, and weight, aerodynamics as ASEAN NCAP requires. Design features will give a good impression of automobile product features, but even though the customers always want the best features combination, they are only willing to pay for what is necessary to provide the best advantage for them [10].

III. RESEARCH FRAMEWORK

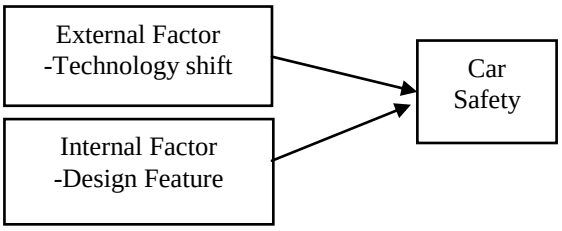


Figure 1. Proposed Research Framework

Therefore, the proposed hypothesis statement is:

H1: There is a significant relationship between technology shift towards designing and manufacturing car safety.

H2: There is a significant relationship between design features towards designing and manufacturing car safety.

IV. IMPLICATION OF THE STUDY

From the theoretical implication, this research is expected to understand car manufacturer understanding of car safety and how they implement the safety regulation provided by ASEAN NCAP within their career scope at the designing and manufacturing of a new car.

From practical implication, this research will bring evidence about car manufacturer understanding in Malaysia that needs further attention by MIROS and car manufacturers and vendors to improve car safety manufacturing. On the other hand, additional training, awareness, and safety regulation enforcement can be considered by MIROS as government agencies responsible for planning, managing, and evaluating road safety programs and conducting the related training.

V. CONCLUSION

The automotive industry is growing, vehicles owner and demand increase year by year, in the same way, accident rate increased even rules, and regulation was introduced, and enforcement bodies are taking many actions. Besides, most past research discovers the issues from passenger or customer perspectives, and lack of research has been done to learn from manufacturer perspectives. Therefore, the researcher considers that the analysis from manufacturer perspectives will help meet the proposed research objective for related stakeholder benefits, especially for consumers, automotive industry players, vendors, and MIROS.

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The Unprecedented Epidemic of Covid-19 and Movement Control Order (MCO) Enforcement: Impact and Recovery Towards Child Care Services Industry in Malaysia.

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Abstract*— This paper aims to examine the impact of the Covid-19 MCO on child care performance and the recovery strategies to be implemented for post-MCO outbreaks. The quantitative approach is used to investigate the impact of the Covid-19 MCO and to plan recovery strategies based on the questionnaire survey conducted by the child care provider. The paper discusses the provider of child care in Malaysia and shows that Covid-19 Movement Control Order (MCO) affects most child care operations in terms of their cash flow and performance. This study represented only child care providers in Malaysia's northern states who are willing to participate. Consequently, the research suggested that the holistic area in Malaysia should be covered. Extensive research is thus warranted. Child care providers should consider the recovery planning strategy for their business survival due to MCO enforcement. The paper examines the global issues of Covid-19 that lead to a partial lockdown or Movement Control Order (MCO) where the business operation is indirectly adversely affected, especially in the child care industry scenario in Malaysia.

Index Terms— ***Movement Control Order (MCO), Partial Lockdown, Covid-19, Child care Service, Industry, Questionnaire.***

I. INTRODUCTION

The unprecedented epidemic called Novel Corona Virus or Covid-19 had a devastating effect on most industries during the first quarter of 2020. Today, the same invisible enemy is facing the entire world to fight for. It has become a severe matter for everyone. Covid-19, or the novel coronavirus, was first discovered in Wuhan, China, and is currently spread more quickly to other countries through person to person. Therefore, to break the disease chain, it is necessary to pay extraordinary attention to hygiene, take social distancing, and stay at home during this period. As a result, due to the outbreak of the Covid-19 epidemic, most of the government had implemented a partial lockdown or movement control order (MCO). On March 16, 2020, Malaysia announced its MCO on March 18, 2020, when Malaysia reported about 125 new cases in Malaysia, accounting for the cumulative number of 553 cases [7].

Thus, the Covid-19 epidemic and movement control order (MCO) provided an opportunity to explore its impacts in dealing with the highly uncertain phenomena. In general, the Covid-19 outbreak affects most of those sectors directly. This research paper, therefore, aims at:

-Investigate the effect of Covid-19 during the time of the Movement Control Order (MCO) on the child care industry in particular; and

-Investigate the efficacy of the recovery measures of the "Pakej Rangsangan Ekonomi Prihatin Rakyat" (PRIHATIN) or PRIHATIN Rakyat Economic stimulus Package for the performance of the child care industry.

II. BACKGROUND

A. The Situation of Covid 19 MCO

On March 27, 2020, 130 news cases were reported at the latest press conference of Malaysia's Ministry of Health, with a total of 2,161 cumulative cases. Similarly, unfortunately, three new cases of mortality have been reported and are cumulative, with a total of 26 deaths. However, 259 of them have recovered entirely, which means everybody has paid the

effort and commitment to stay at home, particularly the medical officer.

The Novel Corona Virus or Covid-19 pandemic led to MCO being issued by the government for four weeks from March 18 to April 14, 2020, in two different series of announcements. The Lockdown and MCO have taken strict action by other countries worldwide to break the chain of contagious outbreaks. Subsequently, the Enhanced Movement Control Order was declared for specific areas in Johor, particularly in the Simpang Renggam high-risk area, where Kluang Johor was in force on March 27 to break the chain disease.

Similarly, the Malaysian Institute of Economic Research's press release on the economic impact of Covid-19 on March 24, 2020, reported that Malaysia's real GDP decreased by about 6.9% relative to the 2020 baseline, which translates into real GDP growth of -2.9% (minus 2.9%) in 2020 close to 2019. The country-wide MCO or partial lockdown inevitably leads to economic disruptions affecting the country's production pattern, consumption, and trade in industrial outputs and income and employment [3].

Most industries (manufacturing, food, logistics and transport, tourism, airlines, and small and medium enterprises) are affected by MCO announcements, including the private and government sectors, except for few major and critical industries such as electricity, water, banking, and food production. Therefore, the Malaysian child care industry has also had an immediate impact on MCO enforcement in the fight against the global invisible war disease.

B. Child Care Services in Malaysia

Referring to the official website of the Department of Social Welfare, the Ministry of Women, Family, and Community Development, the child care center has been identified as any premises where four or more children under the age of four are received from more than one household to be cared for reward based on Section 2, 308 of the Child Care Center 1984. Section 5 Act 308 Classifies that in Malaysia, there are four major categories of children's center, which are the Institution Based Child Care Center (established by a private or non-governmental organization), the Work Place Child Care Center (established for its employees on the premises), the Community Based Child Care Center (receives assistance from the Federal Government or State Government authorities) and the Home-based Child Care Center (located on a registered person's homes under Section 7) [2].

Today, child care is essential and becomes a necessity. It is a trend today when both parents work, and most use child care services. Because of the booms in the child care industry, parents need their services in a big city, such as Kuala Lumpur, Penang Island, and Klang, Selangor. There are four main groups in Malaysia, with different child care fees to support a diverse group of parents. Besides, parents seek their children's best to develop their emotional, intellectual and spiritual, and safety factors.

C. Child Care Centre Challenges

Child care business operations rely on the monthly payments they earn from their customers. The primary source for child care providers to operate their businesses is to pay rental fees, workers' wages, utilities, and purchase other essential needs such as maintenance, stationery, grocery, and laundry expenses. It is the most challenging time for child care business providers in this challenging period.

While this is the case during the MCO period, child care is automatically required to stop the operation. At the same time, parents were also directly affected by the MCO announcement when they were also unable to work. Therefore, parents are agreed not to pay the full payment fee as usual, especially for the months of March and April. Similarly, Berita Harian, Malaysia's newspaper, reported the same issues on April 6, 2020. As a result of parental action not to pay monthly fees, as usual, the child care provider cannot comply with the Employment Act 1955 on the statutory payment by employees of such salary, including the EPF and SOCSO, to each of its employees.

Moreover, the worst situation will continue if the Covid-19 does not settle and the MCO remains much longer than we expected. Besides, Husna Abdul Rahman, President of "Persatuan Pengusaha Taska and Tadika Putrajaya" (PUSPAJAYA), confirms that exceptional rentals are being applied to Ministry premises. However, for those in commercial buildings and home premises, monthly fees still need to be paid as usual. At the same time, it also estimates that the majority of child care providers cannot survive if the MCO is continuous. Therefore, on behalf of the child care providers and PUSPAJAYA, she appealed to the government to provide special funds or grants to registered child care providers to ease the burden of Covid-19 MCO while at the same time granting parental subsidies [6].

D. Recovery Strategy Planning Through the Government Initiatives

Thus, the announcement by Malaysian Prime Minister, Tan Sri Dato' Haji Muhyiddin Bin Haji Mohd Yassin, through government initiatives on the 'Pakej Rangsangan Ekonomi Prihatin Rakyat' (PRIHATIN) or PRIHATIN Rakyat Economic Stimulus Package of RM250 billion on March 27, 2020, is of particular benefit to small and medium enterprises (SMEs). There are three main objectives of the incentives: 1) to preserve the welfare of Malaysian society, 2) to encourage

business, and 3) to strengthen the development of the economy [5][8][9].

Besides, PRIHATIN is holistic and will benefit everyone when it concerns MCO's direct and indirect impact on each level of society and its size. For this purpose, incentives such as "Tabung Bantuan Kemudahan Khas" or "Special Relief Facility for Small Medium Enterprises," "Skim Kredit Mikro," and "Adjournment or moratorium on loan payments" have been granted to businesses [9]. The RM250 billion package is intended to preserve the welfare of folk, support businesses, including SMEs, and strengthen the economy. Subsequently, to increase their business cash flows, consulting services are provided for employers to apply the suspension of payment, restructuring, and rescheduling of their EPF and SOCSO contributions towards their employees. The expense of income tax installments for three months also applied for SMEs.

Therefore, it is hoped that small and business enterprises, particularly child care, would benefit from the government's initiatives to be sustained during th O period.

Child care business performance

Recovery strategy planning of PRIHATIN Rakyat Economic Stimulus Package

TUDY DESI

and Hypothesis

ess two key research questions. The first question is as follows:

> *RQ1*. What impact does the Covid-19 Movement Control Order (MCO) have on the child care business's performance?

The research assumes that, during the MCO period, the child care businesses' challenge period is more likely to face a difficult situation. Moreover, the problem is more likely for business players and for their customers, who are children's parents, who have also been unable to work and are indirectly unable to pay child care fees as usual. Therefore:

> *H1*. There is a significant impact of the Covid-19 Movement Control Order (MCO) on childcare businesses' performance.

Besides, the second research question is as follows:

> *RQ2*. Does the recovery strategy planning of "Pakej Rangsangan Ekonomi Prihatin Rakyat" (PRIHATIN) or PRIHATIN Rakyat Economic Stimulus Package significantly help the child care business performance?

For the second research question, the research assumes that the government initiatives to plan the recovery strategy of 'Pakej Rangsangan Ekonomi Prihatin Rakyat' (PRIHATIN) or the PRIHATIN Rakyat Economic Stimulus Package will help business players, especially in child care, to recover the economic impact of the Covid-19 Movement Control Order (MCO) on their business performance. Therefore:

> *H2*. There is a significant relationship between the recovery strategy planning of "Pakej Rangsangan Ekonomi Prihatin Rakyat" (PRIHATIN) or PRIHATIN Rakyat Economic Stimulus Package and the business performance of the child care business.

Thus, the research framework as follows:

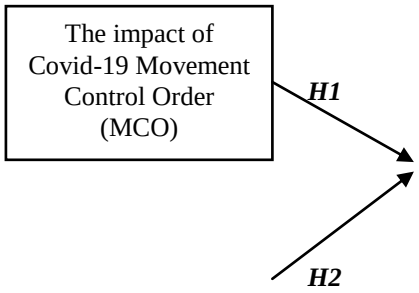


Figure 1: The Research Framework

IV. METHODOLOGY

This paper seeks to provide practical and strategic guidance to child care providers to reduce MCO and Covid-19 disease's negative impacts, where the result was derived from the primary data analysis and quantitative approach. Besides, a questionnaire with 27 questions was designed to explore the following areas: the profile of the respondents (6); the impact of Covid-19 MCO on child care performance (8); recovery strategies planning to be implemented on MCO outbreak (7); and child care business performance (6).

The first part of the survey, which used nominal measurement, included six questions on respondents' demographic profiles. The second part of the survey on the impact of Covid-19 during the MCO consists of eight questions followed by the third part with seven questions and the fourth part with six questions used to measure the impact of Covid-19 MCO, the recovery strategies to be implemented for post-MCO outbreaks and the performance of child care. The respondents were asked to respond using a five-point

Likert scale where 1=strongly disagree; 2=disagree; 3=neutral; 4=agree; and 5=strongly agree.

The climate and landscape of the survey changed dramatically at the beginning of the 21st century. Advances in technology and changes in coverage for various survey modes have contributed to an environment where many surveys are now conducted in whole or in part through self-administered web questionnaires [1]. According to the complexities of the MCO period for the researcher to face and meet prospective respondents, a web-based questionnaire called Google Forms had been used. An introductory letter containing a link to a web-based questionnaire, Google Forms, was sent to 100 child care centers in the Northern States, Malaysia, for two weeks in April 2020. The analysis unit is a child care business entity. Specifically, the link was applied to possible respondents who had a child care owner or the department head's management role in the child care center. Multi-language, Malay, and English were used to ensure that the respondents understood and answered the questions asked. Of the 100 connections in Google Forms, potential respondents were found via WhatsApp and Facebook Messenger. A total of 36 completed questionnaires were issued. The actual response rate was 36% (36/100).

V. FINDING AND DATA ANALYSIS

A. Reliability Analysis

Reliability is used to test the consistency, validity, and reliability of the products used by a research instrument to calculate the research variables used. The item analysis showed that variables ranged from 0.864 to 0.943 for the reliability or Cronbach's Alpha value (see Table 1).

Table 1: Reliability Analysis

Variable	Item	No. of Item	Cronbach Alpha & Remarks
Impact of Covid-19 MCO	IM1. Covid 19 Movement Control Order (MCO) will have an impact on the economy	8	0.943 (Excellent)
	IM2. Covid 19 Movement Control Order (MCO) will have an impact on the childcare industry		
	IM3. Covid 19 Movement Control Order (MCO) will have an impact on parents' willingness to pay a fee		
	IM4. Covid 19 Movement Control Order (MCO) will have an impact on paying staff salary.		
	IM5. Covid 19 Movement Control Order (MCO) will have an impact on paying staff EPF and SOCSO.		
	IM6. Covid 19 Movement Control Order (MCO) will have an impact on paying utility bills (rental, electric, water, Astro, telephone, and internet)		
	IM7. Covid 19 Movement Control Order (MCO) will have an impact on paying a business loan		
	IM8. Covid 19 Movement Control Order (MCO) has led to customers decision to stop the childcare services		
Recovery Strategies Planning on Post-MCO Outbreak	S1. During the movement restrictions period, I have utilized this time by planning my childcare center's future aims and goals.	7	0.864 (Good)
	S2. During the movement restrictions period, I have utilized this time by planning my childcare center future planning.		
	S3. Subsidi Upah program through		

	Pakej Rangsangan Ekonomi Prihatin Rakyat (PRIHATIN) is very useful in keeping my number of staff in my child care business.		
	S4. Special Relief Facility for Small Medium Enterprise is beneficial for my childcare business during the MCO period.		
	S5. Skim Kredit Mikro is beneficial for my childcare business during the MCO period		
	S6. Adjournment or moratorium on the payments of loan is very useful for my childcare business during MCO period.		
	S7. Due to movement restrictions (MCO), I have fully utilized the benefits of Pakej Rangsangan Ekonomi Prihatin Rakyat (PRIHATIN) to help my business.		
The Child Care Performance	P1. Covid 19 MCO has led to business distraction.	6	0.876 (Good)
	P2. Covid 19 MCO has led to a distraction of business operation.		
	P3. Covid 19 MCO has led to an unhealthy business income.		
	P4. Covid 19 MCO has led to a disloyalty customer.		
	P5. Covid 19 MCO has led to an unhealthy business cash flow.		
	P6. Covid 19 MCO has led to unhealthy business overhead.		

The α-value of the dependent variable-child care output was 0.876, and the α-value of the independent variables was 0.943 and 0.864, respectively, for the effects of Covid-19 MCO and Recovery Strategies Planning on Post-MCO outbreaks. Therefore, all variables are considered excellent or very good due to their Cronbach alpha value, which is more than 0.8.

B. Respondent Profile

This section provides an overview of the respondent's demographic profile and their background where the analysis unit is the child care business center.

Table 2: Respondent Profile

	Items	Frequency	Percent
D1. State	Perlis	24	66.7
	Kedah	12	33.3
	Total	**36**	**100**
D2. Child care Status	Institution-Based Child Care Centre	24	66.7
	Community-Based Child Care Centre	9	25.0
	Home-Based Child-Care Centre	3	8.3
	Total	**36**	**100**
D3. Number of Kids	4-6	6	16.7
	7-9	6	16.7
	13-15	3	8.3
	16-18	6	16.7
	19-21	6	16.7
	22-24	6	16.7
	25 and above	3	8.3
	Total	**36**	**100**
D4. Number of Staff	1 only	6	16.7
	2-4	24	66.7
	8-10	6	16.7
	Total	**36**	**100**
D5. Premise Status	Rental	24	66.7
	Aid by Government	6	16.7
	Home	6	16.7
	Total	**36**	**100**
D6.	Less than 1 Year	6	16.7

Operation Period	1-3 years	3	8.3
	4-6 years	18	50.0
	7 years and above	9	25.0
	Total	**36**	**100**

The respondents to child care accounted for slightly more than half of the total number of 24 respondents (66.7%) compared to those of Kedah 22 (33.3%). More than half or 24 (66.7%) of the respondents are from the Institution-Based Child Care Center, 25% are from the Community-Based Child Care Center, and 8.3% are from the Home-Based Child Care Center.

The number of children in the surveyed child care center was 16.7% for 4 to 6 children, 7 to 9 children, 16 to 18 children, 19 to 21 children, and 22 to 24 children. Besides, 8.3% are between 13 and 15 children and more than 25 children, respectively. Simultaneously, for the capacity of the number of staff, more than half of 66.7% of child care staff employed between 2 and 4 in their child care center, and the remaining 16.7% hired only one staff and between 8 and 10 staff respectively.

As far as the premises that they operated their child care centers are concerned, most of them are rent, and the remaining 16.7% are government and home-based aid. Up to 50% of child care was operated for 4 to 6 years, followed by 25% for more than seven years, 16.7% for less than one year, and 8.3% for 1 to 3 years.

C. Descriptive Analysis

Table 3 below lists all variables' mean values at high score and range from 4.30 to 4.448. The impact of the Covid-19 MCO determinant scored the highest mean of 4.448, followed by Recovery Strategies Planning for Post-MCO Outbreak at 4.321, and Child Care Performance at 4.30 mean score.

In the meantime, the standard deviation for all variables varies from 0.587 to 0.874. Child Care Performance was the lowest standard deviation value, and the highest was Covid-19 MCO's impact.

Table 3: Descriptive Analysis

Variables	N	Mean	Standard Deviation
Impact of Covid-19 MCO	36	4.448	0.874
Recovery Strategies Planning on Post-MCO Outbreak	36	4.321	0.634
The Child Care Performance	36	4.30	0.587

D. Pearson Correlation Analysis

Pearson correlation analysis was used to calculate the p-value between The Child Care Performance as a dependent variable and the two independent variables: The Covid-19 MCO Effect and Post-MCO Outbreak Recovery Strategy Planning.

Table 4: Correlation Analysis

		IV 1	IV 2	DV
IV 1	Pearson Correlation	1	0.183	.616**
	Sig. (2-tailed)		0.286	0.000
IV 2	Pearson Correlation	0.183	1	0.309
	Sig. (2-tailed)	0.286		0.067
DV	Pearson Correlation	.616**	0.309	1
	Sig. (2-tailed)	0.000	0.067	

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4 showed a positive relationship between The Child Care Performance and Impact of Covid-19 MCO ($r=0.616$, $p<0.05$) and Recovery Strategies Planning on Post-MCO Outbreak ($r=0.309$, $p>0.05$).

E. Regression Analysis

Table 5 shows that R's value is 0.647, thereby indicating a moderate relationship between these variables. The R square value of 0.419 means that independent variables contributed 41.9% of The Child Care Performance's total variation. In the meantime, the adjusted R Square=0.384 can be concluded that 38.4% of the dependent variable's variation is attributed to the independent variables.

Table 5: Linear Regression on the Independent Variables and Child Care Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.647[a]	.419	.384	.46077

a. Predictors: (Constant), Impact of Covid-19 MCO, Recovery Strategies Planning on Post-MCO Outbreak
b. Dependent Variable: The Child Care Performance

The outcome of multiple regression analysis shown in Table 6 showed that all independent variables: the effect of Covid-19 MCO has a significant relationship to the dependent variable, Child Care Performance since the relevant p-value is less than 0.05. While the Recovery Strategy Planning on Post-MCO Outbreak indicates p-value=0.142 is not significant where the variables' p-value is greater than 0.05.

The β result indicates a positive relationship for all independent variables. Standardized coefficients β-value of Impact of Covid-19 MCO is 0.579. Meanwhile, Recovery

Strategies Planning on Post-MCO Outbreak shows β result of 0.203.

Table 6: Multiple Regression Analysis

Model	Unstandardized Coefficients	Standardized Coefficients		
	Beta	Beta	T	Sig.
1(Constant)	1.759		2.854	0.007
Impact of Covid-19 MCO	0.388	0.579	4.286	0.000
Recovery Strategies Planning	0.188	0.203	1.505	0.142

H1. There is a significant impact on childcare business performance between the Covid-19 Movement Control Order (MCO).

Hypothesis 1 clarified the relation between the Covid-19 Movement Control Order (MCO) impact and the child care business's performance. It shows a highly positive significant relationship at a significant level of 0.01, with Pearson correlation, r=0.616 and p<0.05. Furthermore, the regression analysis result in Table 6 shows the positive results for the significant result between these two variables with the Beta value of 0.579 and 0.00. Both results reveal a significant positive relationship. Hypothesis 1, therefore, constitutes the accepted status.

H2. There is a significant relationship between the recovery strategy planning of the "Pakej Rangsangan Ekonomi Prihatin Rakyat" (PRIHATIN) or PRIHATIN Rakyat Economic Stimulus Package and child care business performance.

Hypothesis 2 explained the relationship between recovery strategy planning of "Pakej Rangsangan Ekonomi Prihatin Rakyat" (PRIHATIN) or PRIHATIN Rakyat Economic Stimulus Package and child care business performance. The relationship showed a very positive relationship between these two variables with a Beta value of 0.203 and a significant result of 0.142. In the meantime, based on the results of the Pearson correlation, r=0.309 and p-value are more than 0.05. In particular, Hypothesis 2 is at the rejected status.

Therefore, *H1*. A significant impact between the Covid-19 Movement Control Order (MCO) towards child care business performance is accepted while and *H2*. There is a significant relationship between the recovery strategy planning of "Pakej Rangsangan Ekonomi Prihatin Rakyat" (PRIHATIN) or PRIHATIN Rakyat Economic Stimulus Package and child care business performance is rejected.

VI. DISCUSSIONS AND CONCLUSION

This study aimed to examine the impact of Covid-19 MCO on child care performance and the planning of recovery strategies to be implemented for the post-MCO outbreak. In other words, the aim was to understand the framework for child care performance by looking at the impact of the Covid-19 MCO and its recovery strategies on child care business providers in Malaysia. The same theme of findings was found in [4], stating that SARS impacted the practical and strategic approach to crisis preparation and management, specifically on Canada's tourism industry.

The analysis done reveals a significant impact on child care performance due to the crisis. Simultaneously, the enforcement of the MCO has led to government initiatives that have also proved to be very excellent initiatives for recovering the business burden in the face of the Covid-19 crisis. As for the first hypothesis, the Covid-19 Movement Control Order (MCO) and child care business performance has a significant impact. Even so, due to MCO enforcement, business providers, in particular, the child care business center, could not operate as usual, so that they would be faced with a lack of income to pay their business commitments, such as rental of premises, payment of utility bills and staff salaries, including EPF and SOCSO contributions. Simultaneously, the worst thing is that the parents are also refused to pay the fees.

Moreover, regarding the second hypothesis, the significant relationship between recovery strategy planning of "Pakej Rangsangan Ekonomi Prihatin Rakyat" (PRIHATIN) or PRIHATIN Rakyat Economic Stimulus Package and child care business performance, the results showed an insignificant relationship. Thus, Hypothesis 2 is rejected. While this is the case, most of the respondents participating in the data collection were from the Institution-Based Child Care Center (66.4%) and rent the Child Care Center from the landlord or the premises' owner. Hence, the benefits of adjournment or moratorium on loan payment given to business are not received indirectly to the child care providers. Besides, the data were collected during the first PRIHATIN Rakyat Economic Stimulus Package, where there is an improvement on the second PRIHATIN Plus announcement where the Prime Minister encourages the owner of the premises to share the same moratorium benefits with the business tenant.

Getting to grips with a crisis pandemic outbreak such as Covid-19 that led to a Movement Control Order (MCO) or a partial lockdown can be difficult, albeit very necessary, action by business players, particularly for child care providers. The

direct and indirect impact includes both strategic and practical actions for the child care industry. Preparation and recovery strategy plan needed to minimize the negative impact of a crisis or disaster. A well-developed plan initiative, taken at the same time by the government, will enable organizations to respond quickly and effectively to the crisis.

Hopefully, if another epidemic crisis like Covid-19 hit Malaysia and other countries again, it is not a question mark. Every country worldwide had learned from this crisis and so far enforced the best recovery planning in dealing with the current and future crises. When it happens, the key is there is no way to avoid it. The only thing everyone can do, the authorities, is to have better planning to minimize the impacts.

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The Strategies of Human Resource Administration in School Accordance in Buddhist

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***Abstract*—** *The purpose of the article was to propose the strategies of human resource administration in school accordance in Buddhism. Documentary study was used for the design, and data was analyzed using content analysis and summarized by descriptive writing. Results of the study showed that new human resource management strategy is the strategy for human resources management in order to make the employees have the performance and behavior to meet the target and the organizational strategy. New role of human resource management must have both a role in shaping the strategy and its role in deploying the organization's strategy to human resources management. It is important to study the principles of Buddhism in relation to the administration of personal affairs that is the principle of Brahmaviharadham IV in order to study mercy management, to study the administration, to study management according to the principle of empathy, and to study the management based on the principle of happiness with focus on personnel administration of educational institution administrators. The concept of management was integrated between western concept and the principle of Brahmaviharadham IV. For a person who is a leader in Buddhism, is to know how to manage the principles and useful methods used as part of the administration. In the development of the work of personnel management in schools requires the use of Buddhist principles as a guide to the direction and direction of management to achieve both the efficiency and effectiveness of the work. If this principle is applied in the management, it will create a good relationship add to the unity by applying Brahmaviharadham IV to the administration of the school according to Western theories. These two principals have the same purpose to administer the school with integrity, to be willing, satisfy and work happily in the organization.*

Index Terms— *Human Resource, Administration, Buddhism*

I. INTRODUCTION

For tutoring the teachers in the school to achieve the desired results, first of all, administrators should have the characteristics of leaders and have the qualifications of management. The second is to build virtue and behave in accordance with good morals, as I would like to propose as follows: 1) maintain justice, 2) set in the four Brahma, 3) do not act as chief, 4) accepting the opinions of Teacher Noi with sincerity, 5) know to encourage teacher, 6) try to promote the progress of teachers, 7) avoid using emotions in work, 8) know what is appropriate and what is ineligible, 9) acknowledging the minority, praising it in the right direction, and the right places, 10) try to protect the interests of the young teacher, and 11) establish a clear standard of work improve oneself [1].

Another important thing that school administrators have in their individual identity is the virtue or the existence of the principles necessary for the administration of education, namely the principles of governance. Principles in dominating people and principles in hiding work which some principles according to Buddhist teachings fully integrate the above-mentioned principles.There are a variety of essential principles for the provision of education that school administrators should adopt for the rule of thumb and one of the most applied principles is Brahma Vihara IV. Brahma Vihara is a principle that will lead a person to success effectively. Kindness refers to compassion and empathy, ready to provide helpful and supportive assistance to another person, empathy means to be pleased when another person is well or has achieved fulfillment, and detention means being indifferent or letting go of what is

ultimately possible to help which exclaimed happy and bright, mentioned Brahma Vihara IV principle that is an important principle in the dominion of people because we can control the hearts of people will make our work successful effectively.

This is because it will create enormous synergies in work by the principles of Brahma Vihara IV, namely mercy, love, desire, peace of life to harmonize the world with compassion and care to perceive the suffering on behalf of others as one's suffering, the joy of the success of others by pure heart and the compassion, the neutral, indifferent, the nature of the world. It is generally accepted that administrators need to use both the gods and grace in the management of their work properly and harmoniously. Therefore, the work can be achieved effectively. The application of Buddhist principles in management is of great importance especially in the use of the principle of holding the hearts of people called "Brahma Vihara" [2], administrators need to use Buddhist principles in the administration in order to work effectively sometimes the school administrators may not put emphasis on the application of management principles. Resulting in teachers lacking morale and sometimes executives do not have sufficient knowledge and understanding of the principles. They may not be able to apply the principles as they should. Executives have to create an image of faith and trust as a management guideline what must be followed as a guideline is to have love, compassion, joy and impartiality for both individuals and groups. Good administrators should use grace rather than power of influence over law. Principles in organizing education of administrators are very important and essential to the administration of school education and Brahma Vihara IV is one of the principles that helps the operation to achieve the goal effectively.

II. THE CONCEPT OF HUMAN RESOURCE ADMINISTRATION

Human resource administration is very important, therefore, in getting the personnel to work. Human resource administration refers to the mission of all executives to perform in all activities related to personnel. Therefore, human factors of the organization are the most effective human resources all along that will affect the goals of the organization [3] including the use of people to do the job effectively within the shortest time, minimal consumption of money, gold and materials. At the same time, the people we use are happy, satisfied for the management to use willing to work as the management wants. In other words, the administration keeps the services of the educator going well and benefit according to the aims of the educational community by using techniques in selecting appropriate persons to work and techniques for developing existing persons to have the knowledge and ability to work for benefit. At the same time, it encourages them to progress and gain satisfaction [4] throughout it is a process by which management of arts and strategies consider individuals in society to conduct the selection and recruitment of qualified persons into the organization. While individuals come to work in the organization, activities are organized to develop and maintain the selected persons to increase their knowledge, abilities, have good physical and mental health in their work, and also to seek ways to make organizational members who have to leave their work can live happily in society [5]. It is the process of working with personnel in the organization to acquire personnel to perform the work according to their needs and to enable personnel to perform work to achieve their goals efficiently which covers from policy formulation planning, manpower and compensation, recruiting, appointment, morale building development and disciplinary action as well as getting out of work [6].

III. THE IMPORTANCE OF HUMAN RESOURCE ADMINISTRATION

Organization administration must be managed by human resources and the acquisition of human resources There must be a process and steps in which the personnel will be acquired Therefore, personnel management is very important to the organization. If the organization can select good and quality personnel. The organization will be able to work as possible efficiently and goals as specified by the organization Personnel management is one of the most important processes of management because after having selected people with knowledge and ability to work over time. The knowledge of various fields has decreased, as well as various science and work techniques have changed. So that the operator is knowledgeable, the ability to suit current events and personnel development is required [7]. It is the heart of management because all kinds of work of all types of agencies. Whether it is a small agency or a large organization, to operate effectively and achieve the goal or not, it depends on the cooperation of all involved persons and parties. If the management lacks the ability to manage personnel although there are many kinds of equipment. There is a lot of money to support and with many people in the agency that it is like nothing because people who use materials and equipment cannot use it, lack of competency, and work morale. There is no loyalty to the agency and irresponsible different people will compete for the benefit of the available budget. It takes advantage of the authority acquired by position and arguing divide different people live and work day by day without cooperation, many projects that the management has set will fail because there are

people like none. When those people are not cooperative and ineffective [8] with the organizational condition today. There are many problems affected by the changing influence in the environment which directly affects the personnel management in the organization various changes as is today both the economy. Technician techniques and social conditions are all obvious and have an impact, making personnel management more important than ever before [9] and "people" or "humans" are the most valuable resources and most useful because other resources, even if they have life, do not have the intelligence. As for the lifeless resources, if people do not use it, it is not useful. Therefore, in the administration of the organization, the matter of the person is the most important and difficult, because according to the general principles of the administration, even though there is sufficient budget, management and administration good. How well equipped with various equipment and materials if the operator is poor? Impotent, lack of integrity not behaving in a good discipline, then it will be extremely difficult for the administration to achieve as good a result as intended, but if a good person has knowledge. The ability to be suitable for the job performed, other problems will be reduced [10].

In conclusion, human resource administration is important is the heart of the organization administration in order to achieve the objectives. If any organization is composed of highly capable people, have leadership see the importance of using people and adapt to keep up with the changes technological advancement as well as the selection building good people to use would be beneficial to that organization as well as society and the nation in the future.

IV. HUMAN RESOURCE MANAGEMENT STRATEGY

Human resource management today, executives involved in personnel management should play a role and participate in organizational strategy formulation (Organizational Strategy) by implementing strategies related to human resource management to formulate strategies in every mission related to human resource management (Strategic Human Resource Management) to enable employees to achieve results in accordance with the organization's strategy by applying technology that Modern (Modern Technology) is used to enhance the efficiency of human resource management in the organization [11] that has said. The current personnel manager must have roles related to the organizational strategy at 3 levels.

1) Corporate Strategy
2) Competitive Strategy
3) Functional Strategy

When it comes to strategic human resource management, human resource managers must apply their expertise to become strategic expertise in developing and implementing modern human resource management strategies which divided into two roles of human resource management:

1) The role of strategy is a role that gives importance to members of the organization with equal focus on human resources with other corporate resources.

2) The operational role is the role involved in the activities, methods and techniques in human resource management for creating equality in various activities of human resource management such as hiring, training, job evaluation wage management, etc.

In addition, there are four types of personnel management roles, namely:

1) Role of participation in strategy (Strategic Partner) is a role that focuses on formulating strategies and operating guidelines in accordance with the organization's strategy.

2) The role of expert in administration (Administrative Expert) is a role that focuses on expert human resource management that is responsible for designing the work paradigm.

3) The role of change agent is a role that focuses on change management to achieve efficiency and reduce the force against change.

4) Employee champion role is a role that focuses on making employees feel committed to the job and the company.

Human resource management strategies in the modern era is to determine the strategy of personnel management to make employees have competencies and working behavior according to their goals and meets the organization's strategy. The new role of personnel manager, there must be both a role in strategy formulation and a role in implementing the organization's strategy to human resource management practices.

V. HUMAN RESOURCE ADMINISTRATION IN SCHOOLS

Personnel management in schools is very important, so in order to get people to work in schools, it is necessary to know the meaning of personnel management clearly. Personnel management in schools refers to the management of the person who is administered the teacher and janitor. Teacher is responsible for teaching students knowledge. The janitor is also responsible for cleaning up the school. Personnel management in school is to know how to use people to make them work to their full potential and his strength and let him do it with a willingness and happiness when the action is over [12]. It is also a resource management in the school with the aim of getting good and qualified people have the ability to suit their position. Work with interest are satisfied with their work. There is a strong response to work. Work efficiency [13] Personnel

management in schools includes activities that assist in coordinating the school's efforts for the management of existing human resources in the school can work towards the school's objectives. It will have a scope of management, starting from planning and maintenance. The key goal of school personnel management is to acquire people with the knowledge and competence of the school and make them more satisfied with their performance. The assignment will be successful. It affects the learners, which is the heart of the school. [14] At the same time, the personnel management of the school. As management or the operation of the policy establishing rules and regulations about people in schools to get people of the right talent to perform their work and to enable them to achieve their goals most effectively [15].

In conclusion, personnel management in schools refers to the process of managing people. In order to provide the school to acquire people with knowledge, abilities and potential that suitable for the job to work in the school for great success in the school or the administrators, they must know how to use people to make them work with full intelligence, strength, and inform them to do so willingly and happily when the action is over. Therefore, the school can perform its mission effectively and the effectiveness of the school objectives.

VI. PRINCIPLES OF HUMAN RESOURCE ADMINISTRATION IN EDUCATIONAL INSTITUTIONS

How effective will the personnel management in schools be? It depends on the introduction of personnel management principles in the school come and apply it in accordance with that school which there are many scholars and organizations have presented their opinions on the principles of personnel management in schools, summarized in 6 points, namely (1) all administrative factors. People are the most important administrative factors, (2) Personnel management will be efficient and effective. Executives must have knowledge and understanding and have high competence in personnel management, (3) arrange personnel to perform tasks that are appropriate with their knowledge and abilities will contribute to the morale of personnel happy to work. This will result in the work to be effective and efficient, (4) developing personnel to have knowledge and capability on a regular basis will cause personnel to change their behavior and actively develop work for the better, (5) personnel management focus on the participation of personnel and stakeholders are important and, (6) evaluating the performance of personnel. It will be useful to consider improving efficiency and consideration of merit [16].

However, in the management of personnel in that school there must be five techniques and principles which consisted of (1) the principle of justice, (2) the principle of filling the teacher officials to suit their knowledge and ability, (3) the principle of advancement in the position as appropriate for each individual, 4) principles for building stability and happiness to government officials, and (5) principles for participants to participate. In operational planning as well as the evaluation and adherence to democratic principles in administration [17].

In addition, the personnel management principles have established 12 principles for personnel administration in schools, namely: (1) principles of cooperation in schools; (2) principles of coordination of interests in schools; (3) principles of coordination in school, (4) principles of knowledge competence of persons in school, (5) principles of maintenance of persons in schools, (6) principles of independence in school work, (7) principles of progress, (8) Principles of morale and morale of work, (9) principles of respect for school workers, (10) principles of flexibility in school personnel management, (11) principles of justice, and (12) principles of human relations of associates [18].

In addition, the principles of personnel management in schools have five main principles as follows [19].

1) School efficiency depends on knowledge and abilities of worker the efficiency of the worker is increased as the school system gives him the opportunity to develop the personality traits that are inherent to him.

2) The development of that person is an activity from birth to death personnel development is an activity that must be performed from the beginning of work until the time they have to leave the work on the agenda.

3) The school system has a duty to enhance experience in various fields, both to prepare people to undertake new duties and to improve their existing work for higher efficiency as a whole faculty and both individually and this role will always be increased.

4) The first objective in the human resource development to improve the quality of the school system to a higher level and in such cases it is necessary to make improvements to allow operators to work in a consistent and quality manner.

5) The school system should consider personal development as a form of investment that will yield long-term results. In addition to enhancing worker efficiency, it will also attract more people to desire to work with that school system, directly building solidarity in that school system.

Concluded that the principles of personnel management in schools, Democratic principles are required by respecting the rights and the abilities of the person flexible management fair. There is a development and encouragement of individual morale encourage school personnel have performed their work with full knowledge and capability throughout providing welfare and creating a good

management atmosphere including considering the good preferences to suit individual performance.

VII. PROCESS OF PERSONNEL ADMINISTRATION IN SCHOOLS

Personnel administration in schools to achieve results, there is a very demanding process. Academic Division, Office of Education Bangkok [20] has established a process or framework for the management of personnel in elementary schools to be effective in 3 areas: (1) personnel planning, (2) personnel organization to work, and (3) personnel building and nurturing.

The Ministry of Education [21] has set out processes or frameworks for personnel management in a juristic basic education establishment in five areas: (1) manpower planning and position determination, (2) recruitment, (3) appointment, (4) discipline and (5) release from government service.

The Office of the Basic Education Commission [22] has established personnel management processes in schools, namely (1) manpower planning, (2) recruiting, (3) recruitment, (4) development, (5) maintenance, and (6) removal from work.

The Office of the Teacher Civil Service Commission [23] has proposed a guideline for the personnel management of the Office of the Teacher Civil Service Commission (July) to guide the Department. The Division of the Ministry of Education has performed six things: (1) manpower planning, (2) recruiting people, (3) personnel maintenance, (4) personal development, (5) performance assessment, (6) assigning people Out of work.

In addition, educational institutions have proposed the process of personnel management in schools in detail, Sukhothai Thammathirat Open University [24] mentions the personnel management in schools has 4 processes: (1) personnel recruitment. It is the process of obtaining persons, consisting of recruitment, selection, appointment and placement for work. (2) Personnel management, it is an arrangement for the person to work with satisfaction, which includes the placement of individuals to work in various duties, including performance evaluation as well. (3) Human resource development, which is to promote the individual's progress in terms of economy, work, knowledge and skills in working; and (4) vacation from work, including welfare and maintaining the mental health of a person who is out of work for various reasons.

There are many scholars who have proposed many processes related to personnel management in schools, such as Rungkaewdang, [25] mentioned the process or scope of personnel management in schools as follows: (1) acquisition the personnel, (2) the maintenance of personnel in the school, (3) the development of school personnel, (4) the removal of school personnel from work.

The academician who has offered additional opinions is Supachai Yawaprapha, [26] that the school administrators can conduct effective personnel management. School administrators must be ready to relate and relate to personnel administration in the following areas:

1) Recruitment and selection of personnel according to the qualifications of the desired position outsourcing of personnel; and within the organization today, recruiting is a direct function of the agency or school especially for schools where school administrators are a key component in personnel selection, so if administrators are ready to select personnel by appropriate methods. It will result in personnel who have the qualifications required for the precise job position that will lead to saving time and money that occurs.

2) Training planning and human resource development, it is about helping to direct the needs of training each person to work effectively because there is a standard for the supervisor to measure that person's talents or skills, or still lacking or weak in any area and need to develop and how this helps to set a more targeted development direction.

3) Personnel career progress planning and planning to replace positions in the management level enabling the department to develop or prepare personnel for new positions by developing skills that are lacking. It can help organizations and people achieve common goals.

4) Personnel performance appraisal has a connection to the promotion placing a successor within an organization or succession as well as using the information obtained to support human resource development. The assessment results will reflect the individual, both the organization and personnel of their abilities and the organization as a whole to plan to proceed in the future.

It can be concluded that from the aforementioned concept, it can be concluded that the process or scope of personnel management in schools consists of 4 things:

1) Planning of school personnel (Planning) is to determine in advance what will be done before, after when, who will do it, and how will it perform by bringing current conditions problems to plan and solve problems accordingly set guidelines and patterns together with school personnel, and to understand and correct such as determining the needs of personnel, amount of knowledge, abilities and special qualifications arrange personnel to perform the work according to their knowledge, ability and aptitude, and make a human resource development plan to have better knowledge and ability. There is a continuous human resource development project.

2) Staffing is an effort of the supervisors to make new entrants familiar with them and able to adapt to that agency as quickly as possible because when people have no problem

with adaptation. The work efficiency will inevitably rise to the maximum of his abilities which is an important destination of personnel management that will allow the agency to benefit fully from the work of the person entering the job.

3) Maintenance and development of personnel in the school (Comfort and Development) is to provide knowledge that encourages the teachers who are working to make further progress with training to develop each person to work effectively.

VIII. BUDDHIST PRINCIPLES IN HUMAN RESOURCE ADMINISTRATION

School or organization management is the most important thing that people want people we train until they have the knowledge, ability, experience and expertise to work with us for a long time to make our organization stable, advance, have management principles, have a good head having virtue, a good leader must have leadership, namely have the ability to influence others to cooperate and to take action, to achieve the desired goals. Leaders must have knowledge and good skills in both people and work, known as "must be good, think good, work well." Build morale and morale, a leader who has a lot of power to make you punish your subordinates. If a leader lacks virtue, then he will order punishment or benefit someone in particular, it shouldn't. It is something that destroys morale and encourages the employees who are dedicated to work. The virtues of leadership consisted of Brahma Vihara IV [27] referring to the virtue of being virtuous. The Dharma of the Good Heart Code of conduct that is virtuous and pure. The dharma that must be kept as a principle and directive of behavior. It is called purely living and behaving with human beings, including;

1) Kindness, affection, good desire, wish him happiness has a kind heart and thinks to benefit humans and animals all over the face.

2) Kindness, compassion, thought to save suffering. Keen on releasing healing the suffering of all animals.

3) the joy of joy when others live well The entertainment Endowed with always cheerfulness to all animals who are in good health ploy rejoices when he is well happy. Grow more and more

4) Deteriorate impartial trust which will remain in the dharma as you consider it with wisdom is having a smooth, upright mind like a scale, not partial with love and hatred. Considering the karma that all animals have done which deserves good or bad results appropriate for the cause Ready to judge and act according to theology as well as knowing to keep quiet and look calm. When there is no business that should be done because he has responsibility for himself. He deserves his own responsibility, or he should receive the consequences of his responsibility.

Personnel management according to Brahma Vihara IV is very important in corporate and school administration. If administrators and teachers or staff adhere to Brahma Vihara IV principles in working to create love. More unity in the organization especially school administrators must adhere to this principle by giving love, kindness, compassion, work with honesty and integrity diligence and patience adhering to the righteousness, and is a good role model for personnel in organizations or schools. This will result in personnel intending to work to achieve their goals.

CONCLUSION

Strategies of human resource administration in the modern era is to determine the strategy of personnel management to make employees have competencies and working behavior according to their goals and meets the organization strategy with the new role of personnel manager. Therefore, there must be both a role in strategy formulation and a role in implementing the organization strategy to human resource administration practices including the need to study the Buddhist principles related to personnel management, that is Brahma Vihara IV in order to study the administration according to the principle of compassion, study the administration, study management according to the principle of empathy and study the management according to the principle with a focus on human resource administration of educational institution administrators by applying the concept of human resource administration which is a western concept with the principle of Brahma Vihara IV. This is the four virtues for a person who is a leader in Buddhism, to know the methods of administration that apply useful principles and methods as part of the administration. In addition, in the development of personnel management in educational institutions, it is necessary to use Buddhist principles as a guideline in setting guidelines and direction in administration in order to achieve both efficiency and effectiveness of the work. Brahma Vihara IV principle is used in administration, it will create a good relationship and unity. The introduction of the principles of Brahma Vihara IV which consisted of 1) mercy, desires to be happy, 2) kindly thought, would help to escape suffering, 3) joy when others were good, 4) refrain from indifference to the principles of human management which consists of 1) personnel planning, 2) staffing, 3) maintenance, 4) evaluation both principles have the same purpose: the administration of education with morality and willingness, satisfied and working happily in the organization as the following figure.

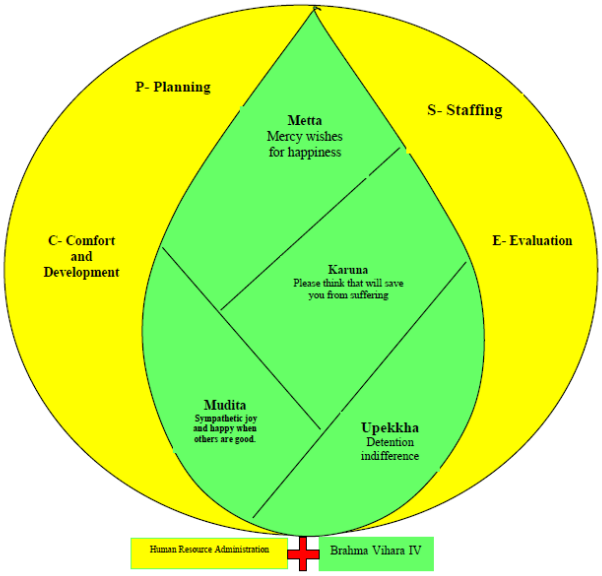


Fig.1 Strategies for Human Resource Administration in educational institutions according to Buddhism

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Development of a model for Sustainable Environmental Administration based on Sappaya Dhamma of Primary Schools in Thailand

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Abstract— *The purpose of this research was to develop and propose a model for sustainable environmental administration based on Sappaya Dhamma of primary schools in Thailand. Mixed methods research was used for research design. In quantitative research, data was collected from 390 samples using questionnaires, and was analyzed by using descriptive statistics which were percentage statistics. frequency, mean, standard deviation. In qualitative research, data was collected by using in-depth interview with 24 key informants and focus group discussion with 9 experts, and data was analyzed by using content analysis. Results indicated that 1) environmental administration conditions in primary schools consisted of (1) physical environment within the school, (2) social environment within the school, and (3) the teaching and learning environment. Development of sustainable environmental administration based on Sappaya Dhamma of primary schools consisted of (1) Arvasa Sappaya is appropriate, these include residences or places that are comfortable and peaceful, (2) Khojara Sappaya, travel is appropriate that the place must have an orbit or a pathway to and for easily and not extremely far away, (3) Passa Sappaya, talking is appropriate such as conversation by talking about things that are beneficial to the administration. 2) A model for sustainable environmental administration based on Sappaya Dhamma of primary schools in Thailand was emphasized 3 important aspects which were: (1) Sappaya Dhamma (S), the sustainable Sangha principle is the right thing complementary help to support the administration to get good results; (2) Environmental Administration (E), it is a policy, planning, controlling, solving and improving various environments in the school to be in good condition and hygienic by implementing the project implementation guidelines, consisting of 3 areas which are (2.1) physical environment management, (2.2) social environment within the school, and (2.3) teaching and learning management; (3) School (S), the school for the development of environmental administration according to the sustainable Buddhist principles for primary school in Thailand. Therefore, S E S Model was proposed, and there should be participation between administrators, teachers, school board directors, parents, students and communities.*

Index Terms— ***Environmental Administration, Sappaya Dhamma, School Administration***

I. INTRODUCTION

Environmental management of an educational institution is very important because humans and the environment are closely related. Throughout this period, human beings have used their intelligence and ability to make use of the environment and improve it to suit life. Due to the adoption of the environment without knowing, incomprehensible, not conserving, together with the rapid population growth resulting in increased demand for resources as a result, environmental problems, degradation, dirt, pollution and pollution have become a big problem that is increasing day

by day. Various educational establishments therefore faced such environmental problems partly due to the increasing number of students at the national level, there is economic and industrial development and bring a lot of natural resources causing a lack of natural balance this causes various toxic environmental conditions such as polluted air, waste water, and less forests until the environment is unable to adapt in time as a result, environmental degradation and pollution follow. Human is the most important driver in the destruction of natural resources and the environment. These problems are increasing day by day. If not cooperating and solving one way to help all people realize the importance and necessity of conservation and environmental development is education starts from school-age children to the general public [1].

Nowadays, environmental problems are becoming more and more serious problems that must be addressed and develop urgently editing and developing should be the responsibility of everyone. Education is one of the departments responsible for education as a vital tool in creating and maintaining natural-friendly thoughts and habits. Educational institutions must provide environmental instruction to help adjust and change the behavior of youth to be the power to protect the environment and conserve energy for the country in the present and in the future must innovate the learning process that leads to energy and environmental conservation for youth and society. For sustainable development can be considered as a new paradigm of development. It is based on a concept and practice that requires cooperation from all parties to participate in the development process, with serious thought, learning and practice. As a result of interaction which all parties must act on the basis of love kindness and sincerity towards one another is known as Kalyanamit, so the most direct way to solve environmental problems is to solve human behavior by providing correct knowledge and cultivating consciousness to think feelings and concern for the environment. This will cause serious environmental conservation and can solve the problem both will result in a reflection and instill a responsibility to cherish and consider the scope of the resource usage schedule as well as protect natural balance [2].

In Thailand, the current trend of environmental protection is becoming a lot of attention and importance. This can be seen from any activities, both public and private sectors. If it affects the environment, it will be opposed by the organization. The community and the people, however, are seriously aware of these problems. As can be seen, the constitution of the Kingdom of Thailand B.E. 2540 states that the importance of natural resources and the environment in Section 50 states that a person shall enjoy the liberty to conduct business or occupation and compete freely and fairly. The elimination of the liberty under paragraph one cannot be done except for the conservation of natural resources or the environment [3]. In this regard, section 56 has been prescribed to provide protection in this matter that the right of individuals to engage with states and communities in the maintenance and benefit of natural resources and biodiversity and in the protection, promotion and preservation of environmental quality in order to live normally and continuously in an environment that will not cause any harm to one's health, welfare or quality of life. It would have been protected and in order for the implementation of environmental management to be implemented, roles and duties have been defined in article 79 that states must promote and encourage people to take part in conservation. It maintains and take advantage of natural resources and biodiversity in a balance including taking part in promoting, maintaining and protecting environmental quality according to the principles of sustainable development. As well as control and determination of pollution affecting health. Public welfare and quality of life [4] and as it is defined in the current constitution, which is the country's highest law, is the awareness of the degradation of natural resources and environmental problems. As a result, of past developments that takes into account only the increased productivity without considering the consequences the results obtained are therefore not what the society in general wants because of the high technology how many products are there in terms of quality and quantity? However, when people continue to experience poverty and inequality as a condition until that product cannot be used equally with the occurrence of the degradation of natural resources and the toxic environment that affects people's lives as well. It means that we are losing both the quality of the environment and the quality of life. Therefore, it does not matter how successful the technology is in creating would not be the right thing because people do not have the same rights to the opportunity of receiving produce to promote their livelihood. At the same time, the poorer is also burdened by the problems arising from that produce.

At present, the Ministry of Education has a policy on environmental conservation and development, both for the short and long term by providing education to children and youth to generate knowledge responsibility, love and tenacity in the environment therefore emphasizing that all departments at all levels under give importance and hold it as an urgent policy on environmental issues by allowing executives at all levels to adopt policies and implement them for serious results, set goals according to the environmental conservation and development policy. It is personnel and students that are developed to have knowledge, understanding, consciousness, and cooperate in conservation, development, prevention and solving of environmental problems management at the same time,

therefore, environmental management. Therefore, it should be integrated principles of Sappaya Dhamma [5] that will bring comfort to education and will enable students to learn in learning resources in environment within and outside the school in all aspects by formulating policies, planning, controlling, correcting and improving the environment in the school to be in good condition, and hygienic by using the project implementation guidelines.

Therefore, the researcher is interested in studying the model of sustainable development of environmental management. For elementary school under Bangkok according to the opinions of the personnel within the school, they can best reflect the management of the environment by developing environmental management in accordance with the principles of Sappaya Dhamma including management physical environmental management and teaching and learning management a comparative study of the opinions of personnel on environmental management according to the principles of the Dharma week including problems, obstacles and suggestions about environmental management according to principles of elementary school under Bangkok.

II. RESEARCH OBJECTIVE

The purpose of this research was to develop and propose a model for sustainable environmental administration based on Sappaya Dhamma of primary schools in Thailand.

III. RESEARCH METHOD

This study Researchers used a survey research model, along with in-depth interview and focus group discussion, which was a mixed methodology research between quantitative research and qualitative research by analyzing data from documents, textbooks, statistical data, research reports of various departments academic articles, dissertation, as well as relevant research work both at home and abroad, and a formal in-depth interview by using the interview questionnaire created by the researcher to study the opinions of the school administrators who are the target groups as a case study, questionnaires were distributed to the administrators, and elementary school teachers 390 sets of Bangkok Metropolitan Administration, interviews with key informants are 20 school administrators and questionnaires for group discussion. There were 11 key information contributors / person. The researcher collected the data and analyzed the data as follows: 1) Document Analysis, Content Analysis, 2) Analysis by using percentage statistics. frequency, mean, standard deviation, 3) Interview using content analysis and conclusion by interview, and 4) Focus group using content analysis.

IV. RESEARCH RESULTS

The study results of environmental management in primary schools Under Bangkok the level of opinion on environmental management in elementary schools. The 3 aspects of Bangkok Metropolitan Administration consisted of 1) the physical environment within the school, 2) the social environment within the school, 3) the teaching and learning environment found that the opinions on environmental management in elementary schools in Bangkok, the overall level is at a high level while each side is at a high level in all aspects.

Results of the study of the model for the development of environmental management according to the sustainable philosophy for elementary school under Bangkok.

A model for the development of environmental management according to the sustainable philosophy for elementary school under Bangkok by developing environmental management for elementary school under Bangkok it is a policy for planning, controlling, correcting and improving the environment in the school to be in good condition and hygienic by using the implementation of the project consists of 3 aspects as follows: 1) Physical environmental management. It is an environment that is object, building, place and school area. 2) Social environment within school. It is a policy, planning, supervision, evaluation of culture, traditions, rules and regulations about the environment in schools. 3) Teaching and learning management. It is the management of learning, creativity, development activities and reporting of performance to support environmental performance.

For the development of environmental management in accordance with the sustainable philosophy for elementary school the Bangkok Metropolitan Administration is a good thing. Contribution helping to support the administration for good results helps to concentrate, not deteriorate, consisting of 1) Arvasasappaya such as housing or a place that is comfortable and peaceful without people walking around. Not too close to swamps, ponds or community sources which may be annoyed by the movement of people gated safe for living 2) Kojarasappaya the proper transportation means that place must have an easy pathway, not too close, not far away. 3) Passasappaya talking appropriately includes talking, talking, listening, talking, talking, but what is beneficial to the administration. Listened to what will cause the mind to bring forth the power of the sultanate, the peace of mind in order to persevere, or have a person who knows the tutor or teacher who teaches the meditation.

The results of the presentation of the model for the development of environmental management according to the sustainable philosophy for elementary school under Bangkok

A model for the development of environmental management according to the sustainable philosophy for elementary school Bangkok Metropolitan Administration (S E S Model) that needs to focus on 3 important points: 1) Sappaya Dhamma, sustainable Dhamma concept is appropriate contribution helping to support the

administration for good results helps to concentrate firmly not deteriorate consists of 7 things which are: 1) the suitable abassapaya, 2) Kojarasappaya travel suitable, 3) Passasappaya appropriate conversation, 4) Appropriate personification, 5) Nutrition, appropriate food, 6) Appropriate weather observation, and 7) Sympathy Appropriate behavior 2. Environmental Administration Environmental management in schools it is a policy for planning, controlling, correcting and improving the environment in the school to be in good condition and hygienic by using the guidelines for the implementation of the project consisting of 3 aspects: 1) physical environmental management, 2) social environment within the school, 3) teaching and learning management 3. School for the development of environmental management in accordance with the principles of sustainable meditation for elementary school under Bangkok there should be a participation among administrators, teachers, school committee members, parents, students and communities.

V. DISCUSSION

The level of opinion on environmental management in elementary schools. The 3 aspects of Bangkok Metropolitan Administration consisted of 1) the physical environment within the school, 2) the social environment within the school, 3) the teaching and learning environment found that the opinions on environmental management in elementary schools the Bangkok Metropolitan Administration is overall at a high level while each side is at a high level in all areas. Environmental management of schools under Bangkok Metropolitan Administration has good environmental management efficient is excellent this is in line with the research of Ninath Pholdej (2015) [6] researched on "Environmental management model that promotes learning management in basic educational institutions", the findings were as follows: 1. The current state results problems and needs of environmental management that promote learning management in basic education institutions, it was found that the basic education committee, administrators and teachers in general practice very level when considering on the basis of each aspect, it was found that the side with the highest mean was in learning management the aspect with the lowest average was the learning promotion activities. 2. The outcome of the environmental management model that promoted learning management in basic education institutions. There are four main components: 1) management to provide educational institutions with planning, policy formulation, vision, structure and implementation; 2) management of learning to enable implementation or use methods that help allowing learners to learn about the environment in organizing the learning process related to the learning curriculum, teaching and learner development activities; 3) Activities to promote learning to manage environmental management in schools and facilitating learning and practicing behavior change in daily life continuously; 4) Coordination relationships with communities to create participation in both educational institutions and communities. 3. Evaluation of conformity of the environmental management model that promotes learning management. Overall, basic education institutions were at the highest level. Qualified experts have an opinion on the pattern and assess appropriateness, possibility and the usefulness of an environmental management model that promotes learning management in basic education institutions overall and each aspect was at the highest level, and related to the research results of Prawit Suthiboon (2015) [7] has researched on "Development of a learning model for environmental education by the excursion process to promote the conservation of natural resources and the environment for high school students." The research found the effectiveness of the learning model in environmental education using the excursion process for High school students cost effective for the index of effectiveness of the learning plan using the environmental education learning model by using the field trip process for students high school show that learners have increased knowledge and as a result the students have increased learning progress after learning the achievement before and after learning with a learning model on environmental education using a field trip process for high school students. The average achievement score after study was significantly higher than the .01 level. The achievement of male and female students who studied with the pattern learning environmental education using the excursion process. For high school students, there was no difference in the average achievement score after class and compared the learning achievement with a learning model on environmental education using educational excursion processes, knowledge, attitudes and awareness for the conservation of natural resources and the environment of students of different genders and learning using different learning styles. It was found that there was an effect on the interaction between students' sex and grades on knowledge, attitudes and awareness in the conservation of natural resources and the environment of the students. The students with different sexes had knowledge, attitudes and conservation of natural resources and the environment of different classes there were statistically significant .05 and testing students had different grades, knowledge, attitudes and conservation awareness. The natural resources and environment of the students are no different.

A model for the development of environmental management according to the sustainable philosophy for elementary school under Bangkok by developing environmental management for elementary school under Bangkok is a policy for planning, controlling, correcting and improving the environment in the school to be in good

condition and hygienic by using the implementation of the project consists of 3 aspects as follows: 1) Physical environmental management. It is an environment that is object, building, place and school area, 2) Social environment within school. It is a policy, planning, supervision, evaluation of culture, traditions, rules and regulations about the environment in schools, 3) teaching and learning management. It is the management of learning, creativity, development activities and reporting of performance to support environmental actions for the development of environmental management in accordance with the sustainable philosophy for elementary school the Bangkok Metropolitan Administration is a good thing. Contribution helping to support the administration for good results helps to concentrate, not deteriorate, consisting of 1) the right Abassappaya such as housing or a place that is comfortable and peaceful without people walking around, not too close to swamps, ponds or community sources which may be annoyed by the movement of people gated safe for living. 2) Kojarasappaya, the proper transportation means that place must have an easy pathway, not too close, not far away. 3) Passasappaya, talking appropriately includes talking, talking, listening, talking, talking, but what is beneficial to the administration, listened to what will cause the mind to bring forth the power of the sultanate, the peace of mind in order to persevere, or have a person who knows the tutor or teacher who teaches the meditation. This is consistent with the research results of Suthipong Nipatthananon (2013) [8] on "Guidelines for the development of schools for environmental education for sustainable development in accordance with the framework of the Department of Environmental Quality Promotion". The School of Environmental Studies for Sustainable Development in the Upper Northern Region has the readiness to be an environmental education school in 4 dimensions with supporting factors as a school Environmental studies for sustainable development as follows: 1) curriculum factors in school environmental studies, 2) factors of supplementary activities, 3) environmental management factors in schools, 4) environmental campaigning and conservation factors, 5) factors School cooperation with community, 6) School atmosphere and environmental factors, 7) The relationship between school and community factors and school personnel, and 8) learner factor for guidelines for the development of schools for environmental education for sustainable development. According to the framework of the Department of Environmental Quality Promotion, 4 strategies can be summarized as follows: Strategy 1: Preparation for a school environment education for sustainable development, it consists of 3 issues: 1) building understanding, 2) setting up a team, and 3) exploring existing capital. Strategy 2: Setting goals and work plans consists of 2 issues: 1) targeting and 2) planning for work. Strategy 3 approaches to applying all four dimensions of missions to the development of schools for environmental education. For sustainable development standing and Strategy 4: The Key Mechanism for Driving School Environmental Education for sustainable development, it consists of 4 issues: 1) holistic school management; PDCA in management, 3) integration of "sustainable development" into the school curriculum and 4) evaluation. School of environment for sustainable development with conditions for success in school development to the school of environmental studies for sustainable development, and it is consistent with the research results of Onong Rojwatanabool (2010) [9] has conducted research on "Development of innovative leadership models". The increasingly evolving external context has affected direction and organizational leadership strategies. Pressuring the leaders to focus more on innovation development in order to gain a competitive advantage and sustainable growth. Organizational context, organizational culture and atmosphere within the organization, their impact on the role of leadership. The form of a learning organization and knowledge management system that has a clear process and uses technology to build a knowledge base. Promotion of learning it is a factor that has a positive impact on innovation development. An appropriate organizational structure is a cross-functional team organizational structure. Human resource development system with elder management and mentoring system. The authorization project assignment is a systematic that positively affects the approach to developing innovative leaders. The results of a comparative analysis of all case studies. The researcher presented models, constituents of innovative leaders; and innovative leadership development approaches. It consists of external and internal contexts that influence innovative leaders. There are four major components: 1) personality, 2) performance, 3) role, and 4) role. Social character is the main attribute of innovative leaders. The proposal of this study is a guideline for developing a leader in the organization for the organization's character traits. Lead innovation to develop innovation in organization and education in the future. Propose the study of the key factors influencing the organization of innovation and the development process for clarity in policy formulation, guidelines for developing leaders in organizations at all levels to create innovative leadership.

A model for the development of environmental management according to the sustainable philosophy for elementary school Bangkok Metropolitan Administration (S E S Model) that needs to focus on 3 important points: 1. Sappaya Dhamma, sustainable Dhamma concept is appropriate contribution helping to support the administration for good results helps to concentrate firmly not deteriorate consists of 7 things which are: 1) the suitable

abassapaya, 2) Kojarasappaya travel suitable, 3) Passasappaya, appropriate conversation, 4) Appropriate personification, 5) Nutrition, appropriate food, 6) Appropriate weather observation, 7) Sympathy Appropriate postures. 2. Environmental Administration, environmental management in schools it is a policy for planning, controlling, correcting and improving the environment in the school to be in good condition and hygienic by using the guidelines for the implementation of the project consisting of 3 aspects: 1) physical environmental management, 2) social environment within the school, 3) teaching and learning management 3. School for the development of environmental management in accordance with the principles of sustainable meditation for elementary school Under Bangkok, the collaboration between administrators, teachers, school directors, parents, students and the community, which is consistent with the findings of Sulaiman (2009)[11], studies creative and the peculiarities of the classroom environment of domestic high school female students Saudi Arabia to examine the relationship between creative abilities initiative versatility in use and flexibility with the characteristics of the classroom environment that can be exposed received by a female grade 4 student and an Arabic language teacher where the variables used contain levels an emphasis on both high and low-level thinking processes class atmosphere and attention in class the trial participants were randomly assigned high school students from a public school in Riyadh. Saudi Arabia. The results of the study indicated a strong correlation between the perceptions of students in The thinking process and class interest were at a level because the teachers spoke little that make students not interested in listening to lectures as for the atmosphere in the classroom in particular, the variables that the teachers spoke less were it made clear the difference between learner and teacher perceptions of the classroom environment, with teachers reporting that the emphasis on both high and low-level thinking processes was very conducive to the classroom atmosphere which is different from student reports it is also consistent with the research of Howe & Disinger (2002) [10] researches the environmental atmosphere in the school. Not only the appearance but also the consideration of other aspects of the components that affect the school environment such as student policy, communication, teachers, regulations. Parents, support, help giving awards and special projects a healthy school environment can be achieved by creating a school policy that emphasizes the importance of students. To give students love, pride and encouragement the activities in the school are aimed at children's society and emotional growth can help foster a better environment at that activity. Including the rule of students safety, special events and opportunities allowing students to be aware of school activities is an important role in communicating. It communicates between teachers and students, so teachers can be a great helpers in encouraging them to create a better environment inside school in the end parents of children teachers and parents association and local assistance organizations can help develop the environment and can be better within the school as well.

VI. RECOMMENDATIONS

A. General Recommendation

Research results on environmental management according to the principles of elementary schools under Bangkok Metropolitan Administration, the researcher has the following recommendations.

1.1 Executives should have a strategic plan. In managing a clear and practical environment, there should be sincerity in planning and directing the environment management.

1.2 The management should have a system for working well and of quality referring to the efficiency and effectiveness of the past environmental management. Executives should be managers who are trained to develop and change the environmental management system to keep progress.

1.3 Executives should strictly perform their duties. They are always strict on time, which motivates the work of subordinates and should be taken as a good example, and should be an executive who should be a good role model have good human relations high responsibility always have a commitment to work and inspire subordinates.

1.4 Executives should always sacrifice their interests for the benefit of their participation and generosity and should be a management who has patience when there is no emotional impact on it to the subordinates

B. Recommendation for further research

If there is a future study on environmental management in schools, the researcher recommends in conducting research in the following way.

2.1 Should study the factors affecting environmental management in primary schools. In other educational areas such as NESDB, NESDB, etc.

2.2 Should be studied in a research that narrows the scope of the research area and should be defined as a study area only.

2.3 Should study other factors. That affect the management of the school environment such as School administration Educational innovation etc.

2.4 Should study the application of other Buddhist principles, such as the ideology, Brahma Vihara IV, etc. that can be applied to the leadership of the school administrators.

CONCLUSION

Conditions of environmental management in elementary schools, there are 3 aspects of Bangkok Metropolitan Administration consisted of 1) the physical environment

within the school, 2) the social environment within the school, and 3) the teaching and learning environment found that the opinions on environmental management in elementary schools affiliated to Bangkok, the overall level is at a high level while each side is at a high level in all aspects. For elementary school Bangkok Metropolitan Administration consists of 1) Development of environmental management for elementary school under Bangkok it is a policy for planning, controlling, correcting and improving the environment in the school to be in good condition and hygienic by using the implementation of the project consists of 3 aspects as follows: (1) Physical environmental management. It is an environment that is object, building, place and school area, (2) Social environment within school. It is a policy, planning, supervision, evaluation of culture, traditions, rules and regulations about the environment in schools, (3) teaching and learning management. It is the management of learning, creativity, development activities and reporting of performance to support environmental operations, and 2) Development of environmental management in accordance with the principles of sustainable development for elementary school the Bangkok Metropolitan Administration is a good thing. Contribution helping to support the administration for good results helps to concentrate, not deteriorate, consisting of 1) the right abassappaya such as housing or a place that is comfortable and peaceful without people walking around, not too close to swamps, ponds or community sources which may be annoyed by the movement of people gated safe for living, 2) Kojarasappaya the proper transportation means that place must have an easy orbital pathway, not too close, not far away, and 3) Passasappaya talking appropriately includes talking, listening, talking, but what is beneficial to the administration, listened to what will cause the mind to bring forth the power of the sultanate, the peace of mind in order to persevere, or have a person who knows the tutor or teacher who teaches the meditation. For presenting a model for the development of environmental management in accordance with the sustainable philosophy for elementary school Bangkok Metropolitan Administration (S E S Model) that needs to focus on 3 important points: 1) Sappaya Dhamma, sustainable Dhamma concept is appropriate contribution helping to support the administration for good results helps to concentrate firmly not deteriorate consists of 7 things which are: (1) the right abassapaya, (2) kajarasappaya, travel suitable, (3) Passasappaya Appropriate conversation, 4) Appropriate personification, 5) Nutrition, appropriate food, 6) Appropriate weather observation, and (7) Sympathy appropriate behavior. 2) Environmental administration environmental management in schools it is a policy for planning, controlling, correcting and improving the environment in the school to be in good condition and hygienic by using the project implementation guideline consisting of 3 aspects: (1) physical environmental management, (2) social environment within the school, (3) teaching and learning management 3. School for the development of environmental management in accordance with the principles of sustainable meditation for elementary school under Bangkok there should be a participation among administrators, teachers, school committee members, parents, students and communities.

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An Analysis of Women's College Mission Statements

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Abstract— *It has been well-documented that many higher education institutions in America assert their identity and marketize themselves through mission statements submitted to such commercial websites as U.S. News and World Report. However, previous analysis is limited to co-educational colleges' mission statements. The objective of this study is to analyze elements that recur within women's college mission statements and compare them to those that recur within co-educational colleges' counterparts. A sample of 30 women's college mission statements published on the U.S. News website was analyzed using Morphew and Hartley's (2006) approach to linguistic and content analysis. It was found that there were 48 distinct elements across all mission statements and the three most common elements that appeared in the first three sentences of women's college mission statements included (1) women's college, (2) leadership, and (3) fostering environment. It is argued that leadership is prioritized by women's colleges as women in the current society are still underrepresented in almost every industry in America. Moreover, learning atmosphere matters immensely to women since a plethora of studies show that women perform better in a single-sex setting. Most importantly, the top three elements do not appear in co-educational colleges as reported previously.*

Index Terms— ***Women's College, Mission Statements, Content Analysis***

I. INTRODUCTION

There are 35 women colleges in America as of October 2019 [1]. The number seems to be high for single-sex higher education institutions when compared to men's counterparts as there are only four all-male colleges in the U.S. today. In the last 55 years, however, the number of women's colleges has drastically declined from 233 to 36; some were closed down, while others went co-educational. Many of them that still exist are struggling to fill their seats and one solution to this problem is to have a strong identity that differentiates them from well over 4,000 co-educational institutions in the U.S. [2]. In order to compete in the education market, colleges and universities employ a variety of techniques and strategies to assert their identities. To this end, they marketize their institutions or brand themselves via websites, viewbooks, vision statements, action statements, strategic plans, and especially mission statements, either publicized on their own institutional websites or commercial ones like U.S. News.

Once employed exclusively in business and management fields as a tool to define a company's business, its objectives, and its approaches to reach those objectives, mission statements are now part of conversation and scholarship in the world of higher education [3]. According to Morphew and Hartley [4], institutional mission statements have two benefits. First, they guide members within the institution to align their work with the aspirations and objectives of the institution. Second, they encourage members to share institutional characteristics with others. One of the very first studies that analyzed academic institutions' mission statements was conducted in the early 1990s [5]. Ever since then, a plethora of research has investigated the role mission statements play in higher education from various perspectives. Some focus on mission statements of specific types of institutions (e.g. with a particular race, religious affiliation, or field of study); others study mission statements of academic institutions in general (e.g. baccalaureate colleges or research universities).

To the best of my knowledge, there is only one study analyzing women's college mission statements in the U.S. and it was conducted around three decades ago [6]. It specifically compares mission statements of women's colleges with women's studies programs, women's colleges without women's studies programs, and coeducational colleges with women's studies programs and focuses on qualitative differences between mission statements of women's colleges and those of coeducational institutions with women's studies program. However, in the current study, I aim to identify themes that recur within women's college mission statements and compare them to those in co-educational colleges' mission statements that are publicized on a commercial

website. In particular, I intend to investigate how women's colleges construct their female identity through mission statements. Previous research reveals that women attending women's colleges have been shown to experience more academic and intellectual development than their peers at coeducational institutions [7]. They are also reported to have greater self-esteem and leadership abilities [8]. Taken all the post-college benefits together, it is worth seeing whether these elements will be included in the mission statements of women' colleges in the U.S.

II. RESEARCH OBJECTIVES

1. What elements recur within women's college mission statements and how are they different from those elements that recur within co-educational mission statements?

III. LITERATURE REVIEW

Previous Studies

A large number of previous studies have examined U.S. college mission statements. One of the pioneering studies scrutinizing the utility of mission statements in postsecondary education was conducted by Newsom and Hayes [5]. They investigated 114 colleges' and universities' mission statements using a cooperate-based framework. Stober [9] is another pioneering researcher in this field who employed content analysis to examine 120 mission statements of postsecondary institutions accredited by the Middle States Association of Colleges and Schools. Other studies investigated mission statements from historically black colleges and universities [10], religiously affiliated institutions [11], women's colleges [6], colleges of engineering [12], colleges of business [13], and schools of social work [14].

More recent comprehensive studies on mission statements of postsecondary institutions were conducted by Morphew and Hartley [4] and Taylor and Morphew [15] who approached their analyses from a linguistic perspective. Morphew and Hartley [4] sampled mission statements from nearly 300 colleges and universities. They found 118 distinct textual elements in their analysis and several occurred frequently in each institutional type. For instance, the term "civic duty" for public institutions means that they make a contribution to the state economy and prepare their graduates to serve the local community, while "civic duty" for private institutions mean that they prepare their graduates to serve the community in the global context. Morphew and Hartley [4] conclude that their sampled mission statements lack the language of aspiration, which shows either a failure or unwillingness of colleges and universities to communicate messages that do not express their primary constitutions.

Extending the work of Morphew and Hartley [4], Taylor and Morphew [15] compare a large sample of baccalaureate colleges' mission statements that are provided on official institutional websites with those publicized by the U.S. News and World Report. They aimed to investigate how baccalaureate institutions represented themselves to prospective students through original institutional mission statements and the ones they submitted to the U.S. News and World Report. To discuss their findings, Taylor and Morphew [15] employed the term "Strategically Deployed Shifter (SDS)" used by Urciuoli [16] and coined by Silverstein [17] to describe how some terms are difficult to define, contest, and quantify. For example, "excellence" is vaguely defined in many colleges' mission statements publicized on the U.S. News website. One of their main findings is that there are just a few colleges that have mission statements on their institutional websites identical to those on the U.S. News website; the majority of them are different to a large extent. Official statements are generally descriptive and normative, while those submitted to the U.S. News and World Report often employed SDSs for the sake of student recruitment.

The Present Study

This paper builds on the mission statement analysis of Morphew and Hartley [4] who examined some recurring elements that emerged across nearly 300 colleges' mission statements. However, I will analyze the mission statements and unique qualities that are publicized on the U.S. News website, rather than those on the institutional websites as I am interested in how women's colleges assert their identities using the U.S. News website as a marketing tool to recruit students. Moreover, I focus on only the first three sentences of each women's college mission statement as I am convinced that they include the elements each college wants to prioritize. I will also compare most common elements that appear in women's college mission statements to those that recur within the co-educational college mission statements found in Morphew and Hartley's [4] and Taylor & Morphew's [15] studies.

IV. RESERCH METHODOLOGY

Data Collection

There are 35 women colleges in America as of October 2019 [1]. However, five of them were excluded as they did not meet the current study's criteria. For example, there are three colleges that were excluded from the analysis because they will be or just turned to be coeducational institutions. Moore College of Art and Design was also excluded since it does not offer various fields or majors. Rather, they primarily offer degrees related to arts and design only. There is also one university that did not publish their mission statements and core values on the U.S. News website:

Trinity Washington University. To sum up, there are eight baccalaureate institutions, 14 master's institutions, and eight research/doctoral institutions. All of them offer undergraduate studies to women only and many that offer postgraduate degrees welcome both women and men to join graduate programs. In total, a sample of 30 women's college mission statements published on the U.S. News website was analyzed.

Data Analysis

I adopted the lens of analysis employed by Morphew and Hartley [4] who scrutinized as many as 299 mission statements from colleges and universities across Carnegie Classification and were able to identify up to 118 distinctive elements that construct multidimensional identities of the academic institutions. I also focused on every element that appeared in the first three sentences of each women's college mission statement as I believed that these elements received a greater institutional emphasis. Important messages are normally placed in the very first part of a mission statement; some details might be repeated in different wordings in the middle or the final part of the mission statement. For instance, Scripps College included as many as 19 sentences with 546 words in their mission statement, whereas Notre Dame of Maryland University had only three sentences with 65 words in their mission statement. The stark difference between their length might imply that only three sentences might be enough for a college to assert their identity through a mission statement.

Following Morphew and Hartley [4], I used the term "element" rather than "theme" as I focused on single words, rather than phrases, that convey significant meanings. Elements may be compared to building blocks of a mission statement; identifying the essential pieces of each mission statement will also allow other researchers, if necessary, to reconstruct each statement using only the pieces I identified in this study. Two experts helped identify every element that appeared in the sampled mission statements. We merged some elements that overlapped and our consensus was reached on 48 distinct elements across 30 women's college mission statements.

IV. RESULTS

I was ultimately able to identify 48 distinct elements across all mission statements. As opposed to Morphew and Hartley's (2006) study, I did not classify women's colleges into their public/private status as there was only one public women's university in my analysis: Texas Woman's University. Furthermore, almost all of them especially baccalaureate and master's institutions were liberal arts institutions, so I did not classify them into their general/liberal arts status either. With a limited set of women's college mission statements available, I decided to group them into three types: baccalaureate, master's, and doctoral. The three most common elements that appeared in the first three sentences among mission statements of baccalaureate institutions are shown in Table 1 below.

Table 1: Three most common elements among mission statements of baccalaureate institutions (n = 8)

Element	Percentage
#1 Women's college	88% (n = 7)
#1 Leadership	88 % (n = 7)
#2 Liberal arts	63% (n = 5)
#2 Fostering environment	63% (n = 5)
#3 Academic excellence	50% (n = 4)
#3 Personal development	50% (n = 4)

Seven out of eight women's colleges stated in the first or second sentence of their mission statements that they were primarily for women, albeit with different wordings. Leadership was also the most common element, appearing in seven out of eight women's colleges. They were also associated with other elements, which I will discuss in detail in the final part of this section. The second most common elements were liberal arts and fostering environment, the latter of which includes classroom atmosphere and learning environment. The third most common elements across baccalaureate college mission statements are academic excellence and personal development, the latter of which refers to opportunities where women can develop themselves, discover their maximum potential, and be equipped with life-long skills. The three most common elements that appeared in the first three sentences among mission statements of master's institutions are shown in Table 2 below.

Table 2: Three most common elements among mission statements of master's institutions (n = 14)

Element	Percentage
#1 Women's college	93% (n = 13)
#2 Leadership	79% (n = 11)
#3 Liberal arts	50% (n = 7)

Similar to elements that recurred within the first three sentences of baccalaureate college mission statements, women's college is the most common element among master's institution mission statements, followed by leadership and liberal arts, respectively. The three most common elements that appeared in the first three sentences among mission statements of doctoral institutions are shown in Table 3 below.

Table 3: Three most common elements among mission statements of doctoral institutions (n = 8)

Element	Percentage
#1 Women's college	88% (n = 7)
#2 Personal development	63% (n = 5)
#2 Leadership	63% (n = 5)
#2 Civic duty	63% (n = 5)
#3 Academic excellence	50% (n = 4)
#3 Fostering environment	50% (n = 4)
#3 Religious affiliation	50% (n = 4)

Women's college is also the top element among mission statements of doctoral institutions, followed by personal development, leadership, and civic duty (helping others and serving the society) as the second most common elements. Academic excellence, fostering environment, and religious affiliation are the third most common elements among doctoral institution mission statements. The three most common elements that appeared in the first three sentences among mission statements of all institutional types are shown in Table 4 below.

Table 4: Three most common elements among mission statements of all institutional types (n = 30)

Element	Percentage
#1 Women's college	90% (n = 27)
#2 Leadership	77% (n = 23)
#3 Fostering environment	50% (n=15)

There appear to be three patterns of wordings associated with the women's college element. Some specified that their institutions were primarily for women in an objective, neutral way, as exemplified in Bennet College's mission statement below [2]:

"Bennet College is a small, private, historically Black liberal arts college for women."

Another example is from Texas Woman's University's mission statement [2]:

"Texas Woman's University (TWU) is a notable institution, primarily for women, committed to fiscal accountability and dedicated to excellence through high quality academic programs, research, and creativity."

Many institutions used sentimental, inspiring wordings to specify that they were primarily for women. One clear example is from Mount Holyoke College's mission statement [2]:

"Mount Holyoke College attracts ambitious, independent women from around the world who embrace complexity, cultivate curiosity, and resolve to become agents of change."

Another clear example is from Wesleyan College's mission statement where the word "women" was mentioned in the first three sentences:

"Founded in 1836, Wesleyan College was the first college in the world chartered to grant degrees to women. Every year since then, Wesleyan women have been making history. We take our role as a pioneer in women's education seriously."

There are three out of 30 institutions that did not mention anywhere in their mission statements that they were primarily for women. Consider Hollins University's mission statement below [2]:

"A Hollins education inspires, engages, and prepares students to lead a life of consequence through exceptional academics, hands-on experiences, and leadership opportunities. From their first seminar to their last debate, students are challenged by new ideas, pushed to do their best work, and encouraged to take charge. Hollins' broad undergraduate liberal arts curriculum encompasses the physical sciences, social sciences, arts, and humanities."

Note that for the rest of the message in Hollins University's mission statement, no single word that referred to women was mentioned although it is a university that offers undergraduate programs to women only. Agnes Scott College is another institution that did not mention words related to women at all, while Simmons college did mention that it was the only undergraduate women's college in Boston, but not in the first three sentences of its mission statement.

Leadership is the second most common element, appearing in 23 out of 30 women's college mission statements. This element is also associated with other elements. Consider Bennet College's mission statement below [2]:

"The College offers women an education conducive to excellence in scholarly pursuits; preparation for leadership roles in the workplace, society, and the world; and life-long learning in a technologically advanced, complex global society."

There are six out of 30 women's colleges associating leadership positions with career or workplace. Another element related to leadership is global society, which was mentioned in 14 out of 30 mission statements. A good example is from Notre Dame of Maryland University's mission statement shown below [2]:

"Notre Dame of Maryland University educates leaders to transform the world. Embracing the vision of the founders, the School Sisters of Notre Dame, the University promotes the advancement of women and provides a liberal arts education in the Catholic tradition."

A few institutions associated leadership positions with various knowledge fields, one of which is Barnard College [2]:

"On a four-acre campus on the Upper West Side of Manhattan, world-class faculty of teacher-scholars educate

more than 2,600 inspired and intrepid undergraduate women – women who, as a matter of course, have gone on to achieve great things. Throughout its history, Barnard graduates have made their mark as leaders in the arts, business, government, science, and more."

Fostering environment is the third most common element and half of women's colleges shared it in the first three sentences of their mission statements. It included classroom atmosphere and other related elements. One clear example is from the mission statements of Wellesley College [2]:

"Wellesley College, one of the most academically challenging institutions of higher education in the country and widely acknowledged as the nation's top women's college, provides its students with an array of opportunities that create the richest possible educational environment. Wellesley prepares women to realize their won highest ambitions and compete in any setting."

Another example related to the environment that fosters women is from Saint Mary's College [2]:

"For over 175 years, Saint Mary's College has been providing women with ground-breaking educational opportunities in an environment in which they can thrive."

Other less common elements are liberal arts, personal development, academic excellence, and so on. In the next section I will discuss why women's colleges prefer some elements mentioned above over the others.

VI. DISCUSSION

Taken together, what do the above findings tell us about the utility of mission statements by women's colleges? How do the three elements, especially leadership and fostering environment, differentiate women's colleges from coeducational colleges? From the findings, there are two issues worth a discussion.

Women Remaining Underrepresented at All Levels

Leadership was the second most frequently cited element in the first three sentences of women's college mission statements. This goes against what Morphew and Hartley [4] found in their analysis of 299 colleges' mission statements. Across three types of academic institutions – baccalaureate, master's, and doctoral, leadership was not a prevailing element at all. Although it was ranked the third most frequently cited element among private doctoral universities, it was not among the three most frequently cited elements of the other two kinds of institutions. It should also be noted that Morphew and Hartley's [4] sampled colleges were coeducational, while the current study included only women's colleges. I argue that although women tend to hold more and more management- and professional-level jobs, they still lag substantially behind men in terms of representation in leadership positions and this is hinted in mission statements of women's colleges. All the sampled mission statements that mentioned leadership in the first three sentences also associated it with other elements, such as workplace, global context, and different fields of the society – politics, science, arts, business, to mention but a few. This backs up the fact that women are still underrepresented in many aspects of the global society. A recent report on the women's leadership also reveals that the leadership gap between men and women in America exists and prevails in various fields [18]. For example, only 12.5 per cent of them are chief officers in Fortune 500 companies; 24 per cent of them are members of Congress. In short, women's colleges possibly wanted to pass on this piece of information, persuading female students that if they come to study with them, they can thrive in the current society, leading and influencing like men do.

Single Gender Setting Benefiting Women's Education

Campus environment including classroom atmosphere fostering women's learning is the third most common element that was frequently cited in the first three sentences of women's college mission statements. This element does not appear in Morphew and Hartley's [4] analysis of the first 2-3 sentences of coeducation colleges' mission statements. This is not surprising for women's colleges to emphasize the supporting environment in which women will immerse. A plethora of studies reveal that women perform better in a single-sex setting [19] [20]. For example, Riggers-Piehl [20] compared data between graduates from all-girls schools and those from coeducational schools and identified over 80 statistically significant differences. Those who graduated from all-girls school had stronger academic skills, greater academic engagement, higher self-confidence, stronger community involvement, higher levels of cultural competency, and increased political engagement. Being free from gender inequality and male dominance or whatever reasons, women being educated in a single-sex setting seem to shine brighter compared to when they are in coeducational colleges as witnessed in a number of empirical studies. To sum up, campus environment and classroom atmosphere clearly differentiate women's colleges from coeducational colleges and this was hinted in half of women's college mission statements in this study.

VII. CONCLUSIONS

From a sample of 30 women's colleges in America, I identified three commonalties that almost all of them share: women's college, leadership, and fostering environment. The latter two elements barely appeared in the first 2-3 sentences of coeducational colleges' mission statements as investigated by previous research, but they prevail in the current study that limits to those of women's colleges only. I argue that leadership is prioritized by women's colleges as women in the

current society are still underrepresented in almost every industry. Moreover, learning atmosphere matters immensely to women and it is hinted in many colleges' mission statements. Further studies might analyze mission statements of women's colleges in other countries especially where women are still underrepresented in the society. Future research might also analyze how all-men colleges assert their identities through mission statements and compare the results with those of the current study.

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Macroeconomic Factors Affect the Electricity Consumption: A Case of ASEAN Countries

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Abstract*— The ASEAN Centre of Energy (ACE) aims to improve electricity accessibility among all 10 members. Electricity consumption is concerned globally, since it is main intermediate input of production in pursuing economic growth in this era Industrial Revolution 5.0. The motivation of this study is to examine the key elements that derives the electricity consumption in all Association of Southeast Asian Nations (ASEAN) countries from year 2000 to 2018. A panel data is utilized to investigate the relationship between urban population, industrial structure and financial development towards electricity consumption (kWh) using linear regression model (Pooled OLS, Random Effect, and Fixed Effect models). Results found that rapid growth of urban population gives a great impact to electricity consumption. Thailand and Vietnam have the highest positive interception using Fixed Effect model estimation. The findings of this research suggests the government to explore new energy sources to meet the increased demand of electricity while balancing the environmental sustainability.

Index Terms*— Electricity Consumption, ASEAN, Panel Data, Urban Population, Industrial Structure, Financial Development.*

I. INTRODUCTION

It is undeniable that the electricity becomes major demand in energy component and exponentially increased over a decade. The transmission of technology urges the consumer to demand more energy while adapting with the expansion of population size and rapid economic expansion. The economy development becomes a driven for nations refashioning the factor input (energy) in order to balance between energy security and sustainability. The accessibility, availability and accessibility of electricity are important keys to guarantee the sustainability of electricity for social, economic and environment indicator [1]. On the same note, ASEAN Centre Energy (ACE) has concerned to face challenges in closing energy access gaps, improving economy recover, and enhancing sustainable energy policy framework [2]. Hence, the government is required to explore more energy source and renewable energy as an alternative in providing a better utility access [3]. Looking inside the majority country which newly industrialization country, Association of Southeast Asian Nations (ASEAN) countries is an interesting case study where dealing with expansion population size and economic growth. International Energy Agency (IEA) also recognizes ASEAN in pursuing Sustainable Development Goals (SDGs), while making energy would access to all population and cleaner to be consumed.

Fig.1. demonstrates the increasing trends of electricity consumption for all ASEAN countries. The largest electricity consumption are among Indonesia, Vietnam, Thailand, Malaysia and Philippines [1]. Indonesia experiences the highest electricity usage associate with a rapid population in ASEAN region around (268.1 mil) [4]. Then, it followed by Vietnam, Thailand and Malaysia (in 2018) reacting to the industrial structure changes in the respective countries. However, what the element that significantly derived the growth of electricity consumption nowadays?

Although many scholars argue that economy growth is essential factor in nation. Examining macroeconomic impact have led to measure consumer welfare and cost of production [5-6]. However, looking to one side only can limit the future uncertainty where we unaware that how does the electricity consumption derived. Thus, this study aims to elaborate the factors attributes to the changes in electricity consumption. In the market, consumer is the main actor in creating an exchange goods and financial flow, where it pumps back into the economy circulation [18].

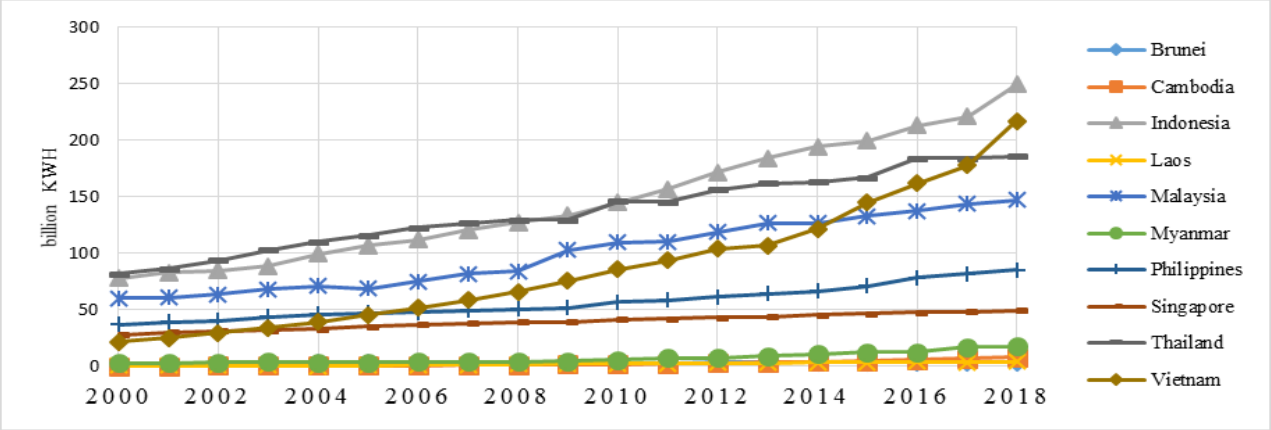
The macroeconomic determinants for electricity demand in Malaysia and proposed that the urbanization may give reduction electricity consumption through the development and encouragement financing the renewable energy, such the installation of rooftop solar PV [7]. Furthermore, the electricity consumption have a strong relationship with the growth of population because it is crucial for the process of

urbanization and improvement in Gross Domestic Product (GDP) [8]. While, the urge of technology and machine equipment such as (lighting, air condition and refrigerator) are the reasons why urban consumer tend to be energy intensity. Keho [9] explained the electricity consumption in urban area gives both positive and negative impact through the theory of ecological modernization. In balancing between the nature and modern lifestyle, the wealthier consumer tend to concern the environment sustainability and prefer advance in technology innovation. Ali [10] criticized the lack of urbanization observation in previous study have lead bias in examining the economic growth. In the case of Kenya, the power distribution have failed to address electricity demand that influenced by the rapid urban growth.

Electricity is source of social good for overall standard of living and economic development. The production of different sectors are basically required more electricity consumption to drive economic activities such as manufacturing, communication, health and transportation. Besides, the supply of energy always links to pursue the economic development as becomes main input in industrial structure and welfare of living. A diversify used of electricity is to match with modern life that with updated technology and applicants (e.g. chiller, machine and computer). The technology advance can be related to the demand more energy for the capital intensity. The structure output in Gross Domestic Product (GDP) consists of Agriculture, Industrial and Services as a key indicator for all countries [4]. The correlation of industrial output and electricity consumption have strong relationship while digesting the role of input factor for all manufacturing production as the capital intensive industrial [11]. However, the type of technology transfer and nature of employment production can contribute to vary in industrial process and affect the level electricity consumption [12].

Meanwhile, the process of urban population and industrial structure is incomplete without the injection of financial development. The ARDL finding indicates the significant of financial development results are greater impact to the electricity consumption in Tunisia case [13]. According to the World Bank, financial development is essential to extend credit in promoting economic growth through capital formation and innovation progress. Topcu [14] support that the capital formation is the basic component of the economic growth. It is an accumulation of physical capital that required in production efficiency. The interaction of urbanization and financial development will help the countries to reduce carbon emission as the countries also realize to moderate in consuming electricity efficiently [15]. Thus, the important of encouraging investment in energy infrastructure aims to upgrade the technology supplying electricity with clean energy.

Figure 1: Electricity Net Consumption (billion kWh)



Source: Energy Information Administration (EIA)

II. DATA AND METHODOLOGY

A. Data and Sample

To examine the relationship between electricity consumption and macroeconomic factors, the explanatory variables, which are urban population, industrial structure and financial development are classified as the key indicators in macroeconomic factors which potentially influence the changes of electricity consumption. The data descriptive are summarized in Table 1. The observation focuess to 10 ASEAN countries, such that Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam. The purpose of selecting these countries is to

compare the variety pattern in developing and industrialize countries. Furthermore, ASEAN countries are selected because of the sharing of similarity in geography, standard of living and income level. Besides, the effort of each members in enhancing energy connectivity to meet the rapid growing economics and offer more sustainable energy pathway becomes the light for this study in understanding the consumption pattern [2]. Thus, data are extracted from Asian Development Bank (ADB) and Energy Information Administration (EIA), employs panel data 10 countries for the period 2000-2018.

Table 1: Data Descriptive

Variables	Symbol	Unit of Definition
Electricity Consumption	EC	Billion kWh
Urban Population	URB	% of total population
Industrial Structure	IND	% of Output GDP
Financial Development	FD	% Gross Capital Formation of GDP Current Prices

B. Multivariate Regression Results

Panel model is utilized because it capable of controlling heterogeneity, more information, reduce multicollinearity [16-17]. Panel data is also known as longitudinal data that comprised multi-dimensional data and measurement over time. This paper conducts the econometric analysis and using STATA software for interpretation. All variables are transformed into natural log beforehand. Using three different estimation models and then verify with robustness model: model 1: Pooled Ordinary Least Square (POLS), model 2: Random Effect (RE), model 3: Fixed Effect – Within Estimation (FE-WE), and model 4: Robustness.

Thus, the equation for all models POLS, FE, RE and Robust are written respectively as follow:

$$EC_1 = \beta_0 + \beta_1 URB_{it} + \beta_2 IND_{it} + \beta_3 FD_{it} + \varepsilon_{it} \quad (1)$$

$$EC_2 = \beta_0 + \beta_{fe_1} URB_{it} + \beta_{fe_2} IND_{it} + \beta_{fe_3} FD_{it} + \varepsilon_{it} \quad (2)$$

$$EC_3 = \beta_0 + \beta_{re_1} URB_{it} + \beta_{re_2} IND_{it} + \beta_{re_3} FD_{it} + \varepsilon_{it} \quad (3)$$

$$EC_4 = \beta_0 + \beta_{robust_{it}} URB_{it} + \beta_2 IND_{it} + \beta_3 FD_{it} + \varepsilon_{it} \quad (4)$$

This study uses two basic tests to decide appropriate estimator among three. The first test is the Breusch-Pagan Lagragian Multiplier (BP-LM) to test is there heteroscedasticity. Second, the study conduct the Hausman test to choose between RE and FE estimator.

III. Results and Discussion

A. Data and Sample

Submit. The descriptive result is shown in Table 2 for full set of ASEAN countries used in this study. The range of Electricity Consumption begins with minimum of 0.382 billion kWh (Combodia) to 1,061 billion kWh (Indonesia). Meanwhile, the mean is 58.101 and the standard deviation is 60.417 indicates that the values for variable electricity consumption data are spread out over a wider range from the mean. This result also explains that the most of countries have higher urban population with average of 48% except for Cambodia, Laos, Myanmar, and Vietnam.

Urban population of these countries indicate a rapid increase over 18 years, except for Singapore that have reached 100% while Philippines and Myanmar are relatively slow in urban population growth as refer to Appendix 1. Meanwhile, the range for industrial structure is between 9.7% (Myanmar in 2000) to 57.7% (Brunei in 2013), indicates that the government is promoting industrial structure but at the same time balancing between agriculture and services structure. The skewness results of industrial structure also supported the argument of most the countries is around 33.48%. On the other hand, the average percentage for financial development is the lowest compared to all variables with 24.17% and standard error of 6.772. Thus, most of countries have limitation in investing in gross capital formation.

Meanwhile, Table 3 shows the correlations between variable, explaining that all variables have positive relationship to Electricity Consumption and the IND have greater correlation with EC, showing that the countries with higher percentage in industrial structure required more energy. Note that, the results also published no multicollinearity issues among all variables.

Table 2: Descriptive Statistics

Symbol	Mean	Std. Dev.	Min	Max	Skewness
EC	58.10	60.417	0.382	248.944	0.952
URB	48.61	24.375	18.586	100.000	0.801
IND	33.48	8.450	9.700	57.770	-0.079
FD	24.17	6.672	6.266	41.067	0.027

Notes: N=10 countries, T=2000-2018

Table 3: Correlations Matrix

	EC	URB	IND	FD
EC	1			
URB	0.1089	1		
IND	0.4979	0.1983	1	
FD	0.3631	0.1353	0.5145	1

B. Multivariate Regression Results

The panel regression result are summarized in Table 3. Meanwhile, **Fig.2. (a,b,c**) show the distribution of each explanatory variable plotted from dependent variable are summarized in **Fig.2. (a,b,c).** The scatter plot explain the relationship between electricity consumption and industrial structure (**Fig.2.b)** and financial development (**Fig.2.c)** are moderately strong positive compared to urban population (**Fig.2.a).** In general, the electricity consumption in each countries tend to increase as all variables increased.

The result from Hausman test confirms that the FE estimator is most appropriate, as the p-value is <5%, reject the null hypothesis: no correlation. Therefore, the study only used FE estimator in discussing the results. The R-square for model 2 (FE-WE) is the highest compared to POLS with 59% and 42% respectively. This shows that the model are strongly relationship between electricity consumption and the explanatory variables. This model also strongly significant as shown in F-test, where 85% strongly explain the dependent variable changes.

Fig.2.a Scatter Plot Relationship between Urban Population (URB) and Electricity Consumption (EC)

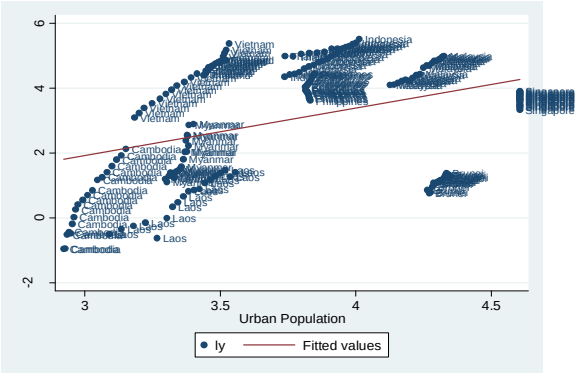
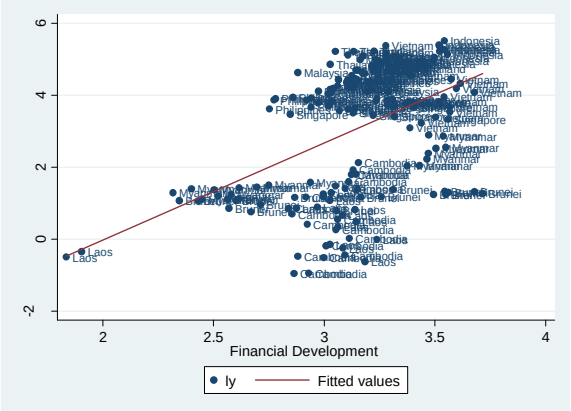


Fig.2.b Scatter Plot Relationship between Industrial Structure (IND) and Electricity Consumption (EC)



Fig.2.c Scatter Plot Relationship between Industrial Structure (IND) and Electricity Consumption (EC)



Therefore, the equation of regression logarithm is expressed based on FE estimator as:

$$EC_{it} = 13.0580 + 3.6524URB_{it} + 0.5040IND_{it} + 0.1944FD_{it} + \varepsilon_{it} \quad \textbf{(5)}$$

The results shows that URB are strongly significant influencing EC (99%), the positive relationship as URB increase by 1% resulted that EC hanged at coefficient 3.642736. URB is the proxy of percentage of urban over population, means that regardless the higher population, the impact of urban is strongly influencing the electricity consumption. The result implies that the country with higher urbanization required more energy to fulfil need in urban. This finding is similar to study done by Al-Mulali [19] in Middle East and North African (MENA) countries and Zhang [20] in China.

Table 4: Estimate Result

	(1) POLS	(2) FE-WE	(3) RE	(4) FE-ROBUST
ln URB	0.893976***	3.652417***	3.422187***	3.652417**
	(0.213)	(0.273)	(0.268)	(1.455)
ln IND	2.548013***	0.504073***	0.518220***	0.504073*
	(0.450)	(0.149)	(0.153)	(0.261)
ln FD	1.082719***	0.194400*	0.214845*	0.194400
	(0.399)	(0.113)	(0.116)	(0.218)
Constant	-12.5613 75***	-13.0580 75***	-12.3145 72***	-13.058075**
	(1.345)	(1.032)	(1.100)	(5.067)
Observations	188	188	188	188
R-squared	0.425259	0.594673		0.594673
Adj. R-squared	0.416	0.567		0.588
F-Test	45.38***	85.58***		9.171***
Wald chi2			238.8	

Note: Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.10, indicate the significant level.

The increase 1% in industrial structure is expected to drive 0.504% changes in the electricity consumption. Thus, it reflects that although the flat curve for industrialization trend among ASEAN countries, the electricity consumption still moving upwards associated with urban population factors. Similar finding from Shahbaz and Lean [13], the growth in industrialization leads more financial services, and at the same time boost electricity consumption in respective country.

The impact of financial development gives less influence compared to the other two variables, where significant value at p<10% and coefficient at 0.1944. However, the government should acknowledge the role financial investment in expanding the technology lead to better energy efficiency. The previous study, the interaction in financial development leads the country to choose high technology innovation and it synchronizes with theory of ecological modernization [21-22]. The transformation of traditional industry implies the major technology adoption while balancing between the environment impact. Diagnostic test also run to confirm that Multicollinearity, Heteroscadisity and Serial Correlation within control.

Table 5: Least Square Dummy Variable (LSDV) for Fixed Effect-Within estimation (FE-WE)

VARIABLES	FE-WE
URB	3.652417***
	(0.273)
IND	0.504073***
	(0.149)
FD	0.194400*
	(0.113)
Cambodia	4.283571***
	(0.369)
Indonesia	5.128283***
	(0.170)
Laos	3.035719***
	(0.284)
Malaysia	3.528178***
	(0.115)
Mynamar	4.413199***
	(0.284)
Philippines	4.667483***
	(0.170)
Singapore	1.489644***
	(0.138)
Thailand	6.092793***
	(0.213)
Vietnam	6.391428***
	(0.287)
Constant	16.970331***
	(1.172)
Observations	188
R-squared	0.967962
Adj. R-squared	0.966
No. of observations	188

Another method to estimate using Fixed Effect is through Least Square Dummy Variable (LSDV) to capture country-specific effects (heterogeneity). Thus, the maximum individual (country) dummies are 9(N-1). Table 5 explains the regression result Country_9 (Thailand) and Country_10 (Vietnam) have the highest positive intercept with 6.0927 and 6.3914 respectively. However, Country_8 (Singapore) has the lowest intercept 1.4894 although the urban population is 100%, this could explain that wealthier population tend to consume less electricity consistent with the theory of ecological modernization and urban transition. The model also explained that using country dummies have greater

R-square with 96.7% independent variable influence the electricity consumption.

CONCLUSION

This study provide new evidence of panel data analysis in examining the impact of urban population, industrial structure, and financial development significantly attribute of electricity consumption. The empirical result explains that the situation of ASEAN countries are derived electricity consumption and it is part of process in economics development to sustain vulnerable living. In addition, the reliance of fossil fuels create environmental concern among industrialized and developing nations on imported oils and it exposes the consumer to volatile fluctuate all the time.

Thus, the finding this study recommends for policy makers to explore new sources of electricity production and ensure the sustainability of energy. It is worrying. As for the case of Myanmar, the country has registered the lowest electricity rate (50%) in 2019. Encouragement of mix renewable energy is expected to give a better energy access and reduce the cost of distribution and transmission in rural area. Learning from the case of Thailand and Vietnam, a strong financing system promote more energy efficiency in household and adoption of the renewable energy technology. Such that, government should encourage more participation of consumer investment in self-generating electricity through rooftop solar PV.

Going forward, there will be more studies identifying the potential of households in reducing the burden of government in producing electricity. It is also suggested to examine relationship of urban population and renewable energy in order to see acceptance of new technology among the society. Another question is whether the effect of financial development could ease the growth of renewable energy in future?

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APPENDIX

Appendix 1. Descriptive Statistics

	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max
	BRUNEI				CAMBODIA				INDONESIA				LAOS				MALAYSIA			
EC	3.12	0.53	2.12	3.95	2.65	2.40	0.38	8.40	145.66	52.52	77.67	248.94	2.22	1.31	0.54	4.37	99.53	30.72	60.33	147.21
URB	74.55	2.00	71.16	77.63	20.41	1.57	18.59	23.39	48.91	4.19	42.00	55.33	29.19	3.88	21.98	35.00	69.59	4.41	62.00	75.60
IND	34.73	12.54	17.52	57.77	26.58	3.36	23.03	34.43	44.51	2.28	40.76	48.06	28.15	5.92	18.27	35.59	42.68	3.29	38.19	47.42
FD	23.09	10.52	10.44	41.07	20.35	2.13	17.10	23.45	29.24	5.03	21.40	35.07	19.85	5.36	6.27	25.47	23.87	2.08	17.84	26.87
	MYANMAR				PHILIPPINES				SINGAPORE				THAILAND				VIETNAM			
EC	7.46	4.79	3.04	18.02	56.76	14.51	37.32	85.51	39.67	6.62	27.85	49.49	136.47	33.04	82.11	185.85	87.47	56.14	22.04	216.99
URB	28.56	0.88	27.03	30.00	45.92	0.44	45.33	46.91	100.00	0.00	100.00	100.00	39.45	7.98	31.13	52.29	29.55	3.43	24.12	34.22
IND	24.53	9.26	9.70	36.74	32.41	1.70	30.13	34.98	28.97	3.38	24.79	34.82	34.66	1.45	32.28	37.12	37.65	1.05	36.37	40.21
FD	21.88	9.69	10.15	34.81	20.18	3.06	15.68	27.15	26.34	3.93	17.22	35.17	24.87	2.66	20.64	30.42	31.58	4.38	26.53	39.57

Appendix 2. Correlation Matrix

	EC	URB	IND	FD	EC	URB	IND	FD	EC	URB	IND	FD	EC	URB	IND	FD	EC	URB	IND	FD
	BRUNEI				CAMBODIA				INDONESIA				LAOS				MALAYSIA			
EC	1				1				1				1				1			
URB	0.9232	1			0.9798	1			0.9811	1			0.9408	1			0.9774	1		
IND	0.5966	0.4515	1		0.8081	0.7259	1		-0.7445	-0.6705	1		0.8527	0.9217	1		-0.9333	-0.8781	1	
FD	0.7306	0.8513	0.4125	1	0.591	0.5367	0.7746	1	0.9047	0.9417	-0.6053	1	0.2834	0.5209	0.4077	1	0.2537	0.1436	-0.2747	1
	MYANMAR				PHILIPPINES				SINGAPORE				THAILAND				VIETNAM			
EC	1				1				1				1				1			
URB	0.8409	1			0.6307	1			.	.			0.9481	1			0.9481	1		
IND	0.8589	0.9864	1		-0.9239	-0.3526	1		-0.9331	.	1		-0.352	-0.5473	1		-0.352	-0.5473	1	
FD	0.8754	0.9263	0.9641	1	0.835	0.7378	-0.643	1	0.1297	.	-0.2772	1	-0.012	-0.1173	0.4674	1	-0.012	-0.1173	0.4674	1

Comparative Studies of Green Bonds Investment in the United States and Europe: Responding to Social Concern on Climate Change

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Abstract—
The oil and gas industry's responsibilities regarding climate change are still debated on both sides of the Atlantic. Despite this debate, two-thirds of carbon dioxide emissions into the atmosphere are released from oil and gas related industries. In order to keep rising temperature down to Paris climate targets, global oil companies face numerous difficulties because they require larger investments to develop new technologies for a broader energy mix. Studies show that climate change is the biggest risk in terms of impacts on the global economy. Realizing the truth, some countries have already managed to break the link between economic growth and carbon dioxide emissions, but more decisive policies are needed to break the link by capable economies such as the United States and Europe. In that context, this paper explores the recent green investment trends in the US and Europe to see how public opinion influences green investment to reduce climate change risks. This study focuses on green bond investment, describing its progress and variation from 2016 to 2019 in the United States and Europe. I use Excel spreadsheets to give graphical and numerical output in descriptive analysis. In conclusion, I found that public opinion on climate change significantly influenced green bond investment in both the US and Europe.

Key Words: *Carbon dioxide emissions, Climate change, Green bond, Oil and gas, Social concern*

Introduction

Global societies are now recognised that climate change is a major threat affect their communities, environmental and economies. The direct damage cost to health alone is estimated to be between 204 billion dollars per year by 2030 (WHO 2018). World Health Organisation states that the human activities

– particularly burning fossil fuel have released carbon dioxide and other greenhouse gases that causes climate change. Fifty percent of global risks are related to greenhouse gas emissions and climate change (Boffo and Patalano 2020). The oil and gas sector is considered a major contributor to global warming and climate change, although it has played a great role in the growth of all major economies and provided great benefits to society and business (Frumkin, Hess and Vindigni, 2009). The oil and gas industry and economic growth have been unconditionally linked since industrialisation begin (Heede 2014; Soewarno, Tjahjadi and Firdausi, 2018). Now the world is recognising climate change as the darker side of fossil fuels. Climate change poses great risks to societies and business by limiting economic growth in contrast to traditional economic growth model. To restrict future climate change risks to the Paris climate agreement is technically feasible human society require to decouple growth from carbon emissions (Schroder and Strom, 2020). The biggest barrier to avoiding the climate change risks is the present prevalent socioeconomic system based on high carbon economic growth and elevated level of resource consumption (Malm, 2016; McNeill and Engelke, 2016).

Climate stabilisation requires a paradigm shift of hydrocarbon energy, production, and transportation infrastructures, a social concern on oil and gas consumption and larger scale public investment describes (Schroder and Strom, 2020). Studies have identified climate change as the biggest risk in terms of impacts to the world economy and as the widest ranging market failure ever seen, because climate change is an economic externality, meaning that whoever causes emissions does not pay the full costs of the damage (Rehn, 2020). Realising this truth and the public concern about climate change caused by oil and gas industry emissions, some countries have already managed to weaken the link between economic growth and emissions, but more decisive policies are needed to break the link in most economies. The solution suggested is to finance renewable energy instead of financing non-renewable energy originating from coal, oil, and gas. The transition to delink this relationship requires a lot of capital, as demonstrated by Rehn. The estimated amount accumulates yearly, and the action plan is regulation which aims to provide incentives through green financing to fill the accumulating gap. The objective of regulation is to ease accumulating financial risks by lowering bank capital loans to the environmentally damaging business sector of coal, oil, and gas. This process promotes renewable energy investments that reverse climate change risks. Against this backdrop, this paper explores the effectiveness of green finance in the United States and Europe and find whether public attitudes about renewable energy influence the mitigation of climate change risks. It is a comparative study of the effectiveness of green finance trends and public attitudes to mitigate climate change risks caused by oil and gas industry emissions, which measures renewables investment trends and variations in the United States and Europe. Therefore, the main consideration is environmental performance related to climate change, although social performance is equally

important to financial performance and is a considerable part of green finance. Empirical evidence from literature reviews and our time-series descriptive analysis shows that public attitudes to renewables significantly positively influence green finance objectives by way of greater investment in green bonds which mitigate climate change impacts.

The next section of this paper discusses the wide range of literature on green finance, then attention is narrowed to the green bond by describing its progress and variations from 2016 to 2020 in the United States and Europe. Then I present a time-series graph based on secondary data obtained from the World Economic Forum (WEF), University of London, and Union Credit bank with the time-series descriptive analysis method. The Methods and Results section discusses the overall progress of the green bond as one of the effective tools of the green finance platform to mitigate climate change risks. This section includes interpretation of data with time-series analysis displaying the underlying influence of public attitudes on climate change issues on both sides of the Atlantic. In this study, I assume that social reality, which is human experience and its social contexts in the US and Europe, is best studied via social-historic trends. Therefore, I use an interpretive paradigm because this research assumes green finance trends are based on social reality and on an understanding of environmental degradation as a human experience in social contexts that influence government policy on environmentally sustainable investment. Therefore, it is best studied within its socio-historic background by interpretation of subjective meanings influencing both US and European investment in green bonds, which is a proxy indicator of the effectiveness of public attitudes to alter public policy on climate change risks regarding renewable investments to reduce carbon dioxide emissions. The paper concludes with the limitations involved.

Literature Review

Global societies now understand that the major threat to societies and economies is climate change and recognised the carbon dioxide emissions need to drop to avoid future climate change risks. The Intergovernmental Panel on Climate Change (IPCC) has revealed that emissions from oil and gas are the major cause of climate change. It further states that 89% carbon dioxide emissions came from oil and gas industry in 2018 (Client Earth,2018). Forbes 2020 reveals that oil and gas sector still supply 84% of world energy according to their analysis on British Petroleum (BP)'s annual review. It is well documented that oil and gas sector has played a great role in the growth of all major economics and provided great benefits to business and society (Frumkin, Hess and Vindigni, 2009; Soewarno, Tjahjadi and Firdausi, 2018). As a result, the sector has emitted great amounts of carbon dioxides and other greenhouse gases into the planetary environment, exceeding its carrying capacity, and the very same world economies which have benefited ignore the carbon accumulated in the atmosphere over the past centuries (Rehn, 2019). Now the time has come to reverse the damage caused by use of non-renewable fossil fuels. Offsetting emitted carbon means replacing non-

renewable with renewable energy, mainly from solar and wind power. Investment in renewables is one of the main solutions to mitigate and adapt to climate change risks, as described by Boffo and Patalano (2020). However, technology and tax incentives alone are not adequate to accomplish this, as demonstrated by Rehn (2019), but they play a moderating role. This idea was focused on at the 21st Paris Climate Summit in 2015, which considered the growing risks of climate change and adopted an agreement to keep global temperature rises well below 2^0C, preferably below 1.5^0C (IEA, 2016, Pearce, 2016, Schroder and Strom, 2020). Accordingly, the United Nations has outlined Sustainable Development Goals. Achieving the objectives of the Paris Agreement will require substantial public and private investments, mainly in the energy sector (Boffo and Patalano, 2020). It is estimated that around USD 6.9 trillion of annual infrastructure investment is required before 2030 to meet climate change related development needs globally. This a great global challenge for all world economies and studies show that USD 4 trillion is required in emerging and developing economies, with a global annual gap of USD 2.5-3 trillion currently (Boffo and Patalano, 2020). To bridge this gap, it is suggested that co-operative efforts are required from both public and private sectors. Mobilising private capital helps this process by financing renewable energy projects. The predominant financial instruments in green finance are debt and equity. Again, these are not without financial risks. The Global Financial Crisis drove climate policy discussion into the political context for a decade, as described by Rehn (2020) and he stated green finance should not repeat that same mistake but should ensure financial stability. Financial stability can be achieved by using the triple bottom-line of people, profit, and plant. Accordingly, a firm's responsibility lies with stakeholders instead of shareholders in the sense that it should focus on stakeholder interests instead of only maximising shareholder interests. Globally, this approach has never been incorporated into business strategy, but the 2015 Paris climate change agreement paved the way for solutions to meet the new reality. This has become a trend and now people are seeking to work more sustainably and buy more sustainably. Studies reveal that the US economy grew by 10% while also dropping carbon dioxide emissions from its energy sector by 9.5% (Phelan, 2017, Schroder and Strom, 2020). This decoupling of energy sector emissions and economic sector trends further confirms the studies by Shuai et al. (2017) of 160 countries, by Messinis (2018) of OECD countries, and by Apergis, Christou, and Gupta (2017) of the United States. The International Energy Agency (IEA) also stressed a similar view based on past data that showed global carbon emissions can remain stable even with the decoupling of economic growth from fossil fuel use.

These views are plausible if more countries switch to renewable energy by investing in green finance anticipating the Paris agreement. In line with view, firms integrate sustainable development goals into their strategies not only to attract and retain staff, but also to encourage all stakeholders investing in green financing to meet the Paris

climate agreement. At this point it is worthwhile to briefly discuss a few definitions of green finance, because it represents a wider frame than just green investment. In 2019, Landberg, Massa and Pogkas defined green finance as money pouring into any kind of asset labelled green or sustainable. Terzo (2020) defines green finance as a combination of the world of finance and business with environmentally friendly behaviour. Green finance can happen differently depending on the participants and it may be led by financial incentives, a desire to preserve the planet, or a combination of both. Chen (2019) demonstrated that green finance may fit well under the umbrella of what is traditionally referred to as socially responsible investing (SRI), even though it is fundamentally much more specific. Hohne *et al.* (2011) describe green finance as a wider term that can refer to financial investments in sustainable development projects and initiatives, environmental products, or policies that encourage development of a more sustainable economy. Zadek and Flynn (2013) define green finance as representing a wider lens than green investment. It includes capital cost, but unlike green investment it also includes operational costs such as project preparation and land costs. Price Waterhouse Cooper Consultants (2013) define green finance as financial products and services which consider environmental factors throughout lending decision-making, monitoring, and risk management to promote environmentally responsible investment in low carbon technologies, industries, and business. Bohnke *et al*. (2015) define green finance as comprising all forms of investment or lending that consider environmental impact and enhancement of sustainable development agenda.

Majority of these definitions have some link to conventional SRI definitions, and it is hard to find a clear definition of green finance, as described by Lindenberg in 2014. This may create some illusions about the terms sustainability, sustainable development, green investment, green finance, and other climate finance terminology. Some use green investment and green finance interchangeably. There are many interpretations of green finance, most commonly around renewable energy and energy efficiency, pollution prevention and control, biodiversity and conservation, circular economy initiatives, and sustainable use of natural resources and land (Fleming, 2020). This type of green finance loan is used to promote the proliferation of renewable energy, for instance, a lender could finance the development of solar or wind power generation. Some argue that fossil fuel companies are not interested in green finance projects, but evidence shows that oil and gas companies have already committed to reduce their emissions by investing in renewable energy projects in the United States and Europe. Green finance refers to any form of finance which integrates environmental, social, and governance (ESG) factors. It consists of numerous variant financial instruments such as bonds, loans, revolving credit facilities, and more. Green finance is a broad topic with multiple stakeholders. In the case of bonds, there are different types of bonds available in green financing, such as green bonds, social bonds, sustainability-linked bonds, and green loans (Landberg,

Massa and Pogkas, 2019). Oil and gas companies traditionally been skeptical about renewables niches now moving beyond their core oil and gas business (Shojaeddini *et al*., 2019). It seems to be beginning to invest in renewables more heavily, whether the growth continuous remains to be seen described by Shojaeddini *et al*., 2019.

Empirical studies reveal that several developments have contributed to the growth of green financing, firstly social demand by non-investors (Boffo and Patalano 2020). It reflects a transition that shift the traditional shareholder model to a broader stakeholder model challenging firms to serve stakeholders' interests and extend the growth of corporate social responsibility in business and government entities. Secondly, greater demands by social investors related to good corporate practices, and thirdly demands by green finance investors for more sustainability perspectives aligning with risk management aspects, social concern and values. These distinctive developments positively influenced green financing (Boffo and Patalano, 2020). Considering these facts, I have taken a third driver, social values, of green bond investment trends and will explore the relationship of public attitudes to renewable energy and green bond investment trends in the United States and Europe, to compare the progress of green finance initiatives. In the next section, I will discuss green bonds and investment trends in the US and Europe.

Accordingly, this paper discusses green finance, a broad topic, in the single area of green bonds and explores comparative studies of public attitudes on climate change and the effectiveness of their influence on green bond investments in the US and Europe from 2016 to 2019. Investing in green bonds may have led to reduced carbon dioxide emissions by oil and gas companies during the same period. The outcome will tell us about the relationship between public attitudes on climate change and green bond investment trends in the US and Europe, comparatively. It also reflects on the players who are dominating the green horizon and proactively leading the way to reduce carbon dioxide emissions and mitigate climate change risks.

Green bonds

Green bonds reside to a broader classification of bonds known as climate line-up bonds. This is a

Kind of bond meant to use to finance low carbon infrastructure (Wang, 2018). There are two types of green bonds—green labelled bonds and green unlabelled bonds. Green labelled bonds are used to finance green assets by their issuers while green unlabelled bonds finance green projects and low carbon economy (Wang, 2018). Today green bonds are used by both public and private sector corporations globally to finance green projects (Paulson, 2016). IRENA 2020 report claims that current global $ 95 million cost investment plan to decarbonization-path reaching $110 trillion will creates enormous socioeconomic benefits including 52 million of renewable energy related jobs in 2050 while increasing a global GDP by 2.4% higher than under the current fossil fuel scenario (Vitter, 2020). Studies of green financing show that green finance seeks to generate a positive social return that is measurable and reportable alongside the financial return (OECD, 2019). Landberg,

Massa and Pogkas (2019) describe green finance as now growing, with sustainable asserts reaching USD 14 trillion in Europe and USD 12 trillion in the USA in 2018. This shows that the private sector has taken climate change risks seriously, even drawing pension funds to back new renewable projects by electricity power developers which offer steady yields. This led to the creation of green bonds and green loans. Additionally, more funds have been diverted by the oil and gas sector to accommodate renewables and have a wider product mix of oil, gas with solar and wind energy, as illustrated by Landberg, Massa and Pogkas (2019). This energy transition can lead to achieving Paris sustainable development goals to mitigate climate change risks caused by the oil and gas industry. Studies show that Europe is the largest contributor of sustainable bonds, with 57% market share, while the USA reached 22% in 2020 (Ramel and Michaelsen, 2020).

Considering this development, this paper explores the effectiveness of green bond growth in the United States and Europe. The green bond market started in 2007 and has seen continuous market growth to date (Rooney,2019).

The World Bank defines a green bond as a debt security issued to raise capital specifically to support climate-related or environmental projects. This definition is well aligned to the economic theory that the policy should be to replace wrong incentives with better incentives. In that sense the green bond, also known as climate bond, is a solution to mitigate climate change risks posed by the oil and gas sector which encourages the sector to diversify their product portfolio to accommodate renewable energy such as solar and wind power. Green bonds are issued to raise finance for climate change solutions and are issued in numerous types, such as government and government-backed entities, financial institutions, and non-financial corporates (OECD, 2019). In the 2019 financial system, regulatory and investor responses to climate change contributed to annual green debt finance exceeding USD 200 to USD 250 billion (Climate Bond Initiatives, 2020). Figure 1 of the methods and results section of this paper clearly shows the green bond growth trend globally. In line with this development and increasing public concern about climate change, both social and sustainability bonds have grown steadily, which is not explored in this study.

Methods and Results

To identify the effectiveness of green bonds, we have obtained secondary data from UniCredit Bank, Munich about the green bond supply and social concern about climate change during the period from 2016 to 2019. We also obtained data from social surveys conducted by the University of London within the same period to investigate the relationship between public attitudes on renewable investment and green bond investment in the US and Europe. Globally, green bond issues have been increasing steadily. Figure 1 shows global trends in green bond issues since 2016. This time-series data and graph are based on the secondary data obtained from World Economic Forum (WEF) publications. In 2016, green bond value reached USD 82 billion and then steadily grew to USD 257.7 billion in 2019 (Lo Giudice, 2017). Public

interest in climate bond investment growth grew not only in the US and Europe, but also in other developing nations as well. The green bond market has risen because the green bond simultaneously achieves financial returns as well as positive effects against climate change impacts on society (Lo Giudice, 2017). The climate bond market predominantly allocates finance to renewable energy and environmental protection projects and is viewed as niche. Figure 1 shows that this niche market has been upscaled yearly with growth of public concerns on climate change risks. Berensmann *et al.* 2017 illustrated that a scale-up of green investment will not only mitigate climate change, but it will also foster economic growth and job creation. This paper focuses on this trend in the United States and Europe. Figure 2 shows public attitudes on renewable energy. They in turn may influence the green bond supply in the US and Europe which is shown in Figure 4. Figure 3 data has taken from google trends from 2016 to 2019 and the graph shows that European concern about investments in green finance while Americans are less convinced. However, green bond issues in the United States and Europe increased between 2016 and 2019. Figure 2 shows that trends in public attitudes on climate change by way of accepting renewables clearly mirror trends in green bond supply shown in Figure 4. Although this association is high and entails a positive relationship between public attitudes and green bond investment, there are several variables omitted here, as indicated in the limitations section of this paper. The other point in this paper is that growing public concern about renewable energy means growing public concern about climate change risks. Figure 5 shows further evidence of growth in green bond volumes in Euro and US currency yearly between 2016 and 2019.

In contrast to the US, the European green bond investment trend has been robust over the last four years, due to continuous European government encouragement of climate finance, as opposed to US speculation on climate change.

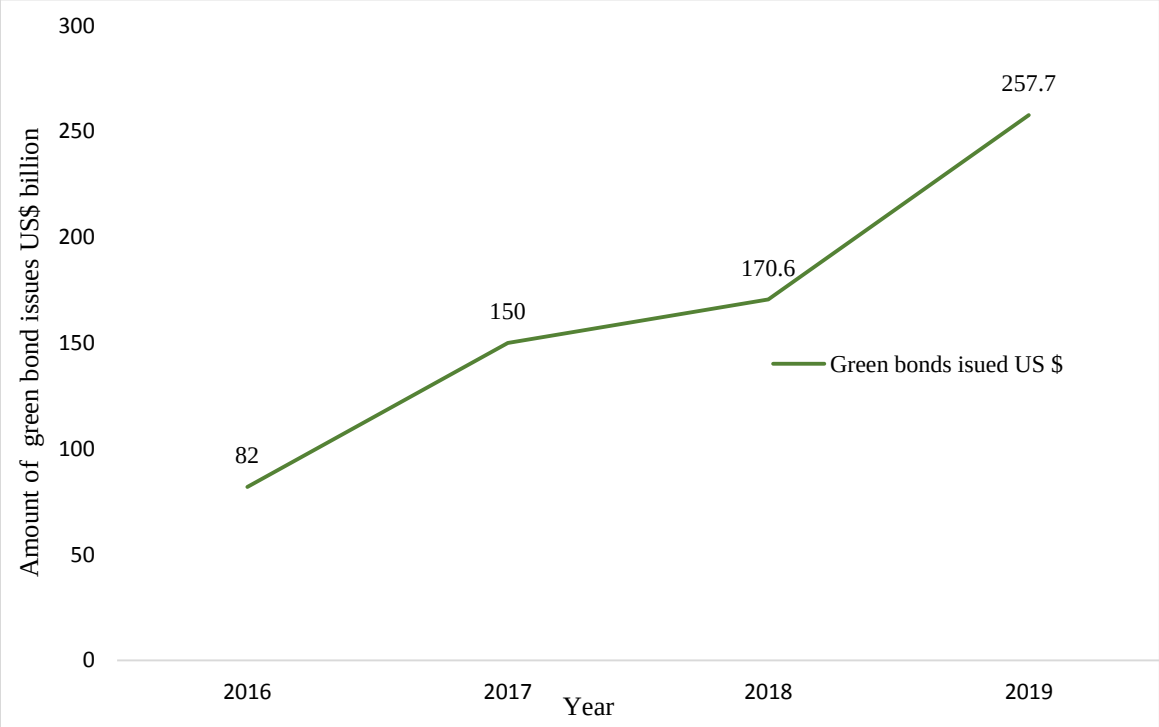
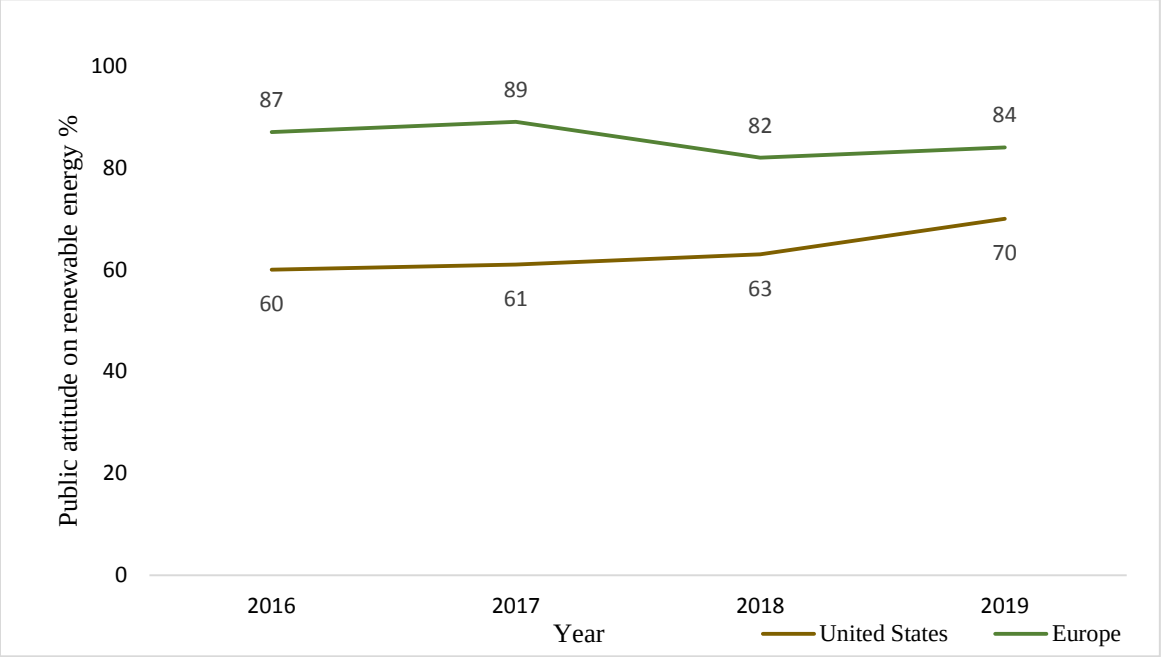


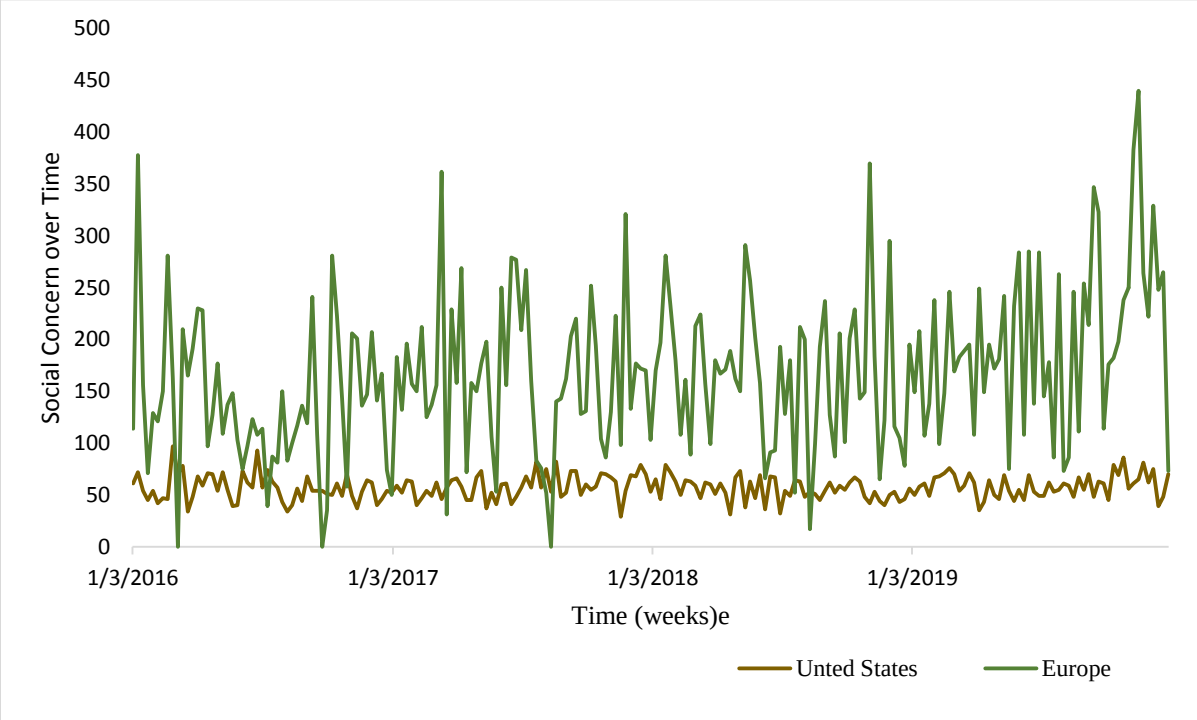
Figure 1. Value of global green bond issues 2016 to 2019

Source: WEF 2020



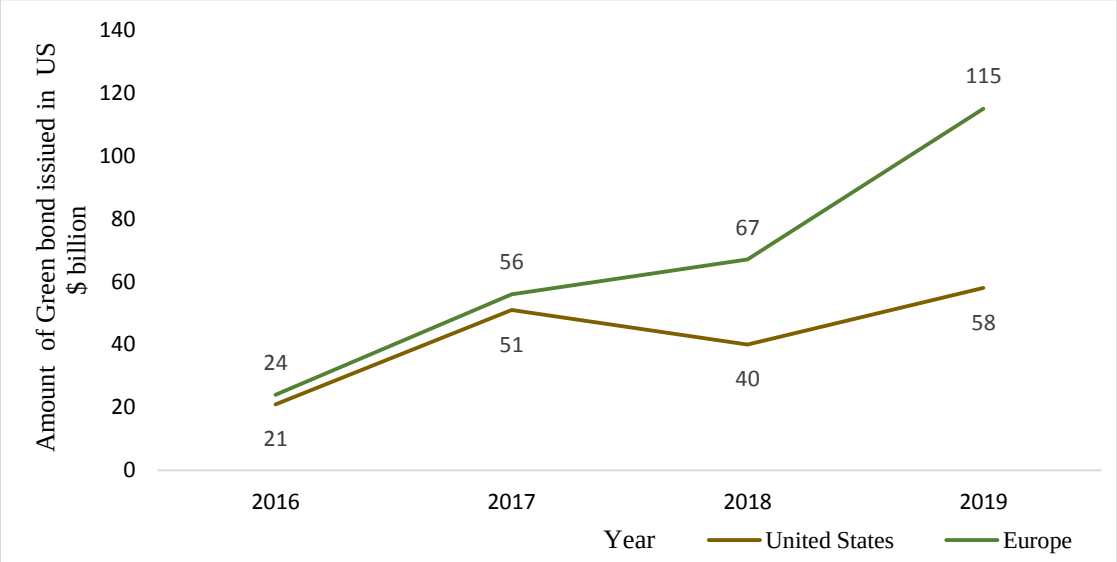
Source: University of London, European Commission

Figure 2. Public attitudes on renewable energy sources in the United States and Europe



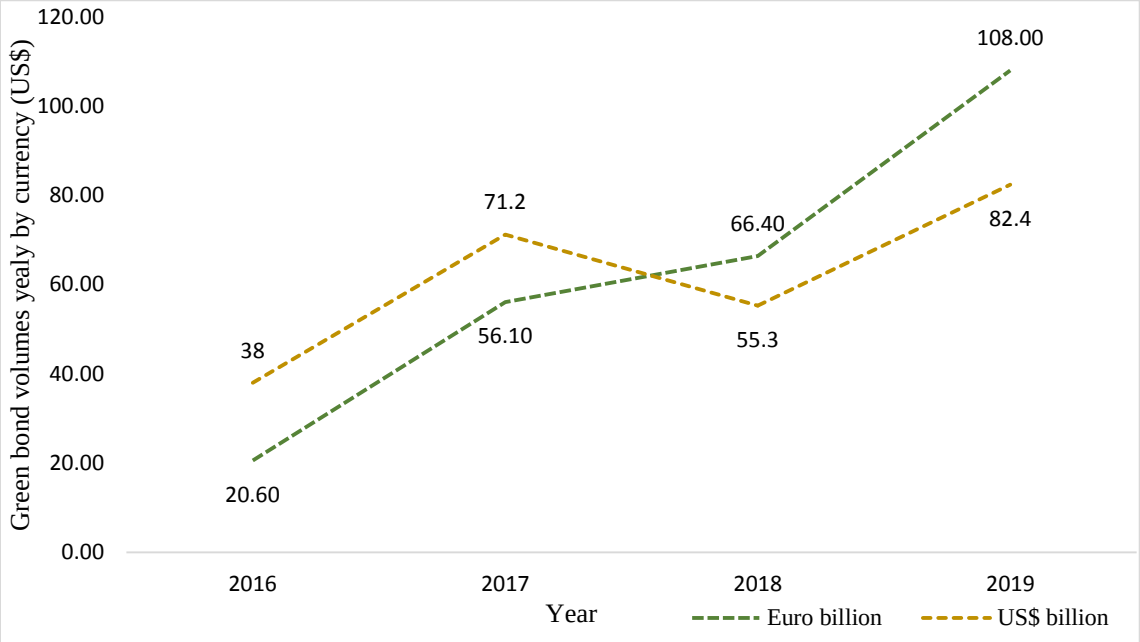
Source: Google 2020

Figure 3. Green Finance Trends 2016-2019 in the United States and Europe



Source: UniCredit Bank, Munich

Figure 4. Green bond supply in US$ billions in the United States and Europe 2016-2019



Source: OECD 2019

Figure 5. Green bond volumes yearly by currency (USD) in millions 2016-2019

Discussion and Conclusion

At a time of social concern spikes are high world policy regimes shifted towards low carbon emissions as well as oil and gas energy prices. This paradigm shift attracts financial instruments to advance the energy transition by accommodating renewables. Empirical studies show that in the US green bond market operates and regulate on self-regulatory mechanism in contrast to the European green bond market (Wang, 2018). As such, American responses towards climate bonds were less effective comparatively. In this paper, I analyse this trend which is the central objective to measure the effectiveness of social concern about climate change and its influence on green bonds investment in the United States and Europe. To achieve this objective and ensure high quality data, I obtained secondary data from independent research bodies and industry publications. These two streams of data enabled identification of the influence of public attitudes to renewable energy on investment in green bonds to alleviate climate change risks. The increase in green bonds constitutes a proxy indicator of environmental performance to mitigate climate change risks. Time-series analysis shows that higher levels of green bond investment are possibly related to higher levels of public concern about climate change risks. The results suggest that in the United States public attitude on climate change is lower than in Europe, and in turn green bond investment is less in the United States than in Europe. Further, the results suggest that public investment in green bonds could be a strong predictor of the degree of public influence to mitigate climate change risks. The results also show that overall Europe has become more publicly aware of climate change risks and that Europeans are playing a leading role in mitigating climate change risks, in contrast to the United Sates. These societal trends mirror a growing recognition of the importance of global investment in climate bonds.

Lastly, the outcome of the results largely consistence with past findings of Brody *et al.* (2008), Kellstedt *et al*. (2008) that more public concern on renewables is more likely influence higher environmental performance. In conclusion, I found that public attitudes on climate change significantly influence green bond investment in both the United States and Europe. However, this study has several limitations, mainly that I considered only green bond investments, but social and sustainability bond investments are also influenced by public attitude. Furthermore, social media platforms also play a moderating role in influencing green bond investments, which is fruitful ground for future research work.

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Relationship between Covid-19 pandemic and firm's performance towards unemployment across countries

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Abstract*— As a result of the consequences of the Covid-19 pandemic, stock market players issued their quick response on how coronavirus has affected the performance of firms whereby most of the affected sectors are airlines, tourism, hotels, transportation and many more. This has led to an increase in the unemployment rate worldwide. Considering this global issue, this study was aimed at investigating the relationship between unemployment with a number of confirmed cases of Covid-19 and firms' performance as well as the controlling factors across seven (7) countries. Secondary data were utilized with the data obtained from Bloomberg and Worldometers website. The dataset for dependent as proxy by unemployment rate and explanatory variables proxies by COVID-19 and firm's performance were then tested using multivariate regression approach. Finally, from the study, it is suggested that an increase in the number of Covid-19 cases will affect business performance as controlled by macroeconomics factors which lead to a significant positive relationship between the unemployment rates in all the countries of this study. This factor may affect the government's decision to implement the Movement Control Order (MCO), for instance by the Malaysian Government. By Covid-19 vaccine development in the market nowadays, hopefully, the spread can be mitigated and firms' performance can return to normalcy to avoid increasing rate of unemployment in the world.

Index Terms—COVID-19; Firm's Performance; Unemployment, Robust Method, Countries

I. INTRODUCTION

According to the World Health Organization (WHO), by 10 March 2020, Covid-19 had led to more than 110,000 confirmed infections and 4,015 deaths in 110 countries and the numbers are increasing rapidly. Due to this extreme and drastic increase in the figure of confirmed infections and death cases, the WHO declared the Covid-19 as a global pandemic. Subsequent to the WHO's declaration, the cumulative pattern of the number of confirmed Covid-19 cases was shown statistically by Worldometers website on the 2nd of March 2021. There are 115,282,226 confirmed cases (see Figure 1), 91,100,130 recovered cases and 2,560,305 deaths in 221 countries. The Covid-19 pandemic was first identified in China and was reported in Malaysia on the 25th of January 2020. According to Malaysiakini news, based on data from the Ministry of Health Malaysia, the number of Covid-19 cases remained relatively low until a spike in cases was recorded in March 2020. However, within afew weeks thereafter, Malaysia became the country with the highest cumulative number of confirmed Covid-19 infections in South-East Asia at the end of March 2020 and within the month of April 2020.

Beginning from March 15, Malaysia saw a significant increase in active cases. The Prime Minister of Malaysia held a live nationwide telecast on March 16, 2020, at 10:00 PM to announce the decision of the federal government to implement the Movement Control Order (MCO). With the MCO put in place since March 18, 2020, all citizens were prohibited from leaving the country and foreigners also prohibited from entering the country.

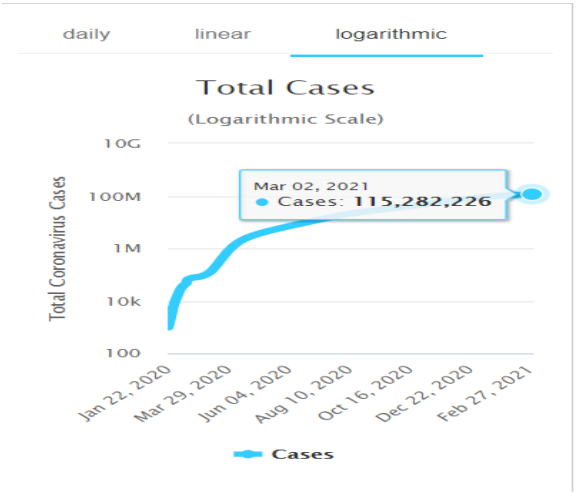


Figure 1: Total number of Covid-19 cases in the world from 22nd of January 2020 to 2nd of March 2021.
Sources: https://www.worldometers.info/coronavirus/. Date retrieved on 3rd March 2021.

In a statement to StarBiz, Bursa Malaysia said the Covid-19 pandemic has evolved from being a health issue to potentially becoming a source of serious economic challenge. In early March, the FBM KLCI along with global markets went through a roller coaster ride, with most markets registering a sharp decline of between 20 to 30% following the first fallout from the Covid-19 virus. As a result of the consequences of the Covid-19 pandemic, stock market players issued their quick response on how this virus has affected the business performance whereby most of the affected sectors are airlines, tourism, hotels, transportation and many more. However, some of the companies performed better or were still active in the trading at Bursa during this situation because the products offered received high demands such as medicines and pharmaceuticals, and medical companies, utility, information technology services, food and services, gas and water and so on. However, the majority of the stock market players issued their quick response towards their trading performance that affected the stock price performance for listed companies and for non-listed companies. Many small, medium and some large-scale companies had to shut down their businesses which led to the retrenchment of many workers that increased the level of unemployment.

With the MCO put in place since March 18, 2020, all citizens have been prohibited from leaving the country and foreigners also prohibited from entering the country. As a consequence of the Covid-19 pandemic, stock market players issued their quick response on how the coronavirus has affected their business performances whereby most of the affected sectors are airlines, tourism, hotels, transportation and many more. However, stock market regulators are still encouraging the stock market to remain open and they believe that investors can diversify their portfolios towards risk and opportunities. This means that some of the sectors are underperformed but some of them are outperformed.

As claimed by [2], Bursa Malaysia and other emerging stock markets will likely remain a laggard until June 2020, partly due to the outbreak of the Covid-19. The regional markets would be extremely weighed down if the deadly Covid-19 is prolonged. Foreign investors had taken a cautious stance on Bursa particularly, amid the negative headlines emanating from China. Bursa's benchmark FTSE Bursa Malaysia KLCI (FBM KLCI) index ended mixed yesterday amid profit-taking in heavyweights and bargain hunting in small-cap stocks as global markets continued to face uncertainties. The index fell 1.17 points to 1,550.47 from Tuesday's close of 1,551.64[2].

In an interdependent and interconnected world, domestic confidence is not usually enough. A well run and profitable company's performance that is stable for human capital and benefit will have to adjust accordingly based on the external environments. For instance, stocks on Malaysia's stock exchange of Bursa Malaysia tumbled during the outbreak as investors sold securities due to the expected economic impact caused by the Covid-19, which along with other emerging stock markets was predicted to remain until June 2020. With China as Malaysia's largest trading partner, the country's economy was directly impacted and economic experts warned that the prolonged virus outbreak could hit hard the country's gross domestic product (GDP).

The country's economic growth may fall below 4% if the coronavirus outbreak worsens and powerhouses like China and the US fail to halt the slides of their own economies. Countries across the world are already calculating the billions of losses due to the Covid-19 which is the worst flu outbreak in 18 years. Trade-reliant economies like South Korea, Singapore and Malaysia would be severely affected. The three countries had already felt the impact of the US-China trade war. China is Malaysia's largest trading partner and the cooling of the second-largest economy in the world would definitely affect the country. The spread of the Covid-19 hits exports, factory output and tourism. A Bloomberg poll of 33 economists estimated Malaysia's average growth of 4.2% with individual forecasts ranging between 3.7 and 4.7%. One analyst expects that the coronavirus will hive 0.4% of Malaysia's GDP [4].

Furthermore, China daily on the 19th of February, 2020 reported that Malaysia which also largely relied on tourism and being among the top destinations for Chinese tourists, suffered a stark decline of tourist arrival from Mainland China due to the outbreak with the tourism industry hit the hardest;

costing around RM3.37 billion losses until March. Malaysian states are highly dependent on the tourism sector and is the point for Mainland Chinese visitors such as Johor [5] Malacca [6], Penang [7]. These states are among the heavily affected states with hotel bookings and food stalls reported to experience large loss in businesses. These subsequently forced the states to shift their focus to the Southeast Asian market due to the decline of Mainland Chinese tourists [8][9].

Regardless of the large losses incurred by tourism businesses, a number of Malaysians have voiced their concerns over the spread of the virus and urging a ban on travellers from China to the country with some 149,000 in support of the call [10][11]. Aberdeen Standard Investments of Malaysia also predicted the country's currency, the Malaysian ringgit (MYR), to weaken further throughout the local and worldwide outbreak which exacerbate further by unstable local political scenes in the country [12].

With respect to the issues discussed in this introduction part, this study was motivated to investigate the relationship between the unemployment rate with a number of confirmed cases of the Covid-19 pandemic and business firm's performance controlled by GDP growth, inflation rate and interest rate across selected seven countries.

Next, the paper is organized as follows. In the next section, discussion about the issues that arise concerning unemployment and firm's performance, affected by the number of confirmed cases of Covid-19 abroad. The succeeding section explains the data and methodology applied, followed by the results and discussion in the succeeding section. The last section highlights the policy implications of the employment issues which concludes the paper.

II. LITERATURE REVIEW

Vast literature reported on firms' performance by many proxies for instance profitability, sales, firm size, leverage level, total asset, shareholdings equity and others. In this study, the firm's performance is limited only to the discussion on the capital structure which consists of the market value of the common share and debt to their proposition with book value of total assets. This performance can be derived as a firm value of the company that is basically based on how companies create their financing structure by issuing equity and bonds to optimize the capital structure for business survival. The survival of the companies especially during the Covid-19 pandemic, with robust macroeconomics situations, is important for a secured job and human capital development. An unstable firm's performance sometimes forces the employees to resign or quit from the job.

Zakaria Firano and Filali Adib Fatine (2020) mentioned that the Covid-19 pandemic could affect all the world economies and the reaction is to strengthen each country on the planet, even to varying degrees. They also highlighted that nowadays, amid a health crisis, countries are thinking of reducing containment constraints in order to seek the optimal circulation of resources and limit the obstacles to the circulation of money. Thus, all countries are seeking to optimise the balance between health and economic well-being, which is quite difficult under the current conditions. Overall, their results show that economic conditions tend to deteriorate, especially as socio-economic relations become closer.

Besides the socio-economic relations, both microeconomic and macroeconomic factors affect the business performance; it is imperative that businesses are aware of these factors in order to reduce the impact of these on future cash flows and profitability. Microeconomic factors such as demand and factors of production are controllable and the effect of which can easily be anticipated and controlled. However, macroeconomic variables especially the unemployment rates, are beyond the control of an organization, therefore, there is the need for businesses to predict the heterogeneous effect of these macroeconomic variables on future corporate performances (Broadstock, Shu, and Xu, 2011).

Therefore, the 2020 Covid-19 crisis have spurred research on firms' corporate finance decisions and their macroeconomic implications (Brunnermeier and Krishnamurthy, 2020). A negative correlation was found between the market price of capital and inflation. It does this in an endogenous growth environment where human capital is a major driver of growth by considering the firm value as a proxy by Tobin's Q in the q-inflation-growth relationship. The importance of this is that there is an emerging literature that shows how monetary policy impacts the stock market boom-bust through sticky wages and inflation targeting (Christiano et al, 2007), known as the effect of monetary policy on the stock market via human capital-driven growth. These arguments and findings were supported by Parantap, Max & Joseph (2009) where Tobin's Q with physical adjustment cost is applied to understand the long-run relationship between inflation, Q and human capital utilization.

Furthermore, based on a pervasive empirical finding from the US economy, inflation is negatively correlated with the normalized market price of capital (Tobin's Q) and growth. A dynamic stochastic general equilibrium model of endogenous growth is developed to explain these stylized facts. In this model, human capital is the principal driver of self-sustained growth. Long run comparative statics analysis suggests that inflation diverts scarce time resource to leisure which lowers human capital utilization. This impacts growth adversely and modulates capital adjustment cost downward resulting in a

decline in Tobin's Q. For the short run, a Tobins'Q effect of inflation on growth weakens the negative association between inflation and Q (Parantap, Max & Joseph, 2009).

Next, Chinedu Francis Egbunike (2018) studied the relationship between macroeconomic factors, firm characteristics and financial performance and reported that there is no significant effect for interest rate and exchange rate, but a significant effect for inflation rate and GDP growth rate on return on assets. Besides, the firm characteristics showed that firm size, leverage and liquidity were significant. A similar finding reported by Tanaka, et. al (2020) reveals three main findings. Firstly, firms' GDP forecasts are associated with their employment, investment, and output growth in the subsequent year. Secondly, over-optimistic and pessimistic forecast errors predict lower profitability and productivity, which is consistent with the model of input choice under uncertainty. Thirdly, the larger and more cyclical firms make forecasts that are closer to professionals, presumably reflecting their higher return to accuracy. Therefore, these results postulated that the impact of the macroeconomic factors towards business performance especially on the firm's value is important to consider in investigating the relationship of the unemployment rate in the country.

In Vietnam, the impact of the Covid-19 lockdown on stock market performance was found to have an adverse impact on the daily increasing number of Covid-19 cases on stock returns whereby the financial sector was hit the hardest, on the Vietnam stock market during the Covid-19 outbreak [14]. In China, transportation, mining, electricity and heating, and environment industries have been adversely affected by the pandemic. However, manufacturing, information technology, education and health-care industries have been resilient to the pandemic [13].

In the United States, the Covid-19 outbreak showed a big impact on energy prices and stock market performance besides weakening in crude oil price. They concluded that the Covid-19 has a significant impact on the global economy since their study covers crude oil price and three US stock indexes: DJI, S&P 500, and NASDAQ Composite [15].

Further analysis of the US economy revealed that changes in share prices exposed how different industries are affected by Covid-19 on real-time/daily basis. Stock market data does have a few limitations, however, when it comes to measuring the impact of the crisis [16]. Notably, it does not include small firms, firms that are not publicly listed, the third sector or the public sector, which might be affected quite differently. For example, many public sector services have seen an increase in demand. In addition, many of these firms operate internationally, so changes in their share prices will represent the effects not only on the UK economy but also in other markets that they operate in.

The spread of Covid-19, and international measures to contain it, are having a major impact on economic activity in the UK. In this observation, how this impact has varied across industries is described using data on share prices of firms listed on the London Stock Exchange. Also described is, how well-targeted government support for workers and companies is, in light of this. This follows [17] who described the impact on the US and China by looking at changes in share prices. The industries that have been hit the hardest include tourism and leisure (which includes air travel), fossil fuels production and distribution, insurance, retailers (excluding food and drug retailers) and some large manufacturing industries. At the other end of the spectrum, some industries have outperformed the market, including food and drug manufacturers and retailers, utilities, high tech manufacturing and tobacco. Unsurprisingly, firms in medical and biotech research have also outperformed the market (falling by 16% relative to the overall fall of 35%). Instead, big changes in share prices occurred from the end of February, in the days following Italy's introduction of a lockdown in Lombardy, with very little change in prices in the period before. The exceptions to this are the gas and water, automotive and parts, and fossil fuel production sectors, where changes in share prices took place steadily over the three-month period, possibly driven by other factors.

The tourism and leisure (excluding air travel) sector stands out as being one of the hardest-hit industries (in terms of seeing a large reduction in relative share price) and having a relatively high share of protection. As the shutdown continues, more capital-intensive firms that are not able to substantially reduce their costs may start to struggle more; this may lead to pressure for further government support. There are likely to be long-run costs to the economy if these firms were forced to shut down and the skills and experience of their workers were lost [17].

These series of studies that focus on stock prices highlighted that the market value of the equity reported dynamic performance that affected the firm's value and capital structure of the companies. Even though some of the business sectors are still outperformed, however, most of the companies are affected by this Covid-19 pandemic that affected the economic factors in the country which offer no new job and perform retrenchment program on employees. According to Daskalakis, Balios & Dalla (2017), the global financial crisis has triggered capital structure dynamic determination regarding how "quickly" companies tend to adjust their capital structure to their long-term targets, in different macroeconomic states. They also found clear differentiations of the effects and the contribution of the firm-specific and the macroeconomic variables between

short-term debt and long-term debt ratios, when macroeconomic states change.

In the perspectives of the private sector, Mokhova & Zinecker (2014) indicated the influence of macroeconomic factors on corporate capital structure in different European countries. The global financial crisis and the European debt crisis show the significance of the country financial stability, the efficiency of fiscal and monetary policies, and their impact on the private sector. Besides, the macroeconomic policies of a country affect the financial performances of the companies and their future sustainable development and growth. They also put stress on the human capital initiates by managers who make their financial decisions according to the source of financing and capital structure based on the company's advantages and disadvantages, i.e. its internal characteristics, and doubtless on the macroeconomic conditions and country specifics, i.e. external factors. The findings show the significance of macroeconomic factors in the decision-making process regarding capital structure and the source of financing.

In relation to the firms' performance and economic factors, (Bastos, Nakamura & Basso, 2009; Bokpin, 2009; Dincergok & Yalciner, 2011; Camara, 2012) found that there is a negative and significant relationship between corporate capital structure and GDP (as well as GDP growth). The boost in economy and consequently growth in GDP lead to an increase in companies' profits. According to pecking order theory, companies will prefer internal sources as retained earnings then debt. Other than GDP, the next economic factor needed to be considered is the inflation rate. With respect to this proxy, there are mixed results reported. For instance, inflation has a strong and positive influence on the capital structure (Hanousek & Shamshur, 2011); inflation does not influence the capital structure (Bastos, Nakamura & Basso, 2009); inflation haz relationship with market leverage, but no effect on the book leverage (Frank & Goyal, 2009). Camara (2012) showed that macroeconomic conditions including inflation rate have a significant relationship with capital structure.

In addition, some authors have investigated the influence of different macroeconomic indexes on the corporate capital structure. For instance, Duan, Chik bin. & Liu (2012) found out that the product market index, legal system index, non-state economic structure index and financial market index are negatively correlated with debt ratio. Moreover, the companies choose short-term loans, if the degree of government intervention is stronger, the efficiency of the product market is higher, and the legal system is robust. And the preferred source of financing is long-term loans if the proportion of the non-state economy is greater and the development of financial sector is higher.

Also focused on capital structure, Kottaridi & Siourounis (2007) witnessed a significant change in the structure of capital flows to developed as well as developing countries. They provided empirical evidence that a bad liquidity shock increases, investors switch to safer assets but with a pecking order: they seem to damp equities for more bonds and more direct investments. Sadiq, et. al (2020) also claimed that debt in capital structure and firms' performance has a great novelty in reducing market imperfections that improve firms' values. Besides, they confirmed a U-shaped relationship between debt and Tobin's Q in mediation with the country's per capita income. Pervaiz Ahmed Memon et al. (2015) applied pooled OLS and fixed effect regression as estimation techniques and found out that profitability, tangibility, and size of the firm appear to significantly affect debt level across different proxies and different estimation techniques. Interest rate and inflation are significant determinants of debt in fixed effect estimation. Previous study also confirmed the existence of firm specific influence on firm performance.

Based on business globalization and the fierce competition for market share among the companies, it is fundamental for a firm to maintain a high firm performance (Ruhomaun, Saeedi & Nagavhi (2019). They highlighted that firm performance is considered as an important indicator for investors while making investment decisions since it reflects a firm's overall financial health. Hence, firm performance is influenced by economic factors, macro and microeconomic variables such as exchange rate, interest rate, financial distress and derivatives usage. The study reveals that both interest rate and financial distress have a negative and significant effect on firm performance.

Based on the sample size across countries, Sahin (2018) studied the non-financial companies within the fragile five countries (Turkey, Brazil, South Africa, India and Indonesia) during the period of 2004-2013. The factors affecting capital structure were assessed along with micro and macro variables for these countries. The micro variables (firm specific) included in the model were the debt taken in the previous year, firm size, growth, industry debt average, and the tangibility and profitability ratio; GDP growth, inflation and exchange rate change were included in the model as macroeconomic variables. A statistically significant relationship was discovered between the GDP growth rate and the debt ratio only for Turkey for the full period (2004-2013) and for India for the period between 2006 and 2013. On the other hand, a positive relationship was found between the inflation rate and the debt ratio for the general (2004-2013) and post-crisis models. In addition to that, results reported a negative relationship between price to book value and leverage ratio for Turkey and South Africa. However, a positive and statistically significant relationship between

expected inflation rate and leverage ratio was found for the model with all countries.

The financing decision of a firm is influenced by both internal (firm specific) and external (macroeconomic) factors. However, the impact of macroeconomic variables on capital structure decisions focused on firm value might be affected by the unemployment rate and is somewhat under-researched particularly in the context of developing countries (Rehman, 2016). However, there are other external determinants of a corporate capital structure which has been studied, e.g; public debt, ban credit, unemployment rate, Tobins' Q, ROA, firm value, capital structure and etc. (Korajczyk & Levy, 2003; Bastos, Nakamura & Basso, 2009; Bokpin, 2009; Sett & Sarkhel, 2010; Duan, Chik & Liu, 2012; Camara, 2012, Jinji, Zhang & Haruna, 2019; Sadiq,et. al., 2020; Tanaka, et. al, 2020; Yang & Gan, 2021.

The latest study on the Covid-19 vaccine done by Shrotri, Swinnen, Kampmann & Parker (2021) hopefully can treat and eliminate the pandemic for spreading and recovery processes by mitigating the issue in increasing unemployment rate at the global level. Here, non-pharmaceutical interventions have been the mainstay of epidemic control to date, vaccination is likely to constitute the definitive, long-term defence strategy against SARS-CoV-2 morbidity, mortality, and transmission, offering the best hope of a return to normal life.

III. Data and Methodology

Secondary data are utilized for; unemployment rate as a dependent variable and the number of confirmed cases of Covid-19 and firms' performance as a proxy by firm value as an independent variable and macroeconomics factors like GDP growth, inflation rate and interest rate as controlling variables. The study period started from January 15, 2020, up to January 15, 2021, limited only to the Covid-19 pandemic spread issue. The data were gathered from Bloomberg for all listed companies in seven countries under five main sectors (Consumer Discretionary, energy, industrial, information technology and real estate) for data availability since most of the listed firms still do not published the current data in year 2020 (see Table 1). Therefore, the unbalanced panel data are reported. With regards to the Covid-19, the data were obtained from Worldometers website.

Table 1: Sample Size of the Study

Country	Freq	%	Cum.
Hong Kong	203	10.42	10.42
Japan	1358	69.68	80.09
Malaysia	238	12.21	92.3
Philippines	5	0.26	92.56
Singapore	129	6.62	99.18
Thailand	13	0.67	99.85
Vietnam	3	0.15	100

Next, the multiple regression for such relationship is represented by model equation, ordinary least square (OLS) as follows:

$$UEmployit = \alpha + COVID\text{-}19it + FV + ECO + \varepsilon it \ldots\ldots \text{ OLS (1)}$$

where UEmploy stands for the unemployment rate, the time period is denoted by the subscript t (t = 1 year, 2020 which refers to the year Covid-19 emerged); sectors are denoted by the subscript i (I = 1….5,N = 1…7 countries, 1…1949 companies); Covid-19 refers to the number of confirmed cases; FV refers to the firms' performance as proxy by firm value; ECO represents macroeconomic factors which consisted of GDP growth, inflation rate and interest rate; α represents intercept error term.

IV. Results and Discussion

The study considered seven countries with 1949 listed companies traded in each country with the total number of confirmed covid-19 cases respectively as shown in figure 2. The highest number of Covid-19 is from Philippines and the lowest is Hong Kong based on study period. From these statistics we can see that is there any relationship between this number of Covid-19 cases with the unemployment rate as shown in figure 3. By comparing direct approach using these bar graph, the Philippines also shown at the highest unemployment rate with 10.43 percent. Thus, it was significant for this study to further research and validate the dataset by using statistical approach, OLS.

The data are normal distributed as reported by skewness and kurtosis statistics whereby the data are in between +/- 3.0. These results are supported by the pairwise correlation as shown in table 3, there are no multicollinearity issue among the variables reported by the F value is less than 0.7. With respect to the mean, minimum and maximum value for all the proxies (see table 2), the mean for the unemployment across country is 3.31 percent shows quite far different with the highest record at 10.43 percent for year 2020 whereas at minimum of 2 percent. As for firms' performance, mean value shows at 1.09 percent with minimum and maximum at 0.09 and 11.72 respectively. This implies that some of the companies in the country are still performed better even though during Covid-19 pandemic. With regards to the macroeconomic performance, the conditions are not stable for year 2020 as postulated by mean value of negative GDP growth and inflation rate as well as very low interest rate

which can't help to boost the economy at global.

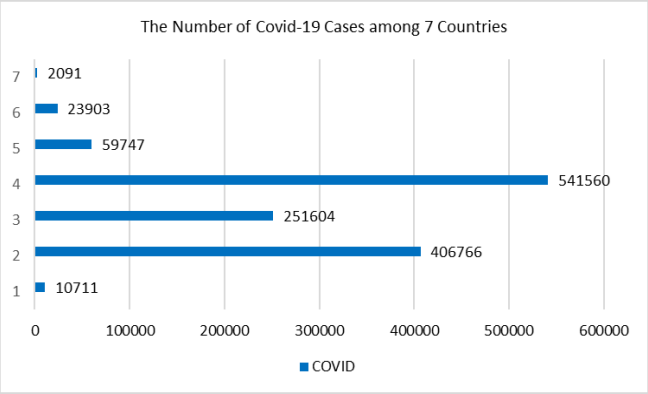


Figure 2: The Number of Covid-19 Cases among 7 Countries; where 1= Hong Kong; 2= Japan; 3= Malaysia; 4= Philippines; 5= Singapore; 6= Thailand; 7 = Vietnam.

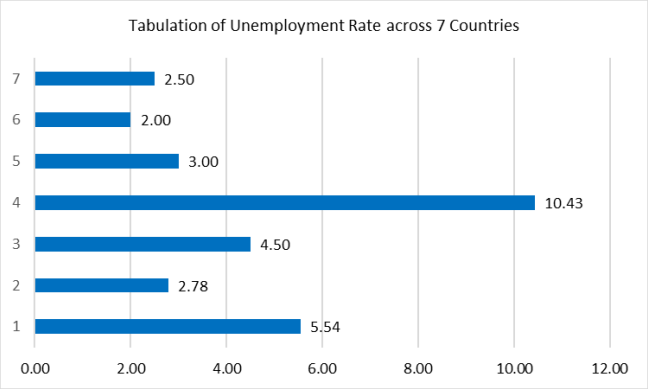


Figure 3: The Unemployment Rate across Countries

Table 2: Descriptive Statistics and Normality Tests Results

Variable	Obs	Mean	Std Dev	Min	Max	Skewness	Kurtosis
Country	1,949	2.26	0.96	1	7	0.00	0.00
Sector	1,949	2.81	1.32	1	5	0.02	0.00
Unemploy	1,949	3.31	1.02	2	10.43	0.00	0.00
Firm Value	1,949	1.09	0.86	0.09	11.72	0.00	0.00
Covid	1,949	320,768	145,395	2091	541,560	0.00	0.34
GDP	1,949	-5.48	0.49	-9.5	2.91	0.00	0.00
Inflation	1,949	-0.11	0.44	1.14	3.18	0.01	0.00
Interest Rate	1,949	0.29	0.61	-0.03	4	0.00	0.00

Table 3: Pairwise Correlation Results

Variable	Country	Sector	Unemploy	FV	Covid	GDP	Inflation	Interest
Country	1.00							
Sector	0.06	1.00						
Unemploy	-0.16	0.03	1.00					
Firm Value	0.05	0.02	0.07	1.00				
Covid	0.27	0.05	-0.69	0.07	1.00			
GDP	-0.03	-0.01	-0.66	0.05	0.48	1.00		
Inflation	-0.39	-0.08	-0.08	0.05	0.05	0.21	1.00	
Interest	0.39	0.08	0.65	-0.08	-0.47	-0.29	-0.63	1.00

Next, based on the results presented in Table 4, unbalanced panel data were applied for the tests indicate an unequal number of observations, N which covered the pooled ordinary least square (OLS) model. R-square is reported for the model estimation of regression in order to investigate the percentage of relationship from the number of Covid-19 cases and firm value as explanatory variation in explaining the level of unemployment rate controlled by macroeconomics factors in each country. The R-square and adjusted R-square results also revealed a very satisfactory and strongly acceptable value for almost 87.5 percent. This implies that unemployment rate has about 87.5 percent affected by the Covid-19 cases since the p value has shown a significant at 99 percent confident level at significant controlling variables to all. However, the performance of companies shows insignificant result as similar as industry sector since this pandemic spread worldwide.

Table 4: Multivariate Regression Results

Variable	Coeff	t	P
Intercept	-2.386	-19.25	0.000
Sector	-0.002	-0.39	0.696
Firm Value	0.005	0.48	0.633
Covid	-0.000	-8.85	0.000
GDP	-1.033	-52.54	0.000
Inflation	1.237	63.89	0.000
Interest	1.354	63.89	0.000
R Sq.	87.46%		
Adj. R Sq.	87.42%		
F-Value	294.169***		

V. DISCUSSION AND CONCLUSION

Covid-19 vaccine recently discover hopefully can treat and eliminate the pandemic for spreading and recovery processes by mitigating the issue in increasing unemployment rate at the global level. The finding of this study concludes that Covid-19 have a relationship towards unemployment in seven countries especially Philippines followed by Hong Kong and Malaysia. Since this study also consider firm value as a firms' performance proxy, therefore the study provides a practical outcome to a government and stock market player in across countries as well as stakeholders particularly for the future strategize planning while facing any pandemic event that most probably will happen again and again. Besides, the findings benefited stakeholders who will be able to provide justifications, by considering the risk and opportunities (possible gain in abnormal returns) in the trading market, and who will be able to forecast the movement of share price by identifying its significant reaction to certain sectors, and who

will be able to make recommendations and provide inputs to government on risks and opportunities in business performance. Thus, this study can provide a reference to stakeholders on the significant association between unemployment rate and COVID-19 pandemic spreads and firms' performance by considering the different macroeconomics factors states.

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Making Ends Meet: A Survey on Adapting Flexible Learning amidst the COVID-19 Pandemic of the BSIT Program in Davao del Norte State College

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ABSTRACT

The COVID-19 pandemic unwrapped several challenges, most especially in the Academic Sector. To protect students, schools all world-wide have shifted from face-to-face instruction to flexible learning. This study narrates the Davao del Norte State College's sudden transition to flexible learning, particularly the BSIT Program, and how they make ends meet.

INTRODUCTION

The COVID-19 global pandemic posed significant challenges and created changes in our daily undertakings [1][2]. Suddenly, we need to distance ourselves from other people, avoid mass gathering, and wear protective gear and clothing. Everyone is taken aback.

One of the sectors directly affected by the pandemic is the education sector [3]. Since schools and classrooms are among the crowded places and most of the students are minors who are considered as either vulnerable or super spreader, schools were forced to close all over the world [4]. As a result, schools have shifted from face-to-face instruction to flexible learning [4][5].

Flexible learning is a term used to describe the design and delivery of programs, courses, and lessons in which the students may choose to complete either on-campus or off-campus[6][1]. This approach provides a customized learning environment wherein students may choose the time, place, and pace of learning.

For instance, the Zhejiang University (ZJU) in East China is one of the first to respond to the needs to conduct distance learning amidst the pandemic[7]. The university has launched the course hub "Learning at ZJU", which offers more than 5,000 courses to undergraduate and graduate programs.

In the Philippines, the Department of Education's K to 12 curricula is committed to achieving the Education for All 2015. The program aims to prepare senior high school graduates for the advanced educational potential to contribute to the competitive workforce of the nation [8][9][10]. However, due to the pandemic, the Philippine government mandated all schools, including primary to tertiary, to shift to distant learning and comply with the quarantine measures[11].

As a prevailing educational tool, ICT can facilitate the conversion of school education. Hence, harnessing ICT continues be a significant challenge to educators [12].

Given these setbacks, this study was conducted to analyze the adaptability of shifting the learning modalities from the practiced face-to-face interaction in delivering education to the adoption of flexible learning of the BSIT students of Davao del Norte State College for the first semester of the school year 2020-2021.

METHODOLOGY

Planning

The academic unit of the College surveyed to gauge the readiness of the students to the adoption of flexible learning. Hence, the survey questionnaire was deployed during the enrolment of the semester. Questions related to year level, geographical distribution, basic provisions for flexible learning, modalities of learning, delivery of instructions utilized, devices/gadgets used for flexible learning, and the students' internet connectivity were included in the survey questionnaire using the Google Form application.

Data Collection and Analysis

The online survey questionnaire through Google form was deployed on online platforms such as emails and Facebook groups, and group chats for the data collection. The respondents included the BSIT students enrolled in the first semester of the academic year 2020 - 2021. The students are instructed to personally answer the survey questionnaire. The collected data are organized, and frequency distribution analysis was used to show the frequency of occurrences of the field or outcome being considered.

RESULTS

An online survey was conducted to the 345 students currently enrolled for the Bachelor of Science in Information Technology program for the First Semester, AY 2020 – 2021. Table 1 shows the distribution of the participants of the survey.

The majority of the students surveyed are residents of the province of Davao del Norte. However, other students surveyed are Davao City residents and the nearby provinces such as Davao de Oro, Agusan del Norte, and Agusan del Sur. Table 2 shows the distribution of respondents based on their geographic location.

DNSC is located at Panabo City, Davao del Norte, and caters to students from the Davao del Norte and different parts of the Davao region and even outside the Davao region. The students residing in Panabo City account for most of the students in the Davao del Norte location, with

179 from the 301 respondents. The rest are from neighboring cities and municipalities. Outside Davao del Norte, respondents reside in Davao City, Davao de Oro, and Agusan del Sur.

Table 1. Year Level Responses

Year Level	*Responses*
First	98
Second	93
Third	102
Fourth	52

Table 2. Students Geographical Distribution

Location	**Responses**
Davao del Norte	301
Outside Davao del Norte	44

Table 3 summarizes the responses for the provisions for flexible learning. Few of the BSIT students do not have access to electricity, which only shows that some of the DNSC students belong to society's marginalized sectors and have no access to essential commodities. Table 3 also indicates that the provisions on television, radio, and internet access are not available to students, which poses significant challenges for communications and information dissemination. Television is the primary provision for flexible learning that students can access, followed by Internet Access and radio. Since television is an expensive option for the delivery of instructions and requires ample time to prepare, DNSC did not use the mass media for the First Semester, AY 2020 – 2021.

Table 3. Provisions for Flexible Learning

Basic Provisions	**Responses**	
	Yes	***No***
Electricity	338	7
Television	286	59
Radio	152	193
Internet Access	198	147

When surveyed on the delivery of instruction they practiced during the semester, most of the students experienced a combination of modular and online learning, while some responded to modular and online learning. Table 4 summarizes the modality of learning adopted by the BSIT students during the semester.

The educational course packs distributed to students are formatted and divided into modules/modular setups. In context, in modular modality, the instructors have developed instructional materials (modules) and sent a softcopy of the modules to the students using various media. Simultaneously, online learning refers to the lesson delivery through video discussion and online meetings and conferences.

Table 4. Modality of Learning Adapted

Modality of Learning	**Responses**
Modular	126
Combination of Modular and Online Learning	196
Online Learning	13

The instructors utilized several approaches and platforms to reach the students. The varied platforms mode of the semester's instructions includes DNSC Learning Management System (DNSC LMS), Facebook Page and Messenger, Edmodo, Google Classroom, Discord, Youtube,

and email. Table 5 summarizes the medium used by the instructors to contact and deliver instructions to students. The DNSC-LMS serves as the central repository of the instructional materials, including the course packs.

Table 5. Delivery of Instruction Utilized

Delivery of Instruction	Responses
DNSC LMS	282
Facebook (Group/Page, Messenger)	284
Google Classroom	176
Edmodo	60
Discord	95
Youtube	9
Email	125

Table 6 shows the primary devices used for learning in the new normal setup. The majority of the students use smartphones to access their lessons while others use their personal computers like laptops. However, three respondents answered that they do not have access to devices for learning; they cope with their lessons by asynchronously answering modules and borrowing devices from relatives and/or neighbors.

Although the College opted to deliver instructions through the official DNSC LMS and other online services, several students reported that they experienced poor to intermittent internet connection. Table 7 shows the internet connectivity availability of the BSIT students. It can be noted that 83.47% experience poor or no internet connectivity. Table 8 shows that students with no direct access to the internet in their homes availed the PisoNet Vending Machine or internet cafes. This requires them to seek other places for internet signals instead of staying at home for quarantine. Table 8 summarizes the student's method to access their lessons given the different types of services available for internet access.

Table 6. Devices Used for Learning

Devices Used	Responses
Smartphone	179
Laptop	14
None	3

Table 7. Internet Connectivity Experienced by the DNSC BSIT students

Quality of Internet Connectivity	Responses
Good	57
Poor	275
No internet connectivity	13

Table 8. Type of internet connectivity

Connection Type	Responses
Internet Café	80
Wireless Home Broadband	30
Home Fiber	59
Prepaid/Postpaid Mobile Data	202
None	13

CONCLUSION

Given the results, it can be noted that the study "Making Ends Meet: A Survey on Adapting Flexible Learning amidst the COVID-19 Pandemic", brought about the sudden transition to flexible learning in higher education had uncovered challenges not just to faculty but most especially to the students. Problems with basic

internet access and internet connectivity pose risks in not coping with the new normal setting in the teaching-learning process. But being caught in the immediate transition from the face to face delivery to flexible learning also brings out the resiliency in the management, faculty and students in coping with the new normal. True enough, there are still many challenges to surmount but this new normal also provide an opportunity to further explore alternative ways in carrying out learning amidst the crisis.

RECOMMENDATION

It is recommended that the Davao del Norte State College actively use the digital platforms in the delivery of education and continue in its goal of strengthening the ICT infrastructure of the College and strengthening the ICT capabilities of the working force. Further analysis of the sudden transition should be continually conducted to improve the student-teacher interaction and make access to flexible learning available to all the students, especially the marginalized.

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Prediction of Student's Academic Performance Using Machine Learning- Systematic Review

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***Abstract*-- Education has a crucial role to play in the life of a student. During your choice of area, several options before the student are offered. Student skills, ability, family history, the education nature are the key factors in choosing a career track and these factors serve as preparation in the classification training system. Incremental learning techniques manage the past expertise to take future choices and update system. Throughout our work, we use machine learning method or identification models for predicting pupil's academic success and which can be apply in data mining for education. We want to forecast the effects of such predictive model tests in our research report. During this study, we will also explore how such machine learning's can contribute to improving an education system by considering the various factors surrounding precision, specificity, quality, frequency etc. I have also mentioned several techniques which were used by so many authors for classifying the students' performance.**

Keywords: Classification, Prediction, Machine Learning, SVM, Decision Tree, Naive Bayes, Logistic Regression, LMT

1. Introduction

Education has a crucial role to play in the life of a student. During your choice of area, several options Before the student are offered. Student skills, ability, family history, the education nature are the key factors in choosing a career track and these factors serve as preparation in the classification training system. Kotsiantis et al [9] was one of very first studies to thesis the usage of machine learning methods in remote prediction. It absolutely was a visionary as well as the pilot of many such studies which contributed most considerably to our research. Even though ML algorithms have previously used in number of environments, these methods have most likely been utilized for the very first time in a scientific context. During articles review study of mine, to determine research issues along with purposes, I'd love to point out

I went from great deal of research articles and web apps statistics. Not many of article's reviewed details are actually as follows.

In this very first research report the author used the methodology of feature filtering to reduce the amount of highlights in the wider point range. The writer used a tool in this article to remove unrelated, noisy or repetitive information. Different category algorithms and ranker algorithms were used in the article writer to look for the most contributed point and delete the least suitable point. This would help speed up the data mining process as well as boost its working parameters, such as analytical precision [10]. The author used 3 different approaches in this research paper. Study of cross tabulation, selecting attributes and matching data on inequalities. The filtering technique for highlights is used to pick certain items which are heavily modified dependent variables. Any available characteristic is taken into account by the classification tree. This method points out every potential gap that can exist at every node with each indicator that can be modified.

If a student is frequent in the class and can make a positive comment in the class test and mid-term, so in the final examination[1], he/she can do well. But what if a student holds a decent mid-term mark and has bad attendance or class exam results! Or what will happen in a situation where he/she has an exceptional potential to present, but can not succeed in the main test! No one is flawless on this planet," it is said, and it is also applicable to a student." Yet we agree that, due to our personal skills, we will improve our perfection to the highest level. According to the students' previous event report, we will mainly expect the outcome of the final exam in this review. In Machine Learning, it is possible to implement the KNN, Support Vector Machine, Decision Tree Classifier, Random Forest Classifier, Gradient Boosting Classifier, Linear Discriminant Analysis algorithm to determine the potential outcome of any current student attributes.

2. LITERATURE REVIEW

Vrushali A.Sungar et al [5] proposed that Education play important role in student's lifes. So, educational records increased highly, lots of data of student,s performance and very difficult to measure the performance of students Using machine learning techniques like incremental learning handle the past data that predict the future prediction, decision tree-cart and SVM. Data mining techniques like KDD process used to data should be in standard form and predict the future performance. Performance of CART is 93.24 and SVM is 92.33.

Havan Agrawal et al [4] proposed in this paper also predict the student's performance but the identification of high-risk students and characteristics that affect studental performance. Using artificial intelligence, Machine learning technique like naïve bayes and decision tree, neural network. Multivariate Linear Regression uses previous semester results of a students. In

this paper with help neural network increase in increase in data set and accuracy is 70%.

Amandeep Kaur et al [3] proposed in this paper normally we can not predict the performance because lots of data of student increase rapidly, similarity of data of different student. So, very complex to predict. In this paper also predict the performance of students based on past data with help of various machine learning techniques. Firstly apply KDD process on dataset. Machine learning techniques used like Naïve bayes, svm, LMT, decision tree. By the help of all techniques predict future student's performance. Accuracy of c4.5 is 95.20, SVM is 98.32, Naïve Bayes is 94.88. Highest accuracy with LMT is 99.48. This research would play an important role in the student's positive growth and taking care of them correctly. The Hybrid Classification method offers greater results in terms of precision and other parameters and hence it is desirable to achieve prediction outcomes.

H.M. Rafi Hasan et al [1] proposed that they seek to detect the current status of students and forecast future outcomes. After the test, teachers will give him / her the right advice to prevent the bad outcome. Identifying the reliance on final exams. What courses will he / she take in the next half? Most students each year fall behind due to a lack of appropriate guidance and supervision. Every single student can not be supervised by a teacher at once. If a program allows a student to understand what kind of support the student needs. The goal is to support the student by using artificial intelligence to prevent expected poor performance. Techniques used decision tree-ID3 and KNN clustering. For students and teachers this work is beneficial with 94.88% of the highest quality. Accuracy of decision tress was 94.44% and accuracy of KNN was 89.74% for predicting student final exam performance.

Evawaty Tanuar et al [6] In this paper predict the earlier student's performance which the help machine learning techniques and data mining. In past very difficult to predicted the performance time to time and earlier. Teacher can't guess which student weak and which student took more guide. In this paper predict the earlier student's performance which the help machine learning techniques and data mining. In past very difficult to predicted the performance time to time and earlier. Teacher can't guess which student weak and which student took more guide.

Hamza Turabieh et al [7] In this paper, machine learning technology was effectively active in our lives extremely well. The goal is to create new wise discovery approaches from stored data to the advancement of the machine learning principle of educational data mining systems. Educative data comes from various tools, such as student academic records, e-learning log files, virtual courses etc. Predicting grades for students is a big concern in the field of education. In this paper hybrid feature-setting algorithm to predict student success with machine-learning algorithms. The next

neighbors (kNN), the Convolutionary Neural Network (CNN), the Naıve Bayes (NB) and the decision tree (C4.5) predict the student's performance.Accuracy is 88% with KNN, Naïve bayes is 82%, CNN is 95% and c4.5 is 82%.

Jie Xu et al [8] proposed it is important to predict the potential performance of students accurately based on their academic records to effectively carry out appropriate pedagogical intervention in order to ensure that students are able to graduate on time and successfully and to predict their performance at graduation levels (i.e. college programs) while addressing issues or taking courses using dataset, pupil success prediction in degrees (e.g. university programs) is much less well understood and is met with new challenges. Student history and chosen preparation are extremely different; courses are not similarly insightful when it comes to predicting accuracy; Student growth needs to be included in the prediction. Using machine learning techniques like decision tree, Regression techniques, Ensemble-based Progressive Prediction.

Erkan Er [2] proposed there are many e-learning studies which analyze the ways machine teaching techniques are applied for distance education purposes. One of these research focuses on predicting drop-out rates in distance courses for students by mainly looking at log data obtained from learning management systems.The ultimate objective of the analysis is to suggest an online tool to accurately predict at-risk students. Techniques used decision tree, instance based classifier and naïve bayes. It concluded that Naive Bayes was actually better at learning than any other computer. Naïve bayes accuracy with 60% and decision scheme is 78%. Accuracy vary from 79% to 85% in the final phase. Checked accuracy by LMS Using decision tree-cart4.5.

Stephanie Carnell et al[12] Digital individuals are also used in the teaching of communication skills for medical students. Here, we present the features of communication from the literature on good practices for contact with doctoral patients to predict the success of student interviewer in a given area. We prove that the Bayesian Regulations Lists are a realistic model for machine learning in this area. In this technique used was Bayesian rule, Communication skills learning. This indicates that Bayesian regulations, which yield simple, beings-readable, binary classifications, can be tailored for educational input. Accuracy of cart is 60%, KNN is 63%, SVM is 66%.

B. Kapur et al[13] proposed that Innovative ways of enhancing school quality are required in education programs to achieve the best outcomes and the failure rates. Mining of education data (EDM) has recently boomed into educational systems, meaning that student success can be measured and forecast beforehand. Inadequate data sets, inadequate measurement and predictive precision are needed to allow educational systems to benefit efficiently from the EDM, and education

systems face difficulties. In this paper data mining used and techniques was decision tree and for accuracy LMS. Accuracy of decision tree was 88% result prediction and naives provides 75%.

Sonali Rawat [14] proposed that Predictive Analytics is science of withdrawing information from the existing data for the purpose of determining existing patterns and future trends. Scope of this review paper is to study different data mining techniques that can be used to analyze the academic performance of students to predict their chances of getting placed through campus placement. Different attributes such as academic results, technical skills, training and projects done, are considered to be desirable for prediction purpose. This paper presents an outlook to differentiate data mining techniques for predictive analytics that can be used in the process of predicting campus placement. Various classification and clustering techniques are inspected to evaluate the performance of students in the recruitment procedure. Using the comparative study amongst these techniques ID3 with accuracy 95.33%, KNN with 97.33%, C4.5 with 88.89%, Naïve bayes with 86.15 %, Multilayer perception having 87.395% accuracy is suggested to be the best one.

3. Findings from Literature

Authors [references]	Year of Publication	Database Size	Technique Used	Findings from Literature
H.M. Rafi Hasan et al [1]	2019	1170 student's data and 7 attributes	Decision tree classifier and KNN for highest accuracy rate.	Using decision tree classifier author got 94.4% accuracy and KNN was 89.74% accuracy. In this author avoid some attributes like attendance, presentation, assignment. If we taking all the attributes then accuracy will be higher.
Erkan Er [2],	2012	10 attribute 450 instances for training, 225 instances for testing.	Decision tree, instance based classifier, K-star and naïve Bayesian.	It concluded that Naive Bayes was actually better at learning than any other computer. Naïve bayes accuracy with 60% and decision scheme is 78%. Accuracy vary from 79% to 85% in the final phase. Checked accuracy by LMS.

Amandeep Kaur et al [3]	2018	1735 instances and 37 attributes.	KDD process and techniques used like Naïve Bayesian, SVM, LMT, decision tree	Accuracy of c4.5 is 95.20, SVM is 98.32, Naïve Bayesian is 94.88. Highest accuracy with LMT is 99.48.
Havan Agrawal et al [4]	2015	300 student from 5 different degree college and 17 attributes	Naïve Bayesian and decision tree, neural network.	Multivariate Linear Regression uses previous semester results of a students. In this paper with help neural network increase in increase in data set and accuracy is 70%
Vrushali A.Sungar et al [5]	2017	Data size is 1325 and attributes are 10. 7 classes are present in student dataset.	Incremental learning handle the past data that predict the future prediction, decision tree-cart and SVM.	Performance of CART is 93.24 And SVM is 92.33.
Evawaty Tanuar et al [6]	2018	1835 data and 6 subject has been used in research paper	Generalized Linear Model, Deep Learning and Decision Tree for prediction.	Highest accuracy with generalized linear 66% by added more subject and decision tree with 60.6%. The outcome would be easier for the students to predict themselves and also to learn their skills.
Hamza Turabieh et al [7]	2019	Data consists of 480 entries and 200 students from CSE department.	KNN, CNN, Naive Bayesian and the decision tree (C4.5).	In this paper hybrid feature-setting algorithm to predict student success with machine-learning algorithms. Accuracy is 88% with KNN, Naïve bayes is 82%, CNN is 95% and c4.5 is 82%.
Jie Xu et al	2017	Dataset has	Decision tree,	Predict the potential

[8]		1169 students take two different areas like mechanical and aerospace engineering.	Regression techniques, Ensemble-based Progressive Prediction	performance of students accurately based on their academic records to effectively carry out appropriate pedagogical intervention in order to ensure that students are able to graduate on time and successfully and to predict their performance at graduation levels.
Stephanie Carnell et al [12]	2019	Analyzed 464 transcripts of student interactions with the VPs.	Decision tree, Naive Bayesian classifier, KNN and SVM	Accuracy of cart is 60%, KNN is 63%, and SVM is 66%.
B. Kapur et al [13]	2017	Approx 100-200 instances and 10-20 attributes are used based on need.	Decision tree, Naive Bayesian and for accuracy LMS	Accuracy of decision tree was 88% result prediction and Naives Bayesian provide 75%.
Sonali Rawat [14]	2019		Decision tree ID3, KNN, Naive Bayesian, multilayer perceptron.	Decision tree ID3 with accuracy 95.33%, KNN with 97.33%, C4.5 with 88.89%, Naïve Bayesian with 86.15 %, Multilayer perception having 87.395% accuracy is suggested to be the best one.
S. Kotsiantis et al [9]	2003	354 students record and 12 modules have been taken	Decision tree, Naive Bayesian, neural network, Instance	Initially accuracy reaches 63% based on demographic data of pupils then exceed 83%.

			based learning, logistic regression and SVM.	
K. Prasada Rao et al [15]	2016	200 records of students taken from computer science and engineering.	Decision tree, Naive Bayesian, Random forest algorithm.	Accuracy of decision tree is 76%, Naive Bayesian is 60% and random forest is 80%. As moving forward random forest give better result as compared to both techniques.

4. Techniques

4.1 Naïve Bayesian

Bayes' theorem with the independence assumptions among predictors is based on the Naive Bayesian classifier. It is simple to create a Naive Bayesian model without complex iterative parameter estimation, which makes it especially useful for very large datasets. The Naive Bayesian classifier often does remarkably well, considering its simplicity, and is commonly used because it often outperforms more advanced methods of classification. A way of computing the posterior likelihood, P(c|x), from P(c), P(x), and P(x|c) is given by the Bayes theorem. The Naive Bayes classifier implies that the effect on a given class (c) of the value of a predictor (x) is independent from the values of other predictors. This theory is called conditional independence in class.

P(C | X) = (P(X | C) P(C))/P(X)

4.2 Decision Tree

The decision tree is a significant predictive modelling algorithm that can be used to represent decisions visually and directly. It is a graphical representation that, depending on some parameters, uses branching methodology to explain all possible effects. The internal node of the decision tree represents a test on the attribute, the branch represents the consequence, and the leaf represents the decision taken after the attribute is computed. It can be categorised into two groups, classification trees that are used to divide a dataset on the basis of the basic basis into various classes and usually used when we assume categorical answer variable. The other form is called Regression Trees, that are used where a constant or numerical response variable is used.

There are three methods of decision tree:

1) Cart 4.5
2) Information Gain
3) Gini index

One of the best methods used for estimation and classification is the decision tree. We can forecast the results with the aid of this and find the highest accuracy. I'm trying to take a broad dataset that offers the highest accuracy and outcome to find errors as well. The decision tree algorithm has more precision compared to the naive Bayesian algorithm.

4.3 Support Vector Machine

Support vector machines (SVMs) are powerful but versatile algorithms for supervised machine learning that are used for both classification and regression. But usually, in classification questions, they are used. Compared to other machine learning algorithms, SVMs have their own special method of implementation. Due to their ability to manipulate several continuous and categorical variables, they are highly common. In multidimensional space, an SVM model is effectively a reflection of various groups in a hyper plane. In order to minimise the error, the hyperplane will be generated in an iterative way by SVM. SVM attempts to split the datasets into groups in order to find a maximal marginal hyperplane (MMH).

5. Scope of Study

The machine learning education program is very critical for evaluating and predicting students success in academic classes, taking various success factors. This articles would play an important role in the positive growth of the pupils and contribute to a decrease in dropouts after the prediction and review in the correct direction. In addition, Education Mining can allow study of various educational data as to how different factors affect student success overall. In addition, in terms of precision and other parameterisation, the hybrid approach to classification of the learning machine provides better results and is therefore preferable to achieve forecasting results. In general, different educational groups will use these findings to focus on students ' poor areas in good time by proper pedagogy, and I hope that their respective goals can be achieved.

6. CONCLUSION

In this paper, I only give the systematic review of predicting the student's performance using different machine learning techniques. I was read many paper related to this field and I find many author of paper apply same technique but different dataset for future prediction. I also give comparison between different algorithms with accuracy and precision, which apply on different dataset. By the help of this teacher and principle predict the future performance of students for proper guidance. I will very helpful for those people, who confused about courses and careers goal. I will also save from bad guidance and fail in academics and to choose the proper subject and courses.When I was read, I got comparison of accuracy and precision with between different machine learning techniques apply on dataset.

Naïve bayes < Decision tree < KNN < SVM < Logistic regression

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The Conceptual Framework for the Resources Management Attributes and Aircraft Maintenance Efficiency in the Aviation Industries in Oman

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Abstract* : *The main purpose of the study is to investigate existing available literature for determining of relevant factors that have cause and effects on the ensuring of aircraft maintenance efficiency in the aviation industry in Oman. Therefore, the study uses available sources of existing literature based on the four main keywords 'aircraft maintenance efficiency', 'aircraft maintenance and resource management attributes 'or 'effective planning and aircraft maintenance, and 'internal control and aircraft maintenance, etc., and explored to covers from Google Scholar, ProQuest, and Scopus, and other online resources. The study also justified of above summary literature gap by the most relevant theories such as stakeholder, agency, and resource-based theories accordingly. Based on this extensive review, the study developed a conceptual framework, where effective planning and internal control have moderating role on the relationship between the resource management attributes and aircraft maintenance efficiency in the aviation industry in the sultanate of Oman. The summary review findings of the study will fill the gap in the existing body knowledge especially prime factors affecting the attainment of aircraft maintenance efficiency, resource management attributes, effective planning and 'internal control and aircraft maintenance in the aviation industry in the sultanate of Oman. The study recommends to justify this conceptual framework by empirical data from the in the aviation industry in the sultanate of Oman and draw a policy guideline for ensuring of determining of relevant factors that have cause and effects on the ensuring of aircraft maintenance efficiency in the aviation industry in Oman.

Keywords: Aircraft Maintenance, Resource Management, Effective Planning, Internal Control and Aviation Industry in Oman.

INTRODUCTION

Aircraft maintenance facilities is one of the very essential factor to enhance the aircraft productivities those facilities such as spears, human, and financial add to that the organizational factors in which will help to make the maintenance more efficient and safe because the safety is the priority part in maintenance in which the organization should take in consideration(Bowen, 2013). The aviation industry safety is one of the critical aspect of successful performance, moreover the personnel are the key players in all maintenance activities so it is not only

carry out the activity but carry it with safely (Bowen, 2013).

There are numerous causes for the undesired extended aircraft downtime caused by ineffective maintenance. It has mentioned that up port of a huge armada of airplane postures critical challenges for a commerce in terms of accomplishing the different, and in a few ways clashing, objectives relating to support and operation costs and wanted benefit levels (Samaranayake & Kiridena, 2012). Moreover, to reduce or minimise the extended aircraft downtime by improving the aircraft maintenance efficiency, it is mandatory to know the reasons that are helping the aircraft to remain under Hangar maintenance more than the estimated time of maintenance. The study also mentioned that there are two major stream of literature which focus in studying the problems which facing the heavy maintenance, he found that the first problem was focusing in the scheduling of the fleet of the aircraft, which known as "service scheduling" (Bird, 1976);(Sherif, 1980);(Elkodwa, 1996);(Chan, Cheung, Ip, Lu, & Lai, 2005) and the other problems focusing in managing with perspectives of nitty gritty arranging and planning of exercises and support facilities such as materials, resources and maintenance personnel (Dijkstra, Kroon, van Nunen, & Salomon, 1991);(Chan et al., 2005);(Alfares, 1999);(Chan et al., 2005);(Kilpi, Töyli, & Vepsäläinen, 2009).

Since the research is dedicated studying the aviation sector in Oman, participant observational has been applied with a paradigm "inquiry from inside". This method requests from the research himself to spend some time in the organization itself to observe the real issue and collect all the needed data to be used for testing and evaluation. Many roles can be played in the participant observation method as a complete participant, researcher, complete observer, and observer as participant. Therefore, it is timely initiatives to investigate existing available literature for determining of relevant factors that have cause and effects on the ensuring of aircraft maintenance efficiency in the aviation industry in Oman.

Thus, the study justified of above summary literature gap by the most relevant theories such as stakeholder, agency, and resource-based theories accordingly. Based on this extensive review, the study proposed to develop a conceptual framework, where effective planning and internal control have moderating role on the relationship between the resource management attributes and aircraft maintenance efficiency in the aviation industry in the sultanate of Oman.

BACKGROUND OF THE STUDY

Historical development of aviation industries in Oman

Oman's civil aviation was started in the year 1929 with a small airstrip made in Muscat. Initially was used for military purposes and occasionally for the flights of PETROLEUM Development Oman (PDO) Company. In 1960's Gulf Air started to operate its DC3 commercial flights to Oman. Oman started its own national carrier in the year 1970 as Oman International Services (OIS). The Sultanate

of Oman became a member of the international Civil Aviation Organisation (ICAO) in the year 1973. Oman purchased Gulf Air's light aircraft division in the year 1977 and became Oman Air Services in the year 1981. A new airport was built at Salalah and OAS started operating regular domestic flights from Muscat to Salalah. The real development of Oman's civil aviation started when Oman Aviation Services (OAS) became Oman Air in the year 1993 and started to operate international services to Dubai and India. In the year 1996 Oman Joined the Arab Civil Aviation Organisation (ACAO) and in 1998 Oman Joined International Air Transport Association (IATA). Oman Air engaged CFM to provide engine maintenance services in Muscat. Airports were built in Adam, Butabul ,Buraimi , Dibba Al-Baya , Duqm , Fahud , Qarn Al Alam , Haima , Ibra, Ibri, Khasab , Lekhwair , Marmul , Mukhaizna , Nizwa , Ras al Hadd , Rustaq , Saiq , Salalah, Sohar , Sur and Yibal .

At present more than 550,000 aircraft overfly Oman's airspace. Civil aviation aircraft fly to more than 75 destinations from various airports in Oman. Flight developments at Muscat air terminal developed by 6.3% per year between 2013 and 2018 reaching 125,543 movements in 2018. Passenger traffic increased by 12% per year between 2013 and 2018 reaching 18 million passengers in Muscat International airport, Salalah Airport, Sohar Airport in 2018. Cargo traffic grew by 11% per year between 2013 and 2018 reaching 212,674 tons in 2018. The contribution of the direct and indirect civil aviation sector in the GDP of the Sultanate of Oman amounted to about 3.9 billion US dollars in 2018. In 2017 Salam Air, the first ever low-cost carrier in Oman started its operations. Oman Aviation group was founded in the year 2018 comprising of Oman Air, Oman Airports and Oman Aviation Services expanding the civil aviation sector in Oman. The civil Aviation industry in Oman employs more than 10,000 workforces from various countries and has potential to grow in future.

METHODOLOGY OF THE STUDY

As study aims to investigate existing available literature for determining of relevant factors that have cause and effects on the ensuring of aircraft maintenance efficiency in the aviation industry in Oman. Therefore, the study uses available sources of existing literature based on the four main keywords 'aircraft maintenance efficiency', 'aircraft maintenance and resource management attributes 'or 'effective planning and aircraft maintenance, and 'internal control and aircraft maintenance, etc., and explored to covers from Google Scholar, ProQuest, and Scopus, and other online resources.

REVIEW FINDINGS OF THE STUDY

Empirical Reviews

Many studies done by the previous researchers provided several theories that contributed extensively to maintenance resource management. (Miles, 2012) mentioned that since the late 1700s, scholars have talked about the issue of corporate proprietors contracting others as stewards of their riches. Directors of other people's cash cannot be anticipated to observe over it with the same enthusiasm as the proprietor, so administrative

carelessness will continuously be show within the issues of a company. There are different theories related to this issue and try to explain the relation in detail. Agency theory is one of these theories which tries to study of the relationship between a client or "principle" and someone who performs a task on his/her behalf or "agent". This theory tries to show that the principle will act in his/her best interest even if his/her interests conflict with those of his/her agent ((Eisenhardt, 1989). On the other hand, the stakeholder theory justifies that the main priority of an organization should be its social performance and not only its financial performance. It stresses that increasing the wealth of shareholders is not an organization's primary function. On the contrary, stakeholders have an ethical responsibility to participate in the corporate decisions of an organization, and an organization must include them in discussions about the directions it is considering moving in (El Abboubi & Nicolopoulou, 2012).

Explaining how the organizations maintain dominant positions in competitive environments was done by resource-based theory. This theory verifies that the resources in an organization have influences on its performance in addition to organizations compete against one another for resources (Priem & Butler, 2001; Hoopes, Madsen, & Walker, 2003; Peteraf & Barney, 2003 ; Miles, 2012). It also assumes the basis of an organization's decisions about which resources to select and accumulate is composed of the following: economic rationality, limited information, biases and prejudices, and casual ambiguity (Anderson & Richard). Other researchers focused on the important role of the human factors in aircraft maintenance. Shanmugam & Paul Robert (2015) published a literature review on human factors in aircraft maintenance engineering. Study concluded that discipline in aircraft maintenance has made an extraordinary effect on airplane plan, operations, support, and standards. All previous are connected to shape the security behavior and culture in flying upkeep working environment. In any case, the survey unfurls monstrous potential for future investigate.

Virovac, Domitrović, & Bazijanac (2017) explained that some papers presented the influence of human factor in one of the European aircraft maintenance organizations for widebody aircraft meant for commercial service. Their findings pointed out the occurrence of errors committed by employees' personality errors in communication, and errors in equipment, tools and the factor of working Environment. Based on their research paper the recommend creating a working climate within the aircraft maintenance organization, that will be stimulate for work and at the same time act preventively on the reduction of human Error. Recommendation for a continuous monitoring and analysis of human errors that occur in aircraft maintenance units were proposed by the study. Siddiqui et al. (2012) mentioned that over the previous twenty years, even has been an increasing recognition so human elements coaching do bear a significant affect over safety, especially within high-risk domains. The aviation industry has been at the forefront of this trend. Human calamity has been

constantly identified as contributing in imitation of the championship of wind crashes given that the late 1970s. In the succeeding paragraphs, an attempt in accordance with make up a suit the use of various evaluation strategies in imitation of show that is been done.

Tooley (2013) spoke about the training and qualifications the engineers should have in order for them to work as aircraft maintenance staff. To perform a maintenance to the required standards, individual need to demonstrate maturity, commitment, integrity, and ability to see the job through, often under difficult circumstances. Once the maintenance tasks have been completed to the required standards, category B licensed engineer's certain approvals are permitted to signoff activities and sign the certificate of release to service (CRS). According to (Berto et al., 2011) human are the planning as an dynamic portion of the flight operations including pilots, support labor, discuss activity controllers, and others. Clearly, it's vital to be able to transfer on exceptionally talented individuals to maintain a strategic distance from mistakes that cause mischances or catastrophes in flight operations. It is at that point vital significance to put these individuals in authoritative and organized setting to ensure a reasonable level of proficient training. Human factors can be considered as human variables which have developed progressively prevalent till the level that the commercial flying industry realize that human blunder, rather than mechanical disappointment, underlies most flying accidents and episodes. It is important to note that human factors play an important role in all industries and aviation is not an exemption. The human errors may incur heavy losses in lives and machines, so it's been obvious that human factors have a significant effect in maintenance-related aircraft accidents. It is worth mentioning studies and research that have proven that human error is the main cause of accidents in various industries with global consequences such as aviation and medicine. Based on these discoveries, organizations involved in these industries have developed training programs for employees on a large scale, in order to prevent or reduce these errors and thus mitigate their impact on beneficiaries from the service of these organizations. Therefore, this paper was discussing the importance of the human factors training in aviation industry also mention the errors caused by human factors in aircraft maintenance which certified as 147 according to the European Aviation safety Authority standards. By comparing the previous mentioned theories related to maintenance resource management, resource-based theory can be considered as the best choice among them to be the base of the conducted research. The reason for choosing this theory is the resources of an organization possess influence on its performance. In more detail, RBT accepts that organizational choices to choose and collect assets are financially levelheaded and subject to constrained data, predispositions and biases, and causal ambiguity (Teece, Pisano, & Shuen, 1997). Causal ambiguity means that it isn't known precisely how an asset leads to above-average execution for an Organization. A resource is characterized as anything that

can be thought of as a quality for an organization. Assets incorporate any unmistakable or intangible resources that are semi for all time tied to the organization. Resource-based theory posits that an organization can achieve sustainable competitive advantage by controlling resources that are valuable, rare, imperfectly imitable, and non-substitutable. Your task as a manager is to help your organization use resources more effectively and efficiently than your competition over time.

Theoretical reviews

Previously number of literature and researchers have provided a number of theories contributed extensively to maintenance resource management for example (Miles, 2012)mentioned in his book since the late 1700s, scholars have talked about the issue of corporate proprietors contracting others as stewards of their riches. Directors of other people's cash cannot be anticipated to observe over it with the same enthusiasm as the proprietor, so administrative carelessness will continuously be show within the issues of a company (Smith, 1776/1952)(Miles, 2012).

Agency theory

Agency theory revolves around the study of the relationship between a client or "principle" and someone who performs a task on his/her behalf or "agent." Agency relationships have to do with the delegation of authority, and can be observed in a variety of fields whether medicine (doctorpatient), politics (elected official-constituents), law (lawyer-client), insurance (insurance company-insured), real estate (real estate agent- seller or buyer) and so on. Agency theory argues that in this dynamic, the principle will act in his/her best interest even if his/her interests' conflict with those of his/her agent. In a corporate setting, this implies a company's management will act in its own best interests first rather than those of the shareholders it is to be working on behalf of. Scholars such as(Eisenhardt, 1989), and (Miles, 2012)have written on these issues.

Stake holder theory

Stakeholder theory argues that a main priority of an organization should be its social performance and not only it's financial performance. It stresses that increasing the wealth of shareholders is not an organization's primary function. On the contrary, stakeholders have an ethical responsibility to participate in the corporate decisions of an organization, and an organization has an obligation to include them in discussions about the directions it is considering moving in. It has been argued this sort of relationship results in the organization having a competitive advantage and thus is beneficial for both the organization and its shareholders (El Abboubi & Nicolopoulou, 2012).

Resource-based theory

One of the objectives of resource-theory is to explain how organizations manage to maintain dominant positions in competitive environments (Hoopes, Madsen, & Walker, 2003) According to resource-based theory, the resources an organization possesses have an influence on its performance (Peteraf & Barney, 2003) (2012 (Miles,

2012), and organizations compete against one another for resources (Priem & Butler, 2001) Cited by (Miles, 2012) An organization assesses and categorizes other organizations as competitors based on factors including similarity of products, resources, capabilities, and substitutes (Priem & Butler, 2001)Cited by(Miles, 2012). There are two main assumptions in this theory: 1.) resources are not equally distributed among all organizations and 2.) Resources may have limited mobility and so this disequilibrium of resources among organizations can be a long-term problem (Peteraf & Barney, 2003) Cited by(Miles, 2012). It also assumes the basis of an organization's decisions about which resources to select and accumulate is composed of the following: economic rationality, limited information, biases and prejudices and casual ambiguity (Anderson & Richard) Based on the objective of this study and research, which aims to measure the effects of effective planning and proper control of the relationship between the management of the sources of maintenance and aviation maintenance in the aviation industry in Oman, the appropriate theory for the application in this research is resource- based theory.

This study and research aim to measure the effects of effective planning and proper control of the relationship between the (management of the sources of maintenance?) and the aviation maintenance in the aviation industry in Oman. Based on this objective, resource-based theory is the most appropriate framework for analysis. This is because the resources an organization possesses have an influence on its performance (Peteraf & Barney, 2003) Cited by Jeffery A (2012).

The Resource-based Theory (RBT)

The central thought in resource-based hypothesis is that organizations compete against others on the premise of their assets and capabilities (Peteraf & Barney, 2003) Cited by(Miles, 2012). An organization's competitors can be distinguished by the likeness of their items, assets, capabilities, and substitutes (Peteraf & Barney, 2003) Cited by(Miles, 2012). The hypothesis accept that organizational choices to choose and collect assets are financially levelheaded and subject to constrained data, predispositions and biases, and causal ambiguity(Teece, Pisano, & Shuen, 1997) Cited by)(Miles, 2012).. Causal ambiguity means that it isn't known precisely how a asset leads to above-average execution for an Organization. A resource is characterized as anything that can be thought of as a quality for an organization (Wernerfelt, 1984)) Cited by. (Miles, 2012)).. Assets incorporate any unmistakable or intangible resources that are semi for all time tied to the organization. Resource-based theory posits that an organization can achieve sustainable competitive advantage by controlling resources that are valuable, rare, imperfectly imitable, and non-substitutable. Your task as a manager is to help your organization use resources more effectively and efficiently than your competition over time.

However, the RBT has been criticized by many researchers as being inherently internally focused. It has failed to explain how resources are developed and deployed to achieve competitive and inability to consider the impact of dynamic

market environments. Due to this criticisms, RBT gradually evolved towards the belief that resources are not sufficient alone to generate superior performance and distinctive competitive basis for companies being inherently internally focused and its limitation for dealing with current complex and turbulent marketplaces issues (Kozlenkova, Samaha, & Palmatier, 2014; Roach, Ryman, Jones, & Ryman, 2018; Teece et al., 1997). Therefore, and in response to the limitations of the RBT, the dynamic capabilities view (DCV) has been offered as a more suitable foundation theory to coop with such complex and turbulent markets, which need the continual renewal and reconfiguration of the organization and its resources level (Ambrosini, Bowman, & Collier, 2009; Roach et al., 2018; Teece et al., 1997) According to (Teece et al., 1997), the energetic capabilities see looks at the sources and strategies of riches creation and capture by private firms that working in situations of quick innovative alter, endeavors to recognize and find capabilities that can drive the firm to progress its execution and accomplish a maintainable competitive advantage and clarifies how these energetic capabilities can offer assistance in superior asset allotment within the firm (Teece et al., 1997). In other words, DCV sets that the capabilities in which firms' assets are created and sent in ways that able coordinating the firm's advertise environment and clarifies its execution change over time (Ambrosini et al., 2009).

Literature GAP

After analyzing and studying all the different gaps that might be faced in the previous conducted studies, the current research come up with some of the points that should be tackled in the next step of the research. The following study should help to enhance awareness among the aircraft maintenance organizations in Oman. Initiating the effective usage of aircraft maintenance resources for minimizing the downtime or the aircraft being on the ground for a long time should be considered as one of the critical works in the aviation industry. The study also should concentrate on building the road map to various departments on the effective management of material, manpower, resources, and facilities. One of the main points that come up out of this extensive research is that increasing the availability of aircraft for operation by reducing the downtime. At the end, the aviation industries should minimize the influencing factors of aircraft downtime and emphasize the importance of proper planning and control in aircraft maintenance organizations.

DEVELOPMENT OF CONCEPTUAL RESEARCH FRAMEWORK

Based on reviewing several related and core literatures and different theories to meet the study objectives and questions, the framework of this study was formed. The main objective of the proposed framework is to focus on the moderating impacts of effective planning and control on the relationship of resource management attributes and aircraft maintenance in the aviation industry in the sultanate of Oman. The following framework proposed to solve aviation's talent gap problem by studying the different core variables as the independent variables, dependent variables

and, and moderating variable. This study focused in the effect of the independent variables in aircraft maintenance efficiency in aviation industry in the Sultanate of Oman. The independent variables (IVs) are summarized in five main areas which are Aircraft maintenance facilities, spear parts management, organizational factors, financial allocation and human factors as those are the main factors which have a direct effect and big influence in maintenance efficiency. The study has a moderating Variables (MV) which is planning and control in which I have the influence in all independent variables (IVs). Finally, the study Dependent variables (DV) aircraft maintenance which must be more efficient, safe and with the aviation authority's regulation. Furthermore, this study will be carried out in the sultanate of Oman on aviation industry, some selected air liners and fleets such as Oman air, royal air force of Oman and royal Oman police by focusing in the following posts which directly manage the maintenance activities in the maintenance section.

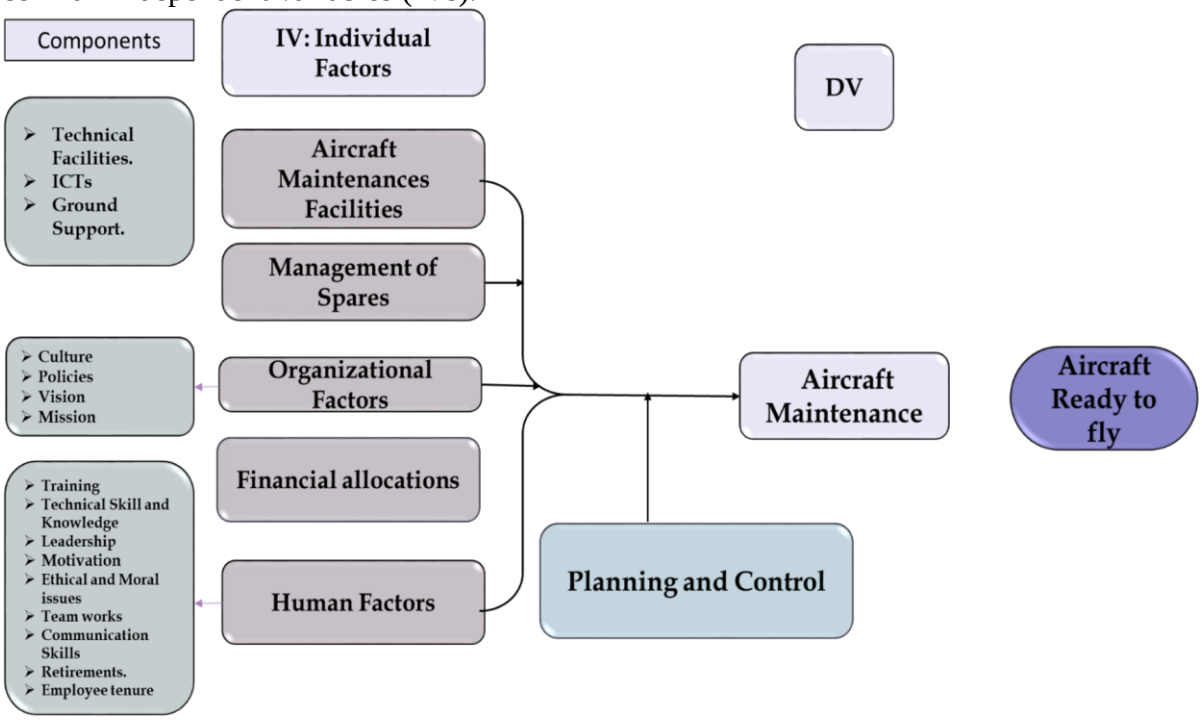


Figure 1. Proposed framework

The independent variable of this research in general meaning is the maintenance resource, this variable has been mentioned earlier as one of the major ones in the studied literatures. There are five independent factors of aircraft maintenance, which will be covered and

discussed in this study, those factors are Aircraft maintenance facilities, management of spares, organizational factors, financial allocation, and human factors.

The dependent variable of this study is the Aircraft maintenance, where this maintenance would not be completed without supporting elements which are the independent variables (Joshi, 2004). Joshi (2004) mentioned that the important factor to justify the maintenance implementation is the revising of resource allocation. Having all resources required for the maintenance and proper allocation and use of them will make the maintenance more efficient. Another variable that will be covered in this study framework is one variable related to the mediating variable called planning and control. This variable has both positive and negative effects (Sherwin, 2000). Sherwin (2000) pointed out in the study that in all engineering there is a demand for this variable. To meet that demand, a planning function should be flexible and also have the ability to adjust to the sequence in which it carries out the work. Also, the engineering work is complex and expensive so its need to be controlled to meet the objectives were set during the plane stage.

CONCLUSION AND RECOMMENDATIONS

As it was the aims to investigate existing available literature for determining of relevant factors that have cause and effects on the ensuring of aircraft maintenance efficiency in the aviation industry in Oman. The study revealed from analyzing of the review findings that there are different gaps in existing literature and the current research come up with some of the points that should be tackled in the next step of the research. The following study also identified the effective usage of aircraft maintenance resources for minimizing the downtime or the aircraft being on the ground for a long time should be considered as one of the critical works in the aviation industry.

The study also justified of above summary literature gap by the most relevant theories such as stakeholder, agency, and resource-based theories accordingly. Based on this extensive review, the study developed a conceptual framework, where effective planning and internal control have moderating role on the relationship between the resource management attributes and aircraft maintenance efficiency in the aviation industry in the sultanate of Oman. The summary review findings of the study will fill the gap in the existing body knowledge especially prime factors affecting the attainment of aircraft maintenance efficiency, resource management attributes, effective planning and ‘internal control and aircraft maintenance in the aviation industry in the sultanate of Oman.

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The Impact of Customer Service, Insurance and Luggage Delivery towards Logistics Customer Satisfaction in Pandemic Situation

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Abstract— As the pandemic of Covid 19 has directly affected the business industry, the business model has changed, including the logistics industry, especially the courier company. Courier company has benefited the most during this pandemic situation as the e-commerce business flourished. Enhanced service by courier company is crucial as stiff competition in the industry. Therefore, this study explores the impact of customer service, insurance, and luggage delivery on logistics customer satisfaction. A quantitative method was employed to analyse the effects of enhanced services of customer services, insurance, and luggage delivery towards logistics customer satisfaction, where 384 responses were collected from respondents identified as active users of courier services for the last 12 months. IBM SPSS was used to analyse the response collected using descriptive, reliability and Pearson Correlation analysis. As a result, it is justifiable that customer service, insurance, and luggage delivery positively impact logistics customer satisfaction

Index Terms— Logistics, Customer, Satisfaction, Service, Delivery.

I. INTRODUCTION

In Malaysia, the courier service industry is rapidly expanding, resulting in a competitive market. This service industry has set a new standard for the economy and society. According to Yimie Yong and Gho Chee Yuan (2019), Malaysia is looking for ways to boost courier services as new operators try to cram into a competitive market. Take into account the strain on businesses due to the globalisation paradigm, and companies must be able to produce goods as quickly as possible and promptly (Rezaei et al., 2016). Price is not the only determinant of the postal industry in this environment (Gouvea et al., 2001). Customer demands for quicker and simpler delivery of requested services are driving the creation of new business models. Since a growing number of customers and businesses outsource their carrier operations to third-party logistics in the market, it is an excellent time for the courier service industry to invest (Sohail and Sohal, 2003).

Meanwhile, a new or added service will help to increase courier service efficiency by offering competitive advantages. Customers would benefit from that because they would have a better experience. Furthermore, courier services are essential for people who use them regularly. As a result, courier service companies must have outstanding customer service to retain customer loyalty. As a result, a problem will emerge in MCO because everyone must stay at home, and the high demand for courier services will cause service providers to be unable to satisfy this demand at the same time.

The study would look at whether courier companies' additional or new services affect customer loyalty during the coronavirus pandemic. This research will decide whether courier companies' added or unused services will affect customer satisfaction during a coronavirus pandemic. The focus of this research is on Peninsular Malaysia's west coast, specifically Kuala Lumpur. Malaysia's capital, Kuala Lumpur, is one of the country's wealthiest cities. As a result, the survey conducted in Kuala Lumpur. Many courier users reside in Selangor and Kuala Lumpur, and an increasing number of customers want faster courier delivery. Since the majority of people need to transfer items, they would need to use a courier service. Malaysia's federal capital and most populous city, Kuala Lumpur, was founded in 1957. There will generally be more residents in these places.

II. LITERATURE REVIEW

Customer Service

According to Norizan and Abdullah (2010), customer service's perceived level substantially affects loyalty, impacting consumers' future purchasing intention. Other than that, customer service plays a vital role in establishing a healthy partnership between companies and consumers (Zhi Li and W. M. Wang, 2019). It supports that companies provide to customers before and after purchasing the companies' goods or services. Recognising the need to differentiate their services, organisations in many competitive markets have recognised that improved customer experience is the way to separate themselves from their rivals (Kanovska, 2009). The use of customer service skills is vital for today's organisations. It has been an essential part of the marketing mix and a necessary part of the marketing strategy to achieve success (Baker, 2000).

Customer service is an integral part of both satisfaction and loyalty. It has a study that shows the relationships of pride and commitment, such as perceived quality, expectations, perceived value, and service quality on satisfaction and loyalty (Karjaluoto et al., 2012). Customer services are values that increase activities related to goods or services that satisfy customer needs and eventually provide customer satisfaction and loyalty (Kursunluoglu, 2011). The level of customer service offered to the market depends on specific criteria, such as the characteristics of the retailer, the services provided by the competitors, the type of merchandise served, price image of the store, the revenue of the target market, the cost of providing the service (Lusch et al., 2011). Finally, the perceived quality of customer service directly affects customer satisfaction (Jahanshahi, 2011).

Insurance

Insurance is an arrangement between the policyholder and the insurer under which the insurance company covers any incident within the insurance scope. In exchange, the policyholder must pay a premium for the so-called insurance regularly (Darooneh, 2007). Insurance services are intangible and reliant on declarations since they are guarantees and contracts kept by a sales median for the consumer, enabling the seller and the customer to have confidence from the beginning of the agreement (Sedighiyan, 2000). According to Osuagwu (2002), insurance is a pure service since it is not related to a tangible product. Insurance programmes sold using the same styles and techniques as real marketing goods. Indirectly, there would be a desire to establish partnerships with service providers (Jap, 2001).

Luggage Delivery

Luggage delivery service aims at serving customers travelling with luggage. Hanna Hussein (2019) concluded that luggage delivery service has a big following among foreign customers and nowadays gained popularity among individuals. This service will improve the quality of parcel collection and management. This service also enables a courier company to pick up the luggage from any address on the day before the actual travel date, including home, office, or hotel. On the next day or a pre-selected day, luggage will be delivered to any address using courier vans (Magrath, 2014). While this service will provide extra benefit to an organization by improving flexibility and efficiency, which minimizes operational costs when adequately planned and managed (Rockwell Automation, 2017). According to Johnstone et al. (2015), the material handling system will improve efficiency by precision delivery.

Customer Satisfaction

Consumer satisfaction has a positive effect on customer retention (Bei and Chiao, 2001). Customer satisfaction has a positive impact on customer loyalty. Customer satisfaction refers to the customer's reaction to the state of delivery and the customer's assessment of the satisfied business. Another author argued in his theory that "consumer satisfaction principles refer to a single transaction (the difference between planned and perceived service) in comparison to more persistent and less situationally oriented behaviours." The customer's perceptions of service quality are the most significant factor affecting customer loyalty. As has been discovered, emotion can play a critical role in deciding customer satisfaction, especially in the context of service (Dalla Pozza, 2014).

Consumer satisfaction is one of the main factors influencing customer loyalty, according to Wong and Zhou (2006), Aktepe et al. (2015), and Chang (2015). Furthermore, customer retention is an excellent indicator of customer engagement. Customer satisfaction increases customer loyalty, decreases marketing loss costs, removes customer turnover, reduces price aversion among customers, enhances advertising performance, and improves company reputation.

Customer service, insurance, and luggage delivery are all listed as independent variables in the report. Customer satisfaction with courier service is the dependent variable. Since there haven't been any previous studies with this three-independent variable, the researcher chose it as an independent variable for this study. It means that these three independent variables have a lower repetition rate than any

independent variable. The researcher selected these three key independent variables for this analysis for this reason. As a reference, there is a Coronavirus pandemic.

III. METHODOLOGY

The descriptive analysis method use in this study. Besides, a formal questionnaire is used as a research tool in this report. Each research portion within the standardised questionnaire was also subjected to descriptive analysis. This research aimed to conduct a cross-sectional survey of the population of courier companies in the vicinity of Kuala Lumpur, Malaysia. The study's target population is Kuala Lumpur, Malaysia, who worked as couriers during the coronavirus pandemic. The respondents will be selected at random, and the sample will be sent via Google Method. In 2018, Kuala Lumpur's population was estimated to be 19.2 million people (Department of Statistics Malaysia, 2018).

A population is used to determine the sample size. The researcher attempts to conclude the sample that is generalizable to the people of interest (Sekaran, 2016). For most research, a sample size greater than 30 but less than 500 is adequate (Roscoe,1975). Furthermore, according to Boddy (2016), a large sample size makes it easier for the analysis to be more reliable in mean computing. Many participants were decided to be needed, with 250 or more being required. A total of 384 people was chosen out of a population of 1000000. During the coronavirus pandemic, 384 sets of questionnaires will be distributed randomly to people who use courier services. According to Rowley (2014), when a researcher deals with many respondents from various locations, the questionnaire becomes a more critical research tool. The researcher will use an online closed-ended questionnaire survey and submit survey questions links to the participants during this study. The questionnaire is written in both English and Malay. The online survey is broken down into five parts. The respondents' demographic profiles were required in the first section, which was designated as Section A.

IV. FINDINGS

The statistical package is a research programme used to develop a more significant knowledge base of statistical concepts. We ran the answers through appropriate data processing before final submission to the respondents' answers were labelled as numbers so that they could be utilised before computational calculations. Using the SPS software, the researcher will conduct statistical tests on the data from this study to answer the questions to see whether it has expanded significantly over time. Qualitative methods because these models can sometimes extend to solve other research problems with large datasets that can't be adequately treated with traditional mathematical methods (Ong & Puteh, 2017). for further data processing, the collected data will be inserted into SPSSPSS. Statistics include describing the variables' normalcy, variable assessment, variable relevance, and variable correlation coefficient testing. Exploratory research may be defined as a small-typically-an exploration of the test of data to search for or assess instruments' reliability and validity. For this research, 384 individuals from the population of Kuala Lumpur, Malaysia were chosen to calculate Cronbach's alpha, as mentioned in chapter 3. According to the pilot test result in table 2, the conclusion in the table is confirmed.

descriptive or expressive analysis

An exploratory analysis of 20 things should test out via Table 3 will focus on variables, with specific ranges, displaying the mean and standard deviation of those values.

used to test if a product or service is trustworthy

Study and trial research may be restricted by reliability, since measurements must be extremely accurate in order to serve as standards. An estimate of a project's reliability can be made into two classes: an inner class estimate and an outer class. Inner validity and efficiency of the trial's methodology were investigated by measuring and calculating the general correlation and the amount of confidence placed in these two parameters: general and specific. The random error freedom of the instrumentation scale refers to how available the instrument's readings are. However, if the output remains the same and unchanging, then a measuring device should be thought of as reliable. In internal consistency, which also is known as split-half reliability, Cronbach's alpha is calculated. When it comes to internal consistency, the coefficient of internal consistency, Cronbach's alpha is also utilised to measure the overall instrument consistency or the average correlation of a survey to its measurement. The alpha value for each variable was computed by using SPSS alpha analysis can be seen in Table 4. When we include insurance and delivery, three things influence the outcome of a customer's loyalty: service of the customer, insurance of the customer, and the shipper. Which has a Cronbach's alpha value of 0.29, each of the independent variables has approximately 0.88, 0.88, and 0.88 respectively have all exhibit perfect reliability on their measures Although a reasonable customer satisfaction with courier service is shown by the Cronbach's alpha coefficient of 0.892 in this study, an internal consistency metric called "liking" was tested and had a value of 0.89 The results showed that the questionnaire tested for 384 participants was reliable and was well-accepted in this study.

shows whether an effect can be safely be developed to cover the entire population

In this case, the study, the normality test will be employed to verify the validity of the data set using kurtosis and sample mean. The acceptable range of skewness lies between the minimum value of -1 and the maximum value of 1. This expansion represents the tendency of the variable's values getting closer to the -1 skewed, while other expansions represent the variables tending to lean toward +toward.

Pearson's correlation is used to investigate the interdependency between the independent variables and the dependent variable. The mediator in this section in this experiment is regarded as a dependent variable to help establish the connection between it and the rest of the section. The coefficient correlation gives a statistical summary of the IV and DV relationship, while the coefficients of the relationship provide a measure of the actual relationship strength. However, Pearson correlation coefficients (r) are valued from -1 to indicate a negative correlation and 1 to indicate a positive correlation. When r is between 0.00 and 0.31, it is classified as "very weak"; r is between -51 and 0.70 and 0, "weak"; r is between 0.71 and 90 and 0.50, "weak"; r is + or r + / is between 0.50, and 1, it is "moderate"; and it is strong, it is considered to be strong.") Expansion of the scope: Since there was only one independent and one dependent variable in this research, it was focused on customer satisfaction with courier service, insurance, and delivery and insurance policies.

For the p-value to be found to be equal to or lower than 0.005, customer service and luggage handling can be included in the analysis. The results in this experiment proved that every hypothesis could be accepted. The current first theory put forth by this study is that there is a significant positive correlation between customer satisfaction with courier service and the relationship between courier service and the customer. For a p-value (hypothesis1) with an alpha value of 0.005, H1 can be rejected at 95% certainty. As can be seen in Table 7, the p-value for H2 in this table is equal to zero. Hence, since the p-value is less than 0.005, and because of this, we believe there is a significant relationship between the level of customer satisfaction and insurance, H2 is accepted. And finally, the p-value of luggage delivery is 0.005, which is lower than 5%. Thus, because of this, it is understood that H3 is accepted, it is known that there are a strong courier service delivery and significant customer satisfaction.

V. DISCUSSION

Coronavirus pandemics expansion was recently identified and this study has discovered courier service or new delivery services that may be important in them The overall result analysis carried out from SPSS software reflects that most of the respondents are strongly agreed and agreed with the customer service factor, which the mean of this variable factor is a score of 3.98696. There is only one level of consistency across all other variables, so there are no real-world conditions that are really unique to this. For this mean, the insurance company charges $3.892 for every one pound of coverage, and the delivery charge means $3.74 for every pound delivered. The regression equation reaches this conclusion by finding a correlation coefficient value, which reveals that all independent variables are significantly linked to the dependent variable, which means that the theory of all three independent agencies is applicable.

The survey data show that there are significant connections between the independent variables and the dependent variables. The study found that three components influence delivery: supply chain influence, customers' effect, and next-of-tier supply chain customers' influence.

Regarding the previous result in Table 6, which demonstrated a moderate and positive correlation between the score being assigned to this characteristic is 0.573, the above mentioned variables appear to be related. Customers were convinced that getting their luggage influenced their courier satisfaction, which showed that they had faith in the service. Thus, companies catering to and helping young and adult customers will be addressed by way of this study.

this table 6 displays the correlation coefficient, which is also referred to as the Pearson correlation ratio or Pearson's correlation coefficient, showing an appreciable positive connection between the variables Customer satisfaction is likely to increase in the long term by providing service coverage in the Expand The research proved that the customer in the industry is the same as those in other service industries who must have insurance to meet their expectations It was shown that the insurance could meet the needs of those who were satisfied with this statement: Respondents in agreement contributed to proving this to the survey.

Other stakeholders may also exert pressure on the organisation's service offering, but they are relatively negligible. This table's Pearson correlation shows that when two independent variables are given, a positive and a second one remains constant, the value of the third variable is 0.477. This means that there is a positive and negative correlation between these two variables. The practice of customer service between couriers and customers will benefit the industry because it will lead to higher customer satisfaction. As a result, this service helps the courier companies, it allows them to better connect with customers in the digital era. As a result, these findings show that users' intentions to use the courier to accomplish their tasks prove this study's assumption correct.

Thus, the messenger delivery method should play a leading role in this change. Additional research has to follow on the following recommendations based on the addition of a particular restriction. This would allow future research to examine other state-based courier service or demand expansion as a lot more topics to be explored and delivery locations in other than the state could become necessary to a study. Like in Malaysia, the researcher will be incentivised to investigate various surveys of all participants, even those who have used the service with a more extensive user base. based on this limited research, this study's results have to be considered very tentative in Kuala Lumpur, Malaysia. While a more extensive population base provides more significant resources and will aid in the investigation, but is not essential for results, broadening the study's generalisation in a broader context increases the findings.

Companies may be able to fulfil the standard requirements further as well as be courier companies but will need to remain financially viable if they want to grow. They may be furthering the country's economy in the latter. There was a time in the not-so-too-distant past when delivering services to customers' doorsteps and shipping small packages was the work of couriers. Still, in the last few years, the industry has become far more involved in online shopping than it was in delivering service to doorsteps. Another example is the routine maintenance issue that has been remedied through increased automation in the sector such as the regularising the delivery vehicles and sorting processes in the morning rather than loading them on a conveyor belt in the trucks at night.

In terms of customer service, most people's decision to use courier services is drastically influences how they use the available options. In the 21st century, customer service is at the forefront of business strategy. Today's customers demand to get good service on any medium, whether it is through the app or a device. An excellent customer service rep makes it easy for people to get new services and products while retaining customers by filling requests quickly and returning purchases. On top of this, the various resources they provide for customers, courier companies can use online and offline tools to offer a good delivery support for customers who use track and trace shipments as well as the webpages that help customers answer questions about their delivery status and have an interactive option to enhance it.

To get a better idea of what and the level of customer service that may be influenced by various services, an exploration of the additional services a customer desires, a range of other customer-satisfying qualities such as faster insurance claims time, better baggage delivery, and better customer service could be useful. This study focuses on three specific service types and insurance, but here are some of the other things that might influence courier choices that customers may need to think about. Because the articles and journals provide an indirect guide to investigate the other variables that may affect whether or not given courier services are employed, future research can use the information they gather to explore different theories or examine additional research possibilities. For those who would like to research the number of times individuals and demographics who used courier service in the past, a demographic survey could be used to examine those findings regarding various ages and aspects that take into account group analyses.

Finally, in the pursuit of information, research and exploration may also focus on various data collection methods. Instead of utilising quantitative data collection techniques like questionnaires, the researcher can use qualitative techniques like interviews to obtain the most significant and most reliable results. This allows respondents to ask questions and enables researchers to contact and speak with respondents since both parties will know respondents' requirements during the interview. As a result, full and precise data will be collected in the whole time period. Suppose future research confirms the arrival of a pandemic. In that case, couriers can cause satisfaction levels to rise, and their services will be expanded or introduced to help with the resolution of a future pandemic.

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Government Policy: Change and Preservation of Isan Culture

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Abstract *—The objectives of research were; 1) to analyze the changes and preservation of Isan culture in politics and government through policies of government and constitution, 2) to analyze political and government changes affected Isan culture, and 3) analyze integration of Isan culture and government politics. This is a qualitative research by collecting information from documents in-depth interviews and participatory observation. There are 45 key informants consisting of; 1) 15 government representatives, 2) 15 persons from local government organization, and 3) 15 local scholars as being both monks and laity. The research results were found that; 1. The change and preservation of Isan culture is the result of changes under government policy, which can be determined by the Constitutional Law and the plan of National Economic and Social Development. It starts with developing people by using culture as the base of development. And then local wisdom and culture were applied to create the value of the product based on knowledge and Thai in order to drive to the growth from increasing productivity based on wisdom and innovation. 2. Thai society at the present time has progressed in technology development. The rapid change in all dimensions both social, economic, political and technological was for creating a cultural development plan according to the 20-year national strategy and the directional framework under the policy of development to Thailand 4.0. 3. The integration of Isan culture and government politics is the result of government policies emphasized the participation of all sectors in society and focused on "People-Centered Development" by transforming the development methods into holistic integration. There is a blend of culture and government policies to make income for the community through cultural tourism activities due to the participation of people within that community under the support of government agencies and the private sectors through various activities.*

Index Terms— ***Government politics, Change and Preservation, Isan culture***

I. INTROCUDTION

Cultural changes and persistence of individual cultures has the main cause from the government policy, followed by changes in society such as technology changes and communication without borders. Moreover, the western culture flushes rapidly. Therefore, in which local cultures will be supported or promoted it depends on government policy first. If a culture goes against government policy, it must be abolished or modified according to government policy. In fact, culture will be associated with government policy. Government policy is the rules that people in that society must follow in order to achieve peace in society. The culture is the way of life of that society. They practice together and have been passed down for a long time from generation to generation. Therefore, the way of life or the conduct of people in society cannot conflict with the policy of the government. In this way, culture and government policy are closely related, or are they one and the same? [1] The upper Isan region is considered an area with great cultural strength. In the past, Isan society used culture as a law to govern the country or to live together in society. Because everyone must follow the culture. Isan culture is therefore divided into several levels like law, and there are penalties that differ depending on the type of culture, such as some culture must be strictly followed, if anyone does not follow, there must be a failure, such as death, madness, accidents, and disabilities[2]. Isan culture is the way of life of Isan people that determines human behavior from birth to death as a lifestyle determines the patterns that aretraditionally memorized both family, government, language, building, such as the twelve traditions, fourteen laws, etc.[3] These are all the cultures that are the way of life of the Isan people. That have been passed down since their ancestors and the Isan culture has taken part in controlling nature and human behavior which causes social order, belief system, art, values. And these cultures are also adapting to new technologies. The modern technology has changed the concept and behavior of Isan people to respond to what happens in society in order to adapt to keep up with the environment and government policies. Isan culture influences the way of life of Isan people.

Researching the policies of the government and the change and persistence of cultures is necessary because it is necessary to learn which Isan cultures are essential to the lives

of the Isan people. Isan culture is considered to be the strength of the Isan region, whether it is a performance culture such as music, singing symbols, art and traditions. And these cultures do Isan people be Isan people and they are the basis for social order, and as a way to nurture the minds of the Isan people to be good and moral, such as the popular twelve traditions, which is a culture that the Isan people have practiced for a long time, and this culture can be regarded as a measure of being Isan people or a symbol of Isan people as well. Isan culture is also the basis of morality, foundation of social organization and is also a lull for the mind of the Isan people to be a good person of society. If we do not conduct research on this subject, the culture that is the strength of the Isan people will be forgotten. Because the

new generation has been influenced by foreign cultures and foreign cultures do not cleanse the mind and organize society, but instead bring problems to society whether it is selfishness, aggression, lack of morality as we see.

From the reasons mentioned above, the researcher found it necessary to research government policy: the transformation and persistence of Isan culture in order to be a sustainable Isan culture for the Isan people and as a tool for continuing the organization of the Isan society.

II. RESEARCH OBJECTIVEES

1. To analyze the change and persistence of Isan culture in politics and government through government and constitutional policies.
2. To analyze the political and administrative changes that affect Isan culture.
3. To analyze the fusion of Isan culture and government politics

III. RESEARCH METHODO

A. Research model

This research was qualitative research by collecting data from primary, secondary, data obtained from in-depth interviews and participatory observation. (Participatory observation).

B. Area boundary

For this research, the researcher set up research areas in 3 provinces, namely Khon Kaen Province. Mahasarakham Province and Roi Et Province. These areas are culturally strong and have a lot of cultural change. Because it is a big city, many people believe in many nations, religions, and cultures to live together. It causes cultural diversity which is one of the reasons for cultural change and one more thing, these three provinces are provinces with politicians. The governor contributes to the transformation of a culture. Therefore, the researcher has selected 3 provinces as a representative for the research.

C. Scope of data source

The key contributors used in this research are people who are involved in politics and have been involved in politics for at least 4 years, being a person who can provide good information on political development. And is a person who lives in the area of 3 provinces, namely Khon Kaen Province, Mahasarakham Province and Roi Et Province as totaling 45 people.

IV.RESEARCH RESULTS

1. Changes and persistence of Isan culture, politics and government through government and constitutional policies. The study found that the change and persistence of Isan culture is the result of changes in government policy, which can be determined by the Constitutional Law and the National Economic and Social Development Plan. As for the constitutional law to reflect the changes in this research, the researcher studied the change and persistence of the Isan culture through three constitution, namely No. 16, No. 18 and No. 20. The Constitution of the Kingdom of Thailand No.16 B.E. 2540 gives the greatest importance to decentralization. People participate in all organizations, expand civil rights, freedoms and cooperation. Reforming culture with a goal, the government must provide protection for fostering the maintenance of Buddhism and other religions, and fostering good cultures and traditions, and promoting local wisdom National arts and culture. Conservation and promotion of local culture, there is a national cultural master plan to control and instill virtuous values. There are important operational strategies, including Build the strength of individuals, families, and communities and apply cultural dimensions to their development and disseminate the value of Thai culture in Thai society and the world society. The culture is classified into 3 types: 1) material culture can be tangible 2) mental culture as intangible, and 3) cultural diversity. There are 4 important policies: 1) the maintenance of artistic and cultural heritage,

2) Continuing the art and cultural heritage, 3) production and development of artistic and cultural personnel, and 4) administration and cultural management. The Sufficiency Economy Philosophy has been applied to link the concept with the community culture. It has promoted various traditions and cultures that have existed since their ancestors, such as education in primary and secondary schools. There is a competition for etiquette, lecture, dharma and chanting among the Saraphanyas at the national level. And this constitution requires the government to adhere to the basic policy in a concrete and clear manner as well as requiring the Council of Ministers to administer the Government Affairs to clarify how to proceed in accordance with the basic policy guidelines and must report the results. Problems and barriers must follow the established guidelines.

The Constitution of the Kingdom of Thailand No.18

B.E. By stipulating in the category of rights and liberties of the Thai people, that makes Thais know that there is the right and freedom to perform the ritual according to the individual trust in which the ritual based on the faith is a culture. In addition to personal liberties, it also extends to the rights and liberties in the community of persons who have consented to the community shall have the right to conserve or restore local traditions and wisdom. Good local arts and culture of the nation to be sustainable and enforce that it is a duty for Thai people to carry on the art, national culture and local wisdom. And clearly set the intent of the management. The government has set a policy for the administration of the Government in the cultural policy to promote and support knowledge, love, unity and learning, cultivate consciousness and disseminate art and culture and national traditions. As well as the good values of local wisdom, the government policy promotes and supports the development of local wisdom, Thai wisdom for use in the production of products. Service and occupation, it is a genetic contract that the government or administration must do. And determine the main organization or agency that will be responsible for the preparation of public services.

Participation, Decision making and problem solving in cultural areas in which the local government organization is clearly responsible. All of which can be seen that Culture is

defined in the constitution or supreme law of the country. The focus is on what is clearly and systematically from individuals, society and organizations.

The Constitution of the Kingdom of Thailand No. 20

B.E. This makes both local and national culture a priority that should be given a top priority of economic and social development.

National Economic and Social Development Plan

The national plans that are considered the largest development plans are: National Economic and Social Development Plan. It is a document prepared by the government to demonstrate the principles, broad policies and plans of government to run the country in the desired direction, setting objectives, goals and operational guidelines within a specified period of time. Therefore, each edition of the National Economic and Social Development Plan has different focus on economic and social development according to the location of the period.

The 8th National Economic and Social Development Plan (1997 - 2001) has revised the development concept from the original focus on economic development. To focus on people as the center of development Encourage culture to play an important role in the development of people based on their own culture. Guidelines for the implementation of the government development plan have encouraged people to have knowledge and understanding and take pride in their conservation for revitalizing and spreading the art, culture, good values and local wisdom and applying them for appropriate benefits. The government encourages all parties to participate in the preservation of the culture.

The 9th National Economic and Social Development Plan (2002-1949) Policy related to cultural events is promotion of social organizations and mass media to support and cooperate in the preservation and development of ancient sites, antiques, cultural heritage and local wisdom. Including continually and seriously upholding Thai identity and values, especially using the correct Thai language, national dress campaign and learning about national and local history. Collection and dissemination of religious information on art, culture and Thai wisdom in all areas systematically.

The 10th National Economic and Social Development Plan (2007-2011) introduces cultural dimensions to strengthen people and communities. There are important development strategies related to culture such as the development of quality of people and Thai society towards a society of wisdom and learning. With an emphasis on the development of morals and knowledge, be able to manage knowledge both local wisdom and modern knowledge from community level to country. It can be used for economic and social development. It also emphasizes the strengthening of the community. The government encourages the community to join together to continue activities in ways that are appropriate for the community and encourages the community to apply local wisdom and culture to create value of products based on knowledge base and Thai.

The 11th National Economic and Social Development Plan (2012-2016), the management of the country under the philosophy of sufficiency economy to support the change is to use the existing strengths and potential to benefit development countries to strengthen and stabilize the country's economy. Therefore, the development of the country during the 11th Development Plan is to create immunity in various dimensions for the national development to be balanced and sustainable. By utilizing the potential national capital to benefit integrally and complementary along with strengthening the foundation for national development such as strengthening social capital (Human capital, social capital Cultural capital) to focus on the development of Thai people and society towards a quality society. The government aims to build immunity at the individual, family and community level, able to manage risks and adapt to the changes Have opportunities to access resources and benefit from equitable economic and social development. For strengthening economic capital (physical capital, financial capital), the government aims to develop a strong domestic economy by using wisdom Science and technology and ideas and focuses on the adjustment of trade and investment structure to meet market demand in both Domestic and foreign country. Environmentally friendly production is linked with countries in different regions on the basis of interdependence.

12th National Economic and Social Development Plan (2017-2011)

The key national development principles in the 12th edition of the National Development Plan are based on the

"Sufficiency Economy Philosophy", "Sustainable Development" and "People-Centered Development", and hold the vision of the flamework of national strategy provided that "Thailand is stable, prosperous and sustainable, is a developed country with the development of the philosophy of sufficiency economy " Principles of economic growth that reduce inequality and drive growth from increasing productivity based on wisdom and innovation with participation processes from the public, private, public and education sectors In all areas of the country.

2. Political and administrative changes affect Isan culture The results of the study showed that when there is a change in the government policy level and changes to the constitutional law will directly affect the government of the culture. When there is the 8th National Economic and Social Development Plan, cultural dimensions are applied to human development and social development. The 9th National Economic and Social Development Plan focuses on the development of people using culture as the base of development. The 10th National Economic and Social Development Plan uses culture to develop the economy, society and the country. The government encourages the community to apply local wisdom and culture to create value of products based on knowledge base and Thai being. The 11th National Economic and Social Development Plan creates immunity in various dimensions for the national development to be balanced and sustainable by bringing the potential country capital come to benefit in an integrated and complementary manner along with strengthening the foundation for national development such as strengthening social capital (Human capital, social capital and Cultural capital). The 12th National Economic and Social Development Plan reduces inequality and drive growth from enhancing productivity based on wisdom and innovation. On the Constitution no. 16 in 2540 B.E., everyone has the responsibility to local wisdom and conservation of natural resources and the environment and the government must give local autonomy according to the principle of self- government according to the will of the local people. The 18th Constitution, 2007. A person is protected from the Government from committing any act that undermines his rights or loses his due benefit. Because of religion, Sect of religion, Religiousism or religious practice, A commandment or a religious practice is different from others Local community or traditional local community with the right to preserve or restore traditions Local wisdom. Local and national arts and culture and their participation in management, Maintenance and utilization of natural resources including biodiversity in a balanced and sustainable manner and the person is responsible for the inheritance of national arts, culture and local wisdom and conserve natural resources and the environment. As provided by law, however, the Government must take action to promote and support the development of local and Thai wisdom for use in the manufacture of products Service and occupation. Local government organization has the power and duty to maintain arts, custom, local wisdom and good culture of the locality. Local government organizations must take into account the maintenance of traditional arts. Local wisdom and good local culture as well. And the Constitution of 20/2017, persons have the duty to cooperate and support conservation and environmental protection. Natural resources, biodiversity, including cultural and government heritage must conserve, restore and promote good local wisdom, arts, culture, customs and traditions of the locality and nation. And the government provides public spaces for related activities Including promoting and supporting people, communities and local government organizations participated in action.

3. A blend of Isan culture and government politics

The study found that the integration of Isan culture with political and government is the result of government policies that emphasize the participation of all sectors in society. "People at the center of development" Change the development method to Holistic integration to achieve balanced development using culture as the base for development and continuing the use of culture as capital Immunization of capital (culture) to the development of capital into an innovative commodity generates income for the local community by combining culture with government policies to generate income for the community Through cultural tourism activities This is due to the participation of people within the community through the support of government and private sectors through various activities, but the participation of the people in local cultural activities at present cannot be fully implemented. Because 1. People lacks support for operations from the government sector, 2. The organization responsible for cultural work lacks coordination. Cultures are planned and operated separately, with different people causing disconnections between government sectors. Public organization, 3. Lack of use of cultural dimensions in harmony with the way of life of the people in the community, 4. In the past, some communities focused on solving economic problems mainly. Neglect the value of local culture.

Suggestions for promoting the building of a strong local culture are as follows:

1. Strengthening the community as a whole by reducing dependence on the government.

2. The Government serves to support the implementation of community culture sufficiently.

3. Promote leaders in the cultural development of the community strongly.

1) Higher education institutions in the community take the lead in researching studies and preparing textbooks. Every community should have its own textbook for learning about their history and community.

2) The school takes the leaders in cultivating the value of local culture.

3) Community leaders take the lead in building local culture, Disseminate the way of life, values, local wisdom which is an important part of building a strong community.

4) Create a balance between local and foreign cultural development consisting of; (1) recording of "local cultural heritage", (2) registration of "national cultural heritage", and (3) providing support to all cultures of all groups as being equal people.

V. DISCUSSION

From the research results, there are important points discussed as follows:

1) Change and persistence of Northeastern culture, politics and government through government and constitutional policies. The study was found that was a result of changes in government policy. This is because of having a change in the direction and principles of social and national development. Different areas of development must be changed according to the respective development policies and plans due to government policies. The government's idea of what to do or not, how, when, with three elements: providing target, principles and strategies for achieving the objectives and various support arrangements.[4] Because culture is a way of living man-made. It is passed on from one generation to another. or have accumulated until now. Culture is a creative work of all fields of arts and Buddhism, and culture is something that is good and worth showing taste of the well-educated and well-offended aristocrats. Culture is a way of living in society. It is a form of behavior and expression of thoughts in different situations. Where members of the same society can understand, appreciate together, and human society creates a culture for the benefit of life and ethnic inheritance, when the life of man is vast and has various aspects. The way of people's life in the community and in society as a whole, including society, culture and art, culture is not abstract and concrete that is still, but constantly changing, with culture focused on the well-being of people and society as a whole. Therefore, there must be a link between the past situation to the present and into the future. People in societies of different ages have to make connections between themselves, their families, their communities, society and the world, they must make connections between knowledge in different areas of the humanities, social sciences and science, and there must be a connection between people and nature by relying on connections and understanding of diversity and differences, and the common point of local culture, national culture, and world culture, which evolves and changes with dynamic dynamism, only to connect and weave the way of life of people and communities around the world and with nature which can create sustainable development.[6] Countries have realized the importance of cultural tourism to generate enormous income for their countries. Therefore, culture is used as part of the country's strategy for cultural tourism in Thailand. Thailand has a lot of cultural resources. It is a country with cultural heritage. Government, therefore, should invest in the cultural tourism industry. Which can be an industry that brings the main income into the country and add Culture is the foundation of national security. It represents a national identity; culture can change over time with cultural changes going faster or slow depending on the social context involved. However, culture determines the style of the institution which have different characteristics in society. And it defines human behavior as well as what regulates society and creates order for society. Nowadays, the culture has changed with the times due to the more open communication. And it is the reason for the spreading of cultures from abroad even more. It was related with Snit Smakarn's research paper [5] explained that culture is subject to change. Social changes can occur as a result of the individual social relationships. It may occur in subsection or most of any social relationship, or any change, no matter the change how big or small. It would be considered a social change at all.

2) From the study results, it was found that Isan culture blending with government politics by combining culture with government policies to generate income for the community through cultural tourism activities. This is due to the participation of people within the community through the support of government and private agencies through various activities. This is because culture is everything that is a prosperous thing that people in Thai society have done enormous value. It uses cultural resources to add to the enormous value. And many other cultural investments including art, antiques, ancient sites, local wisdom, culture of living, food, etc. There are many countries in Thailand than other countries.

Several sectors involved in tourism have begun to develop the idea of Thailand tourism, which is one of the important strategic points to become an important center for the ASEAN community. Educational institution has begun to focus on with strategic areas for tourism in the area. Promoting research linking the area between Isan and other regions, including neighboring countries. However, it is important to challenge tourism to thrive. Sustainability requires cooperation or participation of the local people. Especially in cooperation to achieve conservation for protecting and restoring natural resources, culture and local wisdom to remain permanently.

And in addition, another important benefit that the community will receive under the cooperation in tourism management is Increased income and cooperation unity made will create strength at the community level. This is consistent with the Prachamas Lanchanon's study [7] of cultural heritage management through community participation. Factors influencing the participation and effects of cultural heritage management to the persistence of the cultural heritage of the community in the historical tourism city. It was found that the management of cultural heritage through the participation of the urban community

Chiang Mai historical tourism that has an effect on the persistence of cultural heritage in the community is informal management of cultural heritage through social mechanisms. The main players in management are people in the community, formal groups in the community. Religious

institutions in the public sector, while the supporting roles are informal groups in the community. Educational groups in the community, Private sector in the community, Official groups outside the community, Independent academic and informal groups outside the community. The community engagement process consists of initiatives, planning, execution and evaluation. The factors influencing the participation in the management of cultural heritage of the community were cultural factors in religious belief and social factor Relationship in the kinship system and the interaction of people in the community. Factors of obtaining benefits both in terms of building conservation, maintaining the environment and obtaining information. The results of the study can be summarized as a model for the management of cultural heritage, with the participation of the urban community in an appropriate and utilitarian historical tourism.

VI. CONCLUSION

Public Policy Research: Changes and Persistence of Isan Culture after having studied and analyzed the changes, persistence and impacts of Isan culture in the way of politics and government through government and constitutional policies. It was found that the change and persistence of Isan culture was due to the change in government policy, which can be determined by the law, the Constitution and the National Economic and Social Development Plan. It starts with the development of people using culture as the base of development. Later, local wisdom and culture were applied to create the value of the product based on knowledge and Thai being leading to the growth of productivity based on wisdom and innovation where Thai society today has progressed in technology development. Rapid change in all dimensions; both social, economic, political and technological change leads to create a culture development plan according to the 20-year national strategy and the directional framework for the development to Thailand 4.0, and It was found that the integration of Isan culture with political and government was the result of government policies that emphasize the participation of all sectors in society, focusing on "People-Centered Development" transforms development methods into holistic integration. There is a blend of culture and government policies to generate income for the community through cultural tourism activities. This is due to the participation of people within the community through the support of government agencies and the private sector through various activities.

VII. SUGGESTION

A. Suggestion for policy level

From the research results, it was found that the blend of culture and government policies to generate income for the community through cultural tourism activities. This is due to the participation of people within the community through the support of government and private agencies through various activities. Therefore, the managers or related persons should promote and support local cultural tourism in order to create pride of the people in the community so that people in the community have a sense of love for their hometown and generate income of the local people.

B. Suggestions for applying research results

From the research, it was found that cultural tourism by community contributes to the love home community as born of pride in their own locality and generate income for people within the community, so stakeholders should take cultural tourism as a development strength for people within the community to develop to create stability, wealth and sustainability.

C. Recommendations for the next research

1) There should be a study of the cultural tourism development model in order to create sustainability for people within the community. On the basis of government policies.

2) There should be studies on the factors contributing to the success of cultural tourism in each place, both in the area of administration and management on the basis of cooperation from all related sectors.

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Society and Culture of Cambodia in the Angkorian Period under the influence of Buddhism

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Abstract— *The purposes of this article were 1) to present the society and culture of Cambodia in the Angkorian period, 2) to discover Buddhism in the Angkorian period, and) to analyze the influence of Buddhism on the society and culture of Cambodia in the Angkorian period. This relies on the primary source of data used in the documentary research. The methodology adopted in the study is of a critical and investigative approach to the analysis of data gathered from documentary sources. The result indicated that: ancient Cambodia inherited civilization from India. The ancient Cambodians, therefore, respected both Brahmin and Buddhism. The Cambodian way of life in the Angkorian era was primarily agricultural occupation, and the monarchy was the ultimate leader. Buddhism has spread in Cambodia after the finishing of the 3rd Buddhist Council. The king accepted Buddhism as the Code of conduct and carried on for a period. Mahayana Buddhism was the main school in this period. King Jayavarman VII was one of the kings in this period. In this period, the Jayavarman VII has changed the Hindu worldview of "Deva-raja" to "Buddha-raja" instead. The influence of Buddhism in this era is in the field of society. One hundred two hospitals have been built, Arogayasala 121 places. The Dhammasala is a public shelter along the way, and the property is donated to the monks and the poor. In culture's dimension, it consisting of 1) In the architectural aspect such as Bayon castle, Angkor Thom castle, Ta Phrom castle, etc. 2) he building of the 20, 400 Buddha's statues made of silver, bronze, stone, and to distribute in the kingdom. Also, important Buddha statues have been established and passed on to be enshrined throughout the kingdom, including Thailand today, such as Suphanburi, Ratchaburi, Singburi, and Lopburi, etc. It was Cambodia's golden age.*

Index Terms— **,** *Buddhism, Society, Culture, Angkorian Period*

I. INTRODUCTION

The earliest known kingdom in Cambodia, founded in the lower valley of the Mekhong in the first century A.D. was Funan. According to a local legend, the king was founded by the Indian Brahamana named Kondanya (called Hun-t'ien by the Chinese source), who got married to the Local queen. The archaeological finds that Chinese chronicles prove that from the end of the fifth century AD. Buddhism flourished in Cambodia, though it did not occupy a dominant position. It was less popular than some forms of Brahmanical religion of Kaundinya Jayavarman (478-514 AD) Rudravaraman (514-539 AD) were important from the religious and cultural point of view. Kaundinya Jayavarman sent a mission to China under the leadership of a Buddhist monk named Nagasena in 484 AD. [1]

Cambodia is considered a nation of long-ago civilizations and occupies many lands such as Thailand, Myanmar, Laos, and Vietnam. These countries have all been given ancient Cambodian civilizations called Khmer, which requests together. At the same time, The Cambodian or Cambodia itself is influenced elsewhere: the culture of India, rather than the Chinese civilization, a much closer country. Meanwhile, neighbors like Vietnam fully adopt Chinese culture.

On this connection, Buddhism spread to Suvarnabhumi and Cambodia areas when the Funan or Chenla Empire is in power. There was a Funan monk called Sanghapala; he was the *Abhidhamma Pitaka* expert and is also proficient in *Dhamma-Vinaya* to specialize in many languages. Thus, he had translated several Buddhist texts, and the significant one was called "*Vimuttimagga*". This work had widely, though not universally, been thought of a text associated with the heterodox *Abhayagirivihara* of medieval Sri Lanka, which may have played some role in shaping the forms of Buddhist practice in Cambodia following the fall of Angor in the fifteen Century. The presence of the *Vimuttimagga* might suggest the existence of Mahayana and Sravakayana styles of Buddhism in Funan. [2]

After the Chenla Empire period, Cambodia turned to "Mahanakara Period" or "Angor period" that the Cambodia empire had the most powerful. In this period, Mahayana Buddhism progressed together with Hinduism, and some of them were mixed. However, Theravada Buddhism was prospected by the ordinary people, which we can call Theravada Buddhism was a civil religion, but Mahayana Buddhism and Hinduism were for the monarch. However, the three traditions were stayed together with friendly and peaceful. Thus, when Buddhism came to propagation in ancient Cambodia and influenced Cambodians' society, politics, and culture, the author will present in further detail.

II. THE SOCIETY AND CULTURE OF CAMBODIA IN THE ANGKORIAN PERIOD

This is the era when the word "*Campujdesa*" was used in Cambodia for the first time. There are 31 kings in this era. It was a war period with Vietnam and many throne takings, and many castles were built as temples.

For the Buddhist activities, the king was designated, especially Mahayana Buddhism and Brahmanism, and there was a Devaraj cult.

There are three most prominent monarchs:

(1) King Jayaraman VII has changed the city's policy from Brahman's worldview to a Buddhist worldview. Mahayana Buddhism replaced Brahmanism Jayaraman VII created a moral for many aspects: architecture, especially Ta Phrom castle, is home to the Rajaganayati (a dignitary belonging to the Royal chapter) and monks, along with tens of thousands of families. Jayaraman VII manages public health, provides donations to the poor, and has created Buddha statues. This is an era when Cambodia's country is thriving and is truly Cambodia's golden age

(2) Indaravarman III. This king made a historic appearance by revering Theravada Buddhism, which the commoner initially owned. As it turns out, Theravada Buddhism stands out in this kingdom. In this era, a Pali inscription was formed in the first time. The king gave the treasure to his son and then ordained him as a Buddhist monk. It was the first king to be ordained in Buddhism permanently until he passed away.

(3) Dhammashokaraja king, who during the Ayutthaya period of Thailand was armed with a war with Thailand. The captives were held in Ayutthaya. Cambodia has a heart to the Vietnamese side, but Thailand honors Cambodia for two reasons: the king and Theravada Buddhism alike. In this day and age, the king has used his authority to manage Buddhism, especially in the field of organizing studies and organizing Sanghas as well.

III. BUDDHISM IN THE ANGKORIAN PERIOD

Since ancient times, Cambodia has been a prosperous civilization from India as a national treasure as a world heritage site. Cambodian religions derived from India are Brahminism and Buddhism, which were accepted during King Asoka's reign, who sent Buddhist ambassadors into Suvarnabhumi with Sona and Uttara as the 8th as the head of this group. Its earliest reference is in the *Dipavamsa*, the *Mahavamsa* and the *Samantapasadika*. It was occasioned by the need of establishing the purity of the canon which was endangered by the rise of different sects. [3]

Therefore, the both religions have sought to influence the general people to the leader society such as the ministers, the royal family and the king. At any time, the monarchy revered Brahminism; in that era, Brahminism was flourished. But in a period when Buddhism grew, in that era, Buddhism was flourished. Some Cambodians have mixed Brahminism and Buddhism. Thus, the resulting in the two religions continuing to have deep roots in Cambodians' hearts. For the Royal family, the Cambodia's first king Buddhist king as Suryavarman I (1001-1050 AD). He came from Tambralinudotga in the south and was a Mahayanist. The state religion of his country continued to hold its ancient position unchanged by his advent; so, did Theravada Buddhism Continue in Louvo where the Mons lived. Surayavaraman. Thus, the first on the throne to give recognition to this other school of his own faith. [4]

Angkorain period (1345-1975 B.E.) It refers to the era when Angkor Wat, Angkor Tham, was the Cambodian capital, located near the lake north of Siem Reap. The era when the People of Khmer had the highest levels of shame and art and architecture flourished. The city plan is a model of the center of the universe; the Devalai enshrined Shivalik as a center, built on a tall base that forms a thin layer of pyramids like it is located on a mountain.

In the Angkorain period was the era when Angkor Wat and Nakhon Thon played the role of Rajasthani, named Yasodharapura. This era was when Cambodia's history became most evident. It was an era of long rule and Cambodian architecture entered a revolutionary glory era than any age. Most of the stories are based on Chinese archives. On the religious side, Hinduism has played a more significant role in the royal court than Mahayana Buddhism. Theravada Buddhism also plays a role among the people. It can be said that "Brahmanism and Mahayana Buddhism belong to the monarchy of this land, and Theravada Buddhism belongs to the general people.

IV. THE INFLUENCE OF BUDDHISM ON THE SOCIETY AND CULTURE OF CAMBODIA IN THE ANGKORIAN PERIOD

According to the art historian Pillippe Stern, who studies Jayavaraman's reign in detail, perceived three stages in the development of his iconography and architecture. These coincide with the three phases of construction that Stern had noted for early Cambodian kings- namely, public works, temple in honor or parents, and the king's own temple-mountain. [5]

A. The influence of Buddhism on the society and culture of Cambodia in the Angkorian period

The public works of earlier kings, as we have seen, usually took the form of reservoirs (*baray*). Other projects just as a roads and bridges were also built, but they are seldom noted in inscriptions. But Jayavaravaman's program departed from the past. His hospital, probably established early in his reign, were an important innovation, described in the stele of Ta Prohm. Four of them were located near the gateways to Angkor Thom. Others were built to the west of Angkor into what is now northeastern Thailand and so far, north as central Laos. About twenty hospital sites have so far been identified. The Ta Prohm inscription says that the hospital could call on the services of 838 village, with adult populations totaling roughly eighty thousand people. The services demanded appear to have been to provided labor and rice for the staffs attached to each hospital, or approximately a hundred people, including dependents. The hospital steles give details about the administration of the hospital and about the provisions and staff allocated to them.

In this connection, it concerns the Rajavihara (i.e., the temple of Ta Prohm) and its adjuncts where the king set up an image of his mother as Prajnaparamita.

As many as 66,625 people were employed in the service of the deities of the temple and 3,400 village were given for defraying its expenses. All this was meant for a single group of temples. And the inscription informs us that there were 798 temples and 102 hospitals in the whole kingdom, and all of them were given full support by the kings. [6]

A second set of Jayavarman VII's public works consisted of "house of fire" placed at approximately sixteen-kilometer (ten-mile) intervals along Cambodia's major roads. There were fifty-seven of these between Angkor and the Cham capital and seventeen more between Angkor and a Buddhist temple-site at Phimai in the northeastern Thailand. The exact purpose of these buildings is unknown.

Finally, Jayavaraman VII's own reservoir, known now as the northern Baray and during his reign as the Jayatataka, is located to the northeast of Yasodharapura.

These innovations stemmed from what Jayavarman saw as his mission to rescue his subjects, as the hospital inscription says:

Filled with a deep sympathy for the good of the world, the king swore this oath: "All the beings who are plunged in the ocean of existence, may I draw them out by virtue of this good work. And may the kings of Cambodia who come after him me, attached to goodness…attain with their wives, dignitaries and friend, the places of deliverance, were there is no more illness." [7]

B. The influence of Buddhism on the culture of Cambodia in the Angkorian period

The various capitals of the Angkorian kings may be read symbolically as miniature images of the universe. The revers and barays represented the cosmic ocean: the enclosing walls, the irion-mountain chain (*cakravala*) at the limit of the world's golden disk; and the temples, the central world mountain, Mount Meru. The various hydraulic projects at Angkor may all be reduced to simple from of a *baray* surrounding a temple-mountain. In essence the mountain collected heavenly water and is fructified by the encounter. The water then runs down into a *baray*, from where it fertilizes the surrounding soils. We find this arrangement first at Kulen, but it may also be observed at Angkor Wat and the great Buddhist temple complexes of Jayavarman VII. The king ruled from his cosmic center; he both "consumed" his domains and, by the proper performance of the royal cult, radiated back quasi-divine power. In this way, order and prosperity were sustained. At death he was absorbed back into the immaterial realms above the central world mountain and replaced by a new king. The tremendous cosmic cycles of origination and dissolution so

typical of the Khmero-Indic worldview were recapitulated as one reign followed another. This basic pattern worked whether the cult performed at the center was Brahmanical or Buddhist, the system reaching its apogee during the reign of Jayavarman VII. [8]

Thus, with the passage of time the Brahminical gods in the great sanctuaries like Angkor Wat were replaced by the Buddhist image. We cannot tract the exact states of this conversion, but, gradually, Buddhism became the dominant creed in the Cambodia and today there is hardly any trace of the Brahmanical religion in the country, except in some of the ceremony and festival of the people of Cambodia.

On the other hand, Angkor Thom and its vicinity reflect mostly Buddhist epics. Built by King Jayavannan VII around the end of the twelfth century to the beginning of the thirteenth century, at these sites also, each cardinal direction has its own distinguished monuments and symbolism. Among them, *Bayon* evokes many Buddhist symbols of *Avalokiteshvara* with its more than two hundred large faces carved on 54 towers; this monument remains one of the most enigmatic as well as majestic temples of the Angkor group. [10]

As mentioned above, it is evidence that: Buddhism and Brahminism have a huge influence on the construction of Cambodian society, both psychologically. Traditions, rituals, literature. Language, education, architecture, construction. It is a culture that all Cambodians have finally seen and is unique to Cambodia. When foreigners think of Cambodia, they often think of Nakhon Wat Castle, Angkor Tham Castle, and the beauty of churches, cathedrals, palaces, etc. Therefore, Brahminism and Buddhism have a real influence on Cambodian society and culture in all aspects.

V. CONCLUSION

An ancient Cambodia inherited civilization from India. The ancient Cambodians, therefore, respected both Brahmin and Buddhism. The Cambodian way of life in the Angkorian era was primarily agricultural occupation, and the monarchy was the ultimate leader. Buddhism has spread in Cambodia after the finishing of the 3rd Buddhist Council. The king accepted Buddhism as the Code of conduct and carried on for a period. Mahayana Buddhism was the main school in this period. King Jayavarman VII was one of the kings in this period. In this period, the Jayavarman VII has changed the Hindu worldview of "*Deva-raja*" to "*Buddha-raja*" instead. The influence of Buddhism in this era is in society; there are102 hospitals built, Arogayasala 121 places. The Dhammasala is a public shelter along the way, and the property is donated to the monks and the poor.

In culture's dimension, it consisting of 1) In the architectural aspect such as Bayon castle, Angkor Thom castle, Ta Phrom castle, etc. 2) he building of the 20, 400 Buddha's statues made of silver, bronze, stone, and to distribute in the kingdom. Also, important Buddha statues have been established and passed on to be enshrined throughout the kingdom, including Thailand today, such as Suphanburi, Ratchaburi, Singburi, and Lopburi, etc. It was Cambodia's golden age.

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Leadership According to the Buddhist Concepts

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Abstract- *This academic article aims to study about leadership according to the Buddhist concepts which can be said that Buddhist leadership is a process of influence in which leaders on individuals or groups lead to the achievement of goals that all are willing and mutually satisfied by interacting, conveying ideas into the continued action of A process that relates and influences between a leader, followers, and a situation or a task using Buddhist concepts as the main leading. (SamritKangpeng, 2019). So a really great leader is who can put truth, righteousness as a reference that allows people to join forces in the creation of life and society without the need for greed or anger as a stimulus. (Phraphromkhunaphorn, P.A.Payutto, 2005). Leadership individuals must be willing to tolerate problems arising from the performance of their assigned duties to the best of their ability leading to the promotion of better management and sustainability which must consist of virtues in self-management, namely 1) Alms is a sacrifice to share in a way of giving relief 2) The precepts are the focus and care of one's body and speech, not to hurt oneself, others and society. 3) Nekkhamma is to refrain from sins and various kinds of evil. 4) Wisdom is knowledge 5) Effort is persistence 6) Endurance is patience. Patience is the quality of being a leader in Buddhism.*

Index Terms — ***Leadership, Buddhist concepts, Virtue in self-management***

I. INTRODUCTION

A good leader must be ready to qualify that is to have leadership with the change process, the leader must change the performance of the follower to get results beyond the specified goals, attitudes, beliefs, and confidence and the needs of the follower must be changed from the lower to the higher level. (Bass,1985, p 545). The process by which one influences another person or group, encouraging others by using knowledge, ability, experience, personality, motivation and motivation in the group to cause an activity or change according to the situation in order to achieve the organization's goals. Leadership requires three key components to arise: a leader, a follower, and a situation, where circumstances determine who is right for the situation and those in leadership must be able to motivate, persuade individuals or groups to act on their own opinions and needs with willingness and trust. In addition, they must be willing to cooperate in coordination to lead the achievement of organizational objectives. (Nookraimashek, 2016, page 29)

PhraPromkhunaphorn (P.A. Payutto) (2003) said what the Buddha taught which shows the importance of the leader to the salvation, welfare and peace of all society and all the nations that

"*When the cattle cross the water If the chiefs of the herd crunch the cattle, the whole pack goes together for as there is a leader who crooks, likewise among humans, whoever is assumed to be great If that person behaves unfairly outside public then will behave damaged. All the states will be difficult if the ruler is unrighteous. When herds of cattle swim across the water If the cattle head of the herd go straight to the whole cow, then the whole herd goes straight together for just as there is a leader who goes straight. Among human beings Whoever is assumed to be great If that person is righteous. Among other people will walk along the whole region, it will be blessed if the rulers remain in the dharma*" (ang.Chatukk. 21/70/98)

People come together as a group, a community, and a society, but what we say are together. In truth, if you look deeper you will see that the people were actually gathered together but often combined just outside, the inside is quite scattered. The fact that they are scattered is that there are many differences, different minds and hearts, different feelings, different thoughts, different needs, different knowledge and ability, different levels of development etc. When there are such differences and scattered, there is a problem of how to get people to come together. Doing various tasks get together and get along well to pass the

dangers, obstacles, all the difficulties will be possible to achieve benefits, happiness, or success that is the destination. Like that when a person is doing a particular activity or behavior, there must be some motivation to participate. If the motive is wrong, it will lead to the wrong journey. If the motive is right then move on to development. (PhraPromkhunaporn (Por.Payutto), 2003). Good leadership must have incentives, comparable to the above-mentioned Buddha diction.

KhampornKongtoey has defined "*Leadership*" as the ability and behavior of a leader, using both science and art to inspire confidence in others and support people who have a desire to work showing behavior able to work until the achievement of the goals set by the joint agency. (KhampornKongtoei, 2017, page 21)

Pensirisomruen (2017, page 21) defines "leadership" as a process of using influence, motivation or use of power in a position to enable subordinates to work together to achieve the objectives that It is related to the personality and character of the leader who has shown the behavior that leads to success.

VibhavadiInduang (2018, page 19) has defined "Leadership" as those who influence others in a group who are capable of motivating interactions between members of the group. Group Have a responsibility to support and promote and empathize with people who work together to work together always have perseverance, patience, determination and ability to improve, change, and correct various imperfections.

II. LITERATURE REVIEW

You need to understand the principles of leadership. Therefore, to be a good leader, the work will be successful according to the goals effectively which depends on being a good leader because the leader can be considered as an important pillar in leading to success or the set goals so it can be said that a leader is like a general who can lead to victory and leaders must be a good role model for followers to be victorious.

Definition of leadership

Jacobs &Jaques (1987, p 17) defined leadership as the process of developing work goals and to devote energy to work in order to achieve the goal.

Hersey & Blanchard (1988) defines leadership as a process that influences the activities of an individual or group in an effort to achieve goals in a given situation.

Dubrin (2004, p 334) defines "leadership" as leadership as the ability to inspire confidence and support people who have a desire to work successfully according to the goals of the organization.

Pensirisomruen (2017, page 21) defines "leadership" as a process ofusinginfluence, motivation or use of power in a position to enable subordinates to work together to achieve the objectives that It is related to the personality and character of the leader who has shown the behavior that leads to success.

It can be concluded that "Leadership", the meanings of "leadership" (Leadership) as a leadership that has 5 meanings: 1) leadership to convince others (Convince others) 2) leadership that Influence over others (Influence over others) 3) leadership that encourage and direct others (Encourage and direct others) 4) leadership that have both science and art leadership (There are both science and art) 5) leadership that have Knowledge, ability and experience (Knowledge, ability and experience).

Importance and leadership characteristics

The importance of leadership

Mills (2005) emphasized "Leadership" that in a management context. Effective leadership is essential in driving a nation, organization or business towards success. The lack of leadership affects organizations in many ways, for example the lack of direction to pursue the mission and the achievement of visions, slow movements towards success, many researches are about organizational administrations and believe that the right decision is made and right time will make the organization drive to success. However, decisions alone cannot change an organization because after having made a decision which organizations must also face the problem of implementing decisions into action which this step deals with the issue of whether leaders use their power to influence behavior to adjust the situation and overcome opposition in the organization. Hence, leadership or leadership is essential to successful implementation of decision-making.

Burrow, Kleindl, &Everard (2008) emphasizes "Leadership" that achieving goals requires leadership to persuade personnel or groups in the organization to work together to achieve the organization's goals which the person using this ability is a leader who must have good interpersonal skills to enable people to work together effectively, therefore, human relations skills are essential to the development of corporate leadership in today's business sector. Applicants' leadership skills are assessed to be considered for employment. Many companies want to employ individuals with leadership qualities and leadership experience that are consistent with organizational values and culture. It believes that employees with leadership skills can help the organization achieve its goals and lead the organization to success.

In conclusion, the importance of *"leadership"* (Leadership) mentioned above, the researcher can conclude that the "leadership" is important because of leadership is a key factor for leaders, followers (leaders), followers and organizations. There are five main areas: 1) Achieve the goals set 2) Motivate and inspire 3) Strive towards a

common goal 4 Influence the work of the follower 5) Persuade followers to work with confidence.

Characteristics of leadership

PhraDhammapitaka (2001, p. 22) has given the characteristics of *"leadership"* that 1) oneself must be good, have to be good example 2) must have kingship need to find a consultant and good associates who have knowledge and ability and seek additional problem's results. 3) must be careless 4) must be strong enthusiastic, earnestly, even if there are obstacles, dangers, problems, does not diminish 5) be able to do work and help others to do work. 6) must be broad-sighted, farsighted, an intellectual trait which a person who is a leader is, of course, the most important wisdom.

Seth Khunthabut (2013, p. 20) has given the characteristics of *"Leadership"* that it summarizes the leadership characteristics of general leaders and leaders as school administrators based on the academic concept and the above research results. It is that having the right and consistent characteristics help leaders tend to be most effective for the organization but it cannot be guaranteed that it must be effective because it must be appropriate for the situation at that time.

KraisornRaksuan (2016, p. 42) has given the *"Leadership"* character that the qualities of good leadership It means having good health in both body and mind, being well educated, virtuous and always developing oneself, having self-confidence, having good behavior and good human relations, no self-opinion, fair, honesty, having creative initiatives and a person who has a good desire for society as a whole.

VibhavadiInduang (2018, page 23) has given the **"***Leadership"* trait that a successful leader requires management skills, having creative initiatives and morality, ethics, being a good role model for others to respect and be a suitable role model.

Dubrin (1998, p 335) defines the leadership trait that the strategic leadership character is about top management. It is similar to path goal leadership or transformational leadership. (Transformational Leadership), which is a leader for change rather than constant.

There are elements of the aforementioned features: 1) thinking and understanding at a high level (High-level cognitive activity) 2) can lead to various factors for gathering multiple inputs to formulate strategy 3) anticipating and creating opportunities for the future. (Anticipating and creating a future) 4) have a revolutionary way of thinking. (Completely change) (Revolutionary thinking) 5) Creating a vision.

Daft (1999, p 334) has described the "Leadership" trait that it offers the best nine individual attributes of a leader: 1) charisma, faithful, respectfuland reliable, the ability to understand the needs of others can lead others to a common sense of purpose and vision. 2) individual consideration and mentor, mentor, listener, rationale, support, and help new entrants 3) smart stimulation (Intellectual stimulation) encourages others to think reasonably and use information can motivate others to think and solve problems using new approaches. 4) courage insists on thoughts and beliefs, do not pressure others to have opinions that are consistent with themselves. 5) be reliable, (Dependability), maintain the commitment, admit your mistakes for working independently 6) flexible (Flexibility), able to adjust the practice according to the environment and situation. 7) be honest (Integrity) behave as a model in moral and ethical aspects. 8) the ability to consider events (Judgment) is used to assess objectives from a variety of options and to bring facts into account, logically and truthfully, take past experiences as information for decision making in current conditions. 9) respect for others in both opinions, ideas and suggestions of other people based on their status and position.

Lunenburg and Ornstein (2004: p 278) defines the "leadership" character that will lead to leadership must consist of the following five characteristics. 1) capacity: leaders must have high work potential. 2) success (achievement) leadership, have an empirical performance, success in the implementation of the work as well. 3) responsibility (responsibility), those with high responsibility are likely to be the source of leadership as well. 4) participation, must be involved in all aspects of the organization or group of people. 5) status: people who will have leadership to others must have a stable and reliable status.

From the characteristics of "leadership" mentioned above, the researcher can conclude that "leadership" is the character of leadership that characterizes the behavior of the leader with five characteristics are: 1) honest 2) reliable 3) uprightly 4) responsible 5) respect others.

Leadership according to the Buddhist concepts

Leadership individuals must be willing to tolerate problems arising from the performance of their assigned duties to the best of their ability, leading to the promotion of better management and sustainability which must consist of virtues in self-management, namely: 1) alms is the giving and sharing in a way of giving relief; 2) precepts are the self-discipline and the preservation of one's body, speech, not to hurt oneself, others, society 3.) Nekkhamma is to abstain from sins and various types of evil 4) wisdom is the knowledge 5) effort is persistence 6) endurance is patience.

PhraPhromkhunaphorn (P.A. Payutto) (2019) said that the Lord Buddha, as the leader or prime minister, how does his highness qualify? This story cannot be described in detail but will talk about outstanding features that the Lord Buddha himself said.

First of all, in one place The Buddha said "We are the friend of all animals, relying on me who are good friends, all

animals are free from all sufferings" This statement shows leadership but there is no word "leader" in this speech. You should understand that being a kingship is the most important characteristic of leadership, strength or essence of this Buddhist word. The leader is a leader for the benefit of him, especially for Buddha, that is, for the benefit of all beings or all human beings If viewed in a narrow circle, it is that the leader is the one who intends to do it for the benefit of the people, to their relatives, friends and community to join the nation, to join society or for that organization (But organizations that are created for the benefit of humanity and fellow human beings for society), therefore, the main principle isa good friend in that matter "*Do whatever for the benefit of him*"

Second, the leadership of the Buddha expressed in another way that who discovered the path or discovering the way or who knows the way and gave the way what is it for in order to reach a destination, it means that the Lord Buddha is able to help people reach their destination. Because people want to reach that destination, but they don't know the way. The Lord Buddha discovered the path, being the way to the destination and then came to help tell and guide or give directions like a tour guide, for making it easy for other people to join the journey or take the ride. You use the words "join" or "come to join" to travel to your destination. This means Leaders must know the destination clearly and knows the way to go to that destination, which this is an important feature.

Next, the Buddha has another aspect of leadership, which is expressed in words for some time that is, the Lord Buddha is the one who helps people to study, learn or train themselves until they are able to pass from suffering or problems to his destination. This means leaders do not reach out to others directly but to help others to train themselves, learn until they can be self-sufficient and save themself from problems or accomplished the goal finally.

Leadership according to Brahma Vihara 4

The 4 virtues of Brahma are fundamental virtues that must be present in the mind. and it is the attitude of the mind to show or treat others properly in accordance with the four situations that he is experiencing namely:

1. In the situation that he is in normally, we are kind, friendly, goodwill, want him to be happy which means good wishes towards others, both the individual people with whom we are involved extends to goodwill towards fellow human beings or to all society all over the world. Mercy is thefirst virtue that musthave which is used in normal times when other people are together normally while we have mercy and good wishes to think of ways to continue creating happiness and prosperity for him.

2. In situations when he is in trouble while we have a kindness, the feeling of us is swaying by suffering, trouble or his problems and want to help relieve him from suffering that trouble. This kindness is different from mercy. The kindness is used in normal times but when he falls down to become in trouble and distress, we have compassion and help to heal our suffering.

3. In situations where he moves high in virtue happiness, success. We have attitudes, meaning that when they turn up the heights well, be happy, do what is right and good, success, we then moved to the Mudita, which Is congratulating to help promote and support in the industry as well as being a general that It is very important. When people have problems, having trouble such as getting sick and getting poverty They must be a kindly concern to solve problems when someone succeeds in doing what is right What makes it progress whom must have eyes to help support, but in normal times it must not be neglected that need to pay attention to give him a good life finally.

4. In a situation where he or she has done wrong or wrongdoing We are detached, meaning that when he does something wrong by violating the virtue, which is violating the principle or violate the accuracy, lose the principle, lose the rules, lose fairness and lose righteousness. The Leaders must be in Upekha.

Upekha is to maintain impartiality,impartial, non-partisan, and stop making efforts to comply with 1 - 2 – 3, and keep the principles, rules, rules or maintain the virtue. This Upekha is a balancing act. It is a limitation or control over the practice of 1 - 2 - 3 (mercy - kindness - empathy) not to go beyond the scope until it becomes awaste of justice or helpingpeople must not lose fairness, not to destroy the principle, not to be in violation of the righteous rules.

Leadership according to Suppurisadhamma 7
There are seven qualities of leaders:

1. know the principles when holding a position, having a position or doing anything. You must know the principles, know the job, know the duties, know the rules and the relevant rules, such as the rulers of the nation must know the principles of political science and the rules of state, the law since the constitution and standing in principle, set himself up in principle to get a community, society, organization or whatever business must be principles, there are rules, there are rules that leaders must know and sticking to that principle.

2. know the destination. Leader, if you do not know the destination, you do not know where to lead people and business. Besides knowing the destination Is clear in the destination Must have determination to reach the destination. This is a very important feature. When the heart is determined even if there is something wounding will not be shaken anything irrelevant, not getting into the target, not getting in the way, not messing who would say that she is sarcastic? When it is not relevant did not mind, don't keep it emotional, do not mess with the fussy things. Only things

that go into the direction of the destination mind towards goals clearly and steadfastly.

3. know oneself is to know who they are and what they are. In any state, qualifications, readiness, aptitude, intelligence, ability How much power There are more errors. Weakness and strength which will require self-examination and always remind myself. This is for the benefit of personal development to qualify and more, not as a leader and to be a perfect person, not having to develop oneself more you become a leader, more you have to develop yourself all the time to lead better.

4. know about is knowing the fit. It means that you need to know the boundaries, limits and appropriateness to be made in various matters. For example, the rulers of the country know about criminal punishment and collecting taxes, etc., not just giving in to the heart and must know that in doing that or in that story what elements or factors are involved? How to do it, its elements will fit, proportionate various operations, everything must fit If it doesn't fit, then misses the goodness, it will bring about real success. Therefore, you must know the elements and factors involved and arrange them in a suitable manner.

5. know the tense is knowing the time, such as knowing the sequence, timing, quantity, the ideal of that time When will this matter be done, what time will do and what will be appropriate, as you can see that even speaking must know the time. As well as know how to plan work in spending time This is a big deal, like planning that society will only likely be like this in the future. And events like this will happen How do we plan for that situation.

6. know the community means knowing society from a wide scope, namely knowing the world society, knowing the nation's society. How is in the situation what problems do you have, what are your requirements? Especially if we will help someone. We must know the problem and know his needs even a small community If we will help him. We have to know his needs too properly meet the needs or fix the problem on the spot.

7. know a person is to know the person involved. Especially people who come to work together to join together and the people we go to serve according totheir individual differences to treat him properly and effectively as well as being able to provide assistance services according to the needs, know how to use relationships, make suggestions, criticism, or accept them. Especially in the use of people which must know which person is how have the courteous how capable to use people to suit the job besides that, he knew the benefits he could get. Basil that in the work, it is not that he will be just a working tool but must benefit everyone who works have developed themselves Leaders should know what benefits should he gain for the prosperity of his true life?

Leadership according to Sangkhahawatthu 4

Sangkhahawatthu 4 is a fair that enhances the charm of the leader. Make us loved by followers, help build human relations that can help in operations, achieving the desired objectives, there are 4 things that:

1. Dhana: giving is offering which must come from a generous or generous mind. Such giving may not be a thing, money, knowledge, understanding, technology.

2. Piyawacha: speech is a lovely speech. Admirable speak politely, gentle sweet clarify with ingenious reasons that are beneficial and create a good understanding of each other

3. Atthajariya: behavior is serving or benefiting other persons, that is, acting or doing things that benefit each other. They help each other by giving physical strength, encouragement, thinking and resources.

4.Samanattata: is the self-determination, always put himself in a manner that is appropriate for his status or position.

In summary, Sangkhahawatthu 4 is the principle that helps in building human relations. Which consists of

1) Be generous
2) Sweet words
3) Welfare for people
4) Put yourself fit

III. CONCLUSION

Leadership according to the Buddhist

Concepts is that leaders must maintain their virtues consistently to avoid conflicts between the leader's relationship with the follower as Buddhism demonstrates the important qualities of a leader, it is called "Dharma sovereignty" means that it is very fair, take the righteous Glorify the principles to act according to and for the sake of the truth, the righteousness, the virtue, not the autocracy, that is, not self-centered and it is not a patriarchy, that is, not looking for popular ratings, not just for campaigning or for people who like it, but take the right to take the truth, the right and the virtue, judge by principle since the principles of human establishment down to the abstract principles that support the establishment of that principle Even when anything needs to be diagnosed Is acting as a mouthpiece or a medium of dharma or as a channel for expressing himself of the dharma, i.e. principle or rule, this property is similar With the conduct of the judge.

The leader must have this strength, that is, pursuing the most noble things and with a high-minded heart pursuing this very good and wonderful thing will cause encouragement to create everything, bring together the people that are going to come together, join hands, join hands and do it together with a new aim that has a clear desire together And brought in through behavior, mental and intellectual, it will achieve its true purpose, that is, for the benefit of him, the people, the society and the whole world.

In line with the Buddhist principles that The Lord Buddha and all noble disciples is the one who achieves their benefit that self-development is good and ready It is therefore the one who lives for the sole purpose, the Bahujanahitaya Bahujanasukhaya Loganugumpaya, which means for the benefit. For happiness, for the sake of the people of this world, is the practice of the Lord Buddha and all Arahants Which leaders follow in the same way If you follow these principles you will be successful can be dependable of the people that leadership has another position, called Natha Is a dependency like the Lord Buddha as a person who serves the world, it is "Loganatha", meaning that it is the refuge of the world. Leader, when leading well, will be a dependence on others. A refuge of the people until it is a refuge of humanity in the future.

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Sufficiency Economy Philosophy: From the Buddhist Notion to Survival in Covid-19 Pandemic Crisis

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Abstract— *This paper's purposes were 1) to present the principle and justification of sufficiency economy, 2) to study the Buddhist notion in the sufficiency economy, and 3) to examine the values of the sufficiency economy for survival in the Covid-19 pandemic crisis from the Buddhist viewpoint. This paper used documents from Buddhist texts and modern texts. The contents analysis was used. The result indicated that the principle and justification of sufficiency economy found that the central concept of sufficiency economy philosophy is to guide the existence and practice or drive the country's development to prosper stably and sustainably in various dimensions, which has changed. The result is a balanced development in all aspects. It is ready for economic change, society, environment, and culture, 2) the Buddhist notion in the sufficiency economy found that the sufficiency economy principle is directly related to the principles of the Middle Path in Buddhist teaching, which there are eight factors emphasize the refrain from the wrong occupation and provide a good faith occupation, 3) the value of the sufficiency economy for survival in Covid-19 pandemic from the Buddhist viewpoint found that the principle helps people to live their lives: be conscious of living during the COVID-19 pandemic by realizing the value of life. Therefore, Buddhism doesn't focus on how much wealth we have, but it focuses on the right approach to property acquisition. Therefore, when we live in this crisis, we should live with self-sufficiency, protection, and rationality.*

Index Terms— *Sufficiency Economy, Philosophy, Middle Path, Buddhism, Covid-19*

I. INTRODUCTION

Human as the social being is famous among groups and gathers as families and communities. When born, they must pursue a career to survive and live in a society where human beings live for four factors, food apparel, habitats, and medicines which are physically demanding to humans. When humans desire to live in the world, then the ultimate human need is happiness, which all human beings expect. Happiness in human society can only happen if there is a peaceful coexistence between man and man and nature. Peaceful coexistence is required at all levels of human society, including families, communities, workplaces, regional organizations in the world. Whenever there is peaceful coexistence, there is peace, and the community system is a system of peaceful coexistence.

In a human society in a globalized world, as opposed to all regions of the world, there will be battles between tribes, between religious or international groups, war is severe destruction of peace. There are hundreds of millions of people who have been killed in world wars two times in the last century tens of millions of people died each time. It is estimated that all kinds of wars have killed about 200 million people over the past hundred years, but who have been killed from poverty and Injustice in a society called Silent Violence is many times more than that. Now there is a global crisis, both economic crises. The social crisis, the real environmental crisis, is a crisis of coexistence. The

coexistence crisis is caused by a conflict between the body and the mind. Physically, human beings have come into a unified connection, but the heart is not yet one, still thinking about the unique benefits a particular group might call it. "Globalization without Global Consciousness." The lack of consciousness of unity causes a coexistence crisis, namely the lack of peace of happiness. [1]

Therefore, what human beings in society should adhere to for a happy coexistence in society is either used in the profession to live peacefully or call work, which is one of humankind"s most important activities. This inevitably means that human beings must have a career or professional ethic because, in that work, human beings must have a society consisting of many people. Since in the field of work, working alone is difficult, so it is desirable to frame humans for practice and peaceful collaboration. [2]

Buddhism is one of the most influential religions globally, with doctrines focused on creating humanity's peace. Buddhism's philosophy is like diamonds, which are already cut into polygons. Scholars can arrange a magnificent view of rainbow sequins in many ways. Buddhist Dhamma offers intellectual development principles aimed at training them to achieve insignia, getting out of trouble. Buddhists generally seem to have access to Buddhist principles in terms of the Buddha, the Dhamma, and the Sangha, *Sila* (morality). Indeed, the Buddha has laid out human development and learning principles in a complete process with complete elements and procedures in order. [3] Buddhism has a focus on human existence. In particular, occupation is the principle of sufficiency economy principles, known as the Samma-ajiva (Right Livelihood). Right Livelihood refers to how we earn our living in society. It deals with the kinds of trades, which a lay disciple should avoid. This is the one Path in the Eightfold Path of the Middle Path. The concept of sufficiency economy in Buddhism, Ven. Phra Dhammapitaka (P.A.Payutto) had mentioned in the Buddhist Economic that "Middle Economics or Economic in the *Majjhima-padipada* (Middle path) because of the lifestyle in the Buddhist way which called the *Magga* (Path). The meaning of the exact name is the *Majjhima-padipada* (Middle path) means impartiality is a good suitable." [4]

Does the occupation follow the middle Path in Buddhis? This requires looking at the cause or origin of the work, namely the responsibility of each profession. For social responsibility, this is a factor in conducting business under the sufficiency economy guidelines. In the beginning, we need to understand that human nature is the difference between individuals. By taking into account individuals in a summed-up manner, human behavior inevitably contributes to and predisposes it. Human beings have value and dignity. Humans are complex, which has five main elements: (1) Individual defenses), (2) a whole person), (3) a caused behavior, (4) dignity, and (5) complex. [5]

However, the spread of COVID-19 has affected all sectors of society, especially in businesses that have been significantly affected. People are unemployed, there are more and more factory levels, or companies are increasingly closing. Industrial production workers have moved back to the countryside to find ways to survive this crisis.

According to the above phenomenon, the authors are interested in studying the sufficiency economy principles depicted in the Buddhist scriptures that will contribute to Buddhism's development. Under this Buddhist approach, the sufficiency economic principles would be beneficial to the business industry to be an organization with administrative regulations under the principles of good governance and peaceful social well-being, especially in the era of the COVID-19 pandemic crisis in modern times.

II. THE PRINCIPLE AND JUSTIFICATION OF SUFFICIENCY ECONOMY

a. Royal Initiative About Sufficiency Economy

In 1974, King Bhumibol Adulyadej gave his first speech on sufficiency economy. The ceremony was given to students of Kasetsart University at the university's graduation ceremony. The development of the country needs to be done in stages. The basic must be created: appropriate. The suitable is enough to eat, enough of the initial majority of the public. On this connection, the using economical but academically correct equipment methods. Once the basics of stability are ready and practical, we will build; further, the company will continue to strengthen its prosperity and advanced economic position.[6]

Until December 4, 1997, King Bhumibol Adulyadej gave his speech again on the topic of "Sufficiency Economy" to various people who attended the auspicious occasion of his birthday at Sala Dusit Dalai Suan Chitralada. Dusit Palace, Bangkok-Thailand. The an essence to that:

> *The truth has always been said at meetings like this that being a tiger is not essential. We have a good economy for having, which means that carrying ourselves to be self-sufficient means that self-sufficiency does not mean that every family has to produce its food. This is too serious. However, in the village or in the district, there must be sufficient moderation. Something that makes more than it needs is sold, but it is sold in a not-so-distant way. It doesn't cost much shipping. So, the economies say it's obsolete. True, it may be outdated.*

> *Others wanted to have an economy that wanted to trade, called a trade economy, not a self-sufficiency economy, consequently, he felt it was not a luxury. However, Thailand is a country with merit that it produces enough. Like rice is grown, he encouraged rice to be grown sufficiency for himself and his family. It's in a small barn, and if there's enough, it's for sale. But others say it's offensive, especially in the Northeast. He said he had to grow jasmine rice to sell it—this one's right. Jasmine rice sells well, but when it is sold, it must be purchased by itself. Everyone grows jasmine rice in The Northeast. He likes to consume sticky rice most of the time, which grows sticky rice because he advertises that people who grow sticky rice are fools. Tell him to grow rice. He'll love sticky rice and grow sticky rice. He likes to grow whatever rice he wants. Let him grow that rice and keep it for the rest of the year. If you have enough rice to grow rice, you can grow jasmine rice to sell it..."*

Summary of the essence of "Sufficiency Economy" from the King Rama IX speech that "*Being a tiger doesn't matter, we must have a self-sufficient economy that means holding yourself to self-sufficiency*." "*This self-sufficiency that it doesn't mean every family has to produce their food, I'm going to have to weave it ourselves. This is too serious*." [7]

On this connection, after that, in the wake of the economic crisis, King Rama IX had another speech on December 4, 1998: "In 1974, the day mentioned that we should do enough to eat. When you have enough to eat, it means a sufficiency economy. The more the whole country has enough to eat, the better."

> King Bhumibol Adulyadej gave his speech again that "…a sufficiency economy is the foundation of life. The foundation of the land's stability is like a stake that is nailed to support the building's houses. The structure is stable at stake. But most people can't see the stake. Then, I forgot the stake.... and he said again, "our lives are like building a house. First of all, the stake must be embroidered. You have to create a base first, otherwise, the home won't last... [8]

Sumeth Tantivejkul had said that the sufficiency economy is summarized in six key areas: (1) Any action to be self-sufficient means doing it modestly, so with the cause and effect. The development must be in the order of procedure, (2) it must build a built-in immune system to be able to face and survive the impact of external and internal changes, (3) knowledge, prudence, and extreme caution are required to apply academics to plan and implement every step of the way, (4) the basics of the people of the country must be strengthened to be conscious of morality, ethics and morality (5) must live with patience. Perseverance, wisdom, and prudence, and (6) balance and readiness to support various areas changes. [9]

b. Definition of Sufficiency Economy

According to the dictionary of the royal society, B.E. 2554 (2011: sufficiency economic means the philosophy that His Majesty King Bhumibol Adulyadej has adapted to live and behave for the people from the family level. At the community level, to the state level, to operate on the central line, not to be negligent, not greedy, take into account moderation, rationality, immunity, and use knowledge and morality as the basis for surviving crises, being stable and sustainable amidst globalization and change. [10]

Ven. Phra Dhammapitaka (P.A.Payutto), a Thai Buddhist monk, had expressed the meaning of sufficiency economy as follows: "...Sufficiency economy is cultural because it refers to life, including beliefs, values, common practices, economy, education, aesthetics, traditions, sufficiency. Self-reliance according to the principles of religion..." [11]

Prawet Wasi has given the meaning of sufficiency economy as follows: "...balanced economy, integrated economy, moral economy, basic economy and community economy..." [12]

Sumeth Tantivejkul gave the following sufficiency economy: "sufficiency economy means an economy that can sustain itself (relative self-sufficiency) without having to build its economic basis well." [13]

Sane Jamric also has said that a sufficiency economy is an economy based on balance. Adhere to the principles of sufficiency in life. There is a balance between life and things, living a good deed, eating as a vocation first, and then developing into good eating in an environment. Thus, a sufficiency economy is a philosophy or concept with principles and ideologies that help create human beings and society towards sustainability by knowing themselves. Sufficiency is not very greedy, rational, and reckless. [14]

Apichai Panthasen said that a sufficiency economy is an economy that does not emphasize maximize utility, which is a significant cause of economic problems in today's world but emphasizes greed. Sufficiency economy emphasizes not being greedy, creating systemic immunity. The country's economy is at its best. The economy is based on the Buddhist Dhamma which a living modestly with no desire and carelessness. [15]

Therefore, in short, the term sufficiency economy is to live a balanced life enough to hold itself. If there is more than enough, it can be sold for added value but must be based on righteousness.

a. Sufficiency Economy Guidelines:

Sumeth Tantivejkul has compiled his guidelines according to the Sufficiency Economic Guidelines due to the five royal initiatives for the sufficiency economy lifestyle guidelines. The details are as follow:

(1). Fastening savings truncate all aspects of the cost. Seriously reduce the extravagance of living. As the King said, well-being must not be insufferable, it must be saved in the right way.

(2). Adherence to a suitable occupation Honestly, even if there is a shortage of livelihoods, as the King said, the people's prosperity is caused by behavior. The foraging of life is the main priority.

(3). The dismissal of benefits and competition in the trade. As in the past, a violently fought occupation in which the King said that true happiness meant happiness, prosperity, that a person seeks with fairness, intent, and action, not by coincidence or by snatching from others.

(4). The incitement to find a way to get life out of this misery. By pursuing knowledge to increase income, to the sufficiency stage is an important goal. The King said at one point that it was clear that wanting everyone to try to find knowledge and create themselves. It is steadfastly for themselves to provide themselves with a progressive, happy enough to eat is one step, and the next step is to have the honor of standing on their own.

(5). Behave positively, reducing evil to all, with Thai society falling apart this time because there are still a small number of individuals who do so without shame in the land. His Majesty the King has said he is trying not to cause evil to destroy others, try to take the sin you have; always try to do good for yourself. Try to preserve and enhance the goodness that is in it**.** [16]

d. The conceptual framework of sufficiency economy principles

The conceptual framework of sufficiency economic principles, Puttinan Sukpornvorakul, has said that the development according to the sufficiency economic principles is a development based on the middle Path and negligence and considers moderation. The philosophy of sufficiency economy is considered in five parts as follows:

1. The conceptual framework is a philosophy that guides the existence and behaves in a way that should be based on the traditional way of life of Thai society. It can be applied at any time and is a constantly changing systemic view of the world. Focus on surviving disasters and crises for the stability and sustainability of development.

2. Sufficiency Economy features can be applied to all levels of self-practice. Focus on central line practices and step-by-step development.

3. The definition of sufficiency must consist of three characteristics at the same time: (1) moderation refers to a fit that is not too small and not too much. Such as modest production and consumption, (2) rationality means that decisions about the level of self-sufficiency must be made rationally based on the factors involved, as well as carefully taking into account the expected consequences of such actions, and (3) having good built-in immunity means preparing for impacts and changes in various aspects that will occur taking into account the possibilities of situations expected in the near and far future.

4. The conditions of making decisions and conducting activities to a sufficient level require both knowledge and morality. (1) The expertise requirements consist of detailed knowledge about the subjects involved that will be considered in connection with each other for planning and practice caution., (2) The moral conditions that must be strengthened consist of having an awareness of morality, be honest, patient, perseverance uses wisdom to live, not greedy and no debt.

5. The guidelines / expected consequences of applying the sufficiency economic philosophy are balanced and sustainable development and ready for the change in economic, social, environmental, knowledge, and technology. [17]

e. Elements of sufficiency economy principles

The composition of the sufficiency economy Principle is divided into three sufficiency economy principles:

Firstly: It is an economic system based on the principle that "they are self-reliant". Producing enough crops to meet household consumption needs is the priority. When consumption is enough, then take into account the second-largest commercial production. The excess output released to the market will be the farmer's profit in this situation. The farmer will become the determinant or act on the market instead of whether it works or determines the farmer. As it is now, and the main big thing is to reduce costs by creating consumers on their land, such as rice, water, fish, chickens, fruit, plants, vegetables, etc.

Secondly**:** The sufficiency economy focuses on the integration of villagers, and the villagers or organizations act as various economic activities that include combined

agriculture, handicrafts, food processing, trading, and community tourism. Once these villager organizations have been developed to be strong and have a more extensive network, all farmers in the community will be taken care of to earn more money and be addressed in all aspects. When this happens, the country's overall economy will grow steadily, which means that the economy can expand along with better income distribution circumstances.

Thirdly: **the** sufficiency economy is based on compassion—generosity, and unity of community members. For joying forces to achieve the benefits that arise does not mean income in one dimension. Other services include creating stability for family institutions, community institutions, the ability to conserve natural resources, and the environment developing community learning processes based on local wisdom. It also studies Thai traditions to last forever. [18]

UNESCO has praised the sufficiency economy philosophy as a new ethical paradigm for sustainability. Therefore, the sufficiency economic guidelines are a life-related approach, a behavior that can be applied at all levels, from individuals, families, and communities to the country's natural management and development. The significantly solving social problems in the era of the COVID-19 pandemic similar nowadays.

III. THE BUDDHIST NOTION IN THE SUFFICIENCY ECONOMY

In this section, we will discuss the notion of the sufficiency economy from Buddhist viewpoints. Therefore, this section is divided into two sections: (a) the Noble Eightfold Path: the essential teachings of Buddhism, (b) the sufficiency economy from the Buddhist viewpoint. The details are as follow:

a. The Noble Eightfold Path: the essential teaching of Buddhism

The tertiary level of ethics in Buddhism is *Atthangika-magga* (the Noble Eightfold Path). It is the sublime Path of the holy life when a person observed this Path would attain the *Nibbana*.

The Buddha proclaimed the Noble Eightfold Path as the only Path to Nibbana (Liberation): it was the criterion by which he judged other schools' teachings and found them wanting. His entire education can be organized around the individual components of the Eightfold Path. The Eightfold Path is known as the '*Majjhima-patipada*' (Middle Path), because it avoids two extremes: one extreme being the search for happiness through the pleasures of the senses, which is 'low, common, unprofitable and the way of the ordinary people; the other being the search for happiness through self-mortification in a different form of asceticism, which is 'painful, unworthy and unprofitable. Having himself first tried these two extremes and have found them to be useless, the Buddha discovered, through personal experience, the Middle Path, which gives vision and knowledge, leading to Calm, Insight, Enlightenment. *Nibbana*.' [19]

The Eightfold Path consists of eight steps or dimensions. They are: -

(1). *Samma-ditthi* (Right Understanding). Right, Understanding is the keynote of Buddhism. It amounts to the knowledge of the Four Noble Truths. In other words, it is the understanding of oneself as one really is. This understanding is the highest wisdom, which enables one to see the ultimate truth.

(2). *Samma-sankappa* (Right Thought). When one has the Right Understanding, he developed Right Thought as well. Right Thought is threefold. These are the thought of *Nekkhammasankappa* (Renunciation or Detachment), which are opposed to lustful desire, *Apyapadasankappa* (Benevolent Thought or love), which are opposed to ill-will, and thought of harmless or *Avihimsankappa* (Non-violence), which are opposed to cruelty.

(3). *Samma-vaca* (Right Speech). It involves respect for truth and concern for the welfare for others. It deals with refraining from falsehood, slandering, harsh words, and frivolous talks.

(4). *Samma-kammanta* (Right Action). Right Action entails respect for life, respect for property, and respect for a personal relationship. It deals with refraining from killing, stealing, and unchastely acts.

(5). *Samma-ajiva* (Right Livelihood). Right Livelihood refers to how we earn our living in society. It deals with the kinds of trades, which a lay disciple should avoid.

(6). *Samma-vayama (*Right Effort). Right Effort means that we cultivate a positive attitude and have enthusiasm in the things we do, whether in our career, in our study, or in the Dhamma practice. Having this enthusiasm, we can succeed in the things we do. Right Effort is the energetic will, namely: - (a) to discard evil that has already arise; (b) to prevent the arising of unaware evil; (c) to develop the latent good and wholesome state of mind; and (d) to promote that good and healthy state of mind, which has already arisen.

(7). *Samma-sati* (Right Mindfulness). Right Mindfulness is fourfold. It is the mindfulness with regard to (a) the activities of the body; (b) sensation of feelings; (c) the actions of mind; and (d) the mind's objects. [20]

(8). *Samma-sam⃝dhi* (Right Concentration). Right Concentration is the last factor of the Noble Eightfold Path. It is the practice of developing one-pointedness of the mind on one object, either physical or mental. It leads to the four stages of *Dhy⃝na.* [21]

Those mentioned above Noble Eightfold Path is the way of life to be followed, practiced, and developed by each individual. It calls for self-disciplined in body, word, and mind, self-development and self-purification. Without this Noble Eightfold Path, there is no other way to get the highest Buddhist life goal, i.e., *Nibbana*. [22]

b. The sufficiency economy from the Buddhist viewpoint.

The studies from various documents show that the sufficiency economy is the core of the profession that does not squeeze itself. Don't embrace others. The term "the sufficiency economy" in the Buddhist corner means "being or living in a place that constitutes physical, verbal, and mental purity, and refrains from existence without physical, verbal, and mental corruption, not causing suffering to itself and others. Therefore, if you The Principles of Buddhism that promote life consist of (1) the 5th sacrament, which is the basic framework of human life, (2) the four *Itthipada* (Path of accomplishment), which are virtues conducive to all types of work. It leads to happiness. (4) The central solitude of fit. A virtue that prevents people's greed in the world of capitalism (5) The seven *Ariyasabs* (noble treasures), the property inside the identity. Starting with an unshakable belief, a principle of living, a meltdown in corruption, fear of unseized consequences, a lot of information, and a division that spreads to people in society together, the last thing is to know how to use wisdom to solve everything., (6) the Eightfold Path. It is a guideline that adheres to the principle of self-sufficiency according to the central line, i.e., not to squeeze oneself and others—looking forward to the most. The sufficiency economy principles of the *Samma-jiva (Right Livelihood)* are directly related to the *Samma-ajiva (Right Livelihood)* in the Eightfold Path, which is living in the right way, that is enough. Therefore, the Samma-ajiva principle is the beginning of a relationship. In other words, the type of life is (1) Physically, i.e., non-corruption, and not erotic, (2) verbally, i.e., non-greedy, except verbal, verbal, but valuable and conducive to peaceful coexistence; and (3) mentally, three things: not greedy, refraining from offending others and the environment. The issue of property management is divided into two parts: 1) external property management, which can be divided into four other areas: 1) the principle of pursuit of assets. It must be taken into account how it will be obtained. The purpose of wealth is justified. Be conscious, be conscious, be satisfied. 2) The property management principle is to divide the assets that have been obtained into four parts: part-1: raising family members, part-2: investing in work, keeping it in times of emergency, saving money in part-3 saving principles. Savings or savings and capital accumulation, one side is savings as working capital or as a capital for further occupation. On the other side, saving is the principle of life insurance when needed, and when saving more than necessary for spending on two sides, it becomes a relief. To pay tribute to the dhamma and support society. Create a community of giving, and part-4 the principles of use of property, the principles of Buddhism, have laid out the principles of spending on what benefits, namely one side- raising themselves, raising parents, raising families and people in charge to be happy. Second-sided allowance for friendship, such as hospitality, socializing with relatives, and the third-side spending money is good, such as making merit dedicated to the deceased, who will have relatives or not. Do not avoid taxes, symptoms or donations, etc. Besides, the spending of the assets that can be found that should be realistic, morally correct, and rational, and 2 Internal assets management is the 7th property: wealth is confidence, wealth is morality, wealth is a moral shame, wealth is moral dread, wealth is excellent learning, wealth is liberality and wealth is wisdom. A sufficiency economy aims to focus on three levels: 1) individual goals, 2) social goals, and 3) the ultimate goal is to reach a problem-free state in life: achieving Nibbana. Therefore, a person who is aiming for self-interest must complete three steps. Foreground and maximum as for others benefits, they must help them achieve all three stages and mutual benefits on both sides. It must promote both fair and fair participation. This allows both oneself and others to progress in achieving the above three benefits.

According to the Royal Initiative, it comes from the sufficiency economy, which wants to create the basics: appropriate. When I am having, I'm going It's enough of the majority of the people first. The sufficiency economy, in short, is to live a life that fits perfectly. It's enough to hold your own. If there is more than enough, it can be sold for added value but must be based on preferences. The term "self-sufficiency" has three characteristics: (1) moderation, (2) rationality, (3) good immunity. There are five vital conceptual frameworks for community development: the 1st concept, the expected product based on the area as the establishment, the second base for socially responsible business, the 3rd think base, the 4th strategically partisan work, the use of the learning process together in practice, and the 5th base focused on sustainable development. Therefore, today's professional needs to be ethically regulated because it is professional, profitable and has already been joined together to preserve people's interests within the group [24]. Some professions are essential for the lives and well-being of people within society.

IV. THE VALUES OF THE SUFFICIENCY ECONOMY FOR SURVIVAL IN THE COVID-19 PANDEMIC CRISIS FROM THE BUDDHIST VIEWPOINT

The values of the sufficiency economy for survival in the Covid-19 pandemic crisis from the Buddhist viewpoint can be divide into analytical issues into five sections as fellow:

(1) Value to humans or individuals: The sufficiency economy values at the individual level or at that personal level, entrepreneurs should adhere to the principles of adhesion to the current benefits as a location and should leave all bad things while relying on the principles of the existence of the genealogy, so that their genealogy or business can be performed for a long time and sustainably, until eventually becoming corporate governance.

(2) Value to family institutions: In value to family institutions, there are four sub-issues:

(2.1) Values in family treasure building measures: Helping to strengthen the family's shins based on treasured economics is aimed at but family members to fulfill their responsibilities by following the six directions principle in Buddhism. If a family member has behaved and fulfilled their duties in full responsibility, the family can create a strong family. The family's external wealth is perfect.

(2.2) Value in preventing family degeneration: Compliance with the *Kulacirathiti-dhamma* principle of Buddhism which consists of (1) pursuit of lost, (2) repair of old and damaged, (3) knowing consumption and use, and (4) setting up morally man and woman as a butler. Therefore, it can be seen that organizations such as family, family, organization, institutions, society, nation and world associations, which are already stable and stable, but without knowing the economic principles and moral principles that should be managed appropriately, it will have a negative impact and eventually collapse.

(2.3) Value in family wealth management measures: Buddhism praises moral people, behaves according to ethical principles, is a noble person. In terms of tastes, family nations, and stunts, as well. Suppose taste does not follow the line of virtue. If the family nation is even noble in society, then the person does not. And suppose there is a show of competence without conformity to righteousness and justice. In that case, it is not considered to encourage people to be worthy of praise in society in any way. In a match, crossed back into a person who should be even condemned.

(2.4) Value in solving problems within the family: The value of the measures to solve problems within the family, the family leader, or any family member aims for the family's prosperity. A member of the family should protect from the six degenerations.

(3). Value to the economy: Having a whole sufficiency economy should be a goal, and the area development index means a village or community: sub-district or local and provincial every village, every sub-district. Every province should have a whole life in the area.

(4). Value to nature and the environment: If people know how to use resources in a value based on their principles, live under all duties and responsibilities, and learn how to live self-sufficiently. As much as we don't remember, we will be able to preserve the heritage of natural resources for our children. Future generations, generations, successors.

(5). Environmentally friendly technology innovation values: The value in this field is aimed at invention. Manufacturing, using technology to solve problems and conserve nature directly, has many more, such as developing new technologies that do not destroy the soul. Energy-efficient or energy-efficient technology. High production efficiency technology with less waste technology to eliminate waste for further use, etc., as well as standardization of control and tax measures.

V. CONCLUSION

From the above discussion, everyone should realize the value of a human being and believe in human potential for development; the family condition is the fundamental unit of society, which is the starting point to prevent, solve, and eradicate crisis conditions. The middle way and the moderation are the Buddhist ways for economic ways to avoid and resolve the crisis tendencies, especially in the Covind-19 pandemic crisis. The Buddhist foundation of social harmonies such as generosity, amicable-speech, helpful action, and community participation are the social conditions to prevent and solve illegal activities, which will happen in the Covind-19 pandemic crisis. Political awareness emphasizes the citizens and politicians to contribute the bringing in the excellent administration, knowing and abiding by the seven welfare of Buddhist principle. This principle of collective responsibility demands active participation in the government from both the people and politicians alike. Thus, the Buddha-dhamma encourages accountability consisting of the principle of a grateful person, the holy abiding, the virtues of laypeople, the bases of sympathy, the six directions, the merits of a gentleman, and welfare conditions the noble growth are the principles the ideal society. In Buddhism, the value of the right livelihood and responsibilities are five values: the individual aspect, the family aspect, the economy, the environment, and technology innovation. Therefore, this concept will be beneficial to all stakeholders in applying. [23] Finally, the essential in modern life is to practice the Mindfulness to live with the present moments and accept the reality of all things. This allows us to live in carelessness, and knowingly as much as possible with the problems that arise with impartiality.

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Local Wisdom in the Ritual of Phanjolmamod of Meaung District, Surin Province

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Abstract— *The purposes of this research were 1) to study the concept and evolution of Phanjolmamod of Meaung district, Surin province, 2) to analytical study the belief and value in ethical dimension as reflected from Phanjolmamod ritual, and 3) to analyze the body of knowledge in ethical value. This work is qualitative research. Documentary studies and in-depth interviews were used, and empirical analysis. The result indicated that this ritual's concept and evolution were caused by a mixed belief of Buddhism, Brahminism, and original beliefs such as ghosts, spirits, natural phenomena, and mystery beliefs that are not verified. The evolution of this ceremony does not indicate the time. It can be divided into two periods, namely: the traditional period, which the characteristics of strict ritual practices, but modern times are characterized by unstrung practices, and the number of believers in this ritual has a reduced effect. The beliefs and ethical values expressed through the Phanjolmamod are characteristics of the mixed beliefs of the Buddhist beliefs of Karma, Brahmin's beliefs in the form of rituals and ghosts, and spirits that appear naturally, mystifications that look after the descendants. The ethical values that appear include: moral values, planning values in life, goals and achievements of life, ethical values of coexistence in society, and values in the Buddhist dimension are understanding and realizing the reality of life. The body of knowledge that is instructed people to practice the five precepts, gratitude, believing the karma, and welfare of people in society for peaceful coexistence.*

Index Terms— *Local Wisdom, Ritual, Phanjolmamod, Surin Province*

I. INTRODUCTION

Surin province is located in the lower part of the northeastern region. This province is in contact with territories in contact with Buriram, Roi Et, Sisaket, and Cambodia border. Surin province has a long history, which involves the ancient Kingdom of Khmer, as reflected in archaeological sites, especially stone castle architecture commonly distributed in Buriram, Surin, and Si Sa Ket provinces. [1] According to the archaeological sites, there are also traces of the ancient Khmer kingdom's remaining, such as the cultures, Khmer language, which confirms the intimacy that represents the culture that belongs to this group. Although the passage of time has changed so much that most people cannot read the Khmer script. Fortunately, they are still able to communicate with each other through spoken language (Khmer language). [2] On this point, the Khmerian people stay together in communities, so whether traditions and traditions, arts and cultures, including beliefs and beliefs, may have changed somewhat, they are similar overall. [3] These are the ones that have helped people in the Khmer community retain their cultural identity, especially the traditions and practices that people in the community practice together. The God beliefs, the beliefs of cultivation, the opinions of the house occupying, traditions such as marriage, ordination, the re-boarding of dwellings. Some unique rituals, such as San ca Don Ta Ritual (Similar to the Thai Sath Day), Jun Deay Ka Shuy Ritual (The Sand Pagoda Formational Ritual), Or even rituals related to supernatural superpower beliefs, especially the entry of ghosts, Khmer community people call it "Phanjolmamod Ritual."

The Phanjolmamod ritual is a traditional medical ritual performed by the Khmer ethnic group connected with the ancestral ghost belief that it contributes to the act of illness or helps to recover from the disease. This ritual is a consecutive ritual from the past to the present and is believed

to be one sacred ritual. This ritual plays a similar role to traditional medical treatment with other Thai rituals, such as Ram Pee Fah ritual of Laos people, Seang Mor ritual of Thai Gui. [4] So, the Tung Buan ritual of Thai Sho people, Pee Mod-Pee Meng dance ritual, and the head ghosting ritual are incarcerated with the northern Thais spirits. Nevertheless, it is worth noting that it is impossible to find out whenever a peculiar phenomenon occurs with people in a community or village, especially if someone in a community or town has a causeless illness. When there is no medical cure, it turns to treatment by making the spirit of the devil or any power. Satisfaction. In the belief that a sick person may have committed any acts of harassment or cause. Dissatisfaction with supernatural powers. It can be said that the ritual "Phanjolmamod ritual" is the only medium that allows people to communicate with those powers. It can show reverence for the punishment. On this point, it is worth noting that even though the scientific boom has progressed so much, the beliefs of people in the Khmer community remain cohesive and unwinding.

The scientific world society that originated around 500 years ago and prospered to its current age is about 100 years old. Therefore, it is not possible to abandon such science because of the many illnesses that science has. Modern medicine is incurable. Instead, it can be cured with the ritual "Phanjolmamod". The post-science world is expected in the next 20 years. The ritual "Phanjolmamod" may have been developed to provide maintenance the world precisely, according to the faith of the Khmer Surin ethnic people. Researchers interested in Phanjolmamod have benefits for alternative medical treatments.

II. RESEARHC OBJECTIVES

1) To study the concept and evolution of the Phanjolmamod of Meaungsurin district, Surin province.

2) To analytical study the belief and value in ethical dimension as reflected from Phanjolmamod ritual.

3) To analyze the body of knowledge in ethical value.

III. SCOPE OF RESEARCH

1) Content Scope: This research sets out three areas of content: (1) to study the concept and evolution of the Phanjolmamod ritual in Meaungsurin district, Surin province, (2) to the analytical study of Ethical beliefs and values as reflected from the Phanjolmamod ritual in Meaungsurin district, Surin province, and (3) to analysis ethical value knowledge as reflected in the Phanjolmamod ritual in Meaungsurin district, Surin province This includes information from other documents that are relevant and consistent with the content.

2) Area Scope: The Study of the communities involved in the assembly in the Phanjolmamod ritual included five communities are as follow: (1) Ban Khok Khraphoe community in Nok-meaung sub-district, Meaungsurin district, Surin province, (2) Ban Ta Tueng Tha-nai community in Nok-meaung sub-district, Meaungsurin district, Surin province, (3) Ban Kab community in Thenme sub-district, Meaungsurin district, Surin province (4) Ban Thamnop community in Thenmi sub-district, Meaungsurin district, Surin province (5) Don Khai, in Nai-meaung sub-district, Meaungsurin district, Surin province.

3) Scope in Population and Example: This is the in-depth study focused on interviews A community that still has faith about of the Phanjolmamod ritual or KHAO SHONG (communicate with spirit) of Khmerian communities in areas of Meaungsurin district, Surin province, by collected the data with in-depth interview with Mamod or Medium, local intelligences in ritual and villagers included 20 person, namely: 1) Mrs Phacharee Hasukh Mamod or Medium in Ban Kab, Thenme sub-district, Meaungsurin district, Surin province (2) Mrs. Saborn Heaoowong Mamod or Medium, Nok-meaung sub-district, Meaungsurin district, Surin province, (3) Mrs Arunee Nakchad Mamod or Medium in Don Khai II in Nok-meaung sub-district, Meaungsurin district, Surin province, (4) Mr. Thanin Chaykeaw Mamod or Medium in Thenmi sub-district, Meaungsurin district, Surin province (5) Mrs. Subhavadee Youdlek Mamod or Medium in Nok-meangung sub-district, Meaungsurin district, Surin province, (6) Mrs. Bol Ratsamuth a local intelligence in the Khmer ritual from Ban Ta Tueng Tha-ngi, Nok-mueang sub-district, Meaungsurin district, Surin province, and (7) Mrs. Suwerada kongkeaw intelligence in the Khmer ritual.

In Summary: the Phanjolmamod ritual. The term "Mamod" means the witch known as the Medium (Rang Shong). A person can invite the Phee Fah or angels, including Khru Kam Neard (Original Teacher), who is sacred, protected, healed, and popularly healed. The disease with a kind of ritual called "Jol Mamod or Leng Mamod," because it is believed that it can be solved to make bad things as a good thing. This ritual is characterized by Buddhist psychology in which gods or gods or ghosts take the body as a passage to communicate and touch human beings through summoning rituals and must be acted according to regulations with prohibitions such as keeping the sacrament, giving food. This ritual does not systematically establish a central organization. Buddhism and Shong Chao ritual cult are located on opposite sides. Therefore, this ritual emphasizes ghost spirits using superstition to help humans use subconscious power because they see it as creating an ignorant mind and developing consciousness.

IV. RESEARCH METHODOLOGY

1. Research Design**.** This research is documentary research and a qualitative research design. The research methodology as fellow:

a. Documentary Research: To studies and collect information from relevant documents and evidence, including books, textbooks, research reports, historical records of the Phanjolmamod ritual with an emphasis on (1) concepts and developments. the Phanjolmamod ritual in Mueangsurin sub-district, Surin province, (2) The patterns and belief characteristics Phanjolmamod ritual in Mueangsurin sub-district, Surin province.

b. Field Work studies: The study was conducted on the site used as a research area, a residential area of the Khmer community in Meaungsurin district, Surin province. The research process is carried out. You can:

1) This study was to know the concepts, development, belief patterns, ann. Ethical value in the Phanjolmamod ritual in 5 communities., including in the area to research relevant information from people who collect information consists of documents (1) Ban Khok khraphoe community in Nok-meaung sub-district Meaungsurin district, Surin province, (2) Ban Ta Tueng Tha-nai community in Nok-meaung sub-district, Meaungsurin district, Surin province, (3) the of Ban Kab community in Thenme sub-district, Meaungsurin district, Surin province, (4) Ban Thumnop community in Thenme sub-district, Meaungsurin district, Surin province, and (5) Don Khai community in Nai-meaung sub-district, Meaungsurin district, Surin province.

2) Explore research areas that show fact about the historical records of five communities in Khmer, Lao, and Gui communities.

3) Study qualitative data by in-depth inquiries and interviews with key informant consist of Mamod or Medium, folk philosophers in ritual, and villagers included 20 persons, and 4) To conduct analytical and synthesis of conceptual information, develop patterns of belief, ethical value in the Phanjolmamod ritual of the five communities.

c. Area studies, Populations, and key informants

1) The study areas are Khmer community areas with beliefs and assembling the Phanjolmamod ritual in Meaungsurin district, Surin province in 5 communities.

2) Populations are the populations living in Meaungsurin district, Surin province consists of the people in Ban Khok Kraphoe, Nok-meauang sub-district, Meaungsurin district, Surin province. Community population Ban Tu Tueng Tha-ngai Nok-meauang sub-district, Meaungsurin district, Surin province. Population in Ban Kab, Thenme sub-district, Meaungsurin district, Surin province.

3) Key informants: there 20 person consist of (1) Mamuads or mediums included 5 persons, (2) folk philosophers included ritual 2 persons, and (3) villagers included 13 persons.

d. Tools used in research studies

1.Interview: The in-depth interviews to collect information from Key Informants are as follows: Part 1: The interviewee's basic information is (1) interviewee's name, (2) age, (3) position/duty, and (4) address. Part 2: Format of the Phanjolmamod ritual. Part 3: Concepts and Development of the Phanjolmamod ritual. Part 4: Ethical values of the Phanjolmamod ritual.

2. Voice Recorder.

3. Camera.

e. Data Collection

This research was conducted by researchers with the information obtained, as follow:

1. Collect preliminary information mainly from document information, which is information about the conceptual and developmental patterns of Phanjolmamod Ritual such as research reports, thesis, books, journals, etc. Then synthesize the acquired data and use it as a thinking base to frame the thinking in the research.

2.The Company Once the initial data collected from the documents has been completed, the researchers collected the field data using a qualitative data collection method that uses the Informal interviews and in-depth interviews on the conceptual and developmental patterns of the Phanjolmamod ritual once again after studying from documentation, as well as the informal interviews and in-depth interviews on the ethical values of the Phanjolmamod ritual in Khmerian communities, Mueangsurin district, Surin Province.

f. Data Analysis

For analyze data, the researchers defined the method of classification as two parts: (1) qualitative data analysis, (2) data validation as follows:

1.Qualitative data analysis:

There are seven steps in Data analysis: (1) classification and systemization of information, (2) inductive summary analysis, (3) event comparison, (4) component analysis, (5) document data analysis using descriptive and describing phenomena that occur, (6) cause and effect analysis, and (7) creating a social imaginary study by shifting perspectives beyond a single objective perspective, such as shifting from a social value perspective to a cultural point of view or other perspective.

2. Verification of data:

Using the method "Triangulation in Data Validation". By verifying the accuracy of the 3-sided data

sources are: (1) Data Triangulation in Sources Dimension, (2) Data Triangulation in Data Reviewer, and (3) Data Triangulation in Theory Dimension.

V. CONCLUSION

1. The Concept and Develop of the Phanjolmamod ritual in Mueangsurin district, Surin Province had been found that this ritual is a time-based merit-making ceremony that Buddhists in Thailand have long practiced due to the auspicious merit making ceremony with the misfortune merit making ceremony which called religious ceremony or ritual. The good deeds of Buddhism were later mixed with Brahmin religious rituals. Behaviors committed to satisfy the world or for spiritual exaltation by law, tradition, cultural order, and acceptance of the general public.

There are three phases before entering the medium: the initial phase of the medium, the turning head distance, the complete body phase. According to the history of folk rituals, it is a cultural belief, which inseparable from the state of mind that humans believe exists or in phenomena or events that cannot be proved. The ritual fulfills the belief in what they think by relying on a body to worship. The Phanjolmamod ritual was born. This ritual is no longer an old-fashioned ritual, but an ancient musical therapy. Developing the beliefs of the Phanjolmamod ritual in the present supernatural phenomenon. In the past, the community was very focused because education played an important and transformable role, paradigm, attitude, belief. Rituals arising from the history of the Khmer group Gui or Tribute group and Thai Lao group who have lived in this area before. These ethnic groups are ethnic groups with a strong culture, outstanding and influential over other ethnic groups in this area. As you can see, Khmer Thais have remained strongly adhered to their cultural traditions from ancestors to the present day.

2. Beliefs and ethical values appear through the Phanjolmamod ritual spiritual beliefs. When humans have faith in ghosts or gods, it results in human rituals such as sacrifices becoming a continuation of tradition. Another belief that the descendants of each family in the current generation remain adhered to and inherited until now. The ancestral ghosts that each family respects are beliefs about ghosts, descendants of the construction of pagodas, or small ledges of worship, keeping the ashes of their ancestors at their beheadings to pay homage the ancestral ghosts and repay goodness. It also appears that Buddhism is believed in sin. The Phanjolmamod ritual provides benefits and values in social organizing, socialization, social norms, and evil—belief in the principle of worship. The ethical values created by the Phanjolmamod ritual are three areas: (1) the ethical value of human beings, consisting of moral values, moral values, patterns in life, such as Social Organizing, Socialization Creating social norms, values of goals and achievements of life, such as the happiness of life, the fallout., (2) Ethical values of society. The community consists of creating harmony, love, compassion. Remembrance and Coexistence Activities, and (3) The Buddhist dimension's ethical value consists of understanding the truth and coexistence ethics.

3.The moral and ethical knowledge that appears through the ritual of Phanjolmamod is considered to be a belief that passes through rituals that are passed down in the right way in morality. The ritual of Phanjolmamod is a type of social tool that helps organize society, socialization, and create cognitive, social norms arising from education. There are three bodies of knowledge as found in this ritual, as follow:

a. The Body of Knowledge in personal practicing aspect: This ritual is a moral practice of goodness, practices related to the treatment of 5 ethical practices, moral practices, gratitude, worship, sacrament, merit-making, and the Ti-lakkhana principle. The body of Knowledge in the practice of Mor Mamods, those who take the gods with them must know to ignore what should be ignored, follow the good thing that should be practiced. All these practices are Buddhist teachings. The body of knowledge in moral aspect consists of goodness, and morality is developing self-behavior to be a good person, teaching all students for expressing gratitude to the teachers. Thus, these means are the methods to bring Dhamma to the people in harmony. Thus, at the beginning of the ritual of Phanjolmamod, People help each other by doing a ceremony to carry their belongings to help the hosts feel at peace of mind. This action is a relief to the Khmer ethnic community in Surin province that, according to the Sanghavatthu principle in Buddhism, which helps to the cohesion of peace and peace. The ritual of Phanjolmamod is a ritual made for peace of mind.

b. Knowledge of community society practices as reflected in the ritual of Phanjolmamod contributes to social refixation. It can be analyzed, digested, created as social interaction practices. It was helping to make interactions with people in society with love, harmony, generosity, affecting inter-person behavior and people's behavior in society. Community. The ritual of Phanjolmamod is a tool to help organize a society with unofficial characteristics such as rules. Criterion, but characterized by a mental commitment. Practices arising from respectful individuals who believe in the prohibition, omissions and practices of the ritual of Phanjolmamod.

c. There are four knowledge centers on the ritual of Phanjolmamod, consisting of theological knowledge: the rituals of Buddhism, Brahminism and local cultural traditions. Psychological aspects consist of the morale-building, healing, dispelling, watering mantra, calling for morale. The art aspect consists of dance, dance, musical

communication with angels, and ritual equipment such as: Bai Sri (rice offering), Jewelry, the worship objects. Lastly, the social aspect consists of gratitude, pastoral healing, philanthropy, and people's synthesis in the same society.

VI. SUGGESTIONS

a. The company recommendations for implementing research results the ritual of Phanjolmamod is a long-rooted belief that contributes to a wide range of dimensions. It is a local tradition that should have a neutral mind, open to education, to expand the effects of integration to benefits. The treatment of sick people of those who believe in rituals and improving the social life by linking activities to match Buddhist principles. The ritual of Phanjolmamod is a science and an art. This ritual is Buddhist psychology and creates people in society to be good people.

b. Research Recommendations

1) These Buddhist principles should be studied in the comparative study for improving the quality of life.

2) It is essential to study the Buddhist psychology that appears in rituals caused by the beliefs of the ethnic people in Surin Province.

3) It is essential to study the social developments that appear in the ritual of Phanjolmamod of the people of Surin province with Buddhist psychology.

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Development of School Administrators based on Sangahavatthu IV Principles in Primary Schools under Bangkok Metropolitan Administration

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Abstract— *The purposes of this research were 1) to study the characteristics of school administrators in primary schools, 2) to develop school administrators based on Sangahavatthu IV principles for primary schools, and 3) to propose the development process for school administrators based on Sangahavatthu IV principles for primary schools under Bangkok Metropolitan Administration. Mixed methods research was used for research design. Questionnaires was used for distribution to 390 administrators and teachers in primary schools, interview form by interviewing key informants, including 24 school administrators and questions for focus group discussion with 9 experts. Qualitative data was analyzed by using content analysis whereas quantitative data were analyzed using percentage, frequency, mean, and standard deviation. Results indicated that the characteristics of school administrators in primary schools under Bangkok Metropolitan Administration in 3 areas consisting of 1) leadership qualities, 2) morality and ethics, 3) knowledge and ability. Results of opinions towards the characteristics of school administrators in primary schools under Bangkok Metropolitan Administration found that in overall was in a high level. Considering in each aspect showed a high level in all aspects. The development of school administrators based on Sangahavatthu IV Principle for the primary school under Bangkok Metropolitan Administration, it was the physical characteristics and expression of the behavior of the person who is a part of character. There were 3 aspects which consisted of (1) leadership, (2) morality and ethics, (3) knowledge and ability. Sangahavatthu IV principles are the principles that are anchoring each other's generosity consisted of 4 aspects which are (1) giving, (2) polite speech, (3) good behavior, (4) place oneself properly. The development process for school administrators based on Sangahavatthu IV principles for primary schools under Bangkok Metropolitan Administration was called S A S Model, there are 3 important aspects which composed of 1) Sangahavatthu (S), the Sangahavatthu IV principle is a principle that is an anchor of one another's spirit. There are 4 aspects which consisted of (1) giving, (2) polite speech, (3) good behavior, (4) place oneself properly. 2) Administrator (A), the characteristics of the school administrators are 3 aspects which are (1) leadership, (2) morality and ethics, (3) knowledge and ability. 3) School (S), school administration is the operation in all 4 aspects of the school, which are (1) academic administration, (2) budget administration, (3) human resource management, and (4) general administration.*

Index Terms— *School Administrators, Sangahavatthu IV Principles, Bangkok Metropolitan Administration*

I. INTRODUCTION

Organizations such as private businesses or government sector management is very important basic resources in administration there are four main components: people, money, materials, things, and personnel management is the most important resource because people are the factors that drive efficiency and administrative effectiveness. It is considered a hugely useful resource in the production process. The four feeders must have personnel being a user of other resources to get quality products, it is therefore essential that the organization has to develop personnel to have knowledge and capabilities have operational incentives this will result in the operation to achieve its objectives more efficiently [1].

Education is the cornerstone of security and the progress of the nation if the education of the nation is of quality, it means people in the nation have quality as well. Therefore, the school is the most important educational institution and

school administrators are extremely important. The administrators manage the school personnel well and that efficiency administrators must have the ability to administer the school. There is an operation to effectively spot the damn study. For school administrators to manage the school effectively, management must be a potential person. In particular, it must be a person with knowledge, ability, skills, vision to make the personnel management in the school a success. As well as having a high achievement (Sukhothai Thammathirat Open University, 2012: 7-8) [2].

The school is one of the most important educational institutions that brings the policy of education into practice for success or failure the management of education in schools depends primarily on the administration of the school administrators. The hopes for the future of the youth of the nation must be entrusted to the school administrators. The hopes for the future of the youth of the nation must be deposited with almost all school administrators (Somchai Ratanathongkam, 2013: 12) [3]. It is therefore imperative to realize the duty of managing the school to be successful. Therefore, personnel management in schools must be considered extremely important because the school has two components: people and work. How to manage people which is the success of the work efficiency people are considered essential elements because people are the ones who cause other factors in particular, work is the one who brings success to the goal. From the current Thai society has changed to progress in both science and technology relentless. It causes a wide range of economic, cultural, and other impacts when social objects and cultures change. Thai people in society therefore need to be developed and has been changed as well because it will create a balance in things that have changed. If one thing changes but another thing is still, and will definitely not produce good results. Therefore, education plays an important role in the development of people at the grassroots level to have progress in all areas.

Development of administrators according to the educational institution administration guidelines that are legal entities of the school in the mission of the school this is the main mission of educational institutions that the National Education Act 2019, section 8, paragraph 2 [4] aims to decentralize management to educational institutions as much as possible with the intention of enabling educational institutions to operate independently, flexibly, and in accordance with the needs of learners, educational institutions, local communities and participation from all stakeholders. This will be an important factor to strengthen the school's administration and management able to develop personnel including the measurement of factors supporting the quality development of students in local communities and effective.

Primary school Under Bangkok, the mission of education management is in accordance with the Education Act, which has 50 districts consisting of 435 schools, divided into 1,015 school administrators and 13,143 teachers, totaling 14,158 people. Most of them have a problem of manpower planning to enhance operations to work as efficiently as possible. Personnel quality the number of teachers and staff did not meet the required standard. Therefore, it has an impact on the academic work, but all of them affect the personnel management of the executives, which is the key to sustainable success in the work. In the midst of change organization development and human resource development to be a new organization is a learning organization increase operational efficiency and work processes must emphasize results, efficiency and cost-effectiveness. Personnel must be professional, competent, quality and efficient. In the past, personnel have been developed in this area to a small extent, and is not a continuous system. It depends on how effective the school administrators are, and most importantly that there is a moral principle how much is ethical? The Buddhist principles that administrators should have in their own development, Sangahavatthu IV, which is the principle of governing and caring for people. And the dharma that must be in the heart and direct the behavior it is called purely living and behaving with all human beings like to make the personnel management in the school more efficient.

Therefore, in this study the students are interested in studying and analyzing the application of Sangahavatthu IV to increase the efficiency in the development of school administrators according to Sangahahavatthu IV principles for primary schools under Bangkok this will be a way to know the introduction of Sangahahavatthu IV.

II. RESEARCH OBJECTIVES

The purposes of this research were 1) to study the characteristics of school administrators in primary schools, 2) to develop school administrators based on Sangahavatthu IV principles for primary schools, and 3) to propose the development process for school administrators based on Sangahavatthu IV principles for primary schools under Bangkok Metropolitan Administration.

III. RESEARCH METHOD

This study researchers used a survey research model, along with in-depth interview and Focus Group Discussion, which was a mixed methods research between quantitative research and qualitative research by analyzing data from documents, textbooks, statistical data, research reports of various departments academic articles, thesis, as well as relevant research work and a formal in-depth interview by using the interview questionnaire created by the researcher to study the opinions of the school administrators who are

target groups as a case study, questionnaires were distributed to the administrators, and elementary school teachers 390 sets of Bangkok Metropolitan Administration, interviews with key informants are 20 school administrators and questionnaires for group discussion. There were 11 key informants. The researcher collected the data and analyzed the data as follows: 1) Document analysis, content analysis, 2) Analysis by using percentage, frequency, mean, standard deviation, 3) Interview using content analysis and conclusion by Interview, and 4) focus group using content analysis.

IV. RESEARCH RESULTS

Results of the study of the characteristics of primary school administrators under Bangkok, the level of opinion on the characteristics of the primary school administrators. The 3 aspects of Bangkok Metropolitan Administration consisted of 1) leadership, 2) morality and ethics, 3) knowledge and competence found that opinions on the characteristics of primary school administrators in Bangkok, the overall level is at a high level while each side is at a high level in all aspects.

Results of the study of the development of school administrators according to Sangahavatthu 4 principles for primary schools under Bangkok Metropolitan Administration. The development of school administrators according to Sangahavatthu IV principles for elementary schools Bangkok Metropolitan Administration comprises the development of the characteristics of primary school administrators under Bangkok it is the physical and expressive characteristics of a person's behavior that are part of their character. Which shows others to see of elementary school administrators under Bangkok according to the 20-year educational development plan, there are 3 aspects: (1) having leadership, (2) having morality and ethics, (3) having knowledge and abilities, and Sangkhahawatthu IV is a principle that is an anchor for each other's spirit goodwill, generosity, support, coordination, suitable for management, there are 4 aspects: (1) donation (giving), (2) piyavaja (sweet speech), (3) attajariya (conduct self-interest), (4) Samanattata, results of the presentation of the development process for school administrators according to Sangahavatthu IV principles for elementary schools the development process for educational institution administrators according to Sangahavatthu IV principles for primary schools Bangkok Metropolitan Administration (S A S Model) will have 3 important focus points: 1) Sangahavatthu, Sangahavatthu 4 is a principle that is an anchor for each other's spirit, goodwill, generosity, support, coordination, suitable for management, there are 4 aspects: (1) donation (giving), (2) piyavaja (sweet speech), (3) Atthajariya (conduct self-interest), (4) Samanattata (appropriate). 2) Administrator there are 3 characteristics of school administrators: (1) leadership, (2) morality and ethics, (3) competence. 3) School administration. It is the operation in working in four areas of the school, including (1) academic administration, (2) budget management, (3) personnel management, and (4) general administration.

V. DISCUSSION

The level of opinion on the characteristics of the primary school administrators, there are 3 aspects of Bangkok Metropolitan Administration consisted of 1) leadership, 2) morality and ethics, 3) knowledge and competence found that opinions on the characteristics of primary school administrators under Bangkok, overall at a high level this is because School administrators in primary schools under Bangkok have good management efficient is excellent this is in line with the research of Petros Pashiardis (2004) [5] researching the characteristics of effective primary school administrators in Cyprus. A place to study effective school administrators it was found that the management must have the following characteristics: 1) Have strong ambition in the profession, and realize that a career is something to be respected. It is sacred and dignified, 2) Have a deep thought and a constant interest in education, 3) Have confidence and influence with others. The position of management is more than other positions likes to do challenging work, 4) Take risks and are not afraid to share ideas with other people, 5) Work with other agencies in the country and abroad must be compared, 6) Be honest and have integrity sincere there is no forward and back sleep, 7) Teachers and students must be creative. It is encouraged by rewarding people who do their jobs with intentions, 8) Be ambitious and use driving force to develop authority and influence for both personal and professional reasons, 9) Interest and build understanding between educational institutions and parents, and to participate in the policy; and 10) have faith in leadership theory. To develop the management to be effective, and it is consistent with the research of Rehab Radiuskaew (2008) [6]. Leadership characteristics of quality educational institution administrators were found that 1) the leadership characteristics of the quality school administrators consisted of 4 components: (1) executive emotional intelligence, (2) management's self-esteem, (3) Executives 'Performance, and (4) Executives' Personality. 2) Guidelines for Leadership Development Of school administrators Under the Office of the Basic Education Commission is Management should develop leadership qualities by studying documents and work manuals for further education, and study visit attending the training and attendance of academic seminars.

The development of school administrators according to Sangkhahawatthu IV principles for elementary schools Bangkok Metropolitan Administration comprises the development of the characteristics of primary school

administrators under Bangkok. It is the physical and expressive characteristics of a person's behavior that are part of their character which shows others to see of primary school administrators under Bangkok. According to the 20-year educational development plan, there are 3 aspects: (1) having leadership, (2) having morality and ethics, (3) having knowledge and abilities and Sangahavatthu IV is a principle that is an anchor for each other's spirit Goodwill, generosity, support, coordination, suitable for management, there are 4 aspects: (1) donation (giving), (2) piyavaja (sweet speech) (3) atthajariya (conduct self-interest), and (4) Samanattata (self-fitting), in line with research by Hatchaphan Uachotikun (2014) [7]. "Poor leadership traits that have a negative effect on the morale of a follower," the research found. The poor leadership qualities of that supervisor. It affects the morale of work of followers in almost all cases. In this study, the top 10 list of bad attributes of a leader that affects the working morale of a follower by processing the answers of the respondents all questionnaires. The list is as follows: 1) ward off responsibility or blame others when there is a problem or when the results are not good, 2) There is no sincerity, 3) Lie, 4) Only pretend the merits of the whole team, 5) Likes to speak, hurt kindness or bully his subordinates, 6) impersonates the merits of the work of others both that no participation, 7) Prevent favoritism, 8) I have little control over my emotions, 9) Not open to words, 10) Feel hurt. Recommendations from the results of this study are that there should be a leadership development for personnel in the organization. It aims to eliminate the top 10 bad traits first, followed by establishing the best good leadership traits. In addition, this research has ranked 38 other bad leadership traits (48 in total) that can be used as a framework for defining non-leadership characteristics well that should focus on managing as next as appropriate. It is also consistent with research by Magnuson (1991) [8]. The characteristics of the school administrators who succeed in the administration of the school administration. The results of the research found that the personal and professional characteristics of management are as follows: 1) Personal characteristics are fairness, honesty, and integrity. It has a stable mood, has an open mood, is easy to understand, is cool and empathy for others, for example. 2) Professional qualifications such as the ability to communicate well with others have good knowledge in management, know the assignment, able to work with others well, and have the ability to make decisions.

The development process for educational institution administrators according to Sangahavatthu IV principles for primary schools Bangkok Metropolitan Administration (S A S Model) will have 3 important focus points: 1) Sangahavatthu IV, Sangahavatthu IV is a principle that is an anchor for each other's spirit, goodwill, generosity, support, coordination, suitable for management, there are 4 aspects: (1) donation (giving), (2) piyavaja (sweet speech), (3) Atthajariya (conduct self-interest), (4) Samanattata (appropriate). 2) Administrator there are 3 characteristics of school administrators: (1) leadership, (2) morality and ethics, (3) competence. 3) School administration. It is the operation in working in four areas of the school, including (1) academic administration, (2) budget management, (3) personnel management, and (4) general administration. This is consistent with research by Stogdill (2004) [9]. Handbook of the leader of the theory survey and research from at least 10 research papers, it was found that the person holding the position as the management must have the following qualifications: 1) know how to socialize, 2) initiative, 3) persistence, 4) know how to get work done, 5) Self-confidence, 6) Be alert and insightful, 7) Cooperate, 8) Popular with all, 9) Good adaptability, 10) Ability to speak and from the research results not in less than 15 copies, it was concluded that a person holding an executive position had to be qualified. The following are greater than members of the group: 1) intelligence, 2) education, 3) responsibility. It is also consistent with Smith's research (2004) [10] on Characteristics of effective teachers found that the effective characteristics were in descending order as follows: 1) Establish relationships with senior management over the school and the higher education institutions, 2) Plan and cooperate closely with the teachers in the school, 3) Build understanding and make contacts between the school teachers, budget for education, 4) Encourage teachers to develop both professional and personal, 5) To build stability and confidence in the atmosphere of the school and the teacher, 6) Supporting you, 8) Develop yourself in academia, 9) Build unity and work with teachers to promote their own schools, 10) Work according to ongoing various development projects of educational institutions, 11) Working with good relationships with the community,12) Be an academic leader, 13) Show your ability in teaching and administration of educational institutions can be seen, 14) make students behave well and have discipline, 15) have good relationship with students. The behaviors that are obstacles to effective management is a behavior contrary to the 15 above including in accordance with the research of Supawadee Wongsakul (2555) [11] has researched "Development model for transformational leaders that is effective in basic educational institution administration. " The effectiveness of the basic school administration is to achieve the goals of the school at a high level. The teachers' satisfaction was at a high level, respectively. The factors influencing the transformational leadership of the administrators. The basic educational institutions are management characteristic factors behavioral factors and situation factors for change leadership development process

model the effectiveness of basic education management is divided into four steps: self-assessment, self-development planning, development implementation and evaluation of success the development process is divided into 3 categories: training program, development activities and self-development activities and to examine the feasibility and feasibility of the transformational leadership development model. Productive in basic school administration, it was found that from small group discussion. All 18 experts have the same opinion that the pattern is suitable principles and rationale, objectives, factors and processes of development is consistent and it is possible to use it to develop the administrators in the basic education institutions.

VI. RECOMMENDATIONS

A. Recommendation for practice

Research results on the development of school administrators according to the principle of Sangkhahawatthu 4 for primary schools under Bangkok the researcher has the following recommendations.

1.1 In the aspect of review, school administrators should provide assistance to their colleagues in need with useful advice and must always be able to forgive when a collective error occurs, etc.

1.2 In terms of Piyavaja, school administrators should be keen. Say hello in a sincere tone and should speak and explain various information politely even when experiencing stress or confusion

1.3 Aspects School administrators should have a solid relationship including that it must not be attached to that person or job, but should take into account the interests of the organization and there must be norms or rules that everyone accepts and encourage everyone to follow

1.4 Samanattata School administrators should work based on rules rather than results and should encourage appropriate technology and equipment to be used in the operation

B. Recommendation for further research

If there is further research on the development of school administrators according to Sangahavatthu 4 principles, the researcher would suggest conducting research in the following way.

2.1 Should be studied in a research that narrows the scope of the research area and should be defined as a study area only.

2.2 Should study the application of other Buddhist principles such as the Itthipada IV, Brahma Vihara IV, etc. that can be applied to the development of school administrators.

2.3 The research results obtained should be applied to schools, or the next unit in order to consider the educational achievement of the educational institution administrators further.

2.4 Should study other factors that affect the development of school administrators, such as participation educational innovation etc.

CONCUSION

Characteristics of school administrators in primary schools, the 3 aspects of Bangkok Metropolitan Administration consisted of 1) leadership, 2) morality and ethics, 3) knowledge and competence found that opinions on the characteristics of primary school administrators. In general, the Bangkok Metropolitan Administration was at the high level, the individual aspects were at the high level in all aspects, while the development of the school administrators according to Sangkhahawatthu IV principles for primary schools under Bangkok Metropolitan Administration comprises the development of the characteristics of primary school administrators under Bangkok. It is the physical and expressive characteristics of a person's behavior that are part of their character which shows others to see of elementary school administrators Under Bangkok according to the 20-year educational development plan, there are 3 aspects: (1) having leadership, (2) having morality and ethics, (3) having knowledge and abilities. Sangkhahawatthu IV is a principle that is an anchor for each other's spirit goodwill, generosity, support, coordination, suitable for management, there are 4 aspects: (1) donation (giving), (2) piyavaja (sweet speech), (3) atthajariya (conduct self-interest), (4) Samanattata (suitable position) for the development process of school administrators according to Sangkhahawatthu IV principles for elementary schools Bangkok Metropolitan Administration (S A S Model) will have 3 important focus points: 1) Sangahavatthu IV, 2) Administrator, and 3) School administration. It is the operation in working in four areas of the school, including (1) academic administration, (2) budget management, (3) personnel management, and (4) general administration.

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Model and Activity Development in Adult Health Promotion Foundation, the Adult Health Learning Center, Wat Santiwiwek Takian Sub – District, Kabcherng District, Surin Province

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Abstract— ***The objectives of this research were: 1) to study the requirements and taking care of adult health in the adult health, learning center of Wat Santiwiwek, Takian sub-district, Kabcherng district, Surin Province; 2) to develop models and activities in the adult health promotion foundation; and 3) to analyze the means in the adult health promotion foundation in the adult health learning center of Wat Santiwiwek, Takian sub-district, Kabcherng district, Surin Province. This work is qualitative research. Document studying, in-depth interviews, and a focus group with 20 key persons were used. The Data was analyzed by content analysis and analytic induction. Results indicated that 1) The needs and health care of the elderly health learning center of Wat Santiwiwek, Takian sub-district, Kabcherng district, Surin province had found that the elderly need to be healthy and free from diseases. They should have a healthy diet and need to have recreational activities. 2) the development of model and activity in the adult health promotion foundation had found that there are three forms and activities for enhancing the well-being of the elderly: (1) physical well-being, (2) mental and intellectual well-being, and (3) social well-being. 3) Guidelines for enhancing well-being had found that: - 1) physical aspects include encouraging the elderly to understand the health, 2) psychological and intellectual aspects, including encouraging the elderly to participate in activities with others, and 3) social aspects, i.e., encourage activities with their families. The community should encourage the elderly to attend merit-making temples for achieving peace of mind.***

Index Terms— ***Adult Health, Promotion Foundation, Learning Center, Wat Santiwiwek, Surin Province***

I. INTRODUCTION

According to the 12th National, Economic and Social Development Plan (2017 - 2021), it is approximate to the population of Thailand, 2010 – 2040. The middle and late-aged elderly are likely to increase and reflect an increased burden on health costs. Simultaneously, many older people still do not have enough income to support the elderly, which grows from 10.3 million (16.2 percent). In 2015, it was 20.5 million (32.1 percent) in 2040. Although older people are increasingly involved in the labor force, there is not enough income for expenses due to low savings and a significant income source. On this connection, there is 78.5% of the total revenue coming from the child's support. [1] In this point, section 3 and section 54 of the Constitution of the Kingdom of Thailand B.E. 2540 (1997) [2] have the essence of "individuals who are over 60 years of age and do not have sufficient income to receive state assistance", and in Section 5, Section 80 also states that the state must provide relief for the elderly, the poor, the disabled or the disabled and the disadvantaged to have a good quality of life and self-reliance. Also, organizations support elderly activities under the Thai elderly declaration, which provides fundamental factors for living and provides love, generosity, care from families, community societies, and learning opportunities to develop their potential continuously. If we look back at the past, therefore, it can be seen that the National Economic and Social Development Plan No. 7 (1992-1996) has adopted an elderly policy combined with the approach of improving the quality of life of the population. The agency has delayed redundancy services and, crucially, does not indeed respond to the needs of the elderly. [3] Therefore, the actual improvement of the quality of life of the elderly depends on the ability of individuals, which is the driving force for the

well-being of life. It can be said that the government has seen the importance of the elderly from the past to the present.

In 2014, a Thai health survey by the Office for National Statistics found that 31.7 percent of older people suffer from hypertension nationwide, including diabetes. There is 13.3 percent of heart disease, 7.0 percent of heart disease, and 2.5 percent due to the prevalence of chronic diseases from these statistics. They had affected progression more severely, if not managed systematically. Additionally, part of the elderly still does not take care of themselves, which 17.8% exercised consistently enough, 33.0 percent smoked and drank 17.8% and 16.7% of alcohol, respectively. Only 21.8% of fruits and vegetables are eaten. As for the ability to pursue a career, only 12.2% of occupations were found to pursue careers. Due to the problem, the elderly lacked self-care and received little attention to development from stakeholders. Suppose left as such without research and development studies to encourage older people to promote greater self-health. The burden of caring for the elderly with long-term problems will increase and continue to affect future generations' development. Therefore, all divisions of Thailand have taken into account the issues of the elderly [4]. It has consequently lacked action to promote the self-health of the elderly systematically and sustainably.

From this condition of the problem and its importance, the researchers are interested in studying the model and activity development in adult health promotion foundation. The adult health learning center, Wat Santiwiwek Takian sub-district, Kabcherng district, Surin province in physical, psychological, and social well-being, will help know the needs and health care of the elderly. The model and activity development in adult health promotion foundation, the adult health learning center, Wat Santiwiwek Takian sub-district, Kabcherng district, Surin province, can accommodate future changes to be appropriate.

II. RESEARCH OBJECTIVES

1. To study the requirements and taking care of adult health in the adult health learning center of Wat Santiwiwek, Takian sub-district, Kabcherng district, Surin Province.
2. To develop models and activities in the adult health promotion foundation.
3. To analyze the adult health promotion foundation in the adult health learning center of Wat Santiwiwek, Takian sub-district, Kabcherng district, Surin Province.

III. RESEARCH METHODOLOGY

A. Population, Samples, and Key Informants

1.Population includes the elderly of the Elderly Health Learning Center of Wat Santiwiwek Takian sub-district, Kabcherng district, Surin province, a total of 100 persons.

2. Samples include the elderly of the Wat Santiwiwek Takian sub-district, Kabcherng district, Surin province in number 20 persons which specific selection.

3. Key Informants include qualified persons used in group discussions to develop patterns and activities to enhance the well-being of the aging health learning Center of Wat Santiwiwek Takian sub-district, Kabcherng district, Surin province, which includes: director of the learning center, community leader, experts, scholars, 10 persons.

B. Research Tools

a. Qualitative Research: The researchers created a tool based on the conceptual research framework based on an in-depth interview form created by the researchers to collect interview data.

1. Documentary studies are conducted and collected from relevant evidence documents, guides for establishing elderly schools, research reports, minutes of meetings, relationship documents that illustrate ideas, and the Principles theories about the elderly.
2. Non-participation observation is a tool used to observe activities such as attending meetings, commenting, and participating in events. Observing planned operations Observation and evaluation of activities of the elderly health learning Center of Wat Santiwiwek Takian sub-district, Kabcherng district, Surin province
3. The interview form includes:

Part 1 General Information of Interview Respondents, Part 2 Information about the healthcare needs of the elderly. In Kab Cherng District, Surin Province, and Part 3 Comments and Other suggestions.

4. A specific group discussion form qualified for a specific group discussion to determine the model of activities to promote elderly well-being and guidelines for promoting elderly well-being, including the director of the learning center, community leaders, experts, and academics.

C. Data Collection Tools

Step 1: Collect qualitative research data with the elderly, who are targeted by in-depth interview observation.
Step 2: Synthesize the information from the interview to find patterns and activities for promoting elderly well-being.
Step 3: Take patterns and activities from stage 2 to discuss specific groups from qualified persons to analyze guidelines for promoting the well-being of the elderly.

D. Data analysis statistics:

Qualitative data analysis is the analysis and synthesis of data using content analysis methods.

IV.CONCLUSION

Summary of the findings of the development of patterns and activities for promoting elderly well-being and guidelines for promoting elderly well-being from qualified persons in specific groups of conversations, including the director of the learning center, community leaders, experts, and academics. The researchers summarized the comments according to the objectives in the following order:

a. Education, needs, and health care for elderly health centers of Wat Santiwiwek Takian sub-district, Kabcherng district, Surin province had been found that the elderly needs to be healthy and free from disease. It is safe to have healthy food, and need to have recreational activities. They should have various knowledge about the types of drug use, and not smoking, a requirement to participate in Buddhist activities for the *Vipassana* (insight meditation) practice for gain the benefits in knowledge, and practice the proper profession. They should develop funny emotions, and stress-free activities to take care of their mental health, as well as participating in public activities for doing social activities. Participation in resolving conflicts tackling unfairness in society

b. The development of patterns and activities to enhance the well-being of the elderly of Wat Santiwiwek Takian sub-district, Kabcherng district, Surin province had been found that there are three forms and activities for enhancing the health of the elderly: 1) physical well-being consists of three activities are healthy, safe, non-toxic and healthy foods, 2) mental and intellectual well-being consisting of four activities: beauty, goodness, peace and consciousness, and 3) social well-being consisting of three activities: benefits, justice, peace.

c. Guidelines for enhancing elderly well-being at the wellness learning center of Wat Santiwiwek Takian sub-district, Kabcherng district, Surin province had been found that 1) Physical aspects include encouraging the elderly to understand healthy having and regular health check-ups, promoting physical activity, such as dancing, and encouraging them to see a dentist for oral health check-ups in every six months and annual health check-ups, 2) mental and intellectual health checks. The community should enhance understanding of the benefits of the elderly and encourage the elderly to attend merit-making temples. Meditate and listen to dhamma to achieve peace of mind.

V. DISCUSSION

The results of the model and activity development debate in adult health promotion foundation, the adult health learning center, Wat Santiwiwek Takian sub-district, Kabcherng district, Surin province.

a. Physical aspects:

The results showed that: The elderly want to stay healthy. Exercise regularly, eat healthy foods, keep your body clean and have annual check-ups. Always check body. However, the physical promotion activities should encourage the elderly to understand healthy eating and regular check-ups. They should promote physical activity such as wood dance, which helps maintain the movement of joints in line with Mintra Siriwan [5] to mean that the elderly are 60 years of age or older. Retirement or retirement from a full-time job It must adapt to deteriorating physical and psychological changes in the ability to continue living happily and in line with the concept of Eliopoulos. [6] It mentioned that aging causes physical changes, causing the functioning of the body's systems to change in a deteriorating way, such as decreased flexibility of blood vessels. The immune system has a decrease in function. Therefore, the elderly can cause diseases, especially chronic diseases. Age-related health problems often cause chronic diseases. The elderly includes hypertension, diabetes, arthritis, asthma, paresis, and disability. B. The Mental and Wisdom Aspects:

The results showed that: The elderly want to accept contributions to society and be respected by members of their families. Mental or intellectual promotion activities should build understanding with the elderly as they enter the elderly to adapt happily to the elderly society, and should encourage activities with others. Socialize, adjust your mindset. Always remind yourself not to take heart and to forgive others, which is consistent with the concept of Laddawan Singkhamfu [7] which mentions that Quality of life is a feeling of satisfaction and happiness in an individual's life according to the condition in which they live. It is recognized and decided by the person under the concept of Chanpen Niamin [8] It has been said that the loss of a loved one. This is because a friend dies or a person who is a close relative or partner who dies from causing the elderly to feel isolated, taken from their loved ones, causing sadness easily and in line with the concept of Apichai Mongkol and group [9] has mentioned a happy or distressed state of mind. Their health conditions Physical illnesses that affect the psychological side and mental illness

C. Social Aspects: The results showed that: The elderly need to get the attention of others. Be part of social families and groups, and support social and play a role in society according to their aptitudes. In addition to that, the elderly need to participate in merit-making, meditation practicing, and listen to the Dhamma. Social promotion activities should encourage the elderly to exercise regularly, to do activities with family, friends, to have good physical health, and to encourage the elderly to attend merit-making

temples. meditation and listening to dhamma to have good mental health, which is consistent with the research of Kaniknan Yoksakul [10] Studies on the participation of the elderly in health activities showed that the elderly participated in the activities and participated in a total of 5 procedures. At the stage of analyzing the problems, most of the samples were sick with headaches, insomnia, loss of appetite, hypertension, finding out that it was caused by having an unhealthy body, weakness, lack of knowledge to do. Overworked loneliness planning for the elderly, interested in the most appropriate posture activities, the practice has organized 8 healthy activities. In the follow-up stage, the assessment showed that the elderly had improved physical, mental, and social health. The elderly uses the group process as a stimulus to create health activities that truly meet the needs which affect continuity and sustainability and are consistent with the research of Wanchai Noichan [11] to study about "the improving healthcare capabilities. The self-esteem of the elderly in Ban Pong Nuea In Hang Dong District, Chiang Mai province, the elderly was found to participate regularly, including persuading their children or neighbors to participate in activities, and that the elderly had built good relationships with each other, allowing the elderly to join in the increased exercise and as a model for bringing exercise groups to keep the elderly healthy.

VI. SUGGESTIONS

1. The School of Aging or Takian Sub-District Administrative Organization should take the needs or forms and health promotion activities seriously so that the elderly receives thorough care.

2. The relevant authorities should support the resource factors involved in enhancing the well-being of the elderly.

3. The Sub-District Administrative Organization should establish activities to enhance the well-being of the elderly clearly and continue to do so that the elderly is aware to maintain physical, mental, and intellectual health and social aspects.

4. The elderly must be aware of problems with themselves and cooperate to learn how to solve problems together with the relevant authorities.

5. The health-enhancing activity should be further realized in the changes of the body of the elderly by age, there may be learning activities, preparing to die so that they can understand the reality of life and be able to face problems effectively.

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Buddhist Ethics and the way of Living in Daily life: An Analysis of Genital Malfeasances (Kāmesumicchācāra)

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Abstracts—Genital malfeasances (*kāmesumicchācāra*) is the third precept in the Buddhist doctrine means sensual pleasures with another's the wife or someone's husband and in the same *sutta* of the '*asatdhammadipāyena*', it is referred to having sex with a prohibited person. Rājavoramunī remarks *kāmesumicchācāra* is demanded to directly and indirectly avoid and forbidden in the five precepts, the eight precepts, and the ten precepts. Remarkably, *kāmesumicchācāra acts* in Buddhism are compared to the acts of a hungry dog, a hungry vultures, burns by mal-carrying a blazing grass torch, a burning pit, a speedily faded dream, a show-off vanity, a fruit tree risky to be climbed and cut by rogues, a risky meat chopping block, a painful wound pierced by spear or a lance and an endangering snakehead. In this article, the author shall trail through the Principia of 'genital malfeasances (*kāmesumicchācāra*)' with its criteria of violation while inevitably discussing the dilemmas within Buddhist ethics on its avoidances and some alternative perspectives about genital malfeasances (*kāmesumicchācāra*) through the lenses of some leading scholars.

Keywords—Buddhist Ethics; the Way of Living; Genital Malfeasances

I. INTRODUCTION

None rejects there are certain levels of extramarital malfeasances, nuptial infidelity, adultery and sexual deviance thundering societies and end in calamities like a public teacher harasses his girl students[1]. A youth sets tire fire over his girlfriend because of sexual jealousy [2], a police sergeant sets tire fire over his wife because of sexual jealousy [3], and so many more for just being over-kama. These issues are sensorial and entangled long before Buddhist era and prolonged until these day. However, the allegory of Queen *Mallikā*, may crucially distort all religiously ethical practices and trustworthiness to all social classes, regardless rich or poor. The Lord Buddha teaches not only *kāmesumicchācāra* or 'sexual malfeasances but also *kāmaguṇa gihisukha* and *gharāvāsa-dhamma* and so much more [4].

Natural and traditionally nuptial sexual affairs beget human reproduction in for the purpose of preserving human lineage. But sexual misconducts welcome more social problems like broken homes, genitally deadly diseases, HIV/AIDS, the pool of genital disease spread. By principle, natural and traditionally nuptial sexual affairs or marriages are a legally and socially sanctioned union[5], usually between a man and a woman regulated by laws, rules, customs, beliefs, and attitudes that prescribe the rights and duties of the partners and accords status to their offspring (if any). The wedlock universality among diverse cultures and societies is imputed to the numbers of basic personal and social functions with different structure, like sexual regulation and gratification, divisional labour between the sexes, economic production, consumption and personal satisfactory needs for affection, companionship and status.

Nuptial traditions are, to some extent, processed by the beliefs and practices met in societies worldwide. In the Hindu cultures, weddings are highly garnished affairs with several rituals. Weddings are generally dominated by the parents of both parties with cautious astrological

calculations. However, most Buddhists marriage remains primarily a secular affair, even though the Buddha offered guidelines for the responsibilities of lay householders [6].

His Lord Buddha hints that any homosexual and/or lesbian indulging in oral sex, anal sex, or sodomy with boys will, upon their death, be reborn into the evil realms, particularly Hell. Nevertheless, poisonous social shall usually yield poisonous societies led first by wraths, violence, child abandonment, and broken homes until becoming social catastrophic death. Deviant *Kāmesumicchācāra* are even wiped out by holy fire like Sodom and Gomorrah as in the Genesis 19:4-27 of the Old Testament still social in societies never recognize such deadly devastation. Modern adultery as "recurrent, intense sexually arousal fantasies, sexual urges, or behaviors generally involving non-human objects, the suffering or humiliation of oneself or one's partner, children, and non-consenting persons". [7]

Crimes from sexual jealousy, in brief, found in newspaper each day demonstrate the implications that human beings need reproduction either to prolong their clans with any impurity from other persons or to save faces otherwise there would the cases of a youth sets tire fire over his girlfriend because of sexual jealousy, a police sergeant sets tire fire over his wife because of sexual jealousy. These could be either being humiliated or unlawful protection of lineage. Saving faces and saving clans could lead to senseless acts while each party may end in either death or imprisonment. Such rewards of sexual hedonism are ill-wishes from natural curses [8]. The aftermath impacts are incalculable among both parties' family members, their neighbors, authority in charges, Ministry of Social Developmental and its departments. However, sexually jealousy should not arise if men can why not women since democracy allows equality. Nevertheless, in real social mood, such utopian idea is unlikely supported.

Genital malfeasances (*kāmesumicchācāra*) and pro-human rights paraphilia disorders or sexual perversions begin from a mental disorder to rape, to masochism and unthinkable sexual possibilities. Sociologically, the major causes of sexual misconduct and sexual deviance could have come from traditionalism, social values, behavioral aims, conflict of love, responsiveness, and misbiogenetics, while Hick claims evil rises from physical and psychological suffering, selfishness, and greed (Hick, 1990, p.39). Buddhism believes that evils like misconduct and deviance are caused by ignorance (*avijjā*), volition (*saṅkhāra*), consciousness (*viññāṇa*), name-and-form (*nāmarūpa*), the six-fold sense (*saḷāyatana*), contact (*Phassa*), sensation (*vedanā*), craving (*taṇhā*), attachment (*upādāna*), growing to be a karmic force, like volitional formations (*Bhava, Kammabhava*), and rebirth consciousness (*jāti*) [4].

The researcher contends that every religion prohibits committing adultery or sexual misconduct and perversions like the 3rd precept of 5 in Buddhism, Sins Nos.10 and 11of 70 in Islam, and the 7th Commandment of 10 in Christianity and Judaism. The concepts of Buddhist ethics on 'sexual misconduct' (*kāmesumicchācāra*) and philosophical proposition of genital malfeasances or perversion in texts, and contemporary Buddhist sexual ethics, need to be revisited, based on moral criteria held in the 'five precepts', especially the 'third precept', to regain the moribus Principia of 'genital malfeasances (*kāmesumicchācāra*)' with its criteria of the violation; the dilemmas within Buddhist ethics on its avoidances and scholarly alternative perspectives debate about genital malfeasances (*kāmesumicchācāra*).

II. Sexually Bedding Bragging

Bedding innumerable women doesn't mean a man is a great lover, so stop telling fibs to pollsters. Warren Beatty in Bonnie and Clyde (1967). Legend has it the actor slept with nearly 13,000 women. Men, please stop boasting – sex is more than just a numbers game (Ellen 2018). So then, why mark men out as great in bed by having very many sexual partners? Analyzing 15,000 British men and women to a sex habits survey was conducted by Glasgow University and found that it shocked none when women tended to go low upon numbering sexual partners but men were likely opposite.

The rationale is possible that adulterous females are by propensity harshly judged unlike men. Therefore, boasted high, and sometimes even very high on partner bedding. On Love Island, young men claimed to bed with sometimes hundred partners and they were admired like Greek gods. Their belief is that the higher the number, the more successful, desirable and alpha a lover a man must be. But Ellen is curious whether such boast makes sense and doubtful whether the idea whether the more partners someone has, the more likely he is to be "good" in bed. Too often, such trophy-hunting

boasts don't even seem to be about an honest, primal, monogamy-rejecting need for constant variety, rather a (very intriguing) urge to impress other men and women disgusted such boast and bragged personality [9].

Men are not great sexual performers as bragged regardless their motive, and bedding numbers but good at enticing bedding partners but this contradicts formulaic relationship since it is likely impossible and they are not machines to repetitiously do the same thing with different partner. They never naturally develop their repertoires and with lots of sex does not mean they become experienced men for long-term relationship. They would be even humiliated when they hear other surpass them and reaction from women would even possible disgust them, concluded Ellen.

AIPC (2019) coined that one way some boasters think they covertly act and might mean something else and even in complaints from being recognized. Sometime braggers employed overt metacommunication for recognition and applying presence with high-status people though appearing in high class events. However, bragging might welcome insecurity to braggers. In an entertaining article, "Less Penguiny" characterizes no fewer than 17 modes of "showing off" [10][11] recognized that even in disguise the brag doesn't work; people still hate being the recipient, whether they are made to feel inferior in a covert or an overt way.

They are (1). The insecure person endeavors to make other fell insecure. When one questions one's own self-worth, whether it is around specific person or is that individual always propagating one's strengths? If one in general doesn't feel insecure, but just around certain individuals; they are likely projecting their insecurities over that individual. (2). Showcasing accomplishments is the aim of an insecure individual. Individuals who are consistently bragging on their great lifestyle, or their successes, or elite education, or their cute children are convincing themselves that they are really worthy but in fact they feel inferiority. (3).The insecure person drops the "humblebrag" is too often dropped by insecure individuals. The humblebrag is a brag disguised as a self-derogatory statement often found Facebook like travel complaints due to the importance of his/her job and the "Facebook gloat or triumph." (4). Pessimistic complaints about things by insecure individuals of high insecurity to showcase their high living standards or being a snob to show that they are better than over all with rigorous set of self-assessment criteria.

Returning to the Brookes study, there can be aspects of overt narcissism that actually do work in helping the insecure feel more confident in their abilities. However, this comes at the price of making everyone else feel less confident nd bolstering one's sense of self-efficacy by putting down everyone else is not recommended. A narcissism-based dual trait nature, by literature reviews, comprised covert and overt forms. Many researches explore the two subtypes concerning self-esteem, but few examined narcissistic subtypes and self-efficacy to explore self-report measures of covert narcissism, overt narcissism, self-esteem and self-efficacy conducted with 115 psychology undergraduates. Results reveals that there is no significant relationship between covert and overt narcissism. The covert and overt forms of narcissism are found to significantly contribute to self-efficacy beyond self-esteem. The overt narcissism positively predicts both self-esteem and self-efficacy beyond self-esteem. On the contrary, covert narcissism is found to negatively predict self-esteem and self-efficacy beyond self-esteem. It is recommended that power is more adaptive subscale. The Special Person subscale is conjoined to higher self-esteem but not self-efficacy, it is then recommended that it forms the maladaptive core of overt narcissism. Exhibitionism is not relative to either self-esteem or self-efficacy. Results appear congruent with past literature, and have given an additional insight into the implications of trait based narcissism about self-efficacy. Findings recommends that overt narcissism- based trait is a more adaptive construct to each self-concept than covert narcissism, found by Brookes [12].

A. The Thai Family Roles and Social Institute in this and Future Centuries

Its role must foster heavenly family relationships, the warm family atmosphere, create a sense of the family mental stability upon living together, be prevailing smiles in the house, have love, care, generosity to help each other and to cultivate a good lifestyle. This begins with the parental roles as good role models, training to teach, cultivate good things for their children, to care to promote the development and maturity of their relationships, have good relationships with family, relatives, friends, and community. The family strength requires self-reliance, emotional,

social and psychological development, learning and adaptability to live a good day(s) [8].There are psychological bonds, such as morality, religious ethics, based on self-sufficiency. Optimism and omission of gags Contribute to social responsibility there is no anti-or-a-social behavior. To participate in social support, help solve the problems of the community and society.

B. Concepts and Principles of Family and Social Empowerment

According to Buddhist science. Buddhist orthodoxy is the principle of Buddhist teaching stipulated by The Buddha to standardize human conduct divided into 3 levels: in Basic Buddhist ethics, it is meant for the societal peace through applying the Five Precepts. In the Middle Class of Buddhist Ethics, it is to undertake in the principles of social service and social integration. In the Buddhist High Level, it is to develop oneself through the Earth's Dhamma, or the Dhamma World 2, and the Eight Fold Path of the Buddha's three levels: not doing all evil, making charity a good thing to make their mind sing. This is a level to prevent extramarital malfeasance and social empowerment to avoid adultery [6].

The Buddhist principle of strengthening Thai society and family has found that the dominance or life of married spouses is a life that requires the principle of fostering a relationship that leads each other to move forward in Dhamma together: it must be a step towards the development of life and it is important to co-ordinate the life of a married spouse and live together sustainably. In terms of the transformation of Thai families based on the concept of family psychology theory, which aims to explain the behavior of the relationship between family members and factors influencing family dynamics. This is a life-cycle relationship with dimensions that point to the family's process of living, or are relevant to interactions with outsiders in different contexts in accordance with appropriate guidelines, and to maintain the balance of family life. Because the person in the family has a moral behavior between each other and nurtures the ethics of the family, with a focus on incubating morality within the mind.

The current state of Thai family and social problems in the 21st Century has found that family problems are an important variable . In the view of married women, the situation is problematic and the development of family relationships. This is due to the changing conditions in the socially variable economy, debts, technologies, home and individual's lifestyle impact, wedlock infidelity, the spousal paranoia from sexual jealousy and suspicious wedlock infidelity-sharing love to another man or woman.

III. Traditional Treatment

Traditional Buddhism treats adultery or sexual relations out of wedlock—as a serious transgression that furthers suffering. Viewed as harmful to oneself and others, it is typically contextualized within the framework of the third of five fundamental precepts of Buddhist morality: Buddhists must refrain from taking life, committing theft, indulging in sexual misconduct, giving false speech, and using intoxicants. These guidelines form the basis of Buddhist morality for both the laity and the clergy, and what defines sexual misconduct varies between the two groups. Monks and nuns are expected to be chaste, while the laity is, above all, enjoined to avoid sex with another's partner—marriage or a formalized union being the proper context for sexual relations between two people. With married couples, sexual misconduct is more largely construed beyond sex and out of wedlock to include such misbehaviors as intercourse with or through an improper part of the body, at an improper place or time, or with an instrument. Overall, the primary focus of the third rule is twofold: to avoid causing harm to others through one's sexual and deceitful behavior, and to constrain one's own sexual desire.

IV. Twelve Reasons Why People Commit Extramarital Adultery

It could be excuses but possible but usually when being drunken or stresses from home during pregnancy and during the hypoactive sexual desire disorder in either parties. But twelve [12] reasons why people have extramarital affairs reported [13]. Huffington Post India. Having extramarital affairs, regardless of their socioeconomic background or location or other reasons. Here are 12 possible or rational reasons why individuals satiate in an extramarital misconducts and never feel guilty of such misconducts. They are, (1) early marriage during 20s and meet monotony affairs until 30s so they excuse to have new excitement and thrill in infidel dating but Sezgin, and Punamäki [14] internationally rejected and may lead to more

deadly mental health. (2) Married for the wrong reasons under pressures of their families and castes but Danois [15] cautions if one marries for money, one will pay for marriage life. (3) Inability to deal with changes such as serious illness in the family, death, loss of employment, financial loss, etc. either party may find more comfort in the arms of someone new. Similarly, Douglas LaBier [16] contends that when there's an incapacitated spouse one's partner is permanently incapacitated, mentally and/or physically; it is possible that either party would enliven their extramarital affairs even under condemnation. (4) Becoming parents, particularly women give their 200% to be mothers and leave their husbands behind and several men who suddenly feel lost and unimportant at home, and indulge in extramarital affairs. (5). Physical dissatisfaction - This is probably one of the most common reasons for people to get involved in an extramarital affair. A list of a few things that causes adultery, which are lack of communication, sexuality, loneliness, revenge, unhappiness, constant differences, inability to perform, lack of chemistry, depression, and domestic violence (6). Emotional disconnect - Sometimes a couple grows emotionally disconnected from each other, the top reasons being lack of time and lack of communication with each other. (7). Disagreements on core values – when core values are tested and decision-making has to be made but it may not serve the family particularly the partners which can lead to irreconcilable differences, which triggers an extramarital affair. (8). Differing life priorities - if being so different that it becomes tough to live together and agree on even daily basic things. This can be a catalyst for an extramarital affair. Some marry believing that it can advance their career. (9). No common interests – one will end up not spending enough time together but interacting with others and gradually begins a bond with those who share the same interests, which could lead to extramarital affairs. (10). Need for excitement – it is to break boredom, monotony and drudgery of everyday life that is the reason for an extramarital affairs and just for fun, or for a change or for some excitement. (11). Personal finances - excess debts and liabilities, and anyone who can give some financial support is welcome and this can lead to an extramarital affair. And (12). Career advancement - sad but true that some people get into a relationship simply because they believe it can advance their career but could be lifelong issues with guilt and distrust. Extramarital misconducts spare none and harm all.

V. Extramarital Misconduct Phenomena in Thailand

Marital infidelity is a hard (and illegal) habit to give up in Thailand (Thai PBS Directorial Team, 2021). This is the evidence that wedlock infidelity among authorities is prevalent. Surveys show infidelity is still a commonplace practice in Thailand. But if believing cheating on spouses carries no penalties, please think again. Thai law protects the sanctity of wedding vows, and adulterers can face a hefty fine and other, even stricter penalties particularly it threatens career advancement.

Both the Royal Thai Army (RTA) and the Royal Thai Police announced that any members found spousal unfaithful would face disciplinary action. Harsher penalties apply if the offence is repeated or if there are signs of domestic violence. Just last month [February 2021], a junior soldier had been disciplined twice and lost his bonus for failing to be a "model citizen". This was after his legal spouse complained that her husband was openly conducting a relationship with another woman and abusing her in other ways, too. The Civil Service Commission, can fire and confiscate their state pension if caught engaging in extramarital affairs. This rule is also applicable to common-law relationships.

Even though Thai law protects marriages, Thais were found to be most unfaithful nationality in a 2012 survey of 29,000 people in 36 countries conducted by condom manufacturer Durex. Dating website, Match.com, reported similar findings in its survey on infidelity. Thais' casual attitude towards marital fidelity is perhaps best illustrated by the constant stream of headline-making celebrity "scandals". It is no secret that many high-profile Thais like to have more than one partner in their life like the case of Actress Tanyares Engtrakul often makes headlines for trying to rein in her wayward husband, Sanchai "Peck" Engtrakul. Deputy Agriculture and Cooperatives Minister Thamanat Prompow has openly declared he has two wives. When registering his assets before taking his Cabinet post in 2019, he identified Arisara Prompow as his legal spouse and former Miss Thailand Tanaporn Srivirach as his common-law wife. Polygamy was accepted practice in Thailand for centuries, before it was banned in

1935 – a few years after the 1932 Siamese Revolution. Polygamist affairs are legal and there is no need to disguisedly behave extramarital misconducts.

Thai government officials suspected, with sufficient evidence, of committing adultery, sexual harassment or sexual assault will be suspended from government service without pay, pending investigation, under a new ethical and disciplinary code of conduct approved by the cabinet on Tuesday. The ethical and disciplinary code, which was proposed by the Office of the Civil Service Commission, also mandates that any government official who uses social media for sexual harassment or other sexual violations will also be subject to suspension without pay. Deputy government spokesperson Ms. Ratchada Thanadirek said that such offences are regarded as gross breaches of discipline or ethical violations and it is the duty and responsibility of the immediate superior of the official concerned to conduct a fact-finding probe and to take immediate disciplinary action. She said that Prime Minister Prayut Chan-o-cha has attached special importance to this issue and suggested that the officials implicated in such offences should be suspended from service without pay pending the outcome of an investigation [2].

VI. Conclusion

The dilemmas within Buddhist ethics on its avoidances - sexual affairs just for pleasure are 'sinful'. 'Sin' is pointless and empty and not wicked but valid and everyone owns his/her rights to sin as most pessimists believe. Infidelity in marriage and sexual perversions bomb societies. Carnal dilemmas are intricate and sensitive from before Buddha's time until the present. 'Genital malfeasances and perversion, such in the case of Queen *Mallikā*, strongly challenge Buddhist ethics and all the Buddhist believers because of the misled Buddhist teachings on *kāmesumicchācāra* or genital parody. Buddhists in the west like liberality; *Theravāda* keep conservativeness, whereas the *Mahayana* and the *Vajrayāna* adhere to the middle way though traditionally free about sex. *Saṅgharakkhita* advocates that genital malfeasance is avoided by ending sensual desires for wicked deeds. The fire never ends fire, and similarly, sex never ends sex but more sex.

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New Normal Quality of Life according to Dhamma Principle in Covid-19 Pandemic Crisis in Khwao Sinrin District Municipality, Surin Province

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***Abstract*—** *The purposes of this research were 1) to study the adaptation in Covid-19 Pandemic Crisis in Khwao Sinrin district municipality, Surin province, 2) to study problems and obstacles in the adaptation in this area, and 3) to study ways to improve the quality of life in New Normal according to Buddhist principles in Covid-19 Pandemic Crisis in this area. Mixed methods research was used for research design. Quantitative research by handing out questionnaires from a sample of 375 persons. Qualitative research was used in-depth interviews with 10 key informants and the group discussion with 8 samples. The statistics used include frequency, percentage, average, and standard deviation. Results indicated that 1) the adaptation in Covid-19 pandemic crisis in Khwao Sinrin district municipality, Surin province found that people pay attention to maintaining cleanliness, refraining from unnecessary activities, and be cautious to live in carelessness. Recognizing public policy on prevention treatment and awareness of the seriousness of Covid-19, and being vigilant in social coincide and being able to advantage communication technology innovations, 2) the problems and obstacles the adaptation in this crisis found that people were concerned with the dangers and severity of pathogens, stress. People confused with many information, and 3) the ways to improve life's qualities in new normal according to Buddhist principles in this crisis found that the self-development by having a good relationship with the environment and with others as well as to adaptation of working life with honesty and aptitude for living in a society with peacefully.*

Index Terms— *Adaptation, Covid-19, New Normal, Improving Quality of life, Buddhism*

I. INTRODUCTION

Coronavirus is currently spreading with rapid transmission rates and spreading around the world. The World Health Organization first declared COVID-19 a pandemic caused by the coronavirus on March 11, 2020. [1] The main cause of rapid physical contact is the changing lifestyle in the globalization era of urban society, accompanied by rapidly shifting dynamics in an era of technological advancement. There is more movement of the population, to cross-border travel is easier and more affordable than in the past. Therefore a few people enjoying going to different cultural places. It is making the virus spread borderless. [2]

For Thailand in the covid-19 pandemic, the government has stepped up infection control measures by communicating that people should know the disease situation. Preparing for people's lives together. Enforcing surgical masks when traveling outside. Hand washing and distancing between individuals in society. Quarantine when

people are moved for 14 days to prevent the spread of pathogens. The announcement reduced travel abroad. Abstaining from meetings and gatherings, closing workplaces and entertainment venues including all educational institutions, and also declaring emergencies to limit the duration of outings. When consumption habits and recreational activities begin to decline. Many businesses are slowing down. As an unemployment problem, the economy is disrupted, so it is a constant strain on the chain that, with more time at home, most of the free time is spent browsing the Internet to stick closely to the situation, resulting in the news that is not as trusted as the facts. Terror spreads into the minds of more people.

However, the covid-19 crisis is not a crisis. This may be an opportunity for us to remind us of our lives on recklessness and remind us to have time to refine our minds to see change and accept the laws of nature. Take care of nature, take care of our mind, develop a new way of life. The Royal Society's term "new normal" refers to a new normal or a new lifestyle base, meaning a situation or phenomenon that was originally unusual. Unfamiliar people are not the standard, there are some causes or crises, so there has been a change in the situation or phenomenon, which in the current situation is a quality life during the covid-19 pandemic. What to do is how to live with COVID-19. [3] Everyone needs to learn information to understand and take care of themselves as they say. Phra Paisarn Visalo said: "The plague does not harm us as much as we fear the plague, even during the pandemic, happiness persists around us, so we wish everyone a glimpse of happiness during the disasters we are facing."

People's adaptation has an important aim: to ensure that they can survive. [4] Adjustment is the daily routine of self-care management. People around the environment A good adaptor can effectively manage problems among existing conditions, but that does not mean that they will not be left with any distress. 1) Self-understanding learning, society, environment, 2) knowing how to create potential goals, 3) knowing how to manage the environment to achieve it, and 4) acknowledging the desire of others to find ways to live together peacefully. [5] The social aspects of the local people are adapted to allow themselves to live in a changing environment, 2) the old economy with the occupation at any time, having to choose a more secure time to work with an auxiliary occupation, and 3) The security forces keep an eye on what is wrong in the area where they live.

Adapting to improve the quality of life according to the principles of Buddhism is not new, but a lifestyle that is a matter of adaptation and collaboration. According to the Buddhist means according to Buddhist methods, *Pariyatthi-saddhamma* studied doctrine to gain understanding. *Patipatti-saddhamma* follows the doctrines studied and *Patiweda-sadddhamma* receptive to compliance with the doctrine worthy of applied practices as a way to prevent and solve the covid-19 crisis. There are 4 steps: preparatory, preparatory, hands-on, and receiving procedures using mindfulness. Sampajanya, and *Yonisomanasikan* on rational use more than emotion. Feelings. [6] *Yonisomanasikan* is used to screen important information to improve quality of life. *Kayabhavana* refers to physical developments involving external things in a way that is you. The penalty is not to develop a relationship with the physical environment. *Sila-bhavana* refers to the development of conduct to be disciplined. Do not squeeze or cause damage to coexist with others with good deeds. *Citta-bhavana* is a development of the mind to be strong, stable, prosperous with virtues such as kindness, diligence, patience, concentration, and freshness, and *Panya-bhavana* is the development of wisdom to understand things as they are. Knowing the world and life according to conditions It is possible to free yourself, purify yourself from passion and free from suffering, solving problems that arise with wisdom. The principle of 4 Bhavana, if applied to the term New Normal or normality in a new way which is meant to improve the quality of life in a new way.

Khwao Sinrin district municipality is an area in Surin province where anti-coronavirus (COVID-19) surveillance is set up in the area. It has a total population of 10,105. There are 2,763 households (Date at March 2020). The majority of the population has a farming and general mercenary occupation with simple living characteristics with a clear culture and identity. However, the crisis is spreading. As mentioned above, it has also affected agricultural products and the lives of people who need to adapt to the new way of life. The agency plays an important role in promoting the development of the quality of life in the new way of people in the crisis of covid-19. Like this.

Therefore, if you Researchers are interested in studying adaptations to improve the quality of life in the critical situation of the COVID-19 outbreak of the Khwao Sinrin district municipality, Problems and obstacles in improving the quality of life in the face of the covid-19 pandemic in Khwao Sinrin district municipality, Surin province, and guidelines for improving the quality of life according to Buddhist principles in the crisis of covid-19 outbreak of in Khwao Sinrin district municipality, Surin province to ensure normality in society.

II. RESEARCH OBJECTIVES

1) To study the adaptation in Covid-19 Pandemic Crisis in Khwao Sinrin district municipality, Surin province.

2) To study problems and obstacles in the adaptation in this area.

3) To study ways to improve the quality of life in New Normal according to Buddhist principles in Covid-19 Pandemic Crisis in this area.

III. RESEARCH METHODOLOGY

The research model is a combination of quantitative research by the tools used to distribute questionnaires on adaptation to improving quality of life in the critical situation of the COVID-19 pandemic of the Khwao Sinrin District Municipality, Surin Province, 4 areas: 1) self-understanding learning, 2) knowing how to create potential goals, 3) knowing how to deal with the environment to achieve goals, 4) acknowledging the desire of others to find a peaceful way to coexist for the development of quality of life in 4 areas: physical, behavioral, psychological, intellectual. Samples from representative populations of households living in Khao Sinarin Municipality Surin province has 375 people and qualitative research based on 10 key informant interviews and group discussions from 8 experts involved in the use of specific selection methods, including representatives of local government organizations and sub-district health representatives, the member of AOR.SOR.MOR club, community leadership representatives. The statistics used include frequency, percentage, average, and standard deviation based on the issues defined in the research objectives. Qualitative data analysis by inductive summary.

VI. RESEARCH RESULTS

1. Adaptation to the covid-19 crisis of people in The Municipality of Khao Sinrin, Surin Province.

People living in The Municipality of Kaewsinrin Surin are mainly female, aged 46-59 years old. Primary education income 90,000 - 15,000 baht. Marital status and mostly employer /employee occupation. The overall adaptation of the covid-19 crisis of Yao Sinrin Municipality in Surin province was found to be very high (x =3.46, S.D. = .344). Based on the sides, sorted in descending order, the most average aspects are the side that acknowledges the desire of others to find a peaceful way to coexist (x = 3.58, S.D. = .386), second only to knowing how to create potential goals. (x =3.54, S.D. = 7.38), side (x = 2.71, S.D. =.220), self-understanding, social, environmental (x = 3.43, S.D. = .347), and the least known aspects of environmental management to achieve the goals. ($\bar{x}$ = 3.27, S.D. = .502).

Adaptation to improving quality of life in a new way according to the 4 Bhavana in the crisis of the covid-19 outbreak of The Municipality of Kaewsinrin, Surin Province quantitatively, was found to be highly overall (x =3.56, S.D. = .283). According to the list, the highest average is improving the quality of life according to the Buddhist principles of physical dhamma (x = *3.75*, S.D. = *.294)*, the second is improving the quality of life according to the Buddhist principles of mentality (x = *3.55*, S.D. = *.341)* and improving the quality of life according to the Buddhist principles of wisdom. (x = *3.55*, S.D. = *.341)* and the least are improving the quality of life in a new way according to Buddhist principles (x = *3.40*, S.D. = *.489).*

2. Problems and obstacles in adapting to improving the quality of life in the face of the covid-19 pandemic.

Problems and developmental barriers to physical adaptation are mostly about breathing inconveniently wearing a surgical mask, second only to insufficient sleep due to anxiety over the covid-19 pandemic. Being confined to a residential area for a long time makes you feel airy. The inconvenience of cooking your meals, and the inability to exercise on demand.

Problems and developmental barriers to behavioral adaptation are mostly about the inconvenience and are accustomed to washing hands with soap or alcohol gel frequently. The intercommunicable communication equipment to work from home, not being able to participate in social activities, or to socialize with friends as always. Occupations that require meeting a lot of people and not having the freedom to leave home in a place of need.

Problems and developmental barriers to psychological adaptation It has been found that it is mainly about feeling unconvinced to live in society. Feelings of anxiety over the dangers and severity of COVID-19 19. Feeling stressed about the situation of the COVID-19 pandemic that can affect unemployment. Doing the same routine feels bored and lonely.

Problems and developmental barriers to intellectual adaptation are mainly related to confusion about information about the COVID-19 outbreak. The absence of knowledge about the use of technology in communication. There is no up-to-date device to access government information.

3. Guidelines for improving the quality of life according to Buddhist principles in the crisis of the COVID-19 pandemic of Khao Sinrin municipality, Surin province.

1) New lifestyle development, self-improvement to have good relations with the environment by self-improvement and self-improvement first. Preventing organs that are associated with the physical environment from infection and must be known to adapt themselves to the appropriate physical environment. Choosing a diet modestly has beneficial effects on the body. Knowing how to make yourself happy, knowing the satisfaction of life which is a contributing factor to physical health. Adaptation in the family, well-being is not in short supply. Family members live in good interaction with each other. Adapting to work-life by occupation according to their aptitude and be progressive. The adaptation to life in society is to make sacrifices as a person who is useful and valuable to society by following measures. The rules and regulations of society.

2) Improving the quality of life of new behavioral ways to become a new culture in society with a holistic perspective to create shared values with everyone must be aware of the perils of the COVID-19 pandemic, by creating a habit of loving cleanliness by washing their hands frequently. The avoiding meeting with other parties directly may be avoided by using communication devices to facilitate instead. Modifying your career or working using work from home instead. Modifications to travel to various locations using public transport services to deliver goods instead, and behavioral modifications by doing activities in residential areas instead.

3) To develop the way of life to be generous to others, namely the development of the mind to be pure. Rational and ethical, by being aware of peaceful coexistence with others. Not condescending must be generous to each other. Being disciplined does not instantiate or causing damage. Mental development affects the thoughts and behaviors expressed, by thinking about others and helping others. Use their skills in a good way and share them with others who are in need or need. Be kind, be truthful, conscious, and concentrate for peace, exhilaration for life. Knowing how to suppress bad habits. Improve yourself by doing good deeds to succeed. Training your mind to be strong and stable to enhance the quality of your mind and prosper with virtues. Adjusting attitudes and values to suit a good lifestyle is conducive to learning so that intelligence grows. And a consciousness of negligence. Understand the changes in life and the environment.

4. The use of wisdom in the field of self-interest and society includes practicing physical, verbal, and professional conduct. The existence of a reverend society by using deep wisdom and truthfulness to understand all things. Knowing the reality that the COVID-19 pandemic has already occurred in the world and in the society in which they live is serious if there is no means of good self-defense control, but we are committed to knowingly living with the situation and bringing it to safety. The use of intelligence to develop themselves into a good way of life. Knowing how to find good sources of knowledge and examples, including using intelligence to analyze good subjects. Choosing to consume valuable news. Knowing how to use wisdom to organize life, plan and organize various activities in an orderly way, as well as motivating interesting creations. Solving problems related to the impact on occupation by believing that they can develop and prosper, it is desirable to have a job that is worth good and beneficial both personally and socially. Applying skills, potential and self-contained wisdom to develop jobs and careers by applying communication technology to access additional knowledge information to generate income for yourself and benefit society.

V. DISCUSSION

New Normal quality of life according to Dhamma principle in Covid-19 pandemic crisis in Khwao Sinrin district Municipality, Surin Province.

1) The developing a new way of life develops itself to have a good relationship with the environment by adjusting itself and developing itself first by preventing organs that are associated with the physical environment from because of infection. Choosing a modest diet has benefits for the body, adaptation in the family, well-being, no shortage of family members, good interaction with each other, adapting to work-life by occupation according to their aptitude for progression. The adaptation to life in society is to make sacrifices as a person who is useful and valuable to society by following measures of rules and regulations of society which related to the research of [7] Puris Khanthsema Research on "Satisfaction of working from home during the COVID-19 pandemic of the National Police Forensics Office". We are satisfied with the high level of concern for the health and welfare of troops during the COVID-19 pandemic.

2) Improving the quality of life of new behavioral ways to become a new culture in society with a holistic view of creating shared values. All people in society must be aware of the perils of the COVID-19 pandemic by creating a habit of loving cleanliness by washing their hands frequently. Refraining from or avoiding meeting directly with other people may be avoided by using communication devices to facilitate them instead. Modifying your career or working using work from home instead. Adjustments to travel to various locations using public transport services to deliver goods instead, and behavioral modifications by doing activities in residential areas instead of which related to the

research of [8] Avatip Wa studied "COVID-19 and learning to change health behaviors today". During the COVID-19 pandemic, people learned the need and agreed to change their lifestyle habits, taking many self-defense measures, including wearing a mask or a cloth mask. Wash your hands frequently with soap or use alcohol-containing hand sanitizer. Avoiding crowded areas. Keeping distance from others, and having good hygiene in self-care and social responsibility to self-quarantine at home as recommendations of the ministry of health leads to delightful outcomes that cause new sickness rates to continue to decline.

3) To develop a new way of life to be generous to others, namely the development of the mind to be pure. Be rational and ethical by being aware of peaceful coexistence with others. Non-condescension Be generous to each other, be disciplined, not to squeeze or cause damage, by thinking about other people and helping others. Use their skills in a good way and share them with others who are in need or need. Be kind, be truthful, conscious, and concentrate to bring peace and exhilaration to life. Knowing the persecution suppress all bad habits. Don't let the passions lure you into the worst, and improve yourself by doing good deeds to thrive. Adjusting attitudes and values to suit a good lifestyle is conducive to learning so that intelligence grows called acting on opinions, understanding, being ready with consciousness, enthusiasm, and consciousness of carelessness. Understand the changes in life and environment, which are related to the research of [9] Theerachote J. The study found that coexistence with goodness is sacrifice, help, admiration, encouragement, introduction to useful matters, as people who know the cause, the effects themselves, estimate the passage of time. Community and individuals and treat that matter correctly. Considering before eating, take things into account the benefits and safety as a location. Everyone must have no prejudice against each other, but together they will create the power of justice to eradicate the disease with wisdom, perseverance, honesty, and relief as appropriate. There is love, compassion, joy, and justice for each other, and the result of the practice is self-interest. Others and society are born of conscious preparation. Immunity preparations for yourself. Creating the power of mutual good to help humanity get through this crisis together safely.

4) The use of wisdom in terms of creating benefits for themselves and society includes: Practicing physical, verbal, and occupational conduct. The existence of a good society, by using deep wisdom and truthfulness to understand all things as a matter of fact that the covid-19 pandemic has already occurred in the world and in the society in which they live if there is seriousness if there is no means of good self-defense. But we are committed to knowingly staying with the situation and bringing it to safety. Knowing how to solve problems and being self-reliant. There are systematic problems that are more self-reliant than relying on others. Using intelligence to develop themselves into a good lifestyle. Knowing how to find a good source of knowledge and examples includes knowing how to use intelligence to analyze good subject selection. Choosing to consume valuable news. Knowing how to use wisdom to organize life. Planning and organizing events in an orderly way, as well as motivating creative creations. The solving problems related to the impact on the profession by believing that they can develop and prosper, it is desirable to have a job that is of good value and benefit both personally and socially, has adopted the skills, potential, and wisdom that they have in developing jobs and careers, by applying communication technology to access additional knowledge information to generate income for themselves and benefit society, which related to the research of [10] Avatip Wa studied "COVID-19 and learning to change health behaviors today". It was found that all citizens were targeted. Make a plan follow the plan and review your health care plan to prevent it. Coronavirus outbreak 2019.

VII.CONCLUSION

New Normal quality of life according to Dhamma Principle in Covid-19 Pandemic Crisis in Khwao Sinrin District Municipality, Surin Province. People need to develop themselves to have a good relationship with the environment, by self-improvement and self-improvement. It prevents organs that are associated with the physical environment from causing infection and must know how to adjust themselves by protecting their physical health, and have a good interaction with each other in the family. Choose occupation according to their aptitude for prosperity, make sacrifices, be a person who is useful and valuable to society by following measures. The rules and regulations of society. Creating a new culture in society by creating shared values by creating a cleanliness habit, various behavioral modifications to prevent infection, and being generous to spread others is not to be condescending, share it with others who are in need or need. Knowing how to suppress bad habits improves itself by making good deeds progress. Training the mind to be strong, stable, and conscious of negligence understands the changes in life and environment. The use of wisdom in terms of creating benefits for ourselves and society. Indeed, the covid-19 pandemic has already occurred in the world and in the society in which they live. But we are committed to knowingly living with the situation and bringing it to safety. Knowing how to solve problems and being self-reliant. The problem is handled systematically. Using wisdom to develop themselves into a

good lifestyle, such as knowing how to choose a good source of knowledge and example. Planning and organizing various activities in an orderly way. It also creates motivation to create interesting works. Solve problems about the impact on occupation by believing that they can develop and prosper, creating a need for good value and benefits both for themselves and society. Apply your existing skills, potential, and wisdom to develop jobs and careers by applying communication technology to access information to generate income for yourself and benefit society.

VIII. SUGGESTIONS

1) Policy Recommendations

As a result of this research, most people have difficulty adjusting to the confusion over the COVID-19 outbreak. Feeling unconvinced about living in society. The researchers have policy recommendations on each of the following issues: 1) The government should have the authorities in the local government to advise the public proactively and in time for the situation.

2) Recommendations for implementing research results

For those interested in implementing this finding, the researchers have the following recommendations:

All relevant agencies should provide public relations and dissemination of information regarding ongoing prevention of pathogens should provide data centers to develop and utilize the information for community well-being, should have data centers responsible for surveying data and analyzing data, and presenting or delivering information to community organizations and people who want to be encouraged to encourage agencies, community organizations and people to learn and establish an ongoing process for managing community health knowledge.

3) Suggestions for the next research.

For those who are interested in doing the next research, the researchers have suggested that there should be research on improving the quality of life of those in vulnerable groups. "Mission" to "Power". There should also be research on career building supplementation as a tool for everyone to earn enough money from being affected by such situations. They manage the quality of life in a self-sufficient lifestyle by using knowledge, competency, skills consisting of 4 sectors: local, academic, government, community organization, and farmer, developing a healthy and environmentally friendly quality of life.

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A Model Development of Administrators Leadership Integrating Garāvāsadhamma IV in Primary Schools under Bangkok Metropolitan Administration

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Abstract*— The purposes of this research were 1) to study the leadership of primary school administrators, 2) to study the leadership styles of administrators integrating Garāvāsadhamma IV in primary schools, 3) to propose the leadership styles of administrators integrating Garāvāsadhamma IV in primary schools. Research tools used in the research were questionnaires distributed to 390 administrators and teachers in primary schools under Bangkok Metropolitan Administration, interview form by interviewing 24 key informants, and questions for focus group discussion with 9 experts. The researcher collected the data and analyzed data consisting of 1) document analysis using content analysis, quantitative data analyzed using percentage, frequency, mean, and standard deviation. Data from interview and focus group discussion were analyzed by using content analysis. Results indicated that leadership of primary school administrators under the Bangkok Metropolitan Administration consisted of 3 aspects which were 1) vision (Chakkuma), 2) knowledge and ability (Withusu), and 3) Human relations (Nissayasampanno), and overall was in a high level. Considering in each aspect showed that it was at high level in all aspects. Leadership styles of administrators integrating Garāvāsadhamma IV in Primary schools under Bangkok Metropolitan Administration consisted of the leadership principles of the administrators of primary schools. Garāvāsadhamma IV is fair for people to live together, honesty with one another, self-training, patience, tolerance, sharing, generous, the qualities of those who can create honor, create wisdom, and create wealth and building a group of friends and family to succeed with their own perseverance. Garāvāsadhamma IV consists of 4 principles which are (1) truth, (2) emotional control, (3) patience, and (4) sharing. Leadership styles of administrators integrating Garāvāsadhamma IV in primary schools under the Bangkok Metropolitan Administration was called L G S Model, there will be 3 important points which are: 1) Leadership (L), Leadership of the administrators of primary schools was shown in physical behavior various words of leaders that colleagues or subordinates working together to achieve the goals set in 3 ways, which were (1) vision (Chakkuma), (2) knowledge and ability (Withusu), and (3) have human relations (Nissayasampanno). 2) Garāvāsadhamma IV (G) is justified for executive leadership in primary school under Bangkok Metropolitan Administration, there are 4 factors which consisted of truth, emotional control, patience, and sharing. 3) School (S), school administration was the operation in all 4 aspects of the school, which were (1) academic administration, (2) budget administration, (3) human resource management, and (4) general administration.

Index Terms— ***Administrators Leadership, Garāvāsadhamma IV, Bangkok Metropolitan Administration***

I. INTRODUCTION

The principles of Buddhism to be used in daily life according to the nature of the problem according to the intellect and will of the individual. Therefore, there are various levels of teaching of Buddhism, both basic, middle and high. There are both parts called It is the philosophy and the world, etc. (Somboon Suksamran, 2017: 90) [1]. Applying the principles to solving problems of society is important in Thai society who are knowledgeable and able to lead members towards the goals that have been laid out together the same is true in Thai society. There will always be a leader with Buddhist leadership, meaning someone who is well-rounded, visionary, knowledgeable, capable,

responsible for the work, and have personal relationship skills look at the subordinates in a positive light fair have a heart know love and unity. There is a sacrifice without persistence, without prejudice, which virtue these must exist in the leadership of the leader to maximize the benefits and efficiency of their work through self-management, people management, and organization management. In the way of Buddhism, it is considered to be a leader who has good Buddhist leadership. Must have qualifications according to Buddhist principles a leader who has a Buddhist leadership to lead another person. In the footsteps of Buddhism, it is considered a very important person. The larger the organization the importance of a leader with Buddhist leadership to its members is becoming more and more important. On the other hand, any organization has a leader without Buddhist leadership. The organization has to face difficulties in the management of that organization.

In the management system of every organization, the key mechanism that will lead to a good goal is the "leader". Management, including planning initiatives management, supervising and implementing improvements and solutions to various problems to achieve the goals of the organization. Leaders are influencers that can affect every aspect of the organization, be it management and personnel, leadership or leadership is a process by which executives influence the behavior of others. One of the most important factors of success in leadership roles is being a good leader is right, so in every organization there is a need to have a good leader. School Administration to be effective according to the aims of the National Education Act Executives must use leadership, distribute the responsibility fairly to the subordinates in their respective units. In this globalized era, management needs to be able to adapt leadership to various changes, and solve problems that arise to be suitable for every situation and use their knowledge and abilities to benefit the effective management good management should have the ability to manage the work by allowing the personnel to cooperate with the willingness and the full ability executives must have the ability to build morale and encouragement to the operators to achieve job satisfaction. The love and faith in the organization. Sacrifice for work exert energy and encouragement mind power find a way to improve the work that progresses even further (Pichapop Phankhae, 2011: 42) [2].

Organization administrators are required to have leadership. This is because leadership is a state of Dominating other people in an organization where people in the organization can cooperate and perform their tasks to achieve their goals, a good leader must use his leadership in directing the mission. The duties run neatly and accomplish the objectives as well as giving both the results and the whole heart. Therefore, leadership is a very important factor in the management of the organization, because various aspects of the organization's performance are related to the quality of the leadership. 2007: 403) [3]. If an organization has a quality executive or leader to administer it, it can be a guarantee that it must be developed and prospered. Representatives of the organization and is the focal point of the people in the organization. Hence, leaders are responsible for both the personnel within the organization and the contributions made by adjusting to face change or to keep their status and role clear.

School administrators range from basic entry level to advanced level each level is of all importance. It is like a person who controls a mechanism that drives things in every part, so executives at all levels are equally important. In addition to these individuals, there are various characteristics that indicate a managerial personality. Knowledge and charisma have awesome power. A qualified person or a senior but what is indispensable is leadership that must lead the school teachers and personnel involved in the development to achieve the goal of national education.

However, leadership problems often arise in today's society, such as inefficient management. can't solve problems in the organization there was a never-ending conflict that have no trust each other or not being able to control one's emotions have little emotional maturity until the matter of immorality looking beyond the working atmosphere lack of good human relations lack of building morale for officials and people the problem of injustice has no vision, lack of knowledge and understanding in human resource management, lack of knowledge and understanding of roles, duties and procedures lack of decision making and participation in making decisions that are good enough and a longstanding problem for leaders is the lack of transparency in their work.

To have vision diligence and patience honest these human relationships are good leadership traits. It is in line with the Garāvāsadhamma IV looking at all the great leaders who have been successful in the past and present, it is found that those leaders must have Garāvāsadhamma IV adhered to as a practice. One or more or some people have all 4 verses, which are principles that support encourage them to be leaders who are respectful, respected, able to inspire the hearts of their colleagues and solve problems.

Therefore, the researcher is interested in the leadership style of the administrators according to t Garāvāsadhamma IV in primary schools under Bangkok. The opinions of the personnel within the school can reflect the leadership. The best way to build a leader it will study 4 principles of leadership according to secular principles, which consist of competence, diligence honesty and human relations a comparative study of the opinions of personnel on leadership according to Garāvāsadhamma IV, including problems, obstacles, and recommendations about the leadership of the

executives according to Garāvāsadhamma IV, elementary schools under Bangkok Metropolitan Administration.

II. RESEARCH OBJECTIVES

The purposes of this research were 1) to study the leadership of primary school administrators, 2) to study the leadership styles of administrators integrating Garāvāsadhamma IV in primary schools, 3) to propose the leadership styles of administrators integrating Garāvāsadhamma IV in primary schools.

III. RESEARCH METHOD

This study, researchers used a survey research model, along with in-depth interview and focus group discussion, which was a mixed methods research between quantitative research and qualitative research by analyzing data from documents, textbooks, statistical data, research reports of various departments academic articles, thesis, as well as relevant research work both at home and abroad and a formal in-depth interview by using the interview questionnaire created by the researcher to study the opinions of the school administrators who are the target groups as a case study, questionnaires were distributed to the administrators and primary school teachers 390 sets of Bangkok Metropolitan Administration, interviews with key informants are 20 school administrators and questions for focus group discussion. There were 11 key informants. The researcher collected the data and analyzed the data as follows: 1) document analysis, content analysis, 2) Analysis by using percentage, frequency, mean, standard deviation, 3) interview using content analysis and conclusion by interview, 4) focus group discussion using content analysis.

IV. RESEARCH RESULTS

The results of a study of the leadership of the executives according to Garāvāsadhamma IV in primary schools under Bangkok, level of opinion, leadership of executives according to Garāvāsadhamma IV in primary schools the 3 aspects of Bangkok Metropolitan Administration consisted of 1) Vision (Jakuma) 2) Knowledge and capability (Wituro) 3) Human relations (Nissai Sampanno) overall at a high level while each side was at a high level in all aspects.

Results of the Study of the Leadership Model of Executives according to Garāvāsadhamma IV in primary schools under Bangkok leadership of administrators according to Garāvāsadhamma IV in primary schools under Bangkok for schools under Bangkok, it consists of the principles of leadership of primary school administrators under Bangkok behaviors expressed in the body. Speech in different ways of leaders to allow participants or subordinates to work together to achieve the goals set by the primary school administrators under Bangkok has 3 aspects which are (1) have vision (jakkuma), (2) knowledgeable and competent (Withuro), (3) have human relations (Nissai Sampanno) in conjunction with 4 secular principles, fairness for coexistence, honesty to one another, self-cultivation, patience, self-sacrifice, sharing, kindness, qualities of those who can create honor, create wisdom, build wealth and create a group of friends to be successful in their strength and perseverance. It consists of 4 Dharma: (1) truth, sincerity, (2) control of emotions, (3) tolerance, patience, and (4) chaka, sacrifice.

Results of the presentation of the executive leadership model according to Garāvāsadhamma IV in elementary schools under Bangkok the leadership model of administrators according to Garāvāsadhamma IV in primary schools Bangkok Metropolitan Administration (L G S Model) will have 3 important focus points: 1) Leadership leadership of primary school administrators under Bangkok behaviors expressed in the body. Speech in different ways of leaders to allow participants or subordinates to work together to achieve the goals set, there are 3 things: (1) vision (jakuma), (2) knowledge and ability (Wituro), (3) have a human relationship (Nissai Sampanno). 2) Garavasadhamma IV is fair for the leadership of the executive primary school Bangkok Metropolitan Administration consists of 4 things: (1) truth, sincerity, (2) emotional control, (3) patience, patience. It is the operation in working in four areas of the school, including (1) academic administration, (2) budget management, (3) personnel management, and (4) general administration.

V.DISCUSSION

Level of opinion, leadership of executives according to Garāvāsadhamma IV in primary schools the 3 aspects of Bangkok Metropolitan Administration consisted of 1) Vision (Jakuma), 2) Knowledge and capability (Wituro), 3) Human Relations (Nissai Sampanno), overall is at a high level while each side is at a high level in all areas due to Leadership of administrators according to Garāvāsadhamma IV in primary schools under Bangkok have good school management leadership efficient is excellent this is consistent with Daniel Yoshor, Eli M. Mizrahi, (2012) [4] research investigating the relationship between leadership styles and leadership effectiveness. It was developed from cultural differences of the work, which had a theory of situational leaders of hersey and blanchard believe that leadership effectiveness occurs when leaders can balance between the behavior of people-oriented work-directed behavior corresponds to the level of maturity or experience of the employee. Therefore, the sub-cultures of the employees of 2 groups, Ashkenazi and the sephardic group, were examined, affecting the leadership style of ethnic management. Israel research results showed that and the culture of the group ashkenazi and sephardic cultures did not influence the leadership style. Both people-

oriented and work-oriented and is consistent with the research of Boone (1992) [5] studies about the leadership of rural education to find out what contributes to the success of Texas rural school group restructuring and Okahoma State, the results found that there are four main characteristics of the education district in the local people: 1) vision and alertness by accessing the quality of education and realize the necessity of change, 2) Creating a common vision by giving importance to communication or communication with the board of directors, 3) Creating sensitivity to principals, teachers, school committees and communities, and 4) Monitoring and monitoring to ensure that work that drives change. How much to achieve the goals the district must therefore be a creative mindset and be a supporter of innovation and seek new innovations to be used to develop learning to perform duties effectively.

Leadership of administrators according to Garāvāsadhamma IV in primary schools under Bangkok for schools under Bangkok, it consists of the principles of leadership of primary school administrators under Bangkok behaviors expressed in the body, speech in different ways of leaders to allow participants or subordinates to work together to achieve the goals set by the primary school administrators under Bangkok has 3 aspects which are (1) have vision (jakkuma), (2) knowledgeable and competent (Withuro), (3) have human relations (Nissai Sampanno) in conjunction with Garāvāsadhamma IV, fairness for coexistence, honesty to one another, self-cultivation, patience, self-sacrifice, sharing, kindness, qualities of those who can create honor, create wisdom, build wealth and create a group of friends to be successful in their strength and perseverance It consists of 4 dharma: (1) truth, sincerity (2), control of emotions, (3) tolerance, patience (4) chaka, sacrifice, which is in line with the research of Wanthana Nowwan (2015) [6] . "Development of leadership based on Buddhism principles of Phrapariyattidhamma School personnel Department of General Education Group 3 "The research found that the concept of leadership based on Buddhist principles and western theories of leadership of Phrapariyattidhamma School administrators. The general education department group 1 found that 1) leadership characteristics according to the Buddhist principles in the third principle is the Papanikadhamma, followed by the Sangkasophon Sutta. In third place is the virtue Anat Bindikasethi and transformational leadership; 2) processes and methods of leadership development that affect work efficiency. It consists of attending leadership seminars. Study visit the school is well managed and has the leading leaders honoring or being well known and decentralizing leadership in a collaborative manner as for the general problem condition and leadership characteristics of the personnel of Phrapariyattidhamma School, General Education Department, Group 3, 1) Personnel, it was found that personnel lacked stability in the teaching profession. Welfare not equal to government personnel the frequent entry and exit rate leads to a lack of continuity in operations. 2) Budget: the main budget of the school comes from the average subsidy budget per capita per student. When the number of students is small, the budget is small. This is a problem and obstacle in management, and 3) the administration of executives. The main executive is the abbot, despite having a board of directors. However, there are many monastic missions thus causing the lack of flexibility in the management and the leadership characteristics of Phrapariyattidhamma school administrators were found that there is a sacrifice Generosity, compassion, vision, interpersonal take responsibility dedication to work and participatory management as for the development model of the leadership characteristics of school administrators, it was found that the first three principles of the papacy. (Having a good vision) in the field of work (expertise in work Professionalism) and Nissi Sampanno (Relationship building Good understanding and social creativity by relying on interpersonal skills), followed by Sangkasophon Sutta, in Wisarn Master (A mighty person Valiant in dealing with various problems that arise), Vinito (a good discipline having goodness in the work assigned), Viyatto (being a wise person, being knowledgeable and intelligent in working), Thammanutham Patipanno (Dharma practitioners keep the correctness in the right things) and the Phusuto (Being a knowledgeable person who studies memory The third place is Virtue Anathabindikaseti [7]. Having honesty and diligence is excellent generosity and the side of sacrifice and leadership according to western theory, namely transformational leadership giving freedom to work encouraging a positive attitude to work effectively and efficiently being an example of peace and human rights, and wanting a leader to be fair and equitable in performance must have the courage to change by bringing about ethics innovative change for superiority through the flexibility to adapt to the school situation which leads to survival in addition, leaders must know how to use the principles of Buddhism to create faith for themselves and also in line with the research of Patcharani Fugthongpun (2011) [8] researched on "Trends of desirable leadership traits among women private school administrators". The research found that they consisted of five leadership traits: (1) knowledge, (2) skills, (3) attitude, (4) morality and ethics, (5) personality while the desirable characteristics of the private girls school administrators contains features that are used to look forward with a vision. With knowledge and understanding in the context and Thai society in order to create knowledge and apply in the administration of private girls' schools appropriately to society and culture, the results were analyzed, mean, level of opinion, desirable leadership characteristics of experts.

Those involved with the private girls' school to compare, it was found that the experts put the highest importance on personality leadership traits. Followed by moral and ethical aspects. Those involved pay close attention to morality. Highest ethics followed by attitude both groups focused on moral and ethical traits over other areas. The conceptual framework included factors affecting the educational management and educational administration of the private girls' schools, which influenced the leadership traits. The desires of private girls' school administrators in 5 areas are knowledge, skills, attitudes, morality, ethics and personality.

The leadership model of administrators according to Garāvāsadhamma IV in primary schools Bangkok Metropolitan Administration (L G S Model) will have 3 important focus points: 1) Leadership, leadership of primary school administrators under Bangkok behaviors expressed in the body, speech in different ways of leaders to allow participants or subordinates to work together to achieve the goals set, there are 3 things: (1) vision (jakuma), (2) knowledge and ability (Wituro), (3) have a human relationship (Nissai Sampanno), 2) Garavasadhamma IV secular principle 4 is fair for the leadership of the executive. Elementary school Bangkok Metropolitan Administration consists of 4 things: (1) truth, sincerity, (2) emotional control, (3) patience, patience. It is the operation in working in four areas of the school, including (1) academic administration (2) budget management (3) personnel management (4) general administration. This is consistent with the research of Adams (1993) [9] studies organizational leadership and its impact on effectiveness. Organization of case studies in 60 schools to confirm that various leadership styles can judge organizational effectiveness can be which the analyzer argues that the dependent control or influence in the form of that organization and school effectiveness can be measured based on Parson's four organizational functions: adaptability. Achieving the goal of integrating and maintaining stereotypes. Organizational culture the research instruments were graphs and three questionnaires concerning organizational control, overall satisfaction, and loyalty to the organization by asking 1,500 people who represent roles and various positions in elementary school and suburban secondary education to sort the effectiveness according to the perception information has been collected to study relationships Regression analysis and path analysis to determine impact Relationship with the 4 functions of the organization and in relation to increased levels of organizational effectiveness, which can be said that organizational leadership is an important predictor of organizational effectiveness and is consistent with the research of Wimon Chankaew (2012) [10] has researched "Creative leadership development model of school administrators under Surat Thani Primary Educational Service Area Office 3" The research results were found that there were 5 steps as follows: (1) The analysis of the creative leadership characterization of the creative leadership. School administrators want to develop, (2) Model building, (3) Model experiment, (4) Model development, (5) Model evaluation. 2) Leadership characteristics that need to be developed are 5 items: being a team learning leader. The leader of the leader that creates creativity risk management and performance-oriented leaders executives used leadership in the four working groups with the overall average at a high level. The results of using creative leadership after development were higher than before, and student teachers were satisfied with using them. The overall average of creative leadership in performance was high.

CONCLUSION

Leadership of primary school administrators the 3 aspects of Bangkok Metropolitan Administration consisted of 1) Vision (Jakuma), 2) Knowledge and Capability (Wituro), 3) Human Relations (Nissai Sampanno), overall at the high level, in each aspect at the high level in all aspects, while the leadership style of the administrators according to Garāvāsadhamma IV in primary schools Under the Bangkok Metropolitan Administration, it was found that the leadership of the administrators according to Garāvāsadhamma IV in primary schools under Bangkok for schools under Bangkok, it consists of the principles of leadership of primary school administrators under Bangkok behaviors expressed in the body. Speech in different ways of leaders to allow participants or subordinates to work together to achieve the goals set by the primary school administrators has 3 aspects which are (1) have vision (jakkuma), (2) knowledgeable and competent (Withuro), (3) have human relations (Nissai Sampanno), in Garāvāsadhamma IV, fairness for coexistence, honesty to one another, self-cultivation, patience, self-sacrifice, sharing, kindness, qualities of those who can create honor, create wisdom, build wealth and create a group of friends to be successful in their strength and perseverance it consists of 4 dharma: (1) truth, sincerity, (2) attitude, control of emotions, (3) patience, patience (4) chaka, sacrifice for presenting leadership styles of executives according to the principles of secularism, 4 primary schools under Bangkok Metropolitan Administration (L G S Model) will have 3 important focus points: 1) Leadership, leadership of primary school administrators under Bangkok behaviors expressed in the body, speech in different ways of leaders to allow participants or subordinates to work together to achieve the goals set, there are 3 things: (1) vision (jakuma), (2) knowledge and ability (Wituro), (3) have a human relationship (Nissai Sampanno), 2) Garavasadhamma IV secular principle 4 is fair for the leadership of the executive in primary school Bangkok Metropolitan Administration consists of 4 things: (1) truth, sincerity, (2) emotional

control, (3) patience, and (4) chaka, sacrifice. 3) School administration. It is the operation in working in four areas of the school, including (1) academic administration, (2) budget management, (3) personnel management, and (4) general administration.

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A Development Model of Characteristics based on Brahmaviharadhamma Principles for Thai School Administrators

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Abstract— *The purposes of this research were 1) to study the characteristics of school administrators in Thai primary schools, 2) to develop the characteristics of the Brahmaviharadharma Principles for Thai school administrators, and 3) to propose a model of developing the characteristics of the Brahmaviharadharma Principles for Thai school administrators. Mixed methods research was designed, and the instrument used in the research was a questionnaire distributed to 390 administrators in primary schools, interview form by interviewing 24 key informants, and questions for focus group discussion with 17 experts. Qualitative data from in-depth interview and focus group discussion were analyzed by using content analysis whereas quantitative data were analyzed by using percentage, frequency, mean, standard deviation. Results showed that 1) the characteristics of the school administrators in Thai primary schools consisted of 4 aspects which were 1) knowledgeable and capable, 2) social maturity and generous, 3) accountability, and 4) good human relations in the overall level was very high. Considering to each aspect was also at a high level in all aspects. 2) The characteristics of the Brahmaviharadharma Principles for Thai school administrators was the operation in all 4 aspects of the school, which were (1) academic administration, (2) budget administration, (3) human resource management, and (4) general administration. The principle of Brahmaviharadham is a principle that must be kept in mind and supervised behavior that suitable for executives with 4 areas which are (1) compassion, (2) kindness, (3) happy when others are happy, and (4) neutral mind. 3) A model of developing the characteristics of the Brahmaviharadharma Principles for Thai school administrators was called C B S Model which consisted of 3 important points which were 1) Characteristics (C), characteristics of school administrators was the physical characteristics and expression of the behavior of the person who is a part of character which was shown to others for Thai primary school administrators in 4 aspects which composed of (1) have knowledge and ability, (2) have social maturity and generous, (3) accountability, and (4) good human relations. 2) Brahmaviharadhamma (B), it is a principle that must be kept in mind and supervised behavior and suitable for executives with 4 areas which consisted of (1) compassion, (2) kindness, (3) happy when others are happy, and (4) neutral mind. 3) School (S), School administration was the operation in all 4 aspects of the school, which were (1) academic administration, (2) budget administration, (3) human resource management, and (4) general administration.*

Index Terms— *Characteristics, Brahmaviharadhamma, School Administrators*

I. INTRODUCTION

The current trend of change in the global society is the driving factor the pursuit of strategy emerged. In developing the capabilities of the population in Thailand as a country that is developing and changing rapidly in all areas. Education has changed and there is a great need for development and adaptation to keep up with the changing trends of society. The target groups that are essential to the development are those involved in education, namely the school administrators and teachers when the executives are ready and have the potential for development can be a leader for teachers in organizing the learning process effectively. The instructor has knowledge and expertise then quality teacher teaching and learning processes inevitably results in students being trained and learning more effectively by improving their education. According to that national educational standard difficult to do, it is very important

and can do it and have a chance to success it is something that comes to everyone's mind, as can be seen since 2001. The Research Fund Office (TRF) has supported the main research team from the Faculty of Education, Chulalongkorn University in conducting research to seek strategy, guidelines and forms of reform effective learning under the name "The School-wide Learning Transformation Model through Research and Development" is a program of interest to administrators who are responsible for the development of schools. Effective according to national educational standards the executives are target groups that play a role in operates the model process as a tool. (Phra Brammabundit (Prayoon Dhammajitto), 2013: 3)[1].

In education that can create the development of learning throughout the school to be a tool for change the knowledge foundation for educational development to be both efficient and effective. In addition, the current education management has been developed and changed in accordance with the National education Act with decentralized administration and management of education both academically budget, personnel administration and general administration to the committee and area office education and educational institutions in the education area directly (Prawet Wasi, 2007: 5)[2]. Operated by the school administrators with support from parents 'representatives, teachers' representatives, community organizations representatives, local government organizations. alumni representatives of schools representative for a monk or representatives of other religions in the area (Thaina Khaemmanee, 2012: 12)[3].

With the principles set out in this act of education make the school administrators, it is imperative that many of their roles in the management of their educational establishments can be driven to become a learning organization, with their own roles being assigned. It is clear as an academy leader and need to define the role in working with the group of people that are involved with educational institutions in order to have coordination and cooperation in doing internal activities together with the determination of roles in the management of the workload of the school system to be systematically and clearly in the implementation of the goals that have been defined is the development of learning for both learners school in order to achieve this effect. It is essential that leaders educational institutions must have principles, theories, and principles to be used as an important mechanism in order to lead to driving a model for the development of school management system and academic administration is a very important task for the school administrators to formulate plans, methods and stages. In operating systematically because if the administrative system within the school is not good will affect other parts of the agency therefore, success or failure in the school administration it depends on the competency of the school administrators. School administration is a source of development the population of a very important country is a unit that uses many people, money, materials, if the school administration is ineffective. School productivity is that students who have successfully gone out have low efficiency which affects national development inevitably as well (Ministry of Education, 2019: 24)[4].

In the management of educational institution administrators of schools under Bangkok in the field of education management has progressed and modern technology has been applied in the field of teaching and learning. Causing changes in the material rather than the psyche, that is, the materialistic power It affects the roles of the school administrators on the morality, culture and traditions of Buddhism. School administrators used to manage the work less. Than it should be, causing the administration to be unsatisfactory and not as good as it should be, the same importance as the administrators of other departments because the duties of the school administrators must perform the same duties, but sometimes the management between executives and subordinates was not smooth. Moreover, the work on educational quality of schools have not been developed to keep up with the changes as they should. Causing problems in the administration, such as requesting a move for teacher staff which are dissatisfied with the management of the executives or not received cooperation in work development makes academic works unacceptable to the general public. Therefore, the administration of the school administrators must have both the work and the kindness of their colleagues. In this regard, administrators must use both His Majesty the King. Executives who hope to use their power or command in command to the subordinates to do the same work would not benefit in the work said that the school administrators sometimes do not value the use of morality in the administration of the teacher. Lack of morale and the management has insufficient knowledge of morality as a result, when it does not work as expected, the management needs to strengthen the image of faith and trust which guide practice is love, pity, joy, kindness not biased, both individually and a good management team should use grace rather than usefulness more prestige than legal authority (Sanguineet Lerdarun, 2007: 28)[5].

Buddhism is the basic principle of life. It is part of the Thai way of life mainly for the peaceful life of the people in society. Brahma Vihara IV is therefore a principle that is especially suitable for application in school administration because the school is the main source of shaping humanity for all students. Education administrators should adhere to Brahmaviharn IV principles in empowering people and apply them to leadership and communication skills. In line with Phra Brahmakunaporn (P.A. Piyutto) said that people have good quality to the public. (Good member of society)

has Dharma is the following principles of behavior, or a person whose heart is great and generous like Brahmaviharn IV are the following: mercy, loving-kindness, compassion, mercy, joy, humility, impartiality practice relief (Phra Promkhunaporn (P.A.Payutto), 2006: 20)[6].

Therefore, an educational institution is like a place to produce people with knowledge and morality. In order to bring their knowledge and ability to work for themselves and their families along with morality to apply in everyday society educational administration can achieve the objectives of the current policy. Therefore, it must focus on morality which has to start from the administration of the educational institution in order to have principles as a tool for various administration to achieve goals and objectives it can also affect the students.

From the importance of management problems of the management, it is very important which executives must perform duties and responsibilities as a consultant be the administrator of an educational institution about academic work teaching and learning control arrange teachers to teach provide equipment, tools, teaching materials, measurement, evaluation and management of human and material resources to improve and develop academic progress the researcher saw that applying the Buddhist principles of administration, especially Brahmaviharn IV, in the academic administration of the institution administrators would be a good approach. In the development the efficiency of the administration of the school administrators, especially the academic work, can be more effective. Therefore, the researcher is interested in researching the development of Brahma Dharma characteristics. For school administrators the results of the research obtained can be used for the determination and development. Level of application of Brahma Vihara 4 in developing the characteristics of appropriate school administrators as well as being able to utilize the research results by using as a guideline for considering improvement or development of school administration, able to integrate with Buddhist principles, especially the Brahma Vihara IV for further efficiency.

II. RESEARCH OBJECTIVES

The purposes of this research were 1) to study the characteristics of school administrators in Thai primary schools, 2) to develop the characteristics of the Brahmaviharadharma Principles for Thai school administrators, and 3) to propose a model of developing the characteristics of the Brahmaviharadharma Principles for Thai school administrators.

III. RESEARCH METHOD

This study, researchers used a survey research model, along with in-depth Interview and focus group discussion, which was a mixed methods research between quantitative research and qualitative research by analyzing data from documents, textbooks, statistical data, research reports of various departments academic articles, thesis, as well as relevant research work both at home and abroad and a formal in-depth interview by using the interview questionnaire created by the researcher to study the opinions of the school administrators who are target groups as a case study, questionnaires were distributed to elementary school teacher 390 sets of Bangkok Metropolitan Administration, interviews with key informants were 20 school administrators and questionnaires for group discussion. There were 11 key informants. The researcher collected the data and analyzed the data as follows: 1) document analysis, content analysis, 2) Analysis by using percentage, frequency, mean, standard deviation, 3) Interview using content analysis and conclusion by interview 4) Focus group discussion using content analysis.

IV. RESEARCH RESULTS

Results of the study of the characteristics of primary school administrators.

The level of opinions on the characteristics of school administrators in the primary schools in all four aspects consisted of 1) knowledge and competence, 2) social maturity and openness, 3) responsibility, and 4) good human relations included in the high level, each side at high level in all aspects.

Results of the study of the development of Brahmaaviharndham for school administrators development of the Brahmaaviharndham For school administrators must adhere to the principles of school administration it is the operation in working in all four areas of the school, including (1) academic administration, (2) budget administration, (3) personnel management, (4) general administration including principle of character development. School administrators. It is the physical and expressive characteristics of a person's behavior that are part of their character which shows others to see of elementary school administrators the Bangkok Metropolitan Administration has 4 aspects which are (1) knowledgeable and competent, (2) social maturity and generosity, (3) responsible, (4) good human relations and the principle of Brahma Vihara IV. It is a principle that must be in the heart and directive of behavior, suitable for management, there are 4 areas: (1) mercy (affection), (2) kindness (compassion), (3) empathy (joy when others are well-being), (4) doubts (neutral).

The results of presenting the process of character development for school administrators process of character development for school administrators (C B S Model) there

are 3 important focus points: 1) Characteristics. It is the physical and expressive characteristics of a person's behavior that are part of their character which shows others to see of elementary school administrators there are 4 aspects of the Bangkok Metropolitan administration: (1) Knowledge and competence, (2) Social maturity and openness, (3) Responsible, (4) Good human relations. 2) Brahmaviharadhamma it is a principle that must be in the heart and directive of behavior. Suitable for management, there are 4 areas: (1) mercy (affection), (2) kindness (compassion), (3) empathy (joy when others are well-being), (4) detention (impartiality). For school administration, it is the operation in working in four areas of the school, including (1) academic administration, (2) budget management, (3) personnel management, and (4) general administration.

V. DISCUSSION

The level of opinions on the characteristics of school administrators in the primary schools in all four aspects consisted of 1) knowledge and competence, 2) social maturity and openness, 3) responsibility, 4) good human relations included at a high level while in each aspect at a high level in all aspects because School Administration of elementary school have good school management efficient is excellent which is in line with the research of Prakrong Russamikaew (2008) [7] has studied leadership characteristics of quality educational institution administrators were found that 1) the leadership characteristics of the quality school administrators consisted of 4 components: (1) executive emotional intelligence, (2) management's self-esteem, (3) Executives 'Performance and (4) Executives' personality. 2) Guidelines for leadership development of school administrators under the office of the basic education commission is management should develop leadership qualities by study documents and work manuals for further education. Study visit attending the training and attendance of academic seminars it is also in line with the research of Petros Pashiardis (2004)[8] investigating the characteristics of effective primary school administrators in Cyprus. A place to study effective school administrators, it was found that the management must have the following characteristics: 1) Have strong ambition in the profession, and realize that a career is something to be respected. It is sacred and dignified. 2) Have a deep thought and a constant interest in education. 3) Have confidence and influence with others. The position of management is more than other positions likes to do challenging work. 4) Take risks and are not afraid to share ideas with other people, and have a strong determination to make decisions. 5) Be comparable to working with other agencies in the country and abroad. 6) Be honest and sincere there is no forward and back sleep. 7) Teachers and students must be creative. It is encouraged by rewarding people who do their jobs with intentions. 8) Be ambitious and use driving force to develop authority, and influence for both personal and professional reasons. 9) Interest and build understanding between schools and parents, and to participate in the policy; and 10) have faith in leadership theory to develop the management to be effective.

Development of the Brahmaaviharndham for school administrators must adhere to the principles of school administration it is the operation in working in all four areas of the school, including (1) academic administration, (2) budget administration, (3) personnel management, (4) general administration including principle of character development of school administrators. It is the physical and expressive characteristics of a person's behavior that are part of their character which shows others to see of elementary school administrators the Bangkok Metropolitan Administration has 4 aspects which are (1) knowledgeable and competent, (2) social maturity and generosity, (3) responsible, (4) good human relations and the principle of Brahma Vihara IV, it is a principle that must be in the heart and directive of behavior. Suitable for management, there are 4 aspects: (1) mercy (affection), (2) kindness (compassion), (3) empathy (joy when others are well-being), (4) doubts (neutral) which In line with research by Stogdill (2004),[9] we have researched the subject. Handbook of the leader of the theory survey and research from at least 10 research papers, it was found that the person holding the position as the management must have the following qualifications: 1) know how to socialize, 2) initiative, 3) persistence, 4) know how to get work done, 5) Self-confidence, 6) Be alert and insightful, 7) Cooperate, 8) Popular with all,, 9) Good adaptability, 10) Ability to speak, and from the results of not less than 15 studies, it was concluded that a person holding a position as an executive must have qualifications. The following are greater than members of the group: 1) intelligence, 2) education, 3) responsibility and in line with the research of Hatchaphan Uachotikhun (2014) [10] conducted a study on "Poor leadership traits that have a negative effect on the morale of a follower," the research found that the poor leadership qualities of that supervisor. It affects the morale of work of followers in almost all cases in this study, the top 10 list of bad attributes of a leader that affects the working morale of a follower by processing the answers of the respondents all questionnaires the list is as follows: 1) ward off responsibility or blame others when there is a problem or when the performance is not good. 2) There is no sincerity, 3) Lie, 4) Impersonation of the merits of both of them alone, 5) Likes to speak, hurt kindness or bully his subordinates, 6) In spite of no participation, 7) Prevent favoritism, 8) I have little control over my emotions, 9) Not open to words, and

10) Feel hurt. Recommendations from the results of this study are that there should be a leadership development for personnel in the organization by aiming to eliminate all bad characteristics the top 10 lists first, followed by generating oppositional good leadership traits instead. The research also ranked 38 other bad leadership traits (48 in total) which can be used as a framework determine the bad leadership qualities that should be aimed at continuing to manage as appropriate.

Process of character development for school administrators (C B S Model), there are 3 important focus points: 1) Characteristics, it is the physical and expressive characteristics of a person's behavior that are part of their character which shows others to see of elementary school administrators there are 4 aspects of the Bangkok Metropolitan Administration: (1) Knowledge and competence, (2) Social maturity and openness, (3) Responsible, (4) Good human relations. 2) Brahmaaviharntham it is a principle that must be in the heart and directive of behavior. Suitable for management, there are 4 areas: (1) mercy (affection), (2) kindness (compassion), (3) empathy (joy when others are well-being), (4) detention (impartiality), 3 School of school administration it is the operation in working in four areas of the school, including (1) academic administration, (2) budget management, (3) personnel management, (4) general administration. This is consistent with the findings of magnuson (1991) [11]. Characteristics of school administrators to succeed in school administration. The results of the research found that the personal and professional characteristics of management are as follows: 1) Personal characteristics are fairness, honesty, and integrity. It has a stable mood, has an open mood, is easy to understand, and is cool and empathy for others, for example. 2) Professional qualifications such as the ability to communicate well with others and have good knowledge in management know the assignment able to work with others well, have the ability to make decisions and it is consistent with research of Smith (2004) [12] conducted a research study. The characteristics of effective teachers found that the effective characteristics were in descending order as follows: 1) Build relationships with senior management over the school and faculty, school committee members, 2) Plan and cooperate closely with the school teachers, 3) Build understanding and make connections between financial statements, 4) Encourage teachers to develop both professional and personal, 5) Build stability and confidence in the school atmosphere, 6) the big teacher itself, 7) Have patronage, 8) Develop oneself in academics, and 9) Unite and work with teachers to promote their own schools, 10) work on different development projects, 11) work in good relationships with the community, 12) be an academic leader, 13) show the ability to teach and manage the school seeing visions, 14) encourages students to behave well and have discipline, 15) have good relationships with students. The behaviors that are obstacles to effective management is a behavior contrary to the 15 above.

VI. RECOMMENDATIONS

A. Recommendation for practices

Research results on development of the Brahmaaviharndham for the educational institution administrators, the researcher has the following recommendations:

1.1 compassion for school administrators there should be additional benefits provided by the government. There should be a place to rest to relax from work more and giving advice, suggestions, how to work properly.

1.2 The Kindness of school administrators there should be an effective security system for both life and property and there should be a regular meditation practice project for mental development.

1.3 Aspects of school administrators there should be support and promotion of the work for the benefit of the public more as well as promoting opportunities for promotion or leveling of abilities and joining and congratulating the community activities.

1.4 Expansion of school administrators there should be a general meeting. understanding every change in position as well as assigning special duties other than the main duties fairly match with ability and not too much, not too little and should pay attention to divided party behavior share more pods.

B. Recommendation for further research

If there is a further research on the characteristics of the school administrators, the researcher recommends conducting research in the following way.

2.1 Should be studied in a research that narrows the scope of the research area and should be defined as a study area only.

2.2 Should study on the application of Buddhist principles such as the Iddhipada IV, Brahma Vihara IV to develop the characteristics for the school administrators in the future.

2.3 The research results obtained should be applied to schools or the next unit in order to consider the achievement of the development of characteristics for the school administrators.

2.4 Should study other factors that affect the development of educational institution administrators such as participation development of academic administration or other areas.

CONCLUSION

The characteristics of school administrators in primary schools in all four areas consisted of 1) knowledge and competence, 2) social maturity and openness, 3) responsibility, 4) good human relations overall level most of the aspects were at high level in all aspects. For the school administrators, it was found that the development of Brahmaaviharntham. For school administrators, it must adhere to the principles of school administration that it is the operation in working in all four areas of the school, including (1) academic administration, (2) budget administration, (3) personnel management, and (4) general administration including principle of character development. School Administrator is the physical and expressive characteristics of a person's behavior that are part of their character which shows others to see of elementary school administrators the Bangkok Metropolitan Administration has 4 aspects which are (1) knowledgeable and competent, (2) social maturity and generosity, (3) responsible, (4) good human relations and the principle of Brahma Vihara IV. It is a principle that must be in the heart and directive of behavior that suitable for executives, there are 4 areas: (1) mercy (affection), (2) kindness (compassion), (3) empathy (joy when others are well-being), (4) detention (impartiality) for presentation of the process of character development for school administrators (C B S Model) there are 3 important focus points: 1) Characteristics. It is the physical and expressive characteristics of a person's behavior that are part of their character which shows others to see of elementary school administrators there are 4 aspects of the Bangkok Metropolitan Administration: (1) Knowledge and competence, (2) Social maturity and openness, (3) Responsible, (4) Good human relations. 2) Brahmaviharadhamma, it is a principle that must be in the heart and directive of behavior. Suitable for management, there are 4 areas: (1) mercy (affection), (2) kindness (compassion), (3) empathy (joy when others are well-being), (4) detention (impartiality). 3) School of school administration. It is the operation in working in four areas of the school, including (1) academic administration, (2) budget management, (3) personnel management, and (4) general administration.

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The Value of the Buddhist Art as depicted the Khmer Castles in Surin Province

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Abstract— The purposes of this article were 1) to present the Buddhist art as depicted in the Khmer castles, to examine the value of Buddhist art as depicted in the Khmer castles. Historical documents and archaeological evidence were used. The result indicated that: When Buddhism was spread into the Suvarnabhumi region during the 3rd century AD, there was a devotee and dedication to create art related to Buddhism. Thus, this art is called Buddhist art. Among all the important civilizations in this world, the Khmer civilization, which is one of the important civilizations in Southeast Asia. The forms of Khmer architecture or Lopburi architecture can be divided into 3 types: (1) Devalai or temple (2) Dhammasala, accommodation for travelers, or houses with lights (3) Arogayasala (Chapel of the hospital). Surin province is located in the northeast of Thailand. There are a large number of Khmer castles. In this province, the castles of Brahmanism and Buddhism had been settled. The Buddhist arts had reflected through architecture. It was indicated that this area used to have Mahayana Buddhism. Although the Buddhist Mahayana sect at present has deteriorated. Historical evidence and values still exist nowadays.

Index Terms- ***Buddhist Art, Khmer Castle, Surin Province***

I INTRODUCTION

Buddhism spread into the land of Suvarnabhumi during the 3rd-century Buddhist era, resulting in people who had faith and dedicated themselves to creating Buddhist-related artworks to offer Buddhism. It is called "Buddhist Art". The word Buddhist art or Buddhist art can be separated into two words: Buddhism + art, which is a story about Buddhism and is a term used to refer to the Buddha. The word art is a story of beauty, satisfaction in object humans create. Therefore, the overall meaning of Buddhist art is man-made for beauty. It is a Buddhist worshipper in Buddhism. [1] The true purpose of Buddhist art is to create a mentally valuable effect, to bring happiness, peace, and shade, therefore it is said that Buddhist art is like a bridge of merit or a medium that brings faith in Buddhism. Buddhist art that appears in all its areas is a manifestation of the levitation of Buddhist companies for all ages that have appeared in the eyes to the present day. [2] On this connection, Elements of human-made work It is possible to identify what is the art or not. Art must also be a work in which elements with 5 things are (1) human beings, (2) ideas, human intellect, (3) human actions, (4) satisfying beauty, and (5) popularity. [3] Fine art, a branch of art, which is "a work of human perseverance, in addition to hand-trying and with ideas, must be focused on what is done to gain wisdom, thoughts, and feelings of mentality, spout and infiltrate it."

II THE KHMER CIVILIZATION IN THAILAND

Among the major civilizations in the world, the ancient Khmer civilization, which thrived between the 12th and 18th centuries, was one of the most important civilizations in southeast Asia. It spans from Khmer lake to the lower northeast of Thailand and the southern part of Laos today, including the mouth of the Mekong river in southern Vietnam today. [4]

The arts of the Khmer Castle are classified as building construction, buildings, urban planning (which) are divided into 3 types: (1) woodworking, (2) stone making, and (3) reinforce concrete. [5] Therefore, Religious

architecture, which is one of five works of fine art created by mankind in different areas by human race groups in each area. On this point, this religious architecture is a religious site that indicates the prosperity of human society in the area as a nation of shame. Especially the castles that were built in different eras under the Khamarian people. The meaning of Khmer, Chitra Bhommisak assumes that the word "Khmer" is probably from the word "Ka-lom" or "Karaom", meaning south or low. Later, ancient Thais called the ethnic groups that lived in the Mekong and Chao Phraya rivers up to Shan State. [6] There were pieces of evidence in the Sukhothai period inscriptions at Wat Sri Chum at one point: Khmer called the Dhamma, and there is a chronicle of the Ayutthaya period that refers to the Khmer people and the Khmer countries. [7] The word is used in Tai Lue, Tai Yai, Burmese, Lao, etc. with different meanings, but in conclusion, the word "Khmer" is probably derived from the word "Khmer". Probably from the word "Ka-lom" or "Khamer-khrom" [8] On this point, Santi Mueangsukh shows the attitude of the Khmer art in Thailand that the Khmer art in Thailand or Lupburi art refers to art created under the influence of Khmer culture. If we study the art found in Thailand, it is comparable to the art of Cambodia, and it is similar to the art of Phra Nakhon or Angor that was spreading in the Northeast and into central Thailand. [9] which is conforming to Mr. Supattaradit Dishul, who expressed his thoughts: Khmer art was widespread in Cambodia and neighboring countries during the 12th-18th century. In the early stages, it resembled a lot of Indian art. Later, it became even more self-centered and featured beautiful ornamental patterns that did not appear in Indian art before. All sculptures show stiffness, and the show of power style is not found in Indian art either. [10]

Therefore, the forms of Khmer architecture or Lopburi architecture can be divided into 3 types: (1) Devalai or temple (2) Dhammasala, accommodation for travelers, or houses with lights (3) Arogayasala (Chapel of the hospital).[11] 1) The Lobpuri art group of the former Mon Dvaravati people, dating between the 6th and 11th centuries 2) The Lavo or Lopburi art group is a Khmer hybrid art in Thailand that dates back to the 11th-13th century or 1010-1237 and (3) a Buddhist high-rise art group that settled in Thailand. It lived between the 7th and 11th centuries. [12]

According to archaeological evidence, the Khmer or Khmer civilization in Cambodia reached its peak in the Buddhist 16th-18th century, and then spreading into the lower northeastern regions, as pieces of evidence by many Khmer civilizations such as both stone castles, and ancient cities. Surin province is one of the border provinces between Thailand and Cambodia and another province located in the northeastern region of Thailand. In this province, there are a large number of archaeological pieces of evidence of the civilization of Khmer castles and through media from Surin provincial seal, the image of Indra (God) riding an elephant and the back is a picture of a Khmer castle. Surin province has been home to elephants since ancient times, and wild elephants are always adopted. The horoscope of Surin province has a picture of an elephant. The Surin portion of the title is a compound of two words: "Sura" and "Indra" derived from the Sanskrit words which mean the brave Intra, and the picture of the castle in the behind, that the scenes show the construction influence of ancient Khmer, which exists in much of the region. [13]

According to the chronicle of Surin, this area was a major source of Thai nationalism during the powerfull period. The city, named Khunketu, has several ancient creations and Thai characters inscribed in the Northeastern region. Thailand has deteriorated to retreat elsewhere; Khmer kingdom has established the capital at Phimai city. [14] As shown in the stone inscription at Ban Prasat as follows:

> *Sitthikariya baromnathjatibhirom Samajatapasikarara Chao Sangharaja Buddhawongsa and Chao Somdej Utamavarapanya and Chao Kes Chao Somdejghotawvongsa Chao vongsa, Chao Nagriwonsa and Chao Meaung Debaraja, Khunkrai, Khunkeaw, Khunsri, Tangta, Khunchan, Old people, parents, siblings, relatives and All the descendants at the same time created 3 Mahadhatu with God's religion for as long as five millennia. Nibbana paccayo hotu*" [15]

III SURIN PROVINCE AS THE LAND OF THE KHMER CASTLE

Surin province has the following territories: northern territory contacts Mahasakham province and Roi Et province and Sisaket province. To the south, it borders Oddar Meanchey of Cambodia. The east is in contact with Sisaket province, the west is in contact with Buriram province. The capital, Surin province, in the western central region

province, is 454 km. Surin covers a total area of 9,101.381 km [16]

The province is divided into 17 districts. The districts are further divided into 158 sub-districts and 2011 villages. The seventeen districts are (1) Mueangsurin district, (2) champhonpuri district, (3) Thatum district, (4) Chomphra district, (5) Prasat district, (6) Kapchoeng district, (7) Rattanaburi district, (8) Sanom district, (9) Sikhoraphum district, (10) Sangkha district, (11) Lamduan district, (12) Samrongthap district, (13) Buachet district, (14) Phanomdongrak district, (15) Srinarong district, (16) Khwaosinarin district, and (16) Nonnarai district. The main castles in Surin province are separated into castle groups of each district. The sort number of castles in ascending order as follows:

Sangkha district: there are six castles, including (1) Prasat Phum Pon, Dom sub-district, (2) Prasatsangsilapachai Krathiam sub-district, (3) Prasat Meechai, Krathiam sub-district, (4) Prasat Yai Ngao, Sangkha sub-district, (5) Prasat Banchan, Banchan sub-district, and (6) Prasat Ban Dan

Prasat district: there are four castles, including (1) Prasat Ban Pluang, (2) Prasat Ban Plai (3) Prasat Ban Thanong and (4) Prasat Angkanbho.

Mueangsurin district: there are three castles, including (1) Prasat Mueang Tee, Mueang Tee Sub-district, Mueang Surin district, (2) Oranga, Chaeng sub-district, and (3) Prasat Khao Phanom Sawai, Muang Surin district. In addition to the stone castles, there are traces of ancient towns in the Surin district as reflected at Surin city walls and moats on both sides, the outer and inner floors.

Sikhoraphum district, there are three Prasat namely: (1) Prasat Changpi in Changpi sub-district, (2) Prasat Srikhoraphum or Prasat Ban Ra-ngaeng in Ra-ngaeng sub-district, and (3) Prasat Ban Anan or Prasat Anar in Yang sub-district

Buachet district, only one Prasat is Prasat Ta Moy or Ta Mon in Buachet sub-district, and further one Phoo (hill) known as Phoo Sala which located as seem area.

Thatum district: there are two Prasats namely: (1) Prasat Ban Ballung, Thatum sub-district, (2) Prasat Nang Bautum, and the other archaeological site is: Non Taen, Ponkrod sub-district.

Lamduan district: there are three Prasats namely: (1) Prasat Ta Priang Tia or Prasat Ra Biang Tia, Ta Priang Tra, Sub-district, (2) Prasat Ban kraduk, Lumduan sub-district.

Phanomdongrak district. There are three Prasats namely: (1) Prasat Ta Muen, Bakdai sub-district, (2) Prasat Ta Muen Tuj, Bakdai sub-district, and (3) Prasat Ta Muen Thom

Kapchoeng district: there are two Prasats: (1) Prasat Ban Beng, Prasatbeang sub-district, (2) Prasat Moncharoen, Kapchoeng sub-district.

Khwaosinarin district: there are two Prasats: Prasat Keaw, Ban Rae sub-district, and Prasat Tongh Ta Kuk sub-district.

Samrongthap district: only one Prasat known as Prasat Muensrinoi, Muensrinoi sub-district.

Chomphra district. there is one Prasat: Prasat Champhra in Champra sub-district.

Sanom district: only one Prasat is Prasat Ban Sanom, Sanom sub-district.

From the ancient Castle group, there is also an archaeological site known as Prang (Pagoda). The other two places in Rattanaburi districts are (1) Prang of Wat Bhosridhatu, That sub-district (2) Prang of Wat Nonghin, Rae sub-district, and the further one archaeological sites of Wat Pa Dong Nam Kham, Chead sub-district.

IV THE BUDDHIST ART AS DEPICTED IN THE KHMER CASTLE IN SURIN PROVINCE

A. Architecture

From all the archaeological evidence that has emerged, it was found that the Buddhist castle of Buddhism in the Mahayana Vajrayana sect, as evidenced in the inscription of King Jayavarman VII (which has) mentioned the resolution of the establishment of Arogayasala, or medical facility in the year 1108 (1729), mentioned the resolution of the establishment of Arogayasala, or medical facility in the year 1108 (1729 B.E.), in 1020. [17]

(1) Arogayasala**:** According to the evidence inscription, Prasat Ta Prohm of King Jayaraman VII stated, eighteen of Arogayasala appears in all similar inscriptions, found in seven digits of Arogayasala,

seventeen of which are found in Thailand. There are similarities in "Arogayasala" consists of two parts: (1) a medical facility and (2) Suttalaya (or stone castle) where it is enshrined of "Bhaiṣajya-guru-vaiḍūrya-prabhā" or the Buddha, who is the teacher of the doctor who has the light of the province as the radian of Paitoon." [19] As for the management of the medical facility, or Arogayasala, Jaruwan Phuengthian stated, "A large Arogayasala has 200 staff, 50 staff, and he will donate these Arogayasala medicines three times a year." [20] On this point, Nowadays, only in the northeastern region of Thailand, the Suttalaya, a total of the Arogayasala religious sites, nearly a third of the total number of Arogayasala, was found, and 12 Arogayasala stones were found" [21]

(2) Suttalaya: In Surin province, there were five Suttalaya surveys: (1) Ban Prasat castle, Ban Thanon, Krathiam sub-district, Sangkha district (2) Changpi Castle. Ban Chang Phi, Chang Phi Sub-district, Shikharaphum District (3) Chom Phra Castle Ban Chom Phra, Chom Phra Subdistrict, Chom Phra District (4) Ban Chaniang Castle Ban Chao Nyong (5) Castle of Ta Muen Tuj Ban Nong Khanna, Tambol Tahmyeong, Phanom Dong Rak District" [22]

B. The Idols Sculptures

1) Evidence of the discovery of the sculpture: Based on the archaeological evidence presented in Surin Province, Three main inscriptions were also found in the 7th inscription group: (1) Castle Inscription (Soro.4), (2) Ta Muen Tuj Inscription (Sora.1) and (3) Surin Inscription (Soar.6). [23] During this period, a large number of idolatry sculptures were created, especially idolatry in Mahayana Buddhism, such as the Buddha image, the Nagaprak Buddha, Vajrasat, Vajrapani Bodhisattva Avalokitesvara Bodhisattva, etc., especially in the two main castles, Prasat Ta Muen and Prasat Ta Muen Tuj. According to the discovery of archaeological evidence, "The stone inscription of King Jayaraman VII on the 7th day of Arogayasala was found in the 1st letter of the Sanskrit language, mentioning Bhaisajyaguru, Bodhisattva, who gave no disease to the revered people, and in the Prasat Chomphra, Chomphra district. Important antiquities were found in the heads of Avalokitesvara Bodhisattva and Vajrasat too.

(2) Meaning and importance of idol sculpture

1. Bhaisajyaguru

The dominant concept of Mahayana Buddhism, which Theravada Buddhism does not have, is about the concept of respect and worship Bhaisajyaguru, especially in Tibet. China and Japan, which have faith in Him As a medical Buddha with the power to treat both physical and spiritual diseases. [24] Therefore, the full name of this Bodhisattva is "Bhaiṣajya-guru-vaiḍūrya-prabhā-rāja" His name refers to the Lord, who is the teacher of medicine. A person with a blue radius as Paitoon. Your other names are Bhaisajyaguru Raja Buddha of medicine, Mahabhaisajgururajabuddha." [25] But in the view of Western Buddhist scholars, his meaning is "The Medicine Buddha" [26] Which means Medical Buddha or Healing Buddha" [27] It means Medical Buddha, and "Master of Healing" [28] Overall, the idea of him is that he is a Buddha about medicine or medicine, intending to help to save animals from diseases such as physical and mental diseases, namely stupidity or disease.

Appearance: the Buddhist appearance or appearance has been created as idolatry, especially in the section Revering the Buddha or Master of Healing. Most of his idols are enshrined alongside The Buddha. He holds a glass of Paitoon and is adorned with dark blue Ratana stone. There is a belief that there are health care properties. His body looks like a Paitoon glass and is illuminated during the period." [29] There is a difference in the subtleties of each country, as it appears in the Chinese faith, his figure is in a meditation position, with Ratanacetiya placed on his hands, some holding a jar of medicine."[30] But D. Keown said it was a "bottle of detergent."[31] In the Tibetan dimension of faith, "...He has a dark blue body, meditation, right hand holding herbal medicine It is considered to be a Buddha that can cure physical and karma diseases of the animal world..." [32] In general, "The image of His majesty is usually located on the left side of The Buddha's Buddha image and is finished to the east (as opposed to Amitabha) in the Buddha's punditry, and there are twelve great protectors. The Bhaiṣajya-guru-vaiḍurya-prabha-tathagara Sutra Ven. Dhammagup (1667-1702) was translated into Chinese." [33]

Belief: Bhaisajyaguru is widely revered among Mahayana Buddhists, but does not have its sect-like Amitabh. He has the Vidruya pure land that is like the great pure land of the Amitabh. It had mentioned in scriptures of Bhaiṣajyaguruvaiḍuryaprabha-saptabuddhapurvapanidhana Sutra also. He said that he was one of the seven Bhaisajyaguru disciples: Suriyapraha Bodhisattva and Candrapraha Bodhisattva. The Pavaresa-metal Buddha image was created exclusively in the Kingdom of Thailand. Because Buddhism is very similar to Bhaisajyaguru. [34] Therefore, the faith of Mahayana Buddhists is believed to be

the Buddha of medical treatment. He cures all kinds of diseases, including ignorance. In this context, the Bhaiṣajyaguruvaiḍuryaprabha Tathagara Sutra discussed His resolution to keep animals free from all diseases. [35] On this connection, for the respect of his worship, especially in the Chinese health care ritual, the people had to keep eight verses over 7 days, pay tribute to the monks, worship the Buddha, and recede His Majesty the Buddha 75 times, and then create seven more of His idols, and then contemplate the Buddha image, which is his idol. For reasons to want to liven up with His spiritual and healing powers. At this point, it is to encourage those who believe in the power of faith towards Him. [36]

2.Vajrasattva**:** The supreme Buddha of the Tantra sect refers to the strongest buddha, which is considered to be the highest principle of unity. The word "Vajra" here refers to the eye, and the word "Sattva" refers to the purity that appears in all things in the universe. Vajrasattva. Vajrasattva is also considered to be pure, devoid of morality, possessing the universe, and the axis of all Dhamma. Vajrasattva describes Vajrasattva as one with Dhammakaya but sometimes describes it separately as the 4th body of a Buddha called Sahaskayana. The evolution of the idea of Vajrasattva when describing Vajrasattva as the ordinary of the Buddha or the Adhibudha, which has five meditative attributes linked to five Dhyani Buddha are Vairochana, Ratanasambhava, Amitabha, Amoghasitthi, and Akshobhya Each of them is great above the five aggregates namely: corporeality, sensation, perception, mental formation, and consciousness respectively, consort of Vajrasattva is Vajravarahi or Prajnaparamita. Nepalese tradition prefers to write hand-stamped images of crescent moons over diamonds in the middle of lotus flowers on the summit of the Sumeru mountain, which is considered the center of the universe. Vajrasattva is popularly formed as a link, meaning the birthplace is Adhibuddha. In Tibet Vajrasattva usually sits on a lotus flower in a diamond scrub, but sometimes hangs his right on a lotus, crowned in the same way as Dhayani, his right hand is at chest level, and his left-hand holds a hip-level bell, as is usual in a yap-yum position, where his feud holds a cup made of a skull. Vajrasattva is a poster worshipped at a ceremony only for those attending the ceremony in Vajrasattva. [37]

3. Vajrapani Bodhisatta**:** If translated according to the terminology, it can be translated as "The Bearer of The Vajra" as believing a bodhisattva instead of the whole power of Buddha, as Avalokitesvara symbolizes greatness and Manjusri as a symbol of wisdom. Thus, Vajrapani Bodhisatta believes that he can eliminate all patsy, sometimes with the king in Yap-Yum poster. The foot pedals the man in the sign of defeating ignorance. [38]

4. Avakokitesvara**:** He has a bodhisattva status, one of the most important of which is Mahayana Buddhism. He is the majestic bodhisattva of the Buddha, consisting of mercy and grace to save the animals from adversity, especially when traveling or experiencing fires, etc. One incarnation of Avalokitesvara is a feminist namely Guan Yin, a Buddhist bodhisattva in East Asia, namely China, Japan, and Korea. In Tibet, worship Tara, the king of Avalokitesvara, and worship da Lai Lama XIV as one incarnation of this Bodhisattva too. [39]

VI THE VALUE OF BUDDHIST ARTS IN SURIN PROVINCE AS RELATED TO THE KHMER CASTLE

The value of Buddhist art appeared in the Khem castles in Surin province. From studying the documents and field data studies. It found that in seven aspects.

1) The uniqueness of the province: Surin is a province where many castles appear, so one of the mottoes of Surin is that Surin province is the city of a castle, and also, Surin provincial seal including the flag of Surin province and castle holes in it. This is because the Khmer castle is the center of faith, which assistances support the unity of the Surin people.

2) Educational aspect: since the castle doesn't have written recordings, the value lies in the Khmer castle that tells the story of history and stories by engraving them. Therefore, the Khmer castle is a historical learning center, enhancing the knowledge that must be preserved forever and also reliable. It is pronounced, educational, historically stereotyped. It is highly valued for the way of life of locals, such as culture, belief, beauty, humility. Also, the stories that appear in the inscription in the castle give us an idea of history. Events conducted by ancient peoples, including culture. education, governance. The characteristics of letters and evolution, which are especially useful in the field of letters.

3) Economic aspect: the Buddhist art of the Khmer castle appeared in Khmer castle. It is an economic stimulus that is when each castle is important both historically and psychologically important to society. Nodaway, the Khmer castle is generally a tourist attraction both inside and outside the country. Therefore, the government has established a

system for tourism around the castles. Besides, products related to the Khmer castle have been created such as silk pattern design, shirts, souvenirs, coins, mock stone castles, print castle motifs to weave, and more or even the imitation side building to shape the Khmer castle to build a modern office building. etc.

4) Political aspect: the Buddhist art of the Khmer castle appeared in Khmer castle as a means to govern the people of the kingdom of the leaders. This is for the unity of people in society, which, if any society has a solid faith in the sacred things that appear through Buddhist art in Khmer castle, will not be possible. The society of the community is in a normal way, free from physical and mental harm.

5) Social aspect: the values of Buddhist art that have appeared in the Khem castle of society are Buddhism and Brahmin Hinduism. Buddhism, in particular, has been passed down to the present day and influenced the creation of arts and culture as well as the way of life of people living in Surin province. Therefore, the Khmer castles are the center of the hearts of local Buddhists. Even though almost all the castles, ordinary, were built in Hinduism castle before becoming a Buddhist later, so there is a mixed-faith background between ghost-Brahmanism-Buddhism. In each year, residents living around the castle hold annual sacrifices for the well-being of the people of society, and food security too. Therefore, the Khmer castle is a great means to control people in society together, directly or indirectly. Besides, the Khmer castle is also a showcase of the civilization of the Surin people from the past to the present.

6) Aesthetic aspect: This aesthetic value, architecture, figures, castle motifs satisfy the mood or feelings of beauty, imagination, love, kindness to sentient beings, etc. The Buddhist art that appears in the Khem castle is a great legacy of the nation of Thailand and is a particulate matter in Khao Phanom Dong Rak that reflects the way of life, social well-being, belief, tradition dress, code, etc. It is the artistic nature of the collective garden of the people in the Phanom Dong Rak mountain regain. Therefore, if you the Buddhist art that appeared in each of those days has its aesthetic characteristics. Art has changed and passed down to society due to the inter-community relationship. People with higher cultures have more magnificent art. There are techniques for creating better work, it will always convey both faith and art to communities with inferior cultures. At this point, the Buddhist art that appears in the Khmer castle most often conveys that the natures of Buddhism which is peaceful, bright, and clean that appears in people's minds and then reflects outside.

7) Other aspects: culture, traditions, villagers educators teachers in the arts and culture line have removed patterns from the Khmer castle to make costumes for performances, including aspects such as the legendary of Prasat Pan Pee (Millennia), which is associated with the Khmer castle, and the story shows are tied to the path to the castles, especially the Buddhist castles that appeared in both idolatry and beliefs along the route from the golden-era center to the Kingdom of Thailand at presently.

V CONCLUSION

Therefore, according to the pieces of evidence of the Mahayana Buddhist objects that appeared in these Castles, it is archaeological empirical data, which can indicate that in the area of Surin province, there used to be an area where Mahayana Buddhism, the Vajrayana, was passed down before Theravada Buddhism. This Vajrayana has a significant influence on beliefs and deep roots in the minds of the people of the area. Until, there were Buddhists who had a firm faith in the Tri-ratana, and created Buddhist objects and sculptures to become Buddhist worshippers, and proclaimed the power of faith towards the principles of Buddhist teachings. In Surin province, a Buddhist monastery was built and idolatry was created, as the carvings of Bhaisajyaguru were found. Bodhisattva Avalokitesvara Animal watch, or the pattern of the castle that appears in front of the bun. It all represents the beliefs and influences of influential Mahayana Buddhism in Surin province. These Buddhist arts evidence represent the prosperity of the ancient kingdom of Khmer with archaeological evidence since the time of the kingdom of Jenla, which has influenced the area of the southeast, especially Surin for more than 1,000 years, as well as the creation of architecture and idol sculptures due to Buddhist art to the general public. In the area of Surin and nearby provinces, which are still valuable and influence the beliefs and lifestyles of the people.

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The Sustainable Development of Sub-Khao Phanom Dong Rak with Special Reference to the Sangha's Education

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***Abstract*—** *This article's purposes were 1) to present basic information of the Phanom Dong Rak civilization, 2) to study Buddhism in sub- Khao Phanom Dong Rak, and 3) to examine the monastic study for proposing a sustainable development approach in sub-Khao Phanom Dong Rak.* This relies on the main source of data used in the documentary research. The methodology adopted in the study is of a critical and investigative approach to the analysis of data gathered from documentary sources. The result indicated that: The Phanom Dong Rak, which is used in the Thai language. It is a mountain located in the southeastern part of Thailand as the border between Thailand and Cambodia, starting from the Khorat Plateau, stretching to the east to the Prasat Wat Phu in Champasak, Laos. On both sides of Phanom Dong Rak, shows signs of embarrassment that have existed in the past 3,000 years ago, and there are still many ethnic groups inhabiting the particles of the Phanom Dong Mountains. The sustainable development of sub-Khao Phanom Dong Rak should integrate work according to the "Borworn" principle, namely "families, temples, government or schools" of all three countries in Phanom Dong Rak mountain range.

Index Terms- *Buddhism, Sangha, Education, Khao Phanom Dong Rak*

I. INTRODUCTION

Among the civilizations that once flourished in past of the world, many cultures have prospered the civilization is located along the Phanom Dong Ruang Mountain Line, which borders Thailand and Cambodia and is a long stretch of the mountain from the west of the Korat Plateau stretching east to Champasak, Laos. This civilization in the area is a civilization of the Khmer, Lao, Tribute, and Ye peoples, which have flourished since the past and remain to this day. The area inhabited by these species is called the "Phanom Dong Rak Mountain Particle Area", also known in Thai today as "Mount Phanom Dong Rak".

Buddhism has been spreading the Dhamma in the Sub-phanom Dong Rak Mountain particles since the 3rdcentury Buddhist era of King Asoka. In this period, King Asoka has announced nine lines of Dhammadhutas. The 8th line was Sona and Uttara to Suvarnabhumi region, the current group of countries in Southeast Asia: Thailand, Myanmar, Cambodia, and Laos today. Once Buddhism has been recognized by local ethnic groups, it can begin to be enshrined from the past to the present-day. As it turns out, it passes from religious sites, religious objects, religious figures that have appeared from the past as long as the present. During the cultural movement, Buddhism at its core, the continental pink people's civilization was adopted. It is also the motherland of Buddhism in Southeast Asia. It is pertinent to say that Buddhism influences both the concepts of politics, governance, language, culture, beliefs, and arts in Southeast Asia.

In the influence of Buddhism on Southeast Asia, one that continues from the past to the present is monks' study. In the Phnom Dong Rak mountain particles, the Sangha studies are essential for the persistence of communities culture, and society in this mountain particle. Sangha learning in this mountain range may seem different in terms of methods and teaching systems due to the educational system's accession by each country's state. But above all, it doesn't the same thing about the management of monk

studies is the aim of peace to be created in the Phanom Dong mountains particles through developing human resources into valuable and virtuous resources in life bringing stability to society.

Therefore, in this academic article, the author presents Buddhism's stability in the dimension of studying monks in the Phanom Dong Rung mountain range. This is to give a perspective on the dimension of the development of sangha education to be sustainable. During a changing world, in national and international differences, the Phnom Dong Mountain particles' peoples remained together peacefully as long as today.

II. BASIC INFORMATION OF THE PHANOM DONG RAK CIVILIZATION

Phanom Dong Rak Mountain Raek or Phanom Dong Rak Mountain range (Khmer: Chuor Phnom Dângrêk; Thailand: Phanom Dong Rak mountain, Roman Script: Thio Khao Phanom Dongrak, Laos: Sayphou Damlek is derived from the Khmer language "Phanom Dong Rak", meaning "Mai Khan Mountain" (carrying pole Mountain), a mountain that stretches east-east, a border between Thailand and Cambodia. [1]

The term "Phanom Dong Rak" is separated so that the meaning of this word's correct terminology is derived from "Phanom+Dong Rak." The word "Phanom" is a Khmer word meaning mountain or characteristic of a spiky bush like lotus blossoms. [2] The word "Dong," meaning "beamed wood" [3] Therefore, when the two words are taken together, it means that the Mountain Mai Khan or the Khmer people of Thailand are called "water beams," some of which have, or mountains that stretch from west to east. However, nowadays, the word "Phanom Dong Reak" has changed to "Phanom Dong Rak." Currently, one district in Surin province is Phanom Dong Rak District. Therefore, in the northeastern region, there is a great mountain range stretching to the east, a great mountain range in Southeast Asia with a history of people's stories that date from 3-4 thousand years ago to the present day. In the Phnom Dong Rak mountain particles, a group of nationals has lived since the past: Khmer, Lao, tribute, and Yer. Therefore, this area has not been far away from people's settlement since the past as long as today.

In this area of Phanom Dong Rak, there is a mountain range that stretches in the north or upper part of the mountain range, home to the Khmer people of Thailand or "Kamer-LUE". At the bottom of the mountain range is the Lower Khmer or Khmer Cambodia, and the people on both sides call this mountain "Phnom Dong Rak or Phnom Dong Rek." So, Phanom Dong, can translate that the mountain of carrying pole. This mountain stretches directly from the Korat Plateau, which passes through Nakhon Ratchasima province, Buriram province, Surin province, and the Sisaket province, Ubon Ratchathani provinces until the recent trip to Champasak city of Laos.

As for the opinions of Ruang Katshima from Surindra Rajabhat University, which had mentioned in the thousand light rainbow programs in the Phanom Dong Rak study: episode-1 and ethnic geography specify whether, in the past, this mountain was called "Phanom-weng", which means "Long Mountain," but later called "Phnom Dong Rak." The mountain range is a link between the motherland (Matu-bhum) and the land of friends (Mitr-bhum) because 12 other Khmer nationals are living in the area. [4] It has consisted of the interview data of Surat Lertlert in the thousands of rainbows mentioned: "The Phanom Dong Rak mountain range may slow down the movement of people on both sides of Thailand and Cambodia because they have to cross the mountains on both sides of the mountain. So since pre-historic times, the two sides have been associated with each other. There is a story, a story, a life associated from ancient times to the present day, which has been around since prehistoric times with the use of stone axes. The castle was built in pre-history before Phra Nakhon until Bayon Castle and The Buddha temple in the Ayutthaya period had a Buddhist propagation from Ayutthaya. Therefore, there's always a connection, and continues until now." In the opinion of Pongthan Lampao-yen, the archaeologist said: Archaeological excavations in the area have been found in the area since pre-history, such as the discovery of these abrasive stone tools and various metal tools. Therefore, it is an explicit confirmation that there is an ongoing investigation or use of this area. It has been around since then, sometimes in the area, with communities scattered, especially those making salt towns and smelting metals since ancient times.

Therefore, based on the points mentioned above, it is concluded that Phanom Dong Rak, which is used in Thai today, is a mountain located in the south-east of Thailand. It is a border with Thailand and Cambodia, starting from the Korat Plateau stretching east to Wat Phue Castle. Champasak, Laos, on both sides of Phanom Dong, has traces of embarrassment around for the past 3,000 years, and many species continue to settle in the Phanom Dong Mountain particle region. As it turns out, the religious site is Stone Castle. Intangible cultural heritage includes rice culture, dress culture, and intangible cultural heritage such as rice

culture, dress culture, intangible cultural heritage, literature, and culture related to Buddhism.

III. BUDDHISM IN THE SUB-PHANOM DONG MOUNTAINS

Buddhism has been spreading Buddhism in the Phanom Dong Mountain particles since the 3rd-century Buddhist era of the Great King Asoke.

A. Buddhism in the Kingdom of Thailand:

The Kingdom of Thailand or Thailand is one of the lands under Suvarnabhumi. Thailand received Buddhism from the 8th Buddhist missionary, Sona, and Uttar, which spread to Suvarnabhumi. The kingdom that appeared before the kingdom of Sukhothai is the Kingdom of Srivichai. The kingdom is left alone, or Lopburi. The Kingdom of Jenla, the Kingdom of Funan. The Kingdom of Jumpa, etc.

During the Sukhothai period (1792-1981), Buddhism was the most prosperous in King Ramkhamhaeng era. In 1820, King Ramkhamhaeng invited Mahathera from Nakhon Si Thammarat, the site where the Langkavong sect is prospered the Buddhism in Sukhothai, as in the main stone inscription 1. "*King Ramkhamhaeng donation to Mahadetha Sangharaja, who is sagacious, graduated from TripitakaLuak (Chalad) over Purkhru in this town*" King Ramkhamhaeng invited the monks from Nakhon Si Thammarat to stay at Wat Arannik or Wat Pa, so the monks were ruled in two parties: Gamavasri and Aranyavasri. During this Sukhothai era, Siamese countries were normal, Buddhism was prosperous, people liked to make merit, as there was a message in the stone inscribed: "*The people of Sukhothai include Chaw Mae Chaw Chao Tuypur Tuyna, princes, son of juries, men and women with faith in Buddhism*."

Ayutthaya was the longest-lived capital of Thailand (Siam) for 417 years. There are 34 monarchies from five royalty. Buddhism in the Ayutthaya period, despite its prosperity, played a role in the nation's development alongside the monarchy. Especially during the colonization of Western countries in the 16th century, especially during the Great King Narai reign. He will face the threat of a national fall in security. He must be able to use his wise and ingenious Guillory to survive the invasion of western nations.

Buddhism during the Thonburi period (1867-1882), Buddhism during the Thonburi period, because King Taksin the Great was humbled in achieving mortality, saw the punishment for suffering in Sangsawatra. I wish to take vipassana seriously. If anyone can become a god, the land ruled the city in peace. He will give it to him immediately. He will be ordained to do the righteousness alone. This story has appeared in the daily mail in the lead-up to the Cambodian strike. King Taksin always finds the opportunity to have a Dhamma conversation with the elderly monks until he knew the Dhamma until he had a book of "merit characteristics," which still appears today.

Buddhism in Rattanakos Era (1882-present): Buddhism in the early Rattanakosin period, especially during the reign of King Rama I, nurtured Buddhism considerably, as can be seen from promoting monk education, the making of the Tripitaka, the discipline of Buddhist monks, and the morality of the people, the creation of reconstruction and preservation of Buddhist temples and objects. Also, there were important events such as the arrangement of Visakha Puja Day in the reign of King Rama II. The emergence of the Dhammayut sect B.E. 2333 (1833), and during the reign of King Rama III, Makha Puja Day has held in the reign of King Rama IV as well as the establishment of the two Buddhist Universities during the reign of King Rama V. Asarnha Puja Day was held during the 9th reign, including the construction of a Buddhist monastery known as Buddhamonthon for celebrating 25 centuries of Buddhism on 25,000 rai of land, as well as the publication of the Thai Tripitaka. Twenty-five thousand sets for the royal family in and out of the country.

B. Buddhism in the Kingdom of Cambodia:

The Kingdom of Cambodia or Cambodia is one of the countries in Southeast Asia that must be located in Phnom Dong Rak's foothills. In the north, bordering Thailand. Cambodia has changed its name several times for mainly political reasons. But nowadays (2021C.E.), officially referred to as the Kingdom of Cambodia, there is democratic rule. There is a king as head of state with Thailand.

Buddhism has been spreading Buddhism in the Kingdom of Cambodia since the early Buddhist era, namely the King Asoka era, by referencing the evidence from Vinaya Pitaka's commentaries.

On this connection, the three are ten eras for the entry of Buddhism in this country as follow: 1) Buddhism during the Phanom period (Funan), (543-1093), 2) Buddhism in Jenla Era (1093-1993), 3) Buddhism in Phra Nakhon period (1345-1975), 4) Influential Thai Buddhism period (1831-1863), 5) Buddhism in French-colonization (1863-1953), 6) Buddhism in the Era of independence (1953-1970), 7) Buddhism in the republic of Cambodia

(1970-1975), 8) Buddhism during the Khmer Rouge era (1975-1977), 9) Buddhism during the Vietnam-Heng Samrin era (1977-1992), and 10) Buddhism today (1992-present).

In this article, the author presents only the milestones section, which is as follow:

1. Most prosperous Era:

This era is the era of Jayavarman VIII, organized in the city's era (1345-1975). Buddhism in Jayavarman VIII is the most prosperous era. Instead, he changed his policy of managing the town from the Hindu worldview of "Devasith" to "Buddharaja". This lowers the role of Hinduism and Mahayana Buddhism. He built several castles, such as Prasat Bayon, Prasat Nakhon Tham, Prasat Ta Phrom, dedicated to his mother, Prasat Phra Khan, or Prasat Chaisri, dedicated to his father, Prasat Ta Kaeo, Prasat Tasom, Prasat Banthaykut, Prasat Nagaphanthu, Prasat Bantaychamar. Also, 102 hospitals were built, 121 of which were built for irrigation. The pond also, up to 20,000 bronze and stone Buddha statues have been created for distribution both inside and outside the kingdom as evidenced by the inscription in Prasat Ta Phrom, which is depicted as follows:

> "...The Buddha has a body divided into three parts: Dhammakaya 1, Samphokaya 1, Niramankaya 1. As a result of doing good deeds are merits. We worship the Buddha as part of his body. the Budddha-jinasri, the son of the Budddha-jinasri and Has become the refuge of all beings..."

He has also created important Buddha statues to be enshrined throughout the kingdom (in the Thai territory located in Ratchamnat province, Suphan Buri province, Singburi province, Phetchaburi province, and Lopburi province). He passed away in 1762. In his time, it was truly Cambodia's golden age.

2. Era of degeneration:

When Buddhism in the Kingdom of Cambodia deteriorated, the Khmer Rouge rule was in the 1975-1977 era. In just three years and eight months, the Khmer Rouge ruled Cambodia, abolished these possessions, 1) canceled education, 2) abolished currency, 3) abolished religion, 4) public health, 5) entertainment; it appears that more than 2 million Cambodians have died, including novice monks. Buddhism has been overthrown by brutal communism.

But in modern times, Cambodia gained peace again after the United Nations (UN) held general elections, and Buddhism was revived. The Cambodian government has placed Buddhism in the constitution as a national religion since 2012. Of these, Cambodians have a total of 14.8 million. 96.4% of Buddhists are Islamic. 2.1 percent Christianity 1.3 percent.

C. Buddhism in the Lao People's Democratic Republic:

The Lao People's Democratic Republic of Laos has long been a close neighbor to Thailand. It also has the basis of language, culture, values, and traditions similar to Thailand. [5] In the past, Lao people worshiped ghosts and worshipped nature, as well as the Thai people. Even later, when Buddhism came to spread in Lao society, such beliefs are still present and self-modifying. Therefore, to match the current Lao Buddhism, Buddhism came to propagation during Chao Fah Ngum. He played an essential role in bringing Buddhism into Laos. He is a Buddhist and gave Buddhism patronage. [6] The people who are mentally dependent and behave according to the doctrine of Buddhism. Every village has a lot of temples. Folklore Category Epic Poems Dhamma novels and Jataka stories (Stories of the Buddha) happen a lot. [7] Therefore, the entry of Buddhism in Laos has had a different period in many eras. As Mr. Chansuk Suriyachak, Laotian wise man. [8] Buddhism in Lao society has been divided into three eras: 1) Traditional Theravada Buddhism, 2) Cambodian Theravada Buddhism, and 3) Theravada Buddhism from Thailand. However, the research of Phra Sophon Pattanabundit (Sukanya) and the group had divided the entry phase of Buddhism in Laos into four stages: [9]

1. Buddhism began to come in after Buddhism, citing the Uurangga-dhatu legend, and the legend of Bromrajadhiraj says that when the Buddha was born eight years late, Mahakass Thera led Urangga-dhatu, or it is the chest bone of the Buddha enshrined at Thatphanom, where the 5th King of Nakorn joined the assembly.[10] In Uurangga-dhatu legend added: Later, the 5 orangutans brought the Buddha's relics from Rajgir, India. Which were the Buddha relics from the 27 Hua Nao-relics, 7 Kheawfang-relics,9 Right paw-relics, The Hua Nao-relics are packed at Phrathat Luang mountain with Phraya Chanthaburi Praksitsak. The city of Vientiane in that era formed an element containing only four wah and three elbows. Two thousand years later, King Chaiyachedthadhiraja built a large pagoda over it. However, this theory has little historical evidence. But this information is not very reliable.

2. The second phase of Buddhism was obtained during King Asoke's reign, sending the ambassador to Suvarnabhumi land under the Lan Chang kingdom. It is also part of Suvarnabhumi. Phra Maha Theranawasophon and Uttara came ashore on the Mekong River in the south of the

country. He later referred to the city as Tha Kheak on behalf of an Indian guest group. [11]

3. Buddhism phase 3 entered the Kingdom of Lan Chang as a Mahayana, Ruled by Khun Luang Li Mao, Mahayana Buddhism influenced by China. It was not widespread because Mahayana Buddhism was rarely habitual to Lao people until the 4th phase. [12]

4. Phase 4 Buddhism is Theravada Buddhism from Cambodia. During the reign of King Fah Kum. Phra Maha Therapasman is the master of Theravada Buddhism. It is supported by the Queen of Chao Fah Ngum, named Kaew Geng Ya or Kaew Kanlaya. Until he became a religious religion. [13]

Therefore, the entry phase of Buddhism in Laos. It can be summarized in two ways:

1) The north side is the entry of Mahayana Buddhism to China during the reign of Luang Li Mao, whose Buddhism has not been recognized by Lao Buddhists as much as heavily.

2) The south side is the entry of Buddhism to the south of the country. According to the legend of Urangga-dhatu during the reign of King Asoke in the 3rd century Buddhist era, in the early stages of the traditional Buddhist era. In this connection, the Cambodian Theravada Buddhism in the Fah Ngum Era, and during the Thai Theravada period, the Dhammayutika school was adopted into Laos.

In an ever-changing world situation. Buddhism in Laos is also changing. Both positive and negative changes Details are as follows:

1) The positive aspect is the prosperous era, especially in the era of Fa Fah Ngum, such as Buddhist law as the Lao national religion, the establishment of King Sangha as the supreme president of the sangha department, the enactment of sangha laws with the Lao monarchy signed, the establishment of the Royal School in Vientiane Capital called"Chanthaburi Buddha pandit sapa institute", The study was organized. in Pali Studies, from Level (Parian) I-II up to Level Parain IX, and the Printing the Tripitaka in Ak-sorn Dhamma Version. It was the Pali edition in 1955 C.E. with 26 copies printed with white collar, and in 1971, The Tripitaka is translated into Lao spelling according to the terminology. These 34 books are called red covers. [14] From this result, Laos had 45 completed copies of the Tripitaka, and in 2002, the 2002 edition was completed to celebrate Vientiane for 450 years. [15]

2) Negative It is an era of change of governance from 1975 to the present. Based on this year's events, when the Lao movement was under the leadership of Chao Supanuwong, Mr. Kraisorn Promwihan, Mr. Nuhak Bhumisawan, and General Khamtai Stitandorn have strictly taken over the government of King Suwanphuma. As a result of the seizure of power, many changes have been made in Laos, including Buddhism, which has also been affected. In particular, negative events include the cancellation of the symmetric system, the cancellation of conventional education, and antiques' dismantling. The creation of new products is the construction of a new Dhamma Council hall, the persecution of monks in the Vipassana practice, etc. [16]

These two points reflect Buddhism in Laos. There are constant adjustments, both positive and negative, but during the waves that the shoulders come through, Lao Buddhism, with its leaders, can exist magnificently in differences in cults and political beliefs. As I said, "Buddhism can live normally with all regimes", so Buddhism can exist without conflict with all political systems, which is considered to be the hallucination of Lao Buddhism that other countries should study and use as a model.

IV THE SANGH's STUDY THE SUB-PHANOM DONG MOUNTAIN

The study of the Phnom Dong Mountain particles is to be clear in the general context of this issue; the authors presented the country, which is located on two sides of the Phanom Dong Mountains. It consists of Thailand. The three countries have a barrier between the three countries, as mentioned above.

A. The Sangha's education in Thailand:

The Sangha's education in Thailand is currently divided into three sections: 1) Dhamma Studies: The study was directed by Mae Kong Dhamma Sanam Luang or the Director of Royal Dhamma Studies. Currently, 2021 C.E., the Most Ven. Somdej Phramahamunivongs (Sujin Akkhajino) Wat Ratchabophitsathimahasimarama, Bangkok as the director of Dhamma Studies policy the Sangha supreme council of Thailand, and there is the national office of Buddhism as a government agency. There are three teaching levels in this section: Nak-dhamma tri-Level I, Nak-Dhamma Tho: Level II, and Nak-dhamma Ek: Level III. It also allows students and individuals to study, divided into three levels in common with monks and novices. In this system, teaching is organized centrally and regionally. The central part is referred to by the name of the temple, e.g., Wat Bowon Niwet Vihara's school. The region is called including provinces such as Surin provincial school. The school will be managed and managed by the students. The exam is the duty of the director of Royal Dhamma Studies. The office of the Dhamma division is supported. Currently (2021 C.E.) Located at Wat Bowon Niwet Vihara, Bangkok. 2) Pali Studies Section: Under the

operation of the director of Pali Studies, which under the polity of the Sangha supreme council of Thailand, Currently (2021 C.E.) Ven. Phra Brahmamolee (Sujat Dhammaratano Pali IX), Wat Pak Nam Phasi Charoen Bangkok as the detector of Pali Studies, and there is the national office of Buddhism as a government agency. In this section, there are nine levels, namely: level I-II up to level IX, and at present, the Thai government has accepted and compared the Pali studies 'qualifications to general education as Pali studies in level III is equivalent to grade VI in high school, and Pali studies in class IX is equivalent to Bachelor's degree. In this connection, Thai Sangha, which the leader of the Sangha supreme council of Thailand, has set up a committee to study the feasibility of accepting and comparing Pali level IX qualifications equal to doctorate degrees in general education. Besides, there is also an opportunity to take the Pali examination of the common secular, which is called "Pali Seuksa" As for the graduates, the "Bo. So" qualification is Pali Seuksa, Nowadays (2020 C.E.), nuns and individuals are increasingly interested in studying and testing. In the system, teaching is centralized, and the central region is called by temple name, such as the school of Bowon Niwet Vihara. The region is called including provinces such as Surin Provincial School as seen in the Dhamma studies section. The school will be managed and managed by the students. The exam is the Pali studies director, with the Office of Pali Studies office as support, located at Wat Pak Nam Phasi Charoen Bangkok. The General Education of Thai Sangha: There are two levels of sangha education management in the general education management section: 1) Secondary education, which is currently at the control of The General Education Department. There is a Pariyattidhamma School of general education. The school is open to monks and novices from junior high school (grade I) to high school (grade VI) nationwide. According to the national Buddhist office, in 2018, there were 406 schools with 36,057 students, 1,450 teachers. [17] 2) There are two Buddhist Universities in Thailand: Mahachulalongkornrajavidyalaya University and Mahamakut Buddhist University, which distribute education nationwide in almost every Thailand province. Mahachulalongkornrajavidyalaya University has international support institutions such as the Republic of Korea, Sri Lanka, Singapore, and Hungary.

B. The Sangha's education in Cambodia:

The Sangha's education in Cambodia, most forms and education management departments are mainly influenced by Thailand. In Cambodia, there are three sections of education the Dhamma-Vinaya section and there are 3 levels: level-I, level-II, and level-III, which is called Samanaseuksa School. The main subjects to study are Buddhist history, Vinaya (discipline), Dhamma (Buddha's teachings) (Proverbs) as Similar to Thailand. Still, in Cambodia, it is called Dhamma-kosala level-I, Dhamma-kosala level-II, Dhamma-kosala level-III. In 2008 C.E., there were 726 schools with 13 612 students. General Education Section. Primary education is called Buddhikapathomseuksa school; High school is called Buddhikamatthayumseuksa school. There are two places in higher education: Preah Sihanouk Raja Buddhis University and Preah Sihamoni Raja Buddhist University. Bachelor's degree or higher in Buddhism Undergraduate called Parinyabat, the master's degree is called Anu-bandit, a Ph.D. called Bandit.

C. The Sangha's education in the Lao People's Democratic Republic:

In the monks' study in Laos, similar studies were held in the country: Pali and Dhamma and ordinary studies. There is a change in monk education: 1) elementary school in 6 years of study, which divided into 3 years primary school, 3 years 2) secondary school at the end of year 7, there is also an institution preparation for 1 year, which is equivalent to 8 years of secondary school. In charge of the Ministry of Dhammakarn, according to statistics, the study of monks in Laos. In 2002, there were 54 expansions, divided into five elementary schools, 35 junior high schools, 11 high schools, 1 Phra Pariyadham School, 1 Sangha School, 2 Songkram Colleges, Ong Tut Buddhist college, Vientiane city, and Champasak Sangha College. Also, there is the Buddhist Institute, an institution that oversees the management of the collection of Buddhist scriptures and provides Bali education to novice monks, such as at Wat Chan, Nakhon Vientiane.

V. LOOK AT THE SUSTAINABILITY OF THE PHNOM DONG RAK MOUNTAIN PARTICLES THROUGH THE STUDY **DIMENSION OF SANGHA STUDY**

Sustainability is a current term and is often used to communicate alongside sustainable community development or sustainable agriculture.

1. Policy:

The study management policy of the three countries in the Phnom Dong Mountain particles. As it turns out, higher education institutions have been established in all three countries, and the governments in all three countries have endorsed the study of monks by issuing an accreditation act, which is a good vision for the study of monks in this article.

2. Management:

As for the administration, since the management of sangha education was initially focused on the study's management, it was only the Dhamma-Bali department, but nowadays, there are general education departments, both secondary and higher education, involved. The three Sanghas must adapt to keep up with the changes to enhance monks' education to suit the era. Otherwise, the management of Buddhism will not be a solution to society. It turns out that organizations or institutions managing external studies have begun to study Buddhism, such as in Thailand. Mahidol University established the College of Religious Studies, Chulalongkorn University has established Buddhist studies, also Buddhist studies in Thammasat University are offered at the Master's level, and at some Rajabhat universities, Buddhist or Buddhist studies courses are offered at undergraduate levels such as Phra Nakhon Rajabhat University, Nakhon Ratchasima Rajabhat University, etc. In this regard, philosophy and religion are provided at many public universities. If Sangha University also manages Buddhist studies at the core of monk education, external agencies will likely be better organized and managed.

3.Budget:

Initially, the management of monk's studies in the three countries had a relatively limited study budget. Due to the institutions that do not have the laws of the city to support, monks are currently being supported in all three countries. The government has introduced legislation to support and contribute to adequate budgets and central budget distribution to regional areas nationwide.

4. Curriculum:

The curriculum is constantly improving and improving the curriculum in terms of the management of higher education. Still, in Christian education, Pali Dhamma remains the same from the past to the present, which has resulted in the Bali Department, the dharma department of the three countries in the Phanom Dong Rak Mountain Range, rarely attracting much attention from novice monks and gradually decreasing.

5. Instructor:

In higher education, there is an administrative mechanism following the workload framework. However, in the Pali-Dharma department, all three countries are still experiencing teacher shortages due to policies to distribute education that is not yet thorough or thorough but lacks a budget to support teachers who serve in teaching. As a result, the image of monk education management is more about teaching-focused education than teaching.

6. Student:

Although the education system of monks in Thailand was initially aimed at providing education to the heirs, the monks were the main ones. As a result, sangha education is more open to individuals at both sangha universities, including campuses nationwide and abroad. In some countries, too, but due to the current circumstances, Thai children's birth rate is lower. As a result, several students' decline in attendance in the system directly affects monks' education, that the learner will subsequently decline. On the Dhamma Department side, there has been an MOU agreement with the Ministry of Education to allow general students to take the exam thoroughly throughout the country. The problem that follows is that the quality teaching system is decreasing. The problem is that this dhamma education department still has issues in teaching and learning, namely the emphasis on numbers or the number of entrance examinations and passers-by. It does not focus on the quality of education at all. Therefore, it is not acceptable in the eyes of educators. However, the number of candidate statistics may be increasing. Still, the number of passers-by statistics is steadily decreasing. Always, only some of the primary schools in the central area have been organized as activities such as Wat Pak Nam, Wat Moli Lokayaram, Wat Chanasongkhram, Wat Dhammakaya, Wat Takfa, Nakhon Sawan, Wat Chongkham. Lampang, Wat Khan Ngeon Chumphon, Wat Hatyaisitaram, Songkhla Only Most provincial students continue to experience a decline in the condition of passers. This remains a significant problem in the management of education for regional schools in the region and has been realized for solving problems in the long run. Otherwise, we will be unable to manage education in the Pali department of the Thai Sangha is only left to the legendary studies of Thai Sangha.

VI. CONCLUSION

From the point mentioned above, even if we develop Buddhism, which is an institution of society, we will not be able to do so. In particular, the community is located along the Phanom Dong Rung mountain in Thailand. The people of Theravada Buddhism mostly revere Cambodia and Laos. The authors say that to see the sustainability of monk studies management in the Phanom Mountain particles. It should be integrated according to the principles. "Bowon" is the "village, temple, government agency or school" of the three countries in almost the Phanom Dong Rak mountain particles. It is used as formwork or a bridge to connect people to reach the same Buddhist dhamma. This is to make peace in the Phanom Dong Rak mountain region. In differences in subdivisions and borders and Khao Phanom Dong Rak, however, the other people do not exist because the people of the region are Buddhists.

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Development of the Competency of Sangha Administrators in Surin Province

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***Abstract*—** *The purposes of this research were 1) to study the characteristics of competency of Sangha administrators in Surin province, 2) to study the competency and competency indicators of Sangha administrators in Surin province, and 3) to study the competency development and competency indicators of Sangha administrators in Surin province. This research is qualitative. Documentary study and in-depth interview with 10 key informants that's a good prototype and selected purport sampling, were used. Qualitative information by classifying and organizing information. The data were analyzed by using descriptive. The results had found that: - the characteristics of competency of Sangha administrators in Surin province found that administration aspect is meetings, work planning, project preparation, etc. The religious studies aspect is an educational organization, supporting the management of education inside and outside the temple. Study welfare's aspect is learning centers, which are set up within the temple and encouraging education for children etc. The Buddhist propagational aspect is moral and ethical training for a person and organized important Buddhist day activities etc. The public welfare aspect is the construction of buildings, lodgings for monks, etc. Finally, the public welfare aspect is assistance for the victims, Financial support for the construction of hospitals and priest hospital buildings, etc. 2) The competency of Sangha administrators consists of 9 competencies are:- 1) general competency consisted of 3 three competencies namely: (1) morality, (2) good communication, and (3) being a good model manner, 2) self-competency consisted of 3 sub-competencies are (1) teamwork, (2) helping others, and (3) trusting, and in each sub-competency is consisted of 3 three components are knowledge, skill, and attitude. 3) The Development of performance and performance indicators of sangha in Surin Province The performance of the sangha in Surin province has been developed appropriately. Includes (1) General performance, there are three indicators: (1) morality, ethics, (2) good communication, and (3) a good example, (2) self-performance, 3 indicators, (1) self-leadership, (2) intelligence development, and (3) Performance with others 3 indicators: (1) teamwork, (2) helping others, (3) trustworthy.*

Index Terms— *Development, Sangha Administrators, Surin Province*

I. INTRODUCTION

The best way to develop human resources is education for the reason that education is sustainable development. Sustainable development brings human beings to the fore, and investing for humans to be the setting of development is to invest in education. [1] Therefore, according to Buddhist principles, education can develop people in all four areas: 1) *Kaya-bhavana* (physical development) has the skills to use tools. Modern equipment and technologies along with the handicrafts, 2) *Sila-bhavana* (social development): adapting to others is a face-to-face in society, knowing good management and morality, ethics according to the Buddhist ethics, 3) *Citta-bhavana* (mental development) does not insult itself, does not insult the locality, has good mental health, is well-being, prays that this verse is comparable to health education focused on physical well-being and well-being and 4*) Panya-bhavana* (intellectual development) has freedom of thought, i.e., thinking according to Yonisomanasikara principles, being able to seek knowledge on its own at all times. Knowledgeable enough to deal with suffering, called life problem-solving skills, pray that this verse is comparable to Buddhist studies. [2]

Monks are human resources in society that play a role in mental development as part of people's development by using the principle of Tri-sikkha: morality, meditation,

wisdom by training people to meditate at the village sub-district level. On this point, it is for the people to adhere to Buddhism. There are useful social values and norms which affect economic and social development further. As the philosophy is, "to develop, to start, to develop, to develop, to start with the mind, to develop, to develop, to start with us first." [3] The life of a monk has always had a duty and bond with society. There is a principle of teaching in Buddhism as a principle of practice, which is both fair and disciplined, which requires that the monk's life be related and bound to society. This monk's social life's basics are divided into two parts: the relationship within the monks' society and the relationship in the collective society. [4] Monks play a role in improving quality of life by relying on purity, sacrifice, and Intelligence to help guide people to behave well in their livelihoods. In terms of society, it is recommended, preached, and created consciousness. Lead the way in physical and psychological distress. Teach humans to be confident in human potential as trained to develop the utmost vision of development. Based on training studies. [5]

An executive's monks or leaders must be educated because executives must create a person's mind to be regular, competent, responsible, creative, and encouraging. Thus, they have to be training in the field of Sila (morality), Samadhi (concentration), Panya (wisdom) when a monk has morality, concentration, wisdom. He is going to work effectively. Therefore, the work will be able to achieve the intended goals. [6] However, the problems arising from monks' and novices' behavior, in short, are caused by two factors, which from the inconsonance of inconclusive conduct an unprecedented knowledge, since they have been studied in both worldly studies and religious studies at levels. These are not as good as they should be.

Most monks and novices are less educated, do not understand Buddhism deeply, and do not understand the current social conditions. Thus, they cannot convey to the people and cannot lead spirits in the society. The relationship between the monks and the people is mostly a ritual; having a monk who understands Buddhism deeply and understands life and society today, and can communicate is very important to Thailand and the world. It is appropriate for the government and the Sangha to pay much attention to this matter, and the monks should learn in the three main areas: 1). Learn Buddhist Dhamma in-depth, both implicitly and practically. 2) Learn the current society to know the current society for the sake of teaching. 3) To be a part of Learn how to communicate to people's interests, catch people's hearts, and affect behavioral changes, also known as miracle anus. An includes the use of modern communicators. [7]

Humans can improve their performance under the iceberg theory of Spencer [8], which had mentioned that

1. The motive is what the monks honestly think or need, which will be the driving force in determining the direction or choice of the monks to express their behavior or respond to the goals of developing the monks.
2. The trait is a physical feature of monks and includes the monk's response to information or development conditions.
3. Knowledge is the scope of information or specific content that a particular monk has studied following the principles of the Threefold Training.
4. Skill is the ability to perform both physical and physical tasks.

The use of monks' thoughts and minds to the degree that can be thought, analyzed, used knowledge, determining reasons or planning in the management of monk organizations.

From the concept of human resource development of iceberg theory that can find the capacity of human resources deeply, it can be integrated to investigate monks' performance in Surin province to require strong and managed monk organizations to develop human resources into potential individuals. It is a significant problem for monks in Surin province to learn and find the process of managing human resource development. Therefore, the researchers are interested in studying the development of the Sangha monks' performance in Surin province.

II. OBJECTIVES OF RESEARCH

1. To study the characteristics of the Competency of Sangha administrators in Surin province.
2. To study the competency and competency indicators of Sangha administrators in Surin province.
3. To study the competency development and competency indicators of Sangha administrators in Surin province.

III. RESEARCH METHODOLOGY

This research is qualitative research by researching documents and in-depth interviews with groups of key informants, determining the method of study in the following order:

Step 1: Study the performance characteristics of the Sangha by studying the documents, concepts, competency-based approach to the mission of the Sangha administrator, and used contents analysis.

Step 2: Sangha administrator in Surin province's mission performance analysis consists of 1) content analysis, sangha administrator's mission performance from

documents, books, regulations, laws, articles, 2 Synthesize content created as an interview about sangha administrator's mission from a group of key informants who are good role models,3) Processing from analysis, synthesis, interviews. In conclusion, the mission of Sangha administrator in aspects.

Step 3: Study, analyze, synthesize the scope of competency framework of Sangha administrator according to the scope of operation according to the Sangha business consists of 1) Content analysis of sangha administrator's performance from documents, books, regulations, laws, articles, 2) Synthesize the content created as an interview with the performance of the sangha business from the group of key informants.,) Processed from analysis, synthesis, interview, a summary of the Sangha administrator in Surin province.

Step 4: Analyzing the principles and methods of linking the operation of the mission of the Sangha to its performance. 1) analyze and link the operation of the Sangha's business obligations with performance, 2) Synthesis & Summary the scope of competency framework of Sangha administrator according to the mission of performance of Sangha administrator.

Step 5: Defining elements and Competencies of the implementation of the Sangha administration by analyzing the principles of competency elements to determine competency name, the definition of Competency, and critical elements of the principles include knowledge, skill, and attitude. 2) Determining the behaviors that indicate performance in all three areas: Knowledge, skill, and attitude according to the principles of writing competency statements and defining learning behaviors to improve performance according to the learning principles of Bloom's Taxonomy.

IV. RESULTS

A. The features of the Competency of Sangha administrators in Surin province had been found that Governance: Features are meetings. Consultation Job planning, project preparation, note booking, registration, welfare, organizing Coexistence, and training practices. The religious studies feature. The management of education in both the Pali Studies section and the Dhamma studies section inside the temple.

There are organizing the Dhamma Studies examination and the Pali studies examination. Establishment of Dhamma school/ the charity school of Buddhism in the temple. Provide funding for novices and monks. Leashing novices and monks to study in various ways promotes. They were supporting the management of in-temple and non-temple education, such as further study, scholarships. Being a director of educational institutions for schools in the community, and be a Pali teacher or a Dhamma teacher in the school and provide materials equipment for studying Dhamma studies, Pali, and general academic studies.

Education Welfare aspect: some features establish the center of the Buddhist Sunday school within the temple by establishing a children's center before the temple's threshold. Organize activities, projects, and morality training within the temple. They are supporting education for children and young people. Providing the scholarships for offering to novice monks and the general public, and support educational equipment to schools and communities. Provide religious, academic services. Send novice monks to teach morals in schools or school offices with needs, and organize summer novice training programs.

In the propagational aspect, there are characteristics of Competency: moral and ethical training for teachers, students in educational institutions and agencies, organizing important Buddhist day activities, training, meditation training for the elderly and the general public on Monk's Day, or important Buddhist day. Dispatch the speakers to Dhamma training in various departments, projects, or places, organizing a Buddhist Sunday school for students and youth at all levels, and arrange Dhamma lighting on the Buddhist day. Providing the radio Dhamma talk and Television based on the show has been enchanting.

Utility aspect: Performance features are: Construction on building sites for monk accommodation, building sites for people who come to merit, bathrooms, toilets, or other sculptures suitable to tattoo worship. Construction of monks' venues such as Uposatha Hall, Meditation Hall, etc. Conduct environmental arrangements suitable for meditation. It also provides religious learning resources to the public, such as herbal gardens. It is also a Buddhist garden. The preparation of signs inside the temple, such as the places within temples, temple layouts, Buddhist signs, or teachings as a source of the Dhamma learning for the people and monks. Construction on buildings, places for monk accommodation, building sites for people who come to merit. The room was clean toilets or other sculptures suitable for worship. A place where monks' activities are organized, such as the Ubosatha hall. Meditation hall, etc. Public welfare: Performance features include relief for victims, hospital building funding. A path monk building housing relief for long-distance travelers suffered, building a bathroom, toilets, drinking water, water supplies to the general public, funding, funding Purchasing supplies to government agencies such as hospitals, schools, etc**.** Provide dried nutrient rice to the victims. Immigrants Established a pre-1990s society for the public interest, provided scholarships to novice monks who learned Dhamma-Bali relief for the uncompressed, and organized the Poor Children's Relief Fund, the Pre-Criterion Child Development Fund, and various funds.

B. Study performance and performance indicators of the Sangha administrators in Surin province. The performance synthesis results and performance indicators of the Sangha administrators according to the missions of Buddhist Sangha in six aspects as follow:

a. Governance aspect:

The competencies of governance aspect consist of (1) leadership, (2) communication skills, (3) counseling skills, (4) project Preparation, (5) Presentation Skills, (6) Understanding others and caring for others, (77 problem-solving guidance skills, (8) training skills. The indicators of competencies in the governance aspect consist of (1) An ability to use power for a person to follow, (2) Can lead meetings smoothly, (3) use communication appropriately, (4) an ability to provide the consultation until the patient discovers the problem on their own, (5) using the information for the right decisions, (6) subordinates receive appropriate welfare benefits, (7) an able for helping for solving problems, and (8) use a variety of training techniques for personnel.

b. Religious Aspect:

The competencies of religious aspect consist of (1) educational leadership, (2) being a good role model, (3) good motivation, (4) having morals and ethics, (5) achievements of work, (6) adherence to principles, and (7) Knowledge of the essence of mission. The indicators of competencies in the religious aspect consist of (1) an ability to conduct the Dhamma studies, Pali studies, and general studies, (2) be a good sample of education for new novices and monks, (3) be a reliable academic leader in the practice of the holy spirit, (4) there are scholarships, foundations or educational support agencies of novices and monks, (5) develop themself for to be good teachers, (6) and able to serve religious studies both inside and outside the temple, and (7) the temple has a service facilities buildings for the Dhamma studies, and Pali Studies as well as general studies.

c. Public Educational Aspect:

The competencies in the public educational aspect consist of (1) Leadership, (2) Achievements of work, (3) Being intellectual, (4) Self Responsibility, (5) Being a good role model, (6) Help Others, and (7) Good communication. The indications of Competency in the public education aspect are consist of (1) an ability to complete project activities, (2) Knowledge and ability to manage well, (3) There is a fund for welfare education, (4) a network of personnel cooperation that can be providing services to the communities, (5) providing a supporting that actual needs.

d. Propagation Aspect**:**

The competencies in propagation aspect consist of (1) spiritual leadership, (2) good communication, (3) Information technology innovation Skills, (4) expertise in science, (5) achievements of work, and (6) good knowledge transfer skills. The indications of the Competency in propagation aspect are consist of (1) to lead the dissemination of principles to the relevant authorities, (2) service zones are trained in morality, ethics, (3) an ability to provide advice to children and young people, (4) Express your creation, relate to others in a friendly manner and, (5) extreme endeavor according to established principles and methods.

e. Public Utilities Aspect:

The competencies of the public utility aspect consist of (1) environmental knowledge, (2) teamwork, (3) treasure management, (4) accuracy, (5) knowledge in essentials of subjects, and (6) work analysis. The indicators of the competencies of public utility aspects consist of (1) explain the meaning of the environment, (2) expressing relationships with others in a friendly manner, (3) buildings or buildings built are standardized according to construction principles, and (4) The priority of the tasks is appropriate.

g. Public Welfare:

Public welfare performance consists of (1) Leadership, (2) Inspiration (3) Teamwork. Determine the indicators of public welfare performance as (1) Behaviour in bringing yourself to the relief of another person appropriately., (2) Collaborate with others, agencies honorably, (3) provide the support that meets your real needs., and (4) Be a good role model in helping others empirically.

C. Performance development and performance indicators of the Sangha administrator. There are three competencies and nine indicators: as follow:

Group I. General Competency: there are three competencies, including:

1. Moral and Ethical: there are three elements: 1) Knowledge is the right rules and disciplines under the principles and practices under Buddhist principles and disciplines. 2) skill is to bring the Buddha-dhamma principle and the Vinaya (discipline) to work and advise on the practice, according to the Buddha-dhamma principle and Vinaya (discipline) in the right way, 3) attitude is to show personality, be respectful, trust in morality, ethics, strive to promote. The Buddha-dhamma principle and Vinaya (discipline) are good examples of using the Buddha-dhamma principle and Vinaya (discipline) to govern.

2. Good Communication: there are three elements: 1) Knowledge is to accurately convey sound communication principles and improve self-communication skills, 2) Skill in communicating knowledge and skills in a friendly manner and using the right and the multitude of communication skills with colleagues, 3) attitude is

expressing both verbal and written communication behaviors that are appropriate for a good role model and have good emotional maturity in communication and dissemination—promoting the work of The Holy Spirit to the community and society.

3. There are three elements of a good role model 1) Knowledge is Identify or guide an excellent role model and behave in a commendable role and situation, 2) skill is Behave according to Buddhist principles and disciplines in an attractive, friendly manner and motivate others to behave as role models according to the right principles and guidelines, and 3) Attitude is a behavior that creates warmth, safety, friendship with service providers and is empirically recognized in behaving as a role model in governance and other aspects.

Group 2. Individual Competency: here are three sub-performances including

1. there are three elements of self-leadership (1) Knowledge is clearly explaining the characteristics of self-leadership and identifying appropriate ways to manage/develop self-leadership, (2) skill is the recommendation for teaching helping and advising learners to research as a result, and (3) attitude can reach out to the mind and be friendly with others, behave like an emotional maturity model of the lead in governance and organize activities to promote Buddhism.

2. There are two elements of emotional Intelligence: (1) Knowledge is to identify the elements of the intellect and use the wisdom to perform their tasks commendably, (2) Skill is knowing the methods to practice. An attractive way to motivate workers and provide a wide range of advice to work with., (3) Attitude is to behave appropriately for the position and role. Apply wisdom leadership principles to govern and express leadership—an intellectual in all aspects of the work.

3.There are three elements of self-personality development: (1) Knowledge is to explain the meaning of a person with a good personality and identify good and bad personality behavior in work, (2) skill is practiced to have a good personality, cuteness and motivation for others to improve personality development, (3) attitude is to express respectful personality, diligence, patience, conduct temple personality training, and publish guidelines for developing the extraordinary personality of leaders.

Group 3. the group of Working with others Competency: There are consists of 3 sub-performances:

1) There are three elements of working in teams: (1) Knowledge, (2) skill is to express the relationship with others in a friendly manner, provide advice, advise the team rationally. Acceptance, support, empowerment, and value others and appreciate the team, achievements on occasion.

2) There are three elements of helping others: (1) Knowledge is to analyze other people's needs, (2) feelings and words, and (3) providing the support services that meet the actual needs of the service recipients**.**

3) There are two elements in credibility: (1) Knowledge is to identify the elements of a reliable person and (2) play the role of being well-rounded according to the book of discipline.

V. CONCLUSION AND DISCUSSION

There are three Competencies of Sangha Administrators in Surin Province are 1. The company's General Competency consists of morality, ethics, good communication, good example, 2. Self-performance consists of self-leadership, 3. Performance with others consists of: The results are consistent with Matthews and Whelan's mention of performance elements including [9] 1) Leadership performance, 2) planning and organizational performance, 3) management performance, 4) assignment performance, 5) coordinated performance, 6) Inservice and control performance, 7) support performance, 8) consulting performance, 9) teaching and training performance, and 10) Evaluation performance is consistent with the research of Suebwong Kalawong which the results showed that the strategic leadership performance of the Sub-District Administrative Organization consisted of five sub-performance areas: 1) strategic thinking performance, 2) service performance, 3) collective building performance, 4) communication performance, and 5) personnel development performance [10] that related to the research of Sophaporn Klamsakul, which researched on the development of the performance of Rajabhat University professors. The results showed that Rajabhat University lecturers' required performance has four areas: 1) teaching performance, 2) teacher competency, 3) research and academic services performance, and 4) performance in the preservation of arts and culture. [11]

VI. ACKNOWLEDGMENT

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VII.SUGGESTION

1. Governance: It should encourage the Sangha to develop leadership attributes, develop communication skills in counseling, information presentation skills, understanding others, understanding others, problem-solving guidance skills, and training skills.

2. Religious Studies: It should encourage Sangha to develop educational leadership, to be a good role model in education, motivation, inspiration, adherence to morality and ethics. Aiming for the achievement of the work adheres to the principles of knowledge in the principles.

3. Education Welfare: It should encourage the monks to develop leadership, aim for the achievement of the work as an intellectual, self-responsible person, be a role model, to help others communicate well with the community.

4. Mission: It should encourage the Sangha. Have spiritual leadership, good communication. He has the skills to use innovative information technology, expertise in the science of focusing on work achievement, and knowledge transfer skills.

5. Public Utilities: It should encourage the Sangha to have environmental knowledge. Teamwork, religious management, accuracy is well-rounded in core subjects and job analysis.

6. Public Welfare: It should encourage the Sangha to develop leadership, inspire. Community, society, understanding of others. Helping others and teamwork.

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Buddhism and Health Enhancement under the Arts and Culture Charter in Khwao Sinarin District, Surin Province

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Abstract— The purposes of this research were 1) to study the context and potential of self-management in the local social and health of the community in Khwao Sinarin district, Surin province, 2) to study the process of creating a community charter in arts and culture for health in Khwao Sinarin district, Surin province and 3) to present a community charter for the health of the community according to the Buddhist principle in Khwao Sinarin district, Surin province. Action research and quantitative research were used and research tools were interview form and questionnaires. Data were collected from the in-depth interview, focus group discussion. Qualitative data from 13 key informants were analyzed by using content analysis whereas quantitative data collected from 327 samples were analyzed by using descriptive statistics. Results indicated that the villagers in this district are mostly females, 60 years old, average income 5,001-10,000 Baht, agricultural career, self-management potential in local arts and culture of community in this district found that overall is very high. The process of creating a community statute on the arts and culture for health along with the condition of welfare in this district has 7 steps: the first step, holding a local forum, step 2 common responsibility, step 3 establish community committee, step 4 agreement rules of coexistence, step 5 meeting to revise community statute draft, step 6 enactment of the statute, and 7 steps of the community's arts and culture is published and distributed to the villagers for the creation of and to present a community charter for the health of the community according to the Buddha-dhamma in this district from the co-operation of the public sector, civil society. The establishment of a community committee, drafting the community statute by bringing the condition of welfare the unity of the villagers in the community the bases of sympathy justice for mutual relief, and the principle of 4 Bhavana to improve the quality of life of people in the community, and the use of the art and culture's charter for the health of the community in the local area.

Index Terms- *Buddhism, Health Enhancement, Art, Culture, Charter, Sinarin District, Surin Province*

I. INTRODUCTION

The situation of social change, technological advancements, and climate disasters is because natural disasters are increasing. In future development, the challenge of Thailand is to lead the country to "the country is stable, prosperous, sustainable, a developed country according to the philosophy of sufficiency economy. The development direction is in the 20-year National Strategy (2017–2036) to create opportunities for equality and social equality by using the arts and cultures that are the existing capital of society to create stable social value. E-equality and fairness Create reconciliation and harmony, create strong communities, families are warm. Life is stable and having a stable job, and income is enough to live. It is based on local communities and sets out the right approach to allowing local communities to manage

The local community is the foundation of a country that is an important source of resources and environment that contributes to careers, work sources, and lifestyles that are inherited as cultures, incubators, tying hundreds of people with a wide range of ties, from kinship to interconnected careers and religious beliefs to society. If all local communities can't handle their problems, they'll be able to

get the help the state will offer. Lack of power to learn How can a nation develop into stability, prosperity, and sustainability. Therefore, self-management of the community has the potential to learn. Adapting and properly managing their important issues is critical to strengthening communities to cope with change. Both internal and externally derived.

Combining community power for self-management with an important tool is the "Community Constitution", a process that reflects the democratic authority of local communities that do not view the state as central. Nevertheless, it is due to its management with the capital of each community, such as historical capital. Culture, belief, knowledge, wisdom, there are many ecosystems and there are many differences. Bring up rules, rules, agreements on relationship management. The policy of joint development by the local community is defined by the so-called "Constitution", which is the direct operation of the rights and authorities of the community. According to the study, there are seven similar processes in the process of establishing community-level constitutions: Concepts and methods of establishing the constitution of sample areas Procedures for appointing a working group The process of organizing a forum for public hearings to draft community constitutions Procedures for drafting the Constitution Procedures for hearing public opinion for the improvement of the draft constitution The process of improving the constitution until it is recognized by the people and the process of enacting the Constitution. Although local communities in many areas have shown that they have the potential to manage themselves well and found that there are 43 community-level constitutions in Thailand in 15 provinces, almost all of them are health justice. [1]

The area of Surin province is one of the border provinces of the Lower Northeast or "South I-san", where the public sector has been developed and the concept has been adapted. Due to its historical, civilized, and cultural history of various nations, especially ancient Ghem culture, which has been incorporated and blended into Isaan Thai culture, it is unique and distinctive. "Surin is the Land of Gigantic Elephant" to achieve sustainable self-reliance and dependence on the community. It uses the community's shared learning process and uses funds within existing communities or social capital as a tool to drive activities and connect local parties to support local community leaders as the backbone of development. under "Local Community Rehabilitation Strategy" It is based on community organizations to be involved in tackling their poverty. To establish status for public organizations in coordination with other government-development agencies on the behalf of "Surin Community Organization Procession", and it has continued to evolve to date, which is the era of community planning and integrating plans at all levels. The budget has been approved and descended into local organizations in the province, integrating and linking all development parties, including government, locality, private sectors, community organizations, and citizens. Later, the provincial development agenda was set under the concept of guidelines and plans for improving the quality of life of local communities in Surin province (2015-2025). "Sa Ren Nou Jai Main Soi" for moving towards well-being. In 2025, the creating a change in the local community for Surin people to live happily and formulate a strategy. "Civic Power Surin Manages Himself to Live Well, Happy, Occupied, Sleep Warm, Capital with Reduced Debt." The important mission is to support the Surin Community Organization procession to be self-managed with local authorities and all development agencies driving the development of Surin Province.

However, studies have shown that in Surin province, community constitutions are created that are about community health, such as The Phai Health Constitution No. 1, 2010, of Phai Sub-district, Rattanaburi District, Surin Province. [2] For the Bua Khok Community Health Constitution, the first pilot was announced in Tha Tum District, Surin Province. On May 22, 2017, the Health Constitution is a tool that enhances the development of public health systems and is an important tool to help guide the preparation of a practical community health plan based on the participation of all parties. Also, the Health Constitution is like "The Book of Life" that can help people have the opportunity to live their lives. "U Yen Pen Sukh-Stay in Peaceful and Happiness." It's all over the place. [3] As similar to Ba sub-district, Ta Thum district Surin province. This is traditionally local with abundant natural resources and the environment. Nowadays, the changing lifestyle of vegetables and herbs for household consumption has changed with the current external demands. Farmers grow medicinal plants according to the needs of merchants. Then, it buys ready-made food, as well as vegetable crops, from the external market. The origin of the production and chemical production is unknown. As a result, there are more

patients with the chronic non-contagious disease (NCD) such as diabetes, hypertension, coronary artery disease, which is both elderly and in middle age as well. The District Council is aware of the problem and the situation, with a common consensus that chemical control Toxic substances in the farmer's sector require community rules or sub-district constitutions and other issues to balance mutual utilization from the natural resources base. To create participation from all sectors in the preparation of the Sub-District Constitution until it can be declared. [4] The important goals of Surin province are to restore wisdom and local communities to live well. Happy by 2025 in line with the 20-year national strategy by developing local cultural arts potential and prominence to create opportunities, equality, and social equality. Therefore, the researchers were interested to study ways to create community constitutions in restoring wisdom and local communities to build the foundation of living together to live well. For the strength of the community in Surin province and to achieve the strategic goals set out.

Therefore, the researchers were interested in studying "Buddhism and health enhancement under the arts and culture charter in Khao Sinarin district, Surin Province" by studying the local cultural context and community potential to manage themselves to strengthen the community. The system and mechanisms of operation as well as past operations in creating community constitutions and studying the creation of arts and culture constitutions for the well-being of the community with Buddhist principles in Khao Sinarin district, Surin Province.

II. RESEARCH OBJECTIVES

The purposes of this research were:

1) to study the context and potential of self-management in the local social and health of the community in Khwao Sinarin district, Surin province.

2) to study the process of creating a community charter in arts and culture for health in Khwao Sinarin district, Surin province.

3) to present a community charter for the health of the community according to the Buddhist principle in Khwao Sinarin district, Surin province.

III. RESEARCH METHODOLOGY

Mixed methods research was used for research design. Action research and quantitative research were used and research tools were interview form and questionnaires. Data were collected from the in-depth interview, focus group discussion. Qualitative data from 13 key informants were analyzed by using content analysis whereas quantitative data collected from 327 samples were analyzed by using descriptive statistics. The statistics used include frequency, percentage, average, and standard deviation based on the issues defined in the research objectives. A tool used in quantitative research is a questionnaire about the potential for self-management in the arts, culture, well-being of the local area in five areas: 1) cultural life, 2) cultural language, 3) cultural religion, 4) art and aesthetics, and 5) social, economic and political from a sample of 327 household representatives living in Khwao Sinarin district, Surin Province. Qualitative research by tools based on in-depth interviews, local forums, and group discussions from those involved in the creation of the cultural and cultural constitution for the well-being of the Buddhist community in the use of specific methods of choice, including representatives of local administrative organizations and representatives of the Khwao Sinarin district, representatives of 77 community leaders. Qualitative data analysis by inductive summary.

IV. RESEARCH RESULTS

1. Context and potential for self-management of local cultural well-being of communities in Khwao Sinrin District, Surin Province

General information context of the people living in the area in Khwao Sinarin district, Surin Province. The data was compiled from 327 respondents found that in Khwao Sinarin district. The majority of the 185 females accounted for 56.6%, 104 adults aged 60 and over-represented 31.8%, 139 elementary school educators accounted for 42.5%, average monthly income of 5,001 - 10,000 baht, 99% 30.3%, 138 percent of agricultural occupations. The potential for self-management of the local sanitary arts and culture of the community in Khwao Sinarin district, Surin Province found that it is included in a large scale (x = 2.65, S.D. =.102). Considering the sides, sorted in descending order, found that the most average aspects are social. Economy and Politics (x = 2.88, S.D. = .417), second only to religion (x = 2.80, S.D. = 1.99), language (x = 2.71, S.D. =.220), cultural Life (x=2.55, S.D. = .319), and the fewest are artistic and aesthetics (x = 2.30, S.D. = .419).

2. The process of creating a community constitution in arts and culture for well-being has adopted the principles. Aarihaniya-dhamma (condition of welfare) is applied with 7 important steps as follows: First step: Meeting the villagers' forum, Step 2: Shared Responsibility, Step 3: Establish a Community Committee, Step 4: Draft community constitution or agreement Coexistence Rules, Step 5: Meeting to Improve The Amendment of the Community Constitution Draft, Step 6:Announcement of the Arts and Culture Constitution for The Well-being of the Community, and Step 7: Publish the booklet and distribute it to the villagers.

3. Creating and presenting community constitutions for the well-being of the community according to Buddhist principles in Khwao Sinrin District, Surin province from the cooperation of representatives in each sector. Led by local administrative organizations, head of sub-district, head of the village, religious leaders, the 10 communities leaders, the elderly Club, club of Or. Sor. Mor., and the various group of networks. On this connection. The process of creating a community constitution for the culture and culture for well-being according to the Aarihaniya-dhamma (condition of welfare) in the Khwao Sinarin district, Surin Province, found that creating community constitutions for the well-being of the community in the Khwao Sinarin district, Surin Province, using kinship relationships to cooperate in the drafting of community constitutions. Following the principle of Sanghavatthudhamma (social service) for peaceful coexistence, and the principle of 4 Bhavana (development). It is a way to improve the quality of life of people in the community. The established committee has drafted a summary of the contents, compiled it into a system. Bringing draft community rules to public service in every village The Board of Directors signed and witnessed, under the Arts and Culture Constitution for the well-being of the community, and then experts adopted the draft constitution to carry out the classification under the intent of the villagers and under good laws and moral principles, and to proclaim the fairness of arts and culture for the well-being of the community. In the Khwao Sinarin district to be used together. The community health arts and culture constitution in the Khwao Sinarin district was prepared in 1st B.E. 2562 (2019) under the National Health Act B.E. 2550 (2007) section 5, Article 46, Article 47, and Article 48, which governs the National Health System Constitution as a tool and mechanism that provides opportunities for people to join with government agencies and the private sector. Public Health Care Under the potential of the resource appropriately, there is consistency, the context of the area, and preparation. On this point "The community of health arts and culture constitution No. 1, 2019" under the philosophy and concept as mention that "cultures are still persistence, communities know love unity, villagers care and be generous to each other, maintain and bond with traditional traditions, promote good health, be safe in life and property, live to know the natural way and environment, develop people to create jobs without debt.". It is divided into 11 sections: section 1:philosophy and concepts of Khwao Sinarin district, section: 2 culture persistence, section 3: community knows love unity, section 4: villagers care and be kind to each other, section 5: traditional culture, section 6: good health-promoting, section 7: Safety in life and property, section 8: consumption a natural and environmental way, Section 9: develops occupation and creators debt-free, section: 10 committees of the community constitution and advisory board, and chapter 11 interim chapter.

V. DISCUSSION

The findings of the study, there are important points that researchers can use to discuss the results in detail, are as follow:

a. The potential for self-management of the local sanitary arts and culture of the community in the Khwao Sinarin district, Surin Province.

The potential for self-management of the local sanitary arts and culture of the community in Khwao Sinarin district in Khwao Sinarin district, Surin province. It was found that the overall picture is very high, considering the key roles in order as follows:

1.The potential for self-management of the local sanitary arts and culture of the community in the Khwao Sinarin district, Surin province has the potential to manage itself in social aspects. The economy and politics are in the most order. This is because most community residents protect and maintain assets that are in the public interest of the community and have contributed to local politics. Also, we have helped the community's business willingly and respectfully and have joined together to create jobs and careers for the community in line with the research of Wallabhach Sukhsawasdi [5] found that the trust in political officials and trust in individuals, one of the elements of social capital, has a very high influence in strengthening participation in the preparation of self-managed constitutions.

2. The potential for self-management of the local health arts and culture of the community in Khwao Sinarin district, Surin province has the potential to manage itself in the cultural field. This is because most people in the community like to make merit or give food or educate others. Responsible for the community according to its roles and behave under the rules. Regulations of groups or communities that are always defined. Besides, good-hearted people recommend useful things to encourage co-operation within the community, as well as to continue the traditional religious traditions by participating in local merit-making activities such as making merit in the village. (Chanting at Khwao Sinarin) complies

with Ou-aue Singhkham and Nonglek Khunvaradisai[6] studies have shown that the process of creating holistic well-being in the Buddhist way makes people healthier and have a good heart. It has sacrifices, generosity, a strong temperament, and creates the power to help others who suffer to be healthy and to improve the well-being of society. Phra Soontharakittikun [7] Studies have shown that Buddhist concepts discuss three holistic living elements called three-training, namely (1) development in relations with the environment, both physical and social environments. Sila (Morality), (2) develops mental and health into a good, strong, happy mind with charitable and conducive intellectual use. In short, Samadhi (Concentration), and (3) develops the Panya (wisdom) aspect, in which this lifestyle is an organization, including the three areas that must be constantly related and connected.

3. The potential for self-management of the local sanitary arts and culture of the community in Khwao Sinarin district in Khwao Sinarin district, Surin province. The potential for cultural self-management language is second in order this is because of the villagers in the community pride themselves on communicating in tribute or Khmer and communicating Khmer in the household and within the community. This includes speaking, listening to Khmer or tribute languages in line with the concept of Bumrung Boonraksa. [8] which had said that culture is the capital of the community, something that reflects the way of life and things that people in the community have created and inherited. And this history has influenced people at the lower levels of all societies, whether peasants or workers. Because lower-level citizens have a homogeneous history in the whole society, and in link with the concept of Kanchana Kaewthep [9] that the language is a crystallized source of the phenomenon and social relationships. The wording that appears in community cultures will reach the "value system" and the social relations system.

4. The potential for self-management of local cultural well-being in Khwao Sinarin district, Surin province. The potential for self-management on the cultural life side is second to none. This is because the villagers in the community have traditional wisdom, taking into account the coolness that has the characteristics of "prosperity". Eating foods that focus on the use of local vegetables that can be found in the community when in times of illness has brought the properties of folk herbs to treat diseases. However, there are not as many colorful patterns as Surin people, which concern the concept of Dejrat Sukkam and Group [10] that said, living happily and being happy involves several factors. Existence is eaten adequately. Having a wide range of foods, good quality, free from toxins. It has an easily accessible source. There is enough food for consumption and sharing with relatives, neighbors, and merit.

5. The potential for self-management of the local sanitary arts and culture of the community in Khwao Sinarin district in Khwao Sinarin district, Surin province. Aesthetics is the least of its potential for artistic self-management and aesthetics. Joining each other in the community is a group called "Engagement", not so much as before, as well as to participate in major festivals in society such as Kantruem performance, Ram Un Re performance, Ram A Yai performance, etc. less. Attending a sacrifice ceremony to please the supernatural It organizes sacrifices, dances, and folk plays, as well as participating in annual dances or carnivals such as ordinations, etc. with fewer. This is because advances in information technology have increased individuality. As well as the popularity of traditional cultural arts, western culture has increasingly played a role in Thai society, causing locals to neglect traditional cultural arts as Seri Pongpit [11] said that the only remaining weapons culture of the community, demonstrated in many communities that today is not as weak and collapsing as many others. The strong communities that exist across the country can be strengthened because of the important factors: cultural foundations that have been restored with proper learning and development processes unleashed. Communities from the deep dominance of leading power in a society that creates new cultures, new value systems. It allows people to succumb to modern tools in capitalism and consumerism.

B. The process of creating a community constitution for cultural well-being along the Aparihaniyadhamma (welfare service) in Khwao Sinarin district in Khwao Sinarin district, Surin province.

The process of creating a community constitution for the health of arts and culture along with the prime in the Khwao Sinarin district in Khwao Sinarin district, Surin province. There are seven important steps.

First step: Villagers Forum Meeting- all parties must participate in the joint understanding and search for people who have volunteered in the area to find out the needs of the villagers and to find problems in the community. At the same time, stakeholders are required to attend the meeting. Using the forum for communication to recognize and understand issues/problems, and to help push forward conclusions as a way to resolve the issue by establishing a common community constitution which the concern with Son Rupsong [12] had said that the constitution is a constitutional authority that empowers people to self-manage in decentralization of power to local administrative organizations and increases the participation of people and communities with the honor and the right of citizens to exercise the powers outlined in this ultimate law to manage themselves to address various community issues.

Step 2: Responsibility Sharing - By defining a shared role to explore the problems and needs of the

community. Explore basic community information such as resources, environment, lifestyle, culture, plan for solutions to provide peace and people with good quality of life, and define activities together with consciousness of responsibility of people in the community following Son Rupsong [13] That said, the concept of the process is for the public. poor people. Rich people of all professions of all ages exercise their right to share their needs, leading to policeman and community development planning in all areas that meet the needs and solve problems of fair communities, as well as jointly implement the plan and monitor local collaboration. Local and community.

Step 3: Form a Community Committee- from recognized individuals to qualifications, qualifications such as elders, knowers, elders must be moral and ethical individuals, leaders can find solutions to problems for the community as well. Experienced knowledge or wisdom is defined as strategically defined teams, coordinating teams, and operational teams. Cooperation across all other relevant sectors is in line with the concept of Rattanasiri Siripanichkul [14], who said that the appointment of a working group to take responsibility for the implementation of the community-level constitution process within the area.

Step 4: Draft community constitutions or agreements Rules of Coexistence: At this stage, the constitution is defined as its own "Think for yourself, write yourself, do it yourself for your community". Thus, the local traditions should be inherited forever, and setting the goals for the well-being of the villagers in the community together to maintain public interests, preserve and promote Thai identity, love, cherish, maintain to remain with the community, behave within good moral boundaries. Bring a community culture with kinship relationships that are generous to each other, and taking into account those underprivileged providing extra help and care. It is prevented from being exploited or treated unfairly to be able to live with quality. Encourage people in the community to behave healthily, treat members of the community equally, be honor and respect for mutual rights and freedoms in line with Busakorn Watthanabut. [15] There is a concept that Buddhist principles will help people to think evenly, knowledgeable, understanding, believed, and evenly idealistic. Therefore, if a person has a common opinion, the problems that arise will be out of the question, because it is because there is a disagreement between the person and the society. When there is a mismatch, there is a quarrel or hatred.

Step 5 Meeting to revise the community constitution draft: Review community constitutions must not violate laws, morals, good ethics. Categorized according to community needs in line with the concept of PhramahaSakorn Suparamethee (Dearncdhaban), [16] It is said that holistic well-being is based on the natural truths of life. Physically and mentally, it must be related to the environment. Wisdom is an important element in the relationship with the environment and conditions of the mind. Interested in all parts of patient life emphasize the individuality of the patient. The principle of human development of Buddhism is called 4 Bhavana (development).

Step 6: Announcement of the Arts and Culture Constitution for The Well-being of the Community: At this stage, the declaration of the Constitution, which must be able to solve the problem and meet the needs of the people of Kho Sinrin district comprehensively, represents the potential self-management of the community in line with the research of Wanthanang, K. [17] found that The four stages of self-reliance community knowledge management process are knowledge creation, knowledge collection, and knowledge collection. Knowledge sharing and application of knowledge This includes knowledge of natural resources and environmental management, financial management knowledge, lifestyle knowledge, occupational knowledge, and knowledge of group welfare by social capital of self-reliant communities concern with the community of knowledge management. Social capital in the structural dimension is characterized by a pattern of social contact between individuals, groups, and communities, which provides individuals, groups, and communities with channels that provide access to information. Knowledge Experience also contributes to participation in knowledge activities. The results of the study led to the development of social capital integration with knowledge management to self-reliant communities. This explains that social capital is a resource that communities have created based on social relationships. Social capital has encouraged the knowledge management process to contribute to the pursuit of knowledge, exchange of experiences, practical learning, and transfer of lessons from operations to the analysis and synthesis of old knowledge and new knowledge suitable for the community. It leads to new knowledge that contributes to self-reliance within the community.

Step 7: Publish the book and distribute it to the villagers: This is a factor in the success of participation of all sectors as a guide to collective action. [18] Research was conducted to establish sufficient stability for the lives and coexistence of communities in a sustainable manner. The relationship of local organizational groups occurs. Creating community organization processes There is a knowledge management system, tangible wisdom, lessons to communicate to the public and other communities. People in the community are happy. Have community ownership There are rules of coexistence. There's a bond left with each other. Emphasize the regular participation of people in the community. There is a common relationship between everyone in the community. Build a system for developing

people from generation to generation. There is a new generation to inherit the will.

C. The creating and presenting community constitutions for the well-being of Buddhist communities in the Khwao Sinarin district, Surin province.

The cooperation of representatives in each sector, including the government sector. The head of the sub-district, and the head of the village, the religious leader, the community's leaders, the elderly club, Or. Sor. Mo. club and the variety of group networks by holding a meeting of the village forum to establish a community committee, draft a community constitution or agreement. Rules of coexistence. On this connection, from this participating brainstorming process through the process of using Abrihaniyadhamma (social welfare service) to create a harmonious application for the unity of the villagers in the community. The principle of Sanghavatthu (social service) for mutual relief, and the principle of 4 Bhavana (development) for improving the quality of life of people in the community which is a concept that Buddhists are very acquainted with. The established committee has drafted a summary of the content, systematically composed it, bringing draft community rules to public hearings in all villages so that many local people can participate in creating rules in their communities, and the committee has co-signed and witnessed. Under the Community health arts and culture constitution, there are 8 aspects of targeting people in the district:

1. It is a sub-district that maintains wisdom, culture, language, traditions, and a good way of life.

2. The people of the sub-district are loving, harmonious, and good participation in the community.

3. The people of the district live according to the principles of religion and philosophy of sufficiency economy.

4. Juveniles are good people, and they can well preserve the traditional traditions of the tributes and Khmer people.

5. The people in the district are healthy, physically and mentally.

6. The people of the district are safe in life and property.

7. It is a sub-district with good natural resources and an environment.

8 . People in debt-free District.

All people in the district will strictly adhere to the Community Happiness Constitution for the common well-being of the people of the district and the future of the Khwao Sinarin district with the oath that everyone will act seriously and sincerely in line with the research of Prayoon Imwat and Group. [19] The results showed that the productivity of ideas, processes, cooperation from various parties was clearly expressed as a driver of the common rules and rules of the community because the community had the belief that the community could be strengthened, it would require cooperation from people in the community together to determine the direction of development, self-management, basic public health, and cohabitation. Maintaining natural resources and the environment in the community, as well as local culture and wisdom, can therefore be considered a change for the better of the local community.

D. Determination of arts and culture constitutions for the well-being of communities in the district Khwao Sinarin district, Surin Province, by experts bringing the draft constitution to implement the classification under the will of the villagers and good laws and moral principles, and to proclaim the fairness of arts and culture for the well-being of the community in the Khwao Sinarin district to be used together. The community health arts and culture constitution in the Khwao Sinarin district was prepared under the national health Act B.E. 2550 (2007) section 5, Article 46, Article 47, and Article 48, which governs the national health system constitution, is a tool and mechanism that provides opportunities for people. Governing local sectors, including government agencies, private sectors, used as a means for public health supervision, under the appropriate potential of resources, and bring into line the context of the area with the principle of participation and self-reliance from the participation of the people in the area. Those who recognize the importance of community health culture have joined forces with all networking parties to create "The constitution of arts and culture for the Well-being of the community No. 1, B.E. 2562". On this point under the philosophy and concept that "Culture persists, communities love unity, villagers care and are kind to each other. Love and bond with the original tradition, promote good health, be safe in life and property, live to know the natural way and environment, develop people to create jobs without debt." It is divided into 11 sections: section 1:philosophy and concepts of Khwao Sinarin district, section: 2 culture persistence, section 3: community knows love unity, section 4: villagers care and be kind to each other, section 5: traditional culture, section 6: good health-promoting, section 7: Safety in life and property, section 8: consumption a natural and environmental way, Section 9: develops occupation and creators debt-free, section: 10 committees of the community constitution and advisory board, and chapter 11 interim chapter. This is because this community constitution is due to the participation of all sectors in the Khwao Sinarin district, in line with the problems and needs of the Khwao Sinarin district villagers and accordance with the research of Vallapat Suksawat [20] which has shown that social capital is associated with public political participation. It also found that trust in political officials and trust in individuals, one of the elements of social capital, had a very high influence on strengthening participation in the preparation of self-managed

constitutions and also aligned with them. Prayoon Imwat and Group [21] Research have shown that the process of solving problems is caused by three individuals: community leaders. Local government officials and people participated in the brainstorming discussions, formulated methods, and peacefully came to a common conclusion in the drive to create a "people's constitution."

VI. CONCLUSION

A. General information context of the people living in the area of Kheao District Sinrin, Surin

Transcript for general information context study of people Living in Khwao Sinarin district Khwao Sinarin district, Surin province. According to data from 327 respondents, Khwao Sinarin district villagers were found to be in the area. Most of them are female, aged 60 years and over, with primary education. Average monthly income 5,001 - 10,000 baht and agricultural occupation. B. The potential for self-management of the local sanitary arts and culture of the community in Khwao Sinarin district, Surin Province.

The potential for self-management of the local sanitary arts and culture of the community in the Khwao Sinarin district, Surin province found that the overall picture is very high, considering the key self-management potentials in order as follows:

1. The potential for self-management of the local sanitary arts and culture of the community in Khwao Sinarin district, Surin Province. Have the potential to manage themselves socially. The economy and politics are in the most order. For the reason that most community residents protect and maintain assets that are in the public interest of the community and have contributed to local politics. It also helps the community with willingness and respect and inclusion to create jobs and careers for the community.

2. The potential for self-management of the local health arts and culture of the community in Khwao Sinarin district, Surin province has the potential to manage itself in the cultural field. This is because most people in the community like to make merit or give food or educate others. Responsible for the community according to its roles and behave under the rules. Regulations of groups or communities that are always defined. Also, good-hearted people recommend useful things to encourage co-operation within the community, as well as to continue the traditional religious traditions by participating in local merit-making activities such as making merit in the village. (Chanting at Khwao Sinarin)

3. The potential for self-management of the local sanitary arts and culture of the community in Khwao Sinarin district in Khwao Sinarin district, Surin province. The potential for cultural self-management language is second in order this is because of the villagers in the community pride themselves on communicating in tribute or Khmer and communicating Khmer in the household and within the community.

4. The potential for self-management of local cultural well-being in Khwao Sinarin district, Surin province. The potential for self-management on the cultural life side is second to none. This is because the villagers in the community have traditional Thai wisdom, taking into account the coolness that has the characteristics of "prosperity". Eating foods that focus on the use of local vegetables that can be found in the community when in times of illness has brought the properties of folk herbs to treat diseases. However, there are not as many colorful patterns as Surin people.

5. The potential for self-management of the local sanitary arts and culture of the community in Khwao Sinarin district in Khwao Sinarin district, Surin province. Aesthetics is the least of its potential for artistic self-management and aesthetics. Joining each other in the community is a group called "Engagement", not so much as before, as well as to participate in major festivals in society such as Kantruem performance, Ram Un Re performance, Ram A Yai performance, etc. less.

C. The process of creating a community constitution for the culture and culture for well-being according to the Aarihaniya-dhamma (condition of welfare) in the Khwao Sinarin district, Surin Province, found that creating community constitutions for the well-being of the community in the Khwao Sinarin district, Surin Province, using kinship relationships to cooperate in the drafting of community constitutions. Following the principle of Sanghavatthudhamma (social service) for peaceful coexistence, and the principle of 4 Bhavana (development). It is a way to improve the quality of life of people in the community. The established committee has drafted a summary of the contents, compiled it into a system, bringing draft community rules to public service in every village. The board of directors signed and witnessed, under

the arts and culture constitution for the well-being of the community, and then experts adopted the draft constitution to carry out the classification under the intent of the villagers and good laws and moral principles, and to proclaim the fairness of arts and culture for the well-being of the community. In the Khwao Sinarin district to be used together. The community health arts and culture constitution in the Khwao Sinarin district was prepared in 1st B.E. 2562 (2019) under the National Health Act B.E. 2550 (2007) section 5, Article 46, Article 47, and Article 48, which governs the National Health System Constitution as a tool and mechanism that provides opportunities for people to join with government agencies and the private sector. Public Health Care Under the potential of the resource appropriately, there is consistency, the context of the area, and preparation. On this point "The community of health arts and culture constitution No. 1, 2019" under the philosophy and concept as mention that "cultures are still persistence, communities know love unity, villagers care and be generous to each other, maintain and bond with traditional traditions, promote good health, be safe in life and property, live to know the natural way and environment, develop people to create jobs without debt.". It is divided into 11 sections: section 1:philosophy and concepts of Khwao Sinarin district, section: 2 culture persistence, section 3: community knows love unity, section 4: villagers care and be kind to each other, section 5: traditional culture, section 6: good health-promoting, section 7: Safety in life and property, section 8: consumption a natural and environmental way, Section 9: develops occupation and creators debt-free, section: 10 committees of the community constitution and advisory board, and chapter 11 interim chapter.

VII. SUGGESTION

The study of the creation of the Arts and Culture Constitution for the well-being of the community with Buddhist principles in the Khwao Sinarin District, Surin Province, has the following recommendations to implement the findings:

a. Policy Recommendations

As a result of this research, there have been interesting issues regarding the community's self-management potential to join groups to create jobs and careers for the community, eating foods that focus on using local vegetables that use local herbs to treat diseases, but dressing with Hol fabrics with colorful patterns that are unique to Surin people is not as much as it seems, including participating in play/ See fewer local shows such as Kanttruem, Raum-Ayai, etc. Therefore, the researchers have policy recommendations on each of the following issues:

1) The potential for self-management of the community to join the group to create jobs and careers for the community. If the government encourages the elderly, which is considered to be social capital on knowledge of wisdom, villagers can use it to create career-building jobs such as vegetables, herbs, folk remedies, and medicines. Weaving unique local silks by promoting marketing more efficiently to generate income for the community.

2) The campaign to promote Hol fabrics with colorful patterns is unique to Surin people. Thai fabrics are an invaluable legacy of local wisdom, whose ancestors have created, inherited, and developed to date. It uses natural fiber raw materials created locally, which are important for processing into many products such as clothes, pillows, blankets, bags, etc. It can build a reputation for local tourists to appreciate and make money for the community as well. Besides, in today's Thai society, Children, youth and the majority of people behave in an increasingly foreign culture. Such behavior will deteriorate the good Thai culture. It is seen by the dress values of Thai teenagers who like to plagiarize the dress of artists, singers, performers of foreign countries. This is especially inappropriate to dress openly. Therefore, the public and local governments should promote the uniqueness of the area in terms of cultural identity. Traditions, lifestyles, and local wisdom to be sustainable.

b. Recommendations for implementing research results

For those interested in implementing this finding, the researchers have the following recommendations:

According to the study, the process of creating a community constitution for cultural well-being along the lines of the in Khwao Sinarin District, Surin Province, found that there are seven important steps: the first step, the meeting of the villagers, and the participation of volunteers to find problems and needs of the community, step 2: taking responsibility together by determining their roles and duties. Plan for solutions to problems for peace and people have a good quality of life, step 3: Establish a community committee from recognized individuals, including qualifications, age, morality, ethics, leadership, and find solutions to problems for the community as well, step 4 to draft community constitutions or agreements. The rules of coexistence by "self-thinking, self-written, self-made, for their

communities," should have a cultural inheritance. Local traditions jointly maintain public interests, preserve and promote Thai identity. The villagers behave within the moral realm, goodwill for each other, and have proper health behavior, which treats members of the community equally, honor and respect their rights and freedoms.

1. Public relations and dissemination of information about the preparation of community constitutions should be provided with a variety of channels continuously.

2. Information centers should be provided to develop and utilize the information for the creation of community well-being.

3. The data center should be responsible for surveying data and analyzing data and presenting or delivering it to the agencies, community organizations, and people in need.

4. To encourage agencies, community organizations, and people to continuously learn and create a process for managing the power of community health knowledge.

2. Suggestions for the Further Research

For those who are interested in doing the next research, the researchers have suggested that there should be research on the constitution to improve the quality of life for the elderly. "Mission" to "Energy". Also, research on the Agricultural Constitution should be conducted as a tool for everyone to participate in the design of the Constitution for health management, quality of life management in an agricultural way, using knowledge, competence, and skills consisting of four sectors: local, academic, government, community organization, and farmer. Finally, establish a constitution to improve farmers' quality of life to be free from diseases caused by harmful chemicals and health-friendly agriculture and the environment.

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An Analysis of Problems, Effects, and Strategies on Religious and Cultural Tourism of the South East Region for Economic Cooperation in ASEAN Community

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Abstract— *This research aimed 1) to study and analyze the condition of the problems and effects on religious and cultural tourism of the southeast region for economic cooperation in the ASEAN community, 2) to present the strategy of on religious and cultural tourism of the southeast region for economic cooperation in ASEAN community. This research is qualitative. The documentary studies and field studies were used. Finally, to present the findings with a method of descriptive analysis. The results indicated that 1) the condition of the problems and effects on religious and cultural tourism of the southeast region for economic cooperation in ASEAN community found that nowadays, places for travel religiously and culturally, there are problems in the sector that people do not truly understand the intentions of their originators. These places had a deficiency of creating the hallmarks in religious sites, the staff at religious and cultural attractions are inadequate to facilitate and provide relevant knowledge, as well as lack of clear tourism management. Tourist context local authorities also non-existence integrated work. 2) the strategy of on religious and cultural tourism of the southeast region for economic co-operation in the ASEAN community found that public relations invite local personnel to participate in activities to disseminate and convey experiences. The knowledge of the religious site is organized with outstanding activities and information. It should have tourism programs; signs in each location and should be written in the ASEAN languages. Prominently, the website of each location should be provided for easy searching.*

Index Terms— *Problems, Effects, Strategies, Religious and Cultural Tourism, South East Region, Economic Cooperation, ASEAN Community*

I. INTRODUCTION

The Ministry of Tourism and Sports stated that the situation and trends of Thai tourism depend on several factors both within and outside the country, such as trends and directions in global markets, competition, risks, tourist behavior, and various crises that affect tourism, especially the current tourism situation, which is still subject to uncertainty both from the natural disaster, epidemic, economic and political instability of many countries around the world, coupled with the recent development of Thai tourism, there are still many problems and obstacles which are all negative impact factors towards the world tourism and Thai tourism. At the same time, advances in communication technology, access to tourism information, travel convenience, and changing tourist behavior with globalization have led to the trend of global tourist numbers continuing to increase will be a factor that will benefit and create opportunities for the development of the Thai tourism industry. [1] It recognizes the importance of tourism as a vital tool in helping to stabilize and drive the country's economy by taking advantage of location, the abundance of resources, tourism and its diversity of cultures, including Thainess, are important selling points in promoting travel marketing for a long time.

The Office of the National Research Council has focused on tourism research by defining strategy 1 to

promote research as a national agenda on tourism, in line 1.2.2 promoting research to create value and add Tourism value, and strategy 1.3 Research to promote, develop and manage Thailand's tourism market demand, in approach 1.3.2 Promote research to maintain the same tourist base to achieve repeat tourism, line 1. 3.3 Promote research to promote marketing based on identity (local) (image) and national potential, guideline 1.3.4 Promote research to create (Local identity) image of Thai tourism, approach 1.3.5 promote research for (Evaluation of potential, direction and tourism behavior of Thai tourists), stimulate domestic tourism because tourism is an important industry that generates income into the country and also helps to develop economy and society, however, the current tourist market situation is extremely competitive, forcing Thailand to adjust the direction of tourism promotion by identity such as Buddhist tourism, Cultural tourism, etc.

Nzama, Magi, & Ngocoho said that society today is more aware of the importance of arts, culture, festivals, and indigenous heritage. The multiculturalism of each area is the birthplace of the development of cultural tourism sites, as it can be seen that cultural tourism has become the center of the tourism industry in Europe, and other countries have attempted to develop cultural tourism in their country. [2] Cultural tourism is unique in that tourists focus on education in areas or areas that have important historical and cultural features, where they tell stories of social and human development through history as a result of culture, knowledge, and social value, it can reflect the life, living conditions of people in each era as well, whether it is economic, society, or tradition.

Rungtawan Uam-Im (quoted in Sahachok Supapool) said that cultural tourism is a concept that has been used in the field of tourism in a variety of meanings, some refer to homestays, some refer to a light and sound show of the grand splendor of the national historic site, some means watching cultural shows, some means going to floating markets, some means visiting hill tribe villages. etc., as well as art and culture, traditions, and in any sense, the way of life and culture of the people of the community, in any sense, cultural tourism is gaining the attention of tourists, which has led many government organizations to focus on the use of capital for each community's culture has been developed into a tourism destination by allowing the villagers to use handicrafts, arts, and cultural performances as an attraction to generate tourism income and spread it down to the lower levels. Besides cultural tourism, it can bring income into the country and lead to economic development at both national and regional levels. [3]

Sahachok Supapool said that with the trend of cultural tourism has come into play, tourists travel more and more to see cultural expressions such as tourism in historical sites, ancient sites, tourism visit the temple and the beauty of the murals that convey different stories, Thai architecture that reflects the uniqueness of Thailand as well as arts and culture, traditions and way of life and culture of the people in the community, in addition to showing foreigners to know Thai culture, it is also a preservation of good and proud culture and traditions to continue to be preserved, but some attractions are not ready to accept tourists and cause the following problems are that the tourist sites are congested, the facilities are inadequate, the tourist sites are shabby, when the environment and nature are destroyed, the original culture and way of life are inevitably affected. [4]

The Ministry of Tourism and Sports has described the recent results of tourism development in Thailand reflecting the success of the quantitative growth in both the number of tourists and tourism income, but there are still qualitative problems facing the country, threats to sustainable development in the future such as the degradation of tourist attractions due to the concentration of tourists, the safety of tourists, the lack of access and connectivity infrastructure, and the expansion of the new tourism sector. There is a lack of personnel in tourism in terms of quantity and quality, law enforcement, etc., which problems are different, will have an impact on the country's income in respect of the tourism industry.

The Ministry of Tourism and Sports has established tourism strategies for developing tourism products and services in the strategic area of the Southern Isan Civilization Tourism Development Zone, including Nakhon Ratchasima, Buriram, Surin, Sisaket, and Ubon Ratchathani provinces with the main goal of developing the tourism of the way Contemporary Southern Isaan life connects Laos, Cambodia, and Vietnam through measures to enhance Southern Isan civilization and local wisdom to add value and value to tourism. Development guidelines include infrastructure development, tourism routes, linking historical sites. And neighboring countries, develop and create tourism, way of life, contemporary Northeastern culture, promote the creation of outstanding and valuable OTOP community products and services, develop linkages of agricultural products, community products to the tourism service industry instead of leading Entering and consuming products from abroad, resulting in Thailand's economy has grown.

Thailand can increase incomes and economic growth by bringing international brands of over a hundred billion baht a year, the tourism industry positively affects the Thai economy resulting in employment, income distribution, including business sectors, entrepreneurs, Tourism, and people in the local area of the tourism area, as a result, it is necessary to develop and improve the basic tourist

attractions as well as facilities, convenient to accommodate tourists who come to visit various tourist attractions that are likely to increase, especially tourist attractions in the South Isan area such as Nakhon Ratchasima, Buriram, Surin, Sisaket and Ubon Ratchathani, which has culture, traditions, valuable religious cultural heritage, as well as historical sites, ancient sites, which require the participation of the people in the tourist area and other stakeholders bring unique strengths and significance as a selling point in tourism, each with a different identity.

The Surin Provincial Tourism Office has described tourism in the southern Isan provinces as having the identity and potential to attract tourists in their provinces and to combine the distinctive identities of the province into the tourist routes will be presented for sale to tourists, with all provinces already being prepared, such as Surin province, the city of elephants, etc., the tourism of the South Isan has tourist route with a connection point with neighboring countries such as Cambodia in and out of the permanent checkpoint, Chong Chom District, the permanent border checkpoint, Phu Sing District, Srisaket Province, Chong Sa-ngam and Chong Mek, in Ubon Ratchathani Province, all of which are outstanding potentials in terms of physical matters will make tourism connections as well, which this year the government has set it as the year to promote tourism in the Thai way.

Therefore, we must jointly preserve the Thai identity, way of life, traditions, as well as art and culture as a tourism product that has the potential to be ready for sale to tourists in both Asian and European markets. Therefore, we would like to invite everyone to join the Thai way of traveling, Thailand to Thailand, and to be a good host to welcome tourists further with the potential of religious and cultural tourism management in the Southern Isan area at valuable both nationally and globally. The researcher, therefore, aims to contribute to the development of such tourist sites to become a center for tourism, religion, and multiculturalism with an exceptional standard outstanding, the researcher is interested in studying and analyzing the state of problems and tourism strategies to benefit organizations and government agencies as well as stakeholders leading to improvements in a constructive way and develop the economic system of Thailand to continue to progress.

II. OBJECTIVES OF THE RESEARCH

1. To study and analyze problems and impacts on religious and cultural tourism of Southern Isan and economic cooperation in the ASEAN Community.

2. To present the religious and cultural tourism strategy of the South Isan and economic cooperation in the ASEAN community.

III. SCOPE OF THE RESEARCH

This research aimed to study the analysis of the problems and impacts of religious and cultural tourism of southern Isan and economic cooperation in ASEAN

1. Population and sample

The research on an Analysis of impact problems and the religious and cultural tourism strategy of Southern Isan and economic cooperation in the ASEAN community, the researcher has determined the population and sample groups to collect the data as follows:

Population and sample

The research on an Analysis of impact problems and the religious and cultural tourism strategy of Southern Isan and economic cooperation in the ASEAN community, the researcher has determined the population and sample groups to collect the data as follows:

1. The population used in the research was:

1.1 religious and cultural attractions in the South Isan

1.2 Academic

1.3 Abbot or tourist attraction chief or representative and tourist

2. The samples used in the research were:

2.1 10 religious and cultural tourist sites in the South Isan, the researcher used the Purposive Sampling method as follows:

2.1.1 Phimai Historical Park, Nakhon Ratchasima Province

2.1.2 Viharn Luang Pho To, Nakhon Ratchasima Province

2.1.3 Phanom Rung Historical Park, Buriram Province

2.1.4 Wat Khao Phra Angkharn, Buriram Province

2.1.5 Wat Pa A Jiang, Surin Province

2.1.6 Agricultural Tourism Village, Peeram Subdistrict, Surin Province

2.1.7 Wat Khao Sala, Surin Province

2.1.8 Pha Taem National Park, Ubon Ratchathani Province

2.1.9 Wat Tham Khuha Sawan, Ubon Ratchathani Province

2.1.10 Wat Phra That Ruangrong, Sisaket Province

2.2 10 scholars who are experts in tourism management, the researcher used purposive sampling methods, namely:

2.2.1 Dr. Phisuttipong N-du, Position Associate Dean for Research Science, Rajamangala University of Technology, Surin Campus

2.2.2 Dr. Sureechai Sukhantarat, Position Lecturer in Local Research, Surin Rajabhat University

2.2.3 Dr. U-sa Klomphan, Position Lecturer at the Faculty of Humanities, Surin Rajabhat University

2.2.4 Dr. Chuchai Prabsuk, Senior Vice President Office of the Education Area, Surin Primary Education Area 1

2.2.5 Dr. Jakraphong Chuachan Position Lecturer at the Faculty of Business Computing, Surin Rajabhat University

2.2.6 Dr. Sawat Napongsi, Position Deputy Director of Ban Ku Kasing School, Roi Et Primary Educational Service Area Office 2

2.2.7 Ms. Duangporn Boonyuen, Position Analyst, Policy and Planning, Surin Province

2.2.8 Ms. Kwantawee Thaiying, position manager of Saren Tour, Surin Province

2.2.9 Phrakhru Samuhan Panyatharo, Dr. Abbot of Pa Aa-Jiang Temple, Tha-tum District, Surin Province

2.2.10 Phrakhru Wiriyapanyapiwat, Dr. Assistant Abbot of Sala Loi Temple, Muang Surin District, Surin Province

2.3 Abbot or head of religious and cultural attractions of the Southern Isan for the number of 10 persons/monks and tourists, the researcher selected Accidental Sampling to collect the data from the people/monks who came to travel by selecting the specified sample size from random sampling proportional to each place, the average number of 10 places is 4 persons/monks, a total of 40 persons/monks, and a total of 50 persons/monks.

2. Scope of the contents

For this research, the researcher has defined the content framework in 3 areas as follows:

1. The problem of religious and cultural tourism in the south and economic cooperation in the ASEAN community.

2. Southern Isan religious and cultural tourism strategy and cooperation in the economy in the ASEAN Community

3. Scope of the areas

In this research, the researcher focused on religious and cultural tourism routes in 5 southern Isan provinces, namely Nakhon Ratchasima, Buriram, Surin, Sisaket, and Ubon Ratchathani.

4. Scope of Time

The research period is completed within 30 September 2017**.**

V. CONCLUSION

An analysis of problems, impacts, and strategies of religious and cultural tourism of Southern Isan and economic cooperation in the ASEAN Community, the results according to the objectives can be summarized as follows:

1. Problems and impacts of religious and cultural tourism of Southern Isan and economic cooperation in the ASEAN Community on the location of problems and obstacles:

Religion and Culture, today, the problem of places of worship is that people do not understand the spirit of the creator, the lack of building the strength of the place of interest and attract tourists, there are personnel aspects problems and obstacles, overall, religious and cultural tourism personnel currently have insufficient personnel in religious and cultural sites to facilitate and provide relevant knowledge, lack of effective tourism management clearly, the activity aspect of the attraction has a problem. The obstacles are, overall, activities within the current religious and cultural sites have problems that the activities are organized intermittently in both the temple and national parks, lack good publicity it also measures the lack of interconnection between the house measurement and the school or related agencies/organizations, environmental aspects of tourist attractions have problems and obstacles, namely, overall, the environment and the context of tourist attractions, currently there are problems that the toilet for tourists is insufficient, accommodation for tourists, as well as the problem of garbage, the connection of tourist attractions, there are problems and obstacles, namely the picture, total the connection of tourist attractions in the ASEAN community currently has a problem that the lack of public relations in the form of distance signs, place signs in ASEAN languages, unclear highlights or identities of each place, causing tourists to lack, information for tourism, in

addition, temples that are tourist attractions should focus on AEC learning centers and the road linking tourist attractions is not as comfortable as it should be.

2. Strategy for religious and cultural tourism of Southern Isan and economic cooperation in the ASEAN community on personnel is to promote tourism to local people, publicize to invite local personnel to join activities in order to disseminate and transfer experience and knowledge of that place, the place is to promote the uniqueness of each religious and cultural tourist attraction in the Southern Isan area to attract tourists of all forms, promote the outstanding activities, connect and value the place so that tourists can prepare for their tourism and be able to carry out various activities that each place provides according to Needs, promote tourism programs in each place with public relations in all forms, both as a sign indicating all distances of the route from the border of ASEAN countries to tourist sites, should be labeled in ASEAN languages, brochures and create a website belonging to Specific oneself in order to keep up with the current world situation of communication, create information in the internet system that can be searched anytime and anywhere to reach all groups of tourists, create a travel program in each place, make a travel map or route as well.

V. DISCUSSION

From the research results on problem analysis, impacts, and strategies of religious and cultural tourism of Southern Isan and economic cooperation in the ASEAN community, it is found that interesting issues are as follows:

Problems and impacts of religious and cultural tourism of the South Isan and economic cooperation in the ASEAN Community on the location of problems and obstacles is the overall place of religious and cultural tourism. The place is that people do not really understand the spirit of the creator, the lack of building the highlights of the places of worship to attract and attract tourists, the personnel side has problems and obstacles overall, the personnel of the current religious and cultural sites have problems that Insufficient personnel at religious and cultural sites to facilitate and provide relevant knowledge, lack of clear tourism management, the activities of tourist attractions have obstacles, namely, overall, different activities within religious and cultural attractions, there is currently a problem that incoherent activities at temples and national parks, lack of good publicity and lack of mutual connection between temples, homes, and schools or related agencies/organizations, the environmental aspects of the tourist sites have a problem, the overall environment and the context of the tourist attraction currently there is a problem that the toilet Inadequate for tourists, accommodation for tourists, as well as the problem of garbage, the linkage of tourist attractions, there are obstacles, namely overall, the linkage of tourist attractions in the ASEAN community. In the form of distance sign, place sign in ASEAN language, the highlight or identity of each place is not clear, causing tourists to lack information for tourism. Also, the temple that is a tourist attraction should focus on the AEC learning center and the road linking tourist attractions is not as comfortable as it should be in line with Busaba Sitthikarn who studied and research the changes in the physical environment and factors that cause a change in the temple attractions in Phra That Doi Suthep Ratchaworamahawihan Temple, the Research findings are as follows: 1) In the past 10 years, there has been a change in the physical environment, especially garbage and traffic. Besides, there were negative changes in water, air, views, and noise, the severity of the problem was moderate, which had to be addressed as soon as possible changes in the physical environment have resulted from the construction of public utilities, especially the construction and expansion of Srivijaya Road, the promotion of tourism that has led to the increase in the number of tourists, residents and the number of vehicles. The activities of the temple, the beliefs of the people of Chiang Mai as well as the lack of effective management of the agencies involved in the parking space, and wastewater management, as well as the organization of merchandising, are factors affecting the change in the physical environment and Phramaha Wichan Liao-Seng researched Buddhist art and tourism: studying the role of temples in the conservation of Buddhist art for tourism, found that Buddhism is the representative of Thai art that reflects the prosperity of Thai civilization under the shadow of Buddhism is a valuable cultural heritage of Thai society. The temple, which is located and close to Buddhism, is responsible for the persistence of the Buddhist arts which the monks in charge of those temples, the valuable Buddhist art can still be preserved as a tourist destination, Buddhism has become a voice for promoting the world to know Thailand and pouring into Thailand for visiting has a positive economic effect on Thai society, and even visiting the Buddhist arts of Thai tourists as well as an activity that contributes to a positive economic movement as well.

The religious and cultural tourism strategy of Southern Isan and economic cooperation in the ASEAN community, personnel side is to promote tourism to local people, publicize, invite local personnel to join activities to disseminate and transfer experiences and knowledge of religious places, the location side, should promote the uniqueness of each religious and cultural tourist attraction in the Southern Isan area in order to attract all kinds of tourists that tourists can prepare for their excursions and can carry

out activities for each place provides according to their needs, promote tourism programs in each place as well, public relations in all forms, including signs indicating all distances of the route from the ASEAN border to tourist destinations, should be labeled in ASEAN languages, brochures and created their own specific website in order to keep up with the current world situation of communication, the creation of information in the internet system can be searched anytime and anywhere in order to reach all groups of tourists, creating a travel program for each place as well. Making a travel map or tourism routes of each location as well, in line with Aphirak Phaibun who studied the development of temple-type tourism: a case study of Wat Mai Thung Kha, Kamphaeng Phet Sub-district, Rattaphum District, Songkhla Province. The results of the study found that the results of the study of cultural tourism potential of Wat Mai Thung Kha were found that the group the samples gave opinions at a high level, activity potential, and attractiveness. The results of the study of the cultural tourism development approach of Tung Kha temple by community participation found that activities should be organized about the practice of meditation, wisdom, meditation management for interested people, organizing Dharma lectures on community radio, organizing tourism routes in the community by centering on Wat Mai Thung Kha, should have the old traditions that have been lost, should be promoted Wat Mai Thung Kha to be well known to tourists, and should have more public relations channels by creating a website specifically for Wat Mai Thung Kha, creating brochures or tourism guide for tourists and in the participation of the community found that community organizations, whether they are villagers in the community, the government officials have a positive attitude, development of cultural tourism of Wat Mai Thung Kha is willing to help and take part in management and operations and Akha Saengngam studied the study of resource potential and community-based cultural tourism management to promote tourism in Thung Kula Rong District, aiming to study the history and potential of tourist resource culture, to study the current condition of cultural tourism management by the community and to study the management of cultural tourism promotion by communities in Thung Kula Rong District, the research area of 8 villages, namely Ban Bua Ban Ku Noi and Ban Ku Ka Sing, Kaset Wisai District, Wat Ku Phra Kona, Suwannaphum district, Bo Phan Khan community, Nonghee district, Pa Tam Kudpeng, Phon Sai District, Roi Et Province, Ban Tao District, Phayakkhaphum Phisai District, Maha Sarakham Province and Ban Non Muai District, Chumpol Buri District, Surin Province. The sample group studied was a group of 22 people, a group of 96 practitioners, and a group of 24 users, a total of 142 people who were obtained by a specific selection method. , A small group meeting record form and a workshop record, examining the data using a triangular technique to present the research, it was found that the history of tourism had salt production at the late prehistoric ponds, resulting in Khmer Going to build a community and building a Ku in Thung Kula Rong Hai when the Khmer culture deteriorates Lao people to replace the old Khmer, then take Ku as a sacred place. In particular, in 1967, more and more people migrated to the Kula field and broke the state to develop and promote the cultivation of jasmine rice established a weaving group, rice mill, forest management in 2002, and opened an agricultural tourism village in 2005.

VI. SUGGESTION

From the research on problems analysis, impacts and strategies of religious and cultural tourism of Southern Isan and economic cooperation in the ASEAN community, it can be summarized as follows:

Policy suggestion

1. In terms of location, there is a suggestion that budget should be provided to develop a modern and good-looking place regularly by creating a unique identity to attract tourists, for example, Wat Tham Khuha Sawan should increase the number of cleaning staff at each point, organize tourism routes to facilitate the disabled by creating a route for people with disabilities to be comfortable.

2. Personnel in tourist attractions, there are suggestions that there should be good management, build knowledge and understanding based on the principle of participation in each place, building awareness of volunteering in the development of temples, religious places or attractions, provide a budget to train and educate people, students or the general public should have sufficient knowledge to provide relevant knowledge of the tourist attraction instead of the small student guides, whom these students can only be on holiday guides.

3. In terms of activities within temples, places of worship, or other tourist attractions, it is suggested to create a distinctive identity, create a selling point for tourists, and promote in all forms, both the form of pamphlets and Social media in modern times for tourists around the world to know and travel.

4) In terms of environment, there are suggestions as follows: There should be cleaning staff to be stationed at various points of the temple and general tourist attractions, and there should be trash bins in various places of the temple, organize parking, walking routes should be planted trees, flowers decorated to shady, beautiful and labeled as Thai and ASEAN languages

5) In connection with the ASEAN Community, it is suggested that road conditions should be improved to be

comfortable, have ASEAN language signs indicating distance and should be promoted in all forms of media to keep up with the current world situation, be able to find information on religious and cultural attractions is as realistic as possible so that tourists can choose to consume as comfortable and satisfying.

Suggestions for further research

In the next study, the researcher would like to recommend the following research actions as follows:

1) There should be a study on the problem of language communication of temple personnel or historic sites that are historical sites to provide tourists in ASEAN or other countries around the world to gain insights about their history and other information that is relevant and coming to travel more.

2) There should be a focus group discussion with experts in the tourist attraction directly to gain more insights.

3) There should be a study in the same group of variables by expanding the scope of the research area to several other provinces in the northeastern region to obtain more information.

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The Promotion of Local Culinary Tourism in Rayong

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This research aimed to promote local culinary tourism in Rayong, study behavior and satisfaction of Thai tourists towards local culinary tourism in Rayong, and develop the guidelines for promoting local culinary tourism in Rayong. The questionnaires were used to collect data from 400 Thai tourists visting Rayong. An appropriate sample size was determined confidence level at 95% and collect the data by convenience sampling. The data was analyzed by descriptive statistics to analyze the potential of local culinary tourism in Rayong.

The findings revealed that the promotion of local culinary tourism in Rayong was presented in 4 aspects. For the identity of local culinary, the satisfaction of tourists towards unique local culinary was rated at the highest level, (= 4.32). For the worthiness, satisfaction towards reasonable price was rated at the highest level, (= 4.14). For the quality of local culinary, satisfaction towards freshness was rated at the highest level, (= 4.10). For the service provider, tourist's satisfaction towards informing clearly about local culinary was rated at the highest level, (= 3.90). Furthermore, there should be more active advertise because technology is one of the best ways to search the tourism information

Index Terms— *Tourism Promotion, Local Culinary, Rayong province*

I. INTRODUCTION

Cooking is constantly evolving, which is an invaluable representation of the wisdom and way of life of each locality. In the past, food was a neglected element of tourism compared to other elements. Nationally and regional tourism promotion agencies around the world involved in food tourism found that 88.2 percent of food was an essential element in branding and enhancing the local image and 67.6 percent though that their country or region has a strong image of food tourism. Most opinion saw that the most important component of promoting food tourism was the quality and variety of local ingredients. Offering a mix of cultural and exotic cuisine that maintains local identity for food tourism, 79 percent saw food festivals as their most important commodity and 62 percent focused on food tourism routes. In cooking teaching and food workshops, 68 percent said their attractions promote tourism by using food as a point of sale through promotional activities [1] and found that another popular form of tourism was local food choices because eating was considered a daily routine for tourists. In accordance with Sarita Phantian (2017), studied the development of Thai food tourism management model using the creative economy concept in the central river basin provinces in the area of Bangkok, Sumthon Songkhram and Suphanburi as the representative of the provinces in the central river basin, the results showed that food tourism as an attraction in driving tourism had attracted a lot of attention from tourists and could develop into a new type of tourism called Thai food tourism [3]

Rayong Province is a province located in the eastern part of Thailand which is a tourist destination with excellent fruits such as mangosteen, durian, rambutan, as well as fresh seafood, processed food, shrimp paste and fish sauce due to favorable weather conditions and suitable topography. It is also known as a beautiful tourist destination, beautiful long beach along the Gulf of Thailand and world-class beautiful islands such as Koh Samet. The Tourism Authority of Thailand would like to raise the level of local food in the Rayong community to be recognized nationally, while creating a food-based tourism experience of 10 delicious local dishes along with the extension of tourism in Rayong Province. Rayong province has a wide variety of food menus and ingredients with indigenous identity and culture that have yet to be developed to be known. To be one of the channels that distribute income to the community and to strengthen, the tourism industry has joined with the Tourism Authority of Thailand to create a project " Community chefs invite you to eat Rayong food" in collaboration with Chef Chumpon Jangprai, Iron Chef Thailand and Thai food menu experts to help develop local recipes and create new recipes from local

ingredients in the Rayong community to meet the acceptable standards as well as creating community chefs in Rayong Province to create community food in Rayong Province [4]. In line with Zhang et al (2019), studied the quality and loyalty of local food and sustainable tourism experiences, it was found that Rural development, both economic and environmental, could continue to be associated with local food and play a vital role in attracting tourists to preserve traditional cultures and supporting the regional economy. However, the authenticity and quality of local food must still be fully convinced. As it was a competitive advantage for most localities, the accuracy had not been studied on how authenticity, quality, traveler satisfaction and traveler loyalty were. This study examined the role of accuracy in the framework of quality, satisfaction and loyalty. The results emphasized authenticity and key to the quality, satisfaction and loyalty of food tourism. The relationship between quality, satisfaction and loyalty characteristics of tourists depended on the food that tourists perceived the authenticity of the local food in the countryside [5].

PTTGC launched the "Chef Chumpol for Community Chefs" project to develop local Rayong food menus and expand Thai tourism (2017) by creating community chefs to create new menus, upholding the identity of local ingredients in Rayong, where at least one menu is derived from 19 local ingredients from Rayong Province: shrimp paste, fish sauce, Chamuang leaf, Diplazium esculentum, shampoo ginger, mussels, crab, fish, dried squid, sun dried fish, Pisang Awak, 3-flavor jujube, durian, pineapple branch, Klang noodles, Rambutan, Rough cocklebur, mangosteen and mangosteen were used to develop the potential of community chefs in Rayong province as well as promoting tourism along the food traces of Rayong province to be outstanding, interesting and pleasing to the taste, and promotion for professional cooking. This creates a feeling of pride in Thai and Thai cuisine, as well as its contribution to preserving Thai food to be valued and recognized internationally.

The creation of a special menu with local ingredients from Rayong will become a signature dish in Rayong as part of the promotion of local food tourism to Rayong Province: Kang Khaw Pu Bi Chamuang (Curried Roasted Crab with Chamuang Leaves), Kaeng Khua Le Phala Hi (Sea Mussel Curry with Pineapple Shoots), Keng Som Curry Paste (Sour and Spicy Soup with Crab, Pickled Bamboo Shoots, and Burweed) Nam phrik. with Rakam, Grilled Thai fish cake, Kaeng pa with truffle, Kang Khaw with Lay shellfish, Sen Mi Nam Daeng Boran Noodles, Pork Ribs in Chamuang BBQ Sauce, Keng Som Curry Paste (Sour and Spicy Soup with Crab, Pickled Bamboo Shoots, and Burweed), Tom Som Pla Ga Pong Ra Kam (Sour Herbal Soup with Ga Pong Fish), Yam Samphan Ha Sahai (Thai-style Spicy Salad with Five Ingredients), Deep-Fried Shrimp with Sweet-and-Sour Chamuang and Thai-style. Spicy Salad with Shrimp and Deep-Fried Burweed [6].

In accordance with Matthew J, Stone (2019) studied food tourism research focusing on tourism behavior before or during travel including tourism development and food marketing from a tourism destination perspective. This survey study indicated that food activity influences travel satisfaction and influences intention to return and there was an opportunity to take the destination from the food experience related to the memory of the experience and the souvenir of the trip. It also influenced the image of the destination and leads to future purchases. Consistent with Sangkyun Kim (2019) studied on examining food tourist motivation using the participants' phenomenological method, this approach selected food tourists who were at least partially motivated to visit specific locations related to local food tastings to food production professionals which was conducted with respondents, Mizusawa Village udon in japan. The results of the study indicated that the main motivations of Japanese tourists to the Ban Mishushawa Islands looked as follows: access to various media, raising awareness, memory, imagination that appeal to the senses and authenticity of the cooking method [8].

Therefore, the term local food tourism refers to the ability to express identity, quality, value and service providers to promote tourism in Rayong province.

The researcher is therefore interested in conducting research on promoting local food tourism in Rayong Province.

This was a study of the satisfaction of Thai tourists with local food in Rayong Province. This result would benefit government agencies, private sectors and communities that can be used to support tourism to Rayong Province. In addition, the community could use the research results to improve and develop the community in accordance with the needs of tourists. This would make the villagers in the community realize the importance of local food, which could be employed and generate additional income within the community to be strengthened forever.

II. RESEARCH OBJECTIVES

1. To study the satisfaction of Thai tourists with local food in Rayong Province

Research scope

Area scope: Rayong Province

Scope of data source: Thai tourists traveling to Rayong Province

Content Scope: A study of the satisfaction of Thai tourists with local food in Rayong Province.

Period scope: December 2019 - June 2020

III. RESEARCH METHODS

This study was a quantitative research.

1. The source of information is from Thai tourists traveling to Rayong

2. The data collection tool used 400 questionnaires.

3. The method of data collection is to collect information as convenient

4. Data analysis methods use descriptive statistics: frequency, percentage, mean, standard deviation, Chi-square, T-test, One-Way ANOVA and Scheffe's multiple comparison.

Data analysis

The promotion of local food tourism in Rayong province according to the four potential components was obtained from the study of descriptive statistics analysis to characterize the personal factors and local food consumption behavior of tourists traveling to Rayong Province as shown in the table below.

Table 1: Personal factors and local food consumption behavior of tourists

Personal factor		**Percent**
Gender	Male	38.75
	Female	61.25
Occupation	Student / student	26.25
	Government officials / state enterprises	23.25
	Private company employee	11.25
	Personal business / business owner	16.25
	Unemployed / unemployed	8.50
	Self-employed	12.00
	Other	2.50
Average monthly income	Less than 10,000 baht	29.80
	10,000 - 20,000 baht	26.00
	20,001 - 30,000 baht	18.00
	30,001 - 40,000 baht	9.70
	40,001 - 50,000 baht	8.50
	More than 50,001 baht	8.00
Domicile of tourists visiting Rayong Province	Bangkok	32.00
	Central region	30.25
	North	13.25
	South	7.00
	East	9.00
	Northeast	8.50
Decisions for traveling to Rayong Province.	Making your own choices and decisions	43.00
	from social media	17.00
	Father / mother	10.00
	Own child	22.00
	friend	5.00
	Agency / Organization	
	Tour company	3.00
Number of travel days	1 day	26.00
	2 days	52.00
	3 days	12.00
	4 days	6.00
	5 days	2.50
	More than 5 days	1.50
Number of times eating local food	1 time / day	50.25
	2 times / day	33.50
	3 times / day	16.25
The cost of eating local food	Less than 100 baht	7.00
	100-200 baht	21.25
	201-300 baht	45.25
	301-400 baht	3.00
	401-500 baht	14.50
	500 baht or more	9.00
Time to eat	Breakfast	8.00
	Lunch	38.50
	Dinner	53.50

From Table 1, the results of the study showed that most of the Thai tourists who traveled to Rayong Province were female (61.25), students / students (26.25), average monthly income less than 10,000 baht (29.80), domicile of tourists from Bangkok (32), making travel decisions, making your own decisions on social media (43), traveling for a period of 2 days (52), eating local food on average 1 time / day (50.25), eating local food at dinner (53.50) and cost between 201-300 baht (45.25).

Satisfaction of tourists towards promoting local food tourism in Rayong province

Table 2 Satisfaction level of Thai tourists towards local food in Rayong Province

Identity of local food	$\overline{X}$	**SD.**	**Satisfaction level**
1. Unique	4.5	0.66	Highest level
2. Uniqueness of taste	8	0.77	Highest level
3.Uniqueness of the smell	4.3	0.72	High level
4. Interesting novelty	3	0.87	High level
5.Using local ingredients in cooking	4.1 9	0.89	High level
6.Variety of localfood items	4.0 8	0.80	High level

Total	4.13 4.06 **4.23**	**0. 77**	**Highest level**
Quality of local food	$\bar{x}$	**SD.**	**Satisfaction level**
1. Food taste	4.16	0.69	High level
2. Food freshness	4.22	0.64	Highest level
3.Cleanliness of food	4.19	0.67	High level
4. Food decoration	4.09	0.88	High level
5. Nutritional value	4.05	0.74	High level
6. Food quality standard	3.89	0.80	High level
Total	4.09 4.05 **4.10**	**0.70**	**High level**
Value	$\bar{x}$	**SD.**	**Satisfaction level**
1. Reasonable price with food quality	4.24	0.75	Highest level
2. Reasonable price with the quality received	4.12	0.75	High level
3.Reasonable price compared to normal food	4.08	0.81	High level
Total	**4.14**	**0.76**	**High level**
Characteristics of service providers	$\bar{x}$	**SD.**	**Satisfaction level**
1. Dress code of service personnel	3.88	0.81	High level
2. Speed and accuracy of the service staff	3.87	0.89	High level
3. Providing accurate local food advice	3.96	0.84	High level
Total	**3.90**	**0.85**	**High level**

IV. RESULTS

Studies on promoting local food tourism in Rayong province on the 4 aspects of tourist satisfaction were as follows.

Identity of local food - When considering each review, tourists were satisfied that the local food was unique and different from the general food (mean $\bar{x}$= 4.58), followed by unique flavor ($\bar{x}$ = 4.33), unique smell (mean $\bar{x}$ = 4.19), using local vegetables as ingredients for their cooking (mean $\bar{x}$ = 4.13) and unique and interesting (average $\bar{x}$ = 4.08), respectively. Variety of local food items, tourists had the lowest level of satisfaction (mean $\bar{x}$ = 4.06). Tourists were perceived about the image of Thai food, Thai food has a unique flavor. Maintaining the original flavor of the food is important. In order to preserve the Thai food culture, the taste of food should not be modified according to the tourist groups, but the local taste must be preserved. Otherwise, there will be no local standard of taste at all.

Quality of local food - When considering each item, it was found that the tourists were most satisfied with the freshness of the food (mean $\bar{x}$= 4.22), followed by the cleanliness of the food (average = 4.19), taste of food (mean $\bar{x}$= 4.16), nutritional value of food (mean $\bar{x}$= 4.09) and the quality was standardized (mean $\bar{x}$= 4.05), respectively. The setting of the dishes was appetizing, the tourists had the lowest level of satisfaction (mean $\bar{x}$ = 3.89). The freshness of the food was at a high level (49.3 percent) and satisfied to the greatest extent. (32.9percent), therefore, these were two important factors: the use of fresh ingredients and the quality of the ingredients used in cooking.

Value - When considering each case, it was found that the tourists were most satisfied in terms of price and quality (mean $\bar{x}$ = 4.24), followed by the price suitable for the received value (mean $\bar{x}$= 4.12), travelers were least satisfied in terms of affordable price levels compared to conventional food (mean $\bar{x}$= 4.08). The results of Neranchara Kijwikarn (2014) [9] found that tourists had a high level of perceived Thai food image in terms of value for money: Thai food prices were reasonable, affordable compared to other local dishes and Thai food was worth buying., the restaurant should clearly state the price of the food in the food menu, food prices should be fair, they shouldn't make tourists feel that they are being taken advantage of by overpriced food prices.

Characteristics of the service provider - When considering each report, it was found that the tourists were most satisfied with providing staff with clear and accurate information about local food (mean $\bar{x}$= 3.96), followed by the dress code of the service personnel (average $\bar{x}$= 3.88) and tourists were least satisfied with the speed of service of their employees (mean $\bar{x}$ = 3.87). In addition, the study on attitudes, satisfaction or local food consumption behavior of Chitrawadee Sukying (2001) [10] also found that influencing local food choices

included taste, food cleanliness and safety, utensils, equipment, cleanliness and safety of premises, reasonable food prices as well as providing services with tidy, courtesy, polite and good human relations of service providers, etc.

VI. RECOMMENDATIONS

Guidelines for promoting tourism through local food in Rayong Province - From the results of the study, the researcher had proposed a way to promote tourism on the possibility and guidelines that would help drive the promotion of tourism through local food in Rayong Province, which could be divided into 4 areas as follows:

1. Local food identity - Promoting tourism through local food found that the novelty and variety of local food was very satisfactory but it could still be further developed in order to promote and develop the potential of more local food because each local dish was unique and different from the general food. The results of the study showed that tourists enjoyed a unique local food that was most different from conventional food, so it should be promoted and developed to build tourism strengths. In addition, the community should be promoted and developed to recognize the importance of local food resources and their values in order to further develop the sustainability of local food identity.

2. Quality of local food - To promote sales to tourists to gain confidence, relevant government agencies should set local food quality standards using quality assurance marks such as awards or certificates and labels for clean, tasty food in order to give tourists more confidence in the restaurant. They should also describe the ingredients used to prepare the ingredients, their nutritional values, and the emphasis on local food as a healthy food. Cooking with local vegetables using local ingredients is unique.

3. Value - The tourism business group or the relevant government agency should set the mid-price standard of local food so that the price was reasonable compared to the general food. Certain restaurants sell food prices that are exaggerated, giving travelers the impression that they were being taken advantage of. Restaurant operators should take into account the suitability of food in terms of quality, price and value that customers receive in order to impress tourists and come back to use the service again, this is because the results of the study showed that the tourists had a higher satisfaction level in terms of food prices compared to conventional food. However, prices on food items should be clearly stated in order to show honesty in pricing and to build trust in their food choices as well.

4. Service - The tourism business association and relevant government agencies should provide training and education to the public about local food, so that people in the community or staff serving restaurants could provide information about Rayong food and able to accurately recommend local food to tourists in order to give tourists the opportunity to eat local food as much as possible. Restaurant operators should develop their human resources skills according to service standards and the ability to work to provide fast service, not having to wait for long customers. This was in order to give tourists an impression and come back to use the service again. This was because the results of the study showed that the tourists were satisfied with the speed of service of the staff, but also proposed improvements or improvements in the speed of serving additional food.

CONCLUSION

The researchers found that tourists' satisfaction with the unique characteristics, unique taste, food freshness, reasonable price, variety of local food items, food decoration, The dress code and the promptness of the local food recommendations of the service staff were highly satisfied with the tourists. However, there were still gaps for bringing more latent abilities to develop their potentials. For example, in the area of public relations and marketing, relevant government agencies and local restaurant operators should cooperate in organizing tourism routes through local food in the province, mapping to show restaurants to tourists and provide basic information to tourists, including events, festivals, local food and local food sales of each area in the pedestrian street to promote food for tourists to see, recognize and have the opportunity to taste. This will showcase the local culinary culture of Rayong people, including holding food contests, exhibits and selling local food products in order to stimulate further development of local food products.

In addition, it should continuously increase the role of proactive tourism publicity because of the current trend of tourism; tourists had a need to try local food while traveling. However, tourism promotion for local food should be carried out by using information technology and online social networks to communicate and build networks between tourists and tourist attractions to provide tourists with access to the real publicity of information about food. Nowadays, the vast majority of tourists use technology as a means to search for tourism information.

Suggestion

1. It should publicize to related persons, entrepreneurs and restaurants to know the guidelines for working together in order to provide information to tourists in the same direction.

2. Tourism should be promoted through food to tourists through various media such as radio advertising, brochures, magazines and social Media of all types to reach all groups of

tourists, which will affect the perception of tourists thoroughly.

3. Local food occupation by public relations, education, value building, eating local food and creating local pride in terms of the value of local food and the nutritional value should be encouraged and supported

4. Development of creative and unique local food by using local food wisdom to create identity and differentiation of products through development ideas and integration with the potential of local ingredients to be able to develop local food to be more unique, quality and distinctive should be encouraged.

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Forecasting the Patterns and Trends in Age-Specific Fertility in South Asia

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Abstract – *The total fertility rate (TFR) in South Asia has decreased remarkably over the past three decades. The decline is projected to continue in the coming years mostly due to the significant changes occurring in age specific fertility rate (ASFR). This study aims to investigate ASFR trends and forecast the ASFR of India, Bangladesh, and Pakistan from 2020 to 2100. The ASFRs in South Asia data separated by 7 age groups with 5-year interval from 15 to 49 years between 1990 and 2019 were downloaded from the US Census Bureau's website. Linear regression models were used to investigate ASFR patterns from data in that period and ASFR data in the years 2010-2019 of each age group were used to forecast the ASFRs in 2020 to 2100. The forecasted results show that ASFRs in India and Bangladesh in age group 15-24 years have steep declining trends whereas ASFRs in age group 25-29 in both countries and age group 45-49 years in India have gradually decreasing ASFR trends. Age group 30-44 years in Bangladesh have slightly decreasing ASFR trends. Pakistan with previously high fertility rates are experiencing gradually declining ASFRs in all age groups. In conclusion, the change in fertility in these three countries from low stable population to high population will occur within next 40 years from 2020.*

Keywords: *age-specific fertility rates, linear regression model, trends in fertility, fertility patterns*

I. INTRODUCTION

Future size and composition of population are determined by fertility, mortality, and migration rates. Among these factors, fertility prediction plays a vital role due to its importance in determining and control population growth and dynamics [1]. It is a major factor for biological substitution and maintenance of mankind development [2] and also it has a big impact on the socioeconomic condition of a country [3]. Hence, in forecasting of population, fertility remains a key component. The most index usually used to predict fertility and measure population growth is the TFR [4]. The TFR measures the average number of births per woman. However, it does not provide information on the actual number of births [5]. On the other hand, the ASFR is a measure of the annual number of births by women of a specific age (15-49 years) per 1,000 women. Fertility rates may vary among different age groups. Hence, it is pertinent to consider a mathematical model that can describe the fertility profile more accurately and precisely as it will allow the fertility forecasts to be reasonable and transparent [6].

According to the World Fertility Report, virtually all regions in Asia have experienced fertility decline in past several decades. One of them is South Asia which has decreased from 4.3 births per woman in 1990 to 2.4 in 2019 but their fertility rates remain above replacement birth rate at 2.1 births per woman. Fertility decline drives a slow rate of world's population growth. However, in

2019, Asia had 4.8 billion people, 62.8% of the world's population [7] and almost 22.43% live in India, Pakistan and Bangladesh which are among the top ten populous countries around the world (India, Pakistan, and Bangladesh in the second, fifth and seventh ranks) [3] [7]. It has been predicted that India will overtake China as the world's most populous country by 2027 [7].

The ASFR in age group 20-24 has been and remains the highest in India and Bangladesh while ASFR in age group 25-29 is highest in Pakistan [8]. There has been a reduction in ASFR for all of these countries. This reduction is attributed to different reasons. The most consistent reasons are transitions to lower fertility which are driven by two direct causes: a rise in marriage ages, thus reducing teenage childbearing; and increased family size limitation by contraception and abortion [9]. There is enough evidence of continuous declining in the TFRs of South Asia countries.

The likelihood of having a child differs based on a woman's age. Therefore, forecasting ASFR is useful for indicating which age groups have more effect on population change. There have been a small number of studies which have investigated and forecasted the ASFR trend, including that conducted by [10] which forecasted population growth in West Africa using linear regression. Hence, with existing valid methods, this study aims to forecast ASFR in the most three populous countries in South Asia. This contribution helps better understanding not only fertility transition over decades but also changing patterns in the annual number of births by specific-aged-woman in these countries.

II. Materials and Methods

A. Data source

Data relating to the ASFR per 1,000 women in the form of median rates were retrieved from the US Census Bureau website. The US Census Bureau released the first complete set of estimates and projections for over 200 countries in the 1980s. The quality of the data is ensured by the demographic information on which it is based being gathered from many sources, such as censuses, surveys, vital registration, and administrative records from a variety of sources. The process of estimation and projection includes data evaluation, parameter estimation and making assumption about future change. The ASFR data downloaded for this study covered a period of 30 years from 1990 to 2019. The ASFR data consisted of countries as follows: India, Bangladesh, and Pakistan. Basically, the age pattern of reproductive women was distributed into 7 age groups from ages 15 to 49 years with 5-years intervals at: 15-19, 20-24, 25-29, 30-34, 35-39, 40-44 and 45-49 years. Thus, the data contained ASFRs of seven age groups and 3 countries for 30 years, with 630 observations and no missing values.

B. Statistical analysis

(1). Long term Limit

The minimum, maximum and median ASFRs of women in each age group and each country were calculated. These values were used to set up the limits for each age group for all countries to forecast their ASFRs using the following equation:

$$\text{Limit}=\frac{(\text{median(ASFR)}+\text{minimum(ASFR)})}{2} \quad (1)$$

Based on the data described, above the medians, and the long-term limits of ASFR for each age group were calculated. Among almost ASFR all countries and all age groups, the lowest and highest of limits were 1.4 and 200.7 per 1,000 women. These limits were used to constrain the long-term forecasting of the ASFR. The ASFRs were first assessed for stability of variance and the necessity of data transformation, by fitting linear regression model to the entire ASFRs using year, age-group and country as predictors. The normal quantile-quantile (Q-Q) plots of the studentized residuals were used to evaluate the normality of the distribution. Thereafter, 3rd root transformations were applied to stabilize the variance of the ASFR 30-year data.

Table 1: The minimum, medium and maximum of ASFR in each age group for individual country together with lower and upper limits

Countries	Age Group						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
Median	8.7	122.4	110.6	50.0	16.1	4.5	1.4
L. limits	4.0	63.2	98.6	72.5	37.7	11.0	1.5

Countries	Age Group						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
U. limits	85.9	183.2	200.7	171.6	111.6	54.7	29.5

**L.limits is Lower imit and U.limit is Upper limit*

(2). Simple linear regression

Therefore, the ASRF of the recent decade, 2010-2019, which were relatively low volatility in each individual nation were transformed with 3rd-root and used to fit the simple linear regression model in order for projecting long-term ASFR trends in year 2020 to 2100 of individual country as following equation:

$$Y_t = a + b_t + e_t \quad (1)$$

where t is year, Y_t is age-specific fertility rate of each age group in year t of individual country, a is constant, b_t is slope, and e_t is error term.

There were fluctuations in fertility trends in some age groups for India, Bangladesh, and Pakistan from 1990 and 2009. Therefore, only the data from 2010 to 2019 were used to create the linear model to forecast the ASFRs for each age group and each country. Using limits as the constraints, ASFRs were forecasted for the years 2020 to 2100 based on the data for the years 2010 to 2019. In this study, the ASFR was forecasted until 2100 as the world population is forecasted to almost stop increasing at the end of this century. By applying linear regression model, the study assumes that the forecasted trends of ASFR will remain stable in the long-term unless there is a very significant deviation in demography. Thus, the linear projections will continue until these long-term fertility limits are reached and will then remain constant. All statistical analyses and the graphical displays were carried out using the R program, version 3.6.2.

(3). Data transformation

Besides, to ensure that the graphical representation in thenormal quantile-quantile Q-Qplotsof the residuals was not misinterpreted, Box-Cox transformation was used to confirm the necessity of data transformation.

The Box-Cox transformation has been widely used in a variety of fields, especially in economics and finance. It is capable of fulfilling the basic assumptions of linearity, normality and homoscedasticity as recommended by Box and Cox [11] who modified a family of power transformations first presented by [12] to cover discontinuity of the original function as shown below:

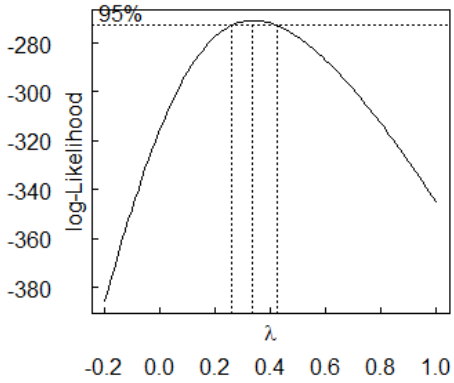


Figure 1: Box-Cox transformation plot

The X-axis of the Box-Cox plot indicates λ values representing a power transformation of data. If the confidence interval covers optimal λ value of 1, a data transformation is then unnecessary, otherwise a transformation is needed. Typically, the rounded optimal value for λ falling within the confidence limits that agrees with an understandable power transformation is used (Box and [11][13] for example the cube root (λ = 1/3), the square root (λ = 0.5) or the natural log (λ = 0). In this data, λ was equal to 0.33. Thus, the best transformation to stabilized variance was third root.

III. Result

The median ASFRs in each age group of all countries during the 30-year period are shown in Table 1. The results showed that Bangladesh had the highest ASFR in the 15-19 age group with an ASFR of 136.8 births per 1,000 women, whereas Pakistan had the lowest rate of 26.9 per 1,000 women. In the 20-24 age group, India had the highest ASFR, followed by Pakistan while the lowest ASFR was in Bangladesh. Pakistan had the highest ASFR in the 25-29 age group, where the lowest ASFR was found in Bangladesh. Among the 30-34 and 35-39

age group, Pakistan had the highest ASFR with the lowest ASFRs in India. Across all the age groups, the 45-49 group had the lowest ASFR.

Due to assumptions of linear regression, the model requires normally distributed residuals. The normal quantile-quantile (Q-Q) plot of the residuals were first examined to compare two theoretical distributions. The quantile of the second distribution is represented on the vertical axis while the quantile of the first distribution is on the horizontal axis. When the Q-Q plot follows its trend line and the two distributions are identical, it indicates that the data are normally distributed. With awareness of a potential outlier that may influence the regression model when analyzing time series data, the Q-Q plot of studentized residuals was also investigated to provide more precise analysis [9].

The ASFRs were first assessed for stability of variance and the necessity of data transformation, by fitting linear regression model to the entire ASFRs using year, age-group, and country as predictors. The normal quantile-quantile (Q-Q) plots of the studentized residuals were used to evaluate the normality of the distribution. Thereafter, 3rd root transformations were applied to stabilize the variance of the ASFR 10-year data.

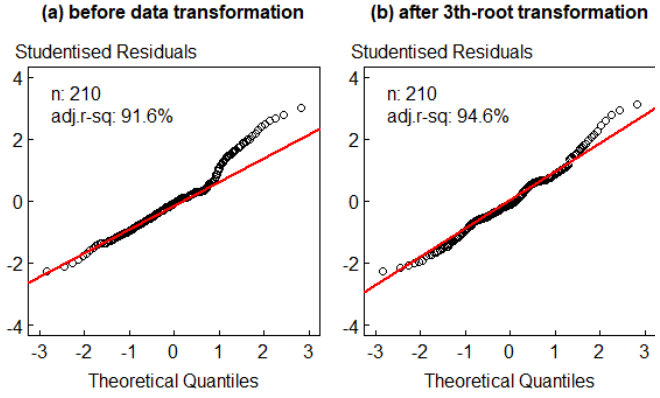


Figure 2: Comparison normal Q-Q plots of the studentized residuals between before (a) and after ASFRs transformation (b)

The Figure 2 shows the results of ASFR forecasting in each reproductive age group of the three countries with the high levels of fertility. The solid-colored lines illustrate the trend of ASFR in each age group between 1990 and 2019. The superimposed solid black lines represent the values produced by fitting separate linear models to the data for the ten most recent years (2010-2019) in each age group. The dotted colored lines are forecasts given by projecting these model values from the year 2020 to 2100 in each age group and country. R-squared values as percentages from each model are presented in the legend of each plot. The solid-colored circles at the end of each forecasting line are the limit in that age group.

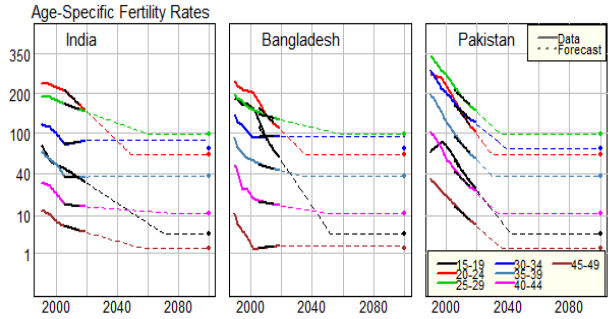


Figure 3: The forecasting trend of ASFR in each age group of the countries with low level of fertility

The forecasted trends of ASFR in this group had hit their own individual limits for all age groups. The forecasted ASFRs for all the countries in this group had decreasing trends with a sharply decreasing trend being observed in the 15-19 age group in Bangladesh and Pakistan. The only exception to this trend was in the 45-49 age group in Bangladesh which had an increasing trend. In India, the 30-39 age group had an ASFR exceeding the limit forecast as did the 30-34 age group in Bangladesh. The median durations to reach the limits in the groups with decreasing trends in their ASFR in Pakistan, Bangladesh, and India were 18, 32 and 32 years, respectively while the median duration to reach the limit in the only group with an increasing trend (the 45-49 age group in Bangladesh) was15 years.

Table 2. R-square from regression model for each age group and each country

Age group	R-square (%)		
	India	Bangladesh	Pakistan

Age 15-19	99.86	99.61	99.58
Age 20-24	99.82	99.32	99.36
Age 25-29	99.65	98.81	99.13
Age 30-34	99.35	97.06	99.11
Age 35-39	97.95	98.27	99.25
Age 40-44	97.32	98.32	99.46
Age 45-49	99.48	72.39	99.69

From Table 2, overall, India had the highest and lowest r-squared value of 99.86% and 72.39.32%, respectively occurring in age groups 15-19 and 40-44. Regarding the RMSE value, Pakistan had the highest value (0.0366) occurring in age group 15-19 while India had the lowest (0.0001) from age group 35-39. In India, an increase in coefficient values occurred in age groups 30-34 and 35-39. However, the decrease occurred in all other age groups. In Bangladesh, the increase in coefficient values were recorded for age groups 30-34 and 45-49 whereas there were decreasing trends in all other age groups. In contrast to India and Bangladesh, the coefficients values in all age groups in Pakistan had decreasing trends.

IV. Discussion

In this paper an approach to forecasting the ASFR is proposed for the 3 most populous countries in South Asia using simple linear regression models, which had R-squared values ranging from 97.32 - 99.86% with the exception of one age groups in Bangladesh with low R-squared values of 72.39 %. The models had reasonably good fit to the data as most of the ASFRs in the three countries and all the age groups followed linear trends, except for the 45-49 age groups in Bangladesh, for which the ASFR slightly departed from a linear trend. This good fit is consistent with the results of the study conducted by [10]. However, this forecasting method assumes constant conditions, such as there being no significant change in family planning policies, no extreme disasters, or major economic changes. However, in the past two decades young women have enjoyed a more open society with a greater chance of leaving their homes to work in other cities where they may live with their partners [14] and might be due to young couples delaying the birth of their first child or increasing the spacing between births, as well as the cessation of childbearing among older women especially in India [15].

Among countries with a high level of fertility, there were decreasing trends in fertility in all age groups with sharp decreases among teenagers and young women in all countries. Except Bangladesh, with a slightly increasing trend in the 45-49 age group. This can be explained by the transition to lower fertility being driven by a rise in marriage age [16]. This in turn leads to a reduction in teenage childbearing20 and a tendency for family size to be limited (ref) due to factors such as the use of contraception and abortion, and a longer time being spent in education, particularly in the context of rapid economic transformation in developing countries. The significant contribution of this study is the forecasting of fertility in all age groups separately for each country, which provides a clearer picture of fertility transition in each country. More detailed information relating to fertility is useful in setting proper policies and in economic and social planning. However, the findings of this study are limited by the linear model employed not being suitable for some age groups with high fluctuations in their ASFR which do not follow a linear trend.

V. Conclusion

In conclusion, the structure of the population in the three South Asia countries studied has changed from a younger to an older population particularly in countries, with high fertility rates where fertility has decreased among younger age groups while increasing in older age groups as Bangladesh. Meanwhile, in Pakistan fertility rates show a dramatically decreasing trend across all age groups in countries with previously high rates of fertility. Therefore, the structure of the population will change over coming decades and all those countries should focus their policies on health care and the well-being of the elderly whereas polices related to the labor force, family planning and education should be emphasized in countries with high rates of fertility.

Acknowledgement

We are grateful to Emeritus Professor Dr. Don McNeil from Macquarie University, Sydney, Australia, and Assoc. Prof. Dr.Apiradee Sae-lim my advisor for initiative and guidance on forecasting techniques used in this statistical modeling. Moreover, we wish to thankful to supported by the Centre of Excellence in Mathematics, the Commission on Higher Education, Thailand.

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Forecasting Age specific fertility rate in Thailand Using Natural Cubic Spline Function

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Abstract – *Thailand has decreased the total fertility rate over the five three decades and continues to fall. The significant changes occurring in age specific fertility rate (ASFR). In this study aims to investigate ASFR trends and forecast the ASFR of Thailand from 2020 to 2050. The ASFRs were downloaded from the US Census Bureau's website by separated by 7 age groups from 15 to 49 years between 1990 and 2019. Natural Cubic Spline Function were used to investigate ASFR patterns from years 2010-2019 of each age group and were used to forecast the ASFRs in 2020 to 2050. From forecasted the results show ASFRs in Thailand of age group 25-29, 30-34, and 35-39 years have slightly increased trends whereas ASFRs in the young and old age group were down relatively constant. In summary, the fertility change in Thailand will occur dramatically entering an aging society within next 10 years from 2020.*
Keywords: age-specific fertility rates, natural cubic spline Function, fertility patterns

I. INTRODUCTION

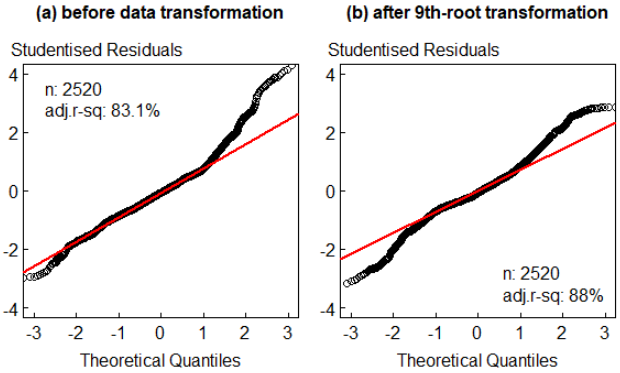
Projections of fertility, mortality, and migration are the three main factors affecting the future size predictions and population compositions. Among these factors, fertility prediction plays a vital role due to its importance in determining and control population growth and dynamics [1]. It is a major factor for biological substitution and maintenance of mankind development [2] and it has a big impact on the socioeconomic condition of a country [3]. Hence, in forecasting of population, fertility remains a key factor. The most index usually used to predict fertility and measure population growth is the total fertility rate (TFR) and age specific fertility rate [4] but the TFR it does not provide information on the age group number of birth [5]. On the other hand, the age-specific fertility rate (ASFR) is a measure of the annual number of births by women of specific age group (15-49) per 1,000 women. Thus, should consider a model that can describe the fertility illustrate more accurately and precisely as it will allow the fertility forecasts to be reasonable. [6]

The World Fertility Report, Southeast Asia fertility has decreased remarkably over past five decades, from 2.5 births per woman in 1990 to 1.8 in 2019 and remain constant projected in 2050 [7]. Almost a half of the world's population lives in countries with below replacement fertility or fertility rate below 2.1 births per woman on of them is Southeast Asia. It is obvious that family size is likely smaller, especially in countries having substantial industrial and urban growth. The fertility is the main engine of population change [8] and this fertility decline drives a slowing rate of world's population growth. However, fertility rate of Thailand fell gradually from 5.4 children per woman in 1971 to 1.5 children per woman in 2020 and faced such problem that mention above.

The ASFR in age group 20-24 has been and remains the highest in Thailand since 1990 until 2000 while age group

45-29 occur lowest [9]. There has been a reduction in ASFR for all age group. This reduction is attributed to different reasons. The most consistent reasons are transitions to lower fertility which are driven by two direct causes: a rise in marriage ages, thus reducing teenage childbearing; and increased family size limitation by contraception and abortion. There is enough evidence of continuous declining in the TFRs of South Asia countries [10].

The significant of having a child differs based on a woman's age. Therefore, forecasting ASFR is useful for indicating which age groups have more effect on population change and this contribution helps better understanding not only fertility transition over decades but also changing patterns in the annual number of births by specific-aged-woman in these countries.



II. Materials and Methods

A. Data source

Data on age-specific fertility rate (ASFR) in Thailand estimates were retrieved from the website of the United States Census Bureau. The ASFR data covered a period of 30 years from 1990 to 2019. Basically, the age pattern of reproductive women was distributed into 7 age groups from ages 15 to 49 years with 5-years intervals at: 15-19, 20-24, 25-29, 30-34, 35-39, 40-44 and 45-49 years.

B. Statistical analysis

(1) Cubic Spline

The natural Cubic Spline functions have been suggested in demographic research for interpolating age-specific data as they have desirable smoothness optimality properties [11]. This is because spline functions [12] are piecewise polynomials connected by knots located along the range of the time series, and cubic splines have desirable optimality with respect to fitting and forecasting [13]. They minimize the integrated squared second derivative and provide plausible linear forecasts that can be controlled by a judicious placement of the knots. The final integrated spline log-linear models developed in this study were constructed as following equations:

$$Yt = S(t) + z_t \quad (1)$$

where t is time, Yt is an observation at time t, S(t) is a spline function, zt is the random error.

III. Result

The time series data of ASFR were preliminarily explored values of each age group. For statistical modeling, these yearly data of ASFR were first assessed the stability of variance and the necessity of data transformation by fitting simple linear regression model to the entire ASFR with years, age-groups and countries. As illustrated in Fig.3, the normal quantile-quantile (Q-Q) plots of the model's studentized residuals illustrate normally distributed after using the 9th root transformation to stabilize the variance the 30-year data.

Figure 1: Comparison normal Q-Q plots of the model's studentized residuals between before data transformation (a) and after the 9th-root transformation (b) in age-specific fertility rates.

Figure 2 shows the results of ASFR forecasting in each reproductive age group of Thailand. The solid-colored lines illustrate the trend of ASFR in each age group between 1990 and 2019. The dotted colored lines are forecasts given by projecting these natural cubic spline function values from the year 2020 to 2050 in each age group and country.

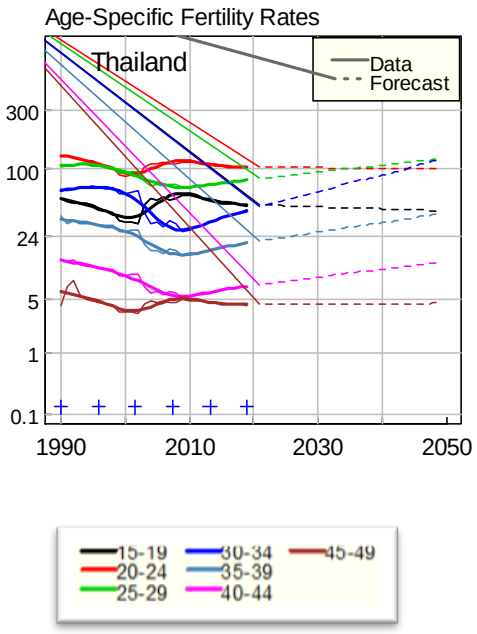


Figure 2: The forecasting trend of ASFR in each age group

The patterns of 30-year ASFR in Figure 2 show high volatility of fertility transitions. There was a slight decline of all ASFRs during the period, 1990-2009. However, fertility rates in the most recent decade (2010-2019) of all age group showed stable declining trends which make most forecasts of the ASFR reliable. The forecasts with dotted lines indicate declining trends of ASFR in most age groups 30-34, 35-39 and 40-44.

IV. Discussion and Conclusion

We have proposed an approach to forecasting the age specific fertility rate. In Thailand it uses a natural cubic spline function for projecting which this method produces a full predictive distribution of future fertility rate. This forecast is broadly in developing countries. It can be seen that fertility is decreasing steadily. Due to countries have a relatively high standard of living, the population are well-educated and are in a high economic status compared to other regions of the world [14]. They have high income under a very complex economic system. A cautious note should be taken in having a baby as it requires very high responsibilities. Women have their own career and are not dependent on men anymore. Therefore, it is not necessary to seek a spouse to support themselves. This has led to fewer marriages and an increase in single-person households [15]. These factors tend to have an influence on the decreasing fertility trends. However, this situation causes problems in these countries. The problems include 1) a shortage of labor, law number of labor, has an impact on economic and social development 2) an increase in the number of elderly will burden members of the family and 3) an increase of immigration between regions causes a social distance and controversies among immigrants.

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Failure Prognostic of Turbofan Engines with Uncertainty Quantification and Explainable AI (XIA)

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Abstract

Deep learning is quickly becoming essential to human ecosystem. However, the opacity of certain deep learning models poses a legal barrier in its adoption for greater purposes. Explainable AI (XAI) is a recent paradigm intended to tackle this issue. It explains the prediction mechanism produced by black box AI models, making it extremely practical for safety, security or financially important decision making. In another aspect, most deep learning studies are based on point estimate prediction with no measure of uncertainty which is vital for decision making. Obviously, these works are not suitable for real world applications. This paper presents a Remaining Useful Life (RUL) estimation problem for turbofan engines equipped with prognostic explainability and uncertainty quantification. A single input, multi outputs probabilistic Long Short-Term Memory (LSTM) is employed to predict the RULs distribution of the turbofans and SHapley Additive exPlanations (SHAP) approach is applied to explain the prognostic made. The explainable probabilistic LSTM is thus able to express its confidence in predicting and explains the produced estimation. The performance of the proposed method is comparable to several other published works.

Introduction

Each year, industries around the world spend massively to operate in a safe and sustainable way. Specifically, organizations depend on the reliability of its industrial assets to fulfil their dedicated functions. These assets are mostly complex engineered system whose downtime would mean paralyzing the whole production process. In a more serious perspective, downtime could also present a threat to the safety of personnel, that unfortunately had resulted in fatalities in certain extreme cases. Carefully maintained assets ensure the continuation of safe operation, enabling profitability and in return, guaranteeing the livelihood of millions of workers.

Reliability of engineered system is one of the topics where researchers and industrial players work hand in hand. Cooperation flourishes to facilitate the exchange of ideas between both milieus. Several efforts originating from academia is actively being pursued in the industry. Domains such as Multi State System Reliability (MSS) (Chao-Hui & Chun Ho, 2019; Zhao et al., 2019) and Human Reliability Analysis (HRA) (Zwirglmaier et al., 2016; Growth et al., 2019) are some of the dedicated research branches in engineered system reliability. In the recent decades, Prognostic and Health Management (PHM) has also emerged as a strong contributor in providing frameworks to ensure the well-being of industrial assets (Shin et al., 2018; Gan, 2020; Baur & Monno, 2020).

PHM is mainly used as a decision support tool for safeguarding the health of engineered system. It facilitates maintenance cost reduction (Scanff et al., 2007), just-in-time maintenance (Sun et al., 2012), liberating load (Atamuradov et al.,2017; Ding Feng et al., 2017) and minimizing accident risks (Kwok et al., 2015; Pham et al., 2012). In PHM, three essential activities consisting of prognostic, anomaly detection and diagnostic are carried out. Prognostic is the act of defining the Remaining Useful Life (RUL) or the remaining operational time of an industrial assets before failure (Elattar et al., 2018; Akpudo & Hur, 2020). Anomaly detection refers to the identification of unusual patterns going against the normal behaviour of operational parameter measurement (Gurkan & Burak, 2020; Liu & Gryllias, 2020). Diagnostic on the other hand, is the action of discovering the root cause of failure, and if possible, matching the concerning features with known failure signatures (Zhou et al.,2020; Benedetti et al., 2018).

Black-Box AI

While there are various approaches in PHM, methods based on artificial intelligence have gained considerable attention in the past decades. In this domain, machine learning, specifically deep learning, have reigned supreme thanks to the powerful advantages inherent it possesses. Deep learning is powerful in modelling nonlinear relationships. Additionally, it is simple to apply and does not require a deep understanding in the underlying physical interactions of the system. Although deep learning is popular in the research domain, its adoption in the real world is currently under setback, due to its black box nature (Kim et al., 2020; Grezmak et al., 2018; Kraus et al., 2019). Black box or opaqueness of deep learning prevents users to understand why certain prediction is made. Naturally, this poses a challenge especially in areas where safety, security and investment amplify the need for comprehension. Moreover, this obscurity could result in ethical issues where black box applications risk offending race or gender of the users. To date, the only legal directive affecting the use of AI is the European General Data Protection Regulation (GDPR) whose interpretation regarding the obligation of logical explanation in automated processing, is currently being debated between AI experts and practitioners (Hacker et al., 2020; Chazette & Schneider, 2020; Bussmann et al., 2020). In term of ethical guideline, the European Commission's High-Level Expert Group on AI presented the key requirements in Ethics Guidelines for Trustworthy Artificial Intelligence in 2019, whose key requirements correspond directly or indirectly on the use of XAI (Bussmann et al., 2020).

Uncertainty in Deep Learning

While XAI helps to understand the decision made by deep learning models, it is imperative for the user to evaluate the confidence of the model when predicting, especially in real life applications. Uncertainty estimation is an indicator of deep learning's prediction quality. Most deep learning models only produce point estimates prediction where notion of uncertainty is completely absent.

Aleatoric uncertainty is the uncertainty linked to the quality of input data (Kendall & Yarin, 2017; Prado et al., 2019; Li et al., 2020). This uncertainty is characteristic of the real world applications where noise, data acquisition error or stochasticity can be present in the input data.

This paper presents a work that combine the strength of AI explainability and deep learning uncertainty quantification where a turbofan engines life prognostic problem is investigated. A single input, multi outputs probabilistic LSTM with SHAP explainability are employed to predict and explain the RUL distributions of the engines. This paper is believed to be the first of its kind that harness these abilities in failure prognostic research. This work is vital as in the real-world applications, uncertainty and explainability are indicators to assess prediction for accurate decision making.

Related Literature

AI explainability has been used in various PHM research.

Class Activation Mapping (CAM)-based explanation approaches have been employed together with CNN in many works to evaluate the focus of CNN. In (Kim et al., 2020), fault classification of linear motion guide based on Convolutional Neural Network (CNN) and Grad-CAM (FG-CAM) explainability in the frequency domain is done to analyze which frequencies have significant impact on the fault conditions. The same technique is applied in (Chen & Lee, 2020) for diagnosis of bearing's fault. In (Zhao et al., 2020), a DecouplEd Feature-Temporal CNN (DEFT- CNN) with Grad CAM is proposed to provide separate explanation on features and temporal information. An automatic vision diagnostic technique for base-excited cantilever beam and water pump system using a combination of CNN and Class Activation Maps (CAM) is presented in (Sun et al., 2020). While the CNN detect faults, the CAM localizes the faults. Additionally, CAM provides the diagnostic explainability, making the method a white box model.

Layer Wise Propagation (LRP) is an explainability technique that traces back the contribution of the input to the prediction by propagating backward the relevance measures from the output layer to the input layer through the nodes of the model. In (Felsberger et al., 2020) LRP is applied to explain failure prognostic of Proton Synchrotron Booster (PSB) of CERN Particle Accelerator. The task is to predict and explain ten most frequent priority 3 fault types of PSB accelerator power converters. In (Grezmak et al., 2019), CNN is employed with LRP to explain the diagnostic of gearbox failure. Again, in (Grezmak et al., 2020), CNN and LRP are utilize for fault classification and explanation of induction motor. In this work, the vibration time series data used as input is transformed into time-frequency image using Continuous Wavelet Transform (CWT) with Morlet wavelet. Specifically, the wavelet coefficients of the vibration data calculated from the CWT are converted to time-frequency plots that are used by the CNN.

Logic Analysis of Data (LAD) is an explainable diagnostic method base on variables analysis. Fault diagnosis in industrial chemical plant and black liquor recovery boiler based on LAD is proposed in (Ragab et al., 2017). In (Ragab et al., 2019), LAD is used to enrich Fault Tree Analysis (FTA) of industrial clean steam and hot water production. The same technique is used in the same context in (Waghen & Ouali, 2019) where diagnosis of actuator system is explained.

Local Interpretable Model-Agnostic Explanations (LIME) and SHAP are both popularly employed model agnostic explanation approaches that can be used to explain any type of

$$g(z') = \phi_0 + \sum_{j=1}^{M} \phi_j z_j' \quad (1)$$

machine learning model. In (Onchis & Gillich, 2021), a feed forward neural network together with SHAP and LIME are employed to predict and explain the damage of prismatic cantilever steel beam. In (Karn et al., 2021), SHAP and LIME are employed to explain crypto mining malware detection in cloud network.

$$\phi_j(val) = \sum_{S \subseteq \{x_1,\ldots,x_p\} \setminus \{x_j\}} \frac{|S|!\,(p-|S|-1)!}{p!} (val(S \cup \{x_j\}) - val(S)) \quad (2)$$

Method

LSTM Architecture with Probabilistic Layer

The model employed for the RUL prediction is a single input, multi-output LSTM with probabilistic layer. This probabilistic LSTM maps the sensors data to Health Index (HI) target of the turbofan. The model has 2 output layers. In the first output, the model predicts a sequence of HI distributions corresponding to the complete health state of the studied turbofan engine. This layer incorporates the probabilistic element where it transforms the input to gaussian distribution with variable standard deviation as suggested in (Kendall & Yarin, 2017). The model thus "force" the prediction into a suitable form for uncertainty management. In the second output, the model extracts only the HI point estimate which is the mean of the first HI distribution from the sequence obtained before. This output corresponds to the initial HI or initial RUL of the concerned turbofan where the predictive performance of the model is based upon (i.e., RMSE calculation). These outputs will thus form a single vector and will be included in SHAP analysis. This is necessary as SHAP library only accepts single vector output. The model is trained to minimize loss only based on the first output as the model favors HI distribution sequence rather than point estimate. The hyperparameters used in this model are optimized via Bayesian hyperparameter optimization.

SHapley Additive exPlanations (SHAP)

SHAP is a model agnostic, game theoretic approach to explain the output of any machine learning model. Model-agnostic explanation works by analyzing trained black box AI model input and output in post-hoc nature, or after the model is trained (Ribeiro et al., 2016).

SHAP evaluates the contribution of each feature to the prediction by using Shapley values. It can cater both global and local explainability. Shapley values determine the importance of a single feature by considering the outcome of each possible combination of available features. In other word, the Shapley value is the average expected marginal contribution of a feature across all possible combination of features.

Here, g is the explanation model. $z' \in \{0,1\}^M$ are the simplified features that describe the presence of interested feature in the feature's combination with $z' = 0$ means the interested feature are absent in the combination and $z' = 1$ signifying the feature are present. M is the maximum coalition size and $\phi_j \in R$ is the Shapley values for a feature j. The formula for Shapley value is:

S is a subset of the features used in the model, x is the

$$val_x(S) = \int \hat{f}(x_1,\ldots,x_p) d\mathbb{P}_{x \notin S} - E_X(\hat{f}(X)) \quad (3)$$

vector of feature values of the instance to be explained and p is the number of features $val_x(S)$ is the prediction for feature values in set S that are marginalized over features that are not included in set S. $E_X\left(\hat{f}(X)\right)$ is the average predicted value (Lundberg & Lee, 2017).

Performance Evaluation

RMSE & Scoring Function The performance of the model is assessed by calculating the Root Mean Squared Error (RMSE) and Scoring Function, S, of the obtained RUL prediction as respectively shown in Eq. (4) and Eq (5), (6) and (7) (Li et al, 2018; Wu et al., 2019).

$$RMSE = \sqrt{\frac{1}{M}\sum_{i=1}^{M}(RUL_i^{truth} - RUL_i^{predicted})^2} \quad (4)$$

$$s = M\sum_{i=1}^{M} s_i \quad (5)$$

$$s_i = \begin{cases} e^{\frac{-d_i}{13}} - 1, d_i < 0 \\ e^{\frac{di}{10}} - 1, d_i > 0 \end{cases} \quad (6)$$

$$d_i = \left(RUL_i^{predicted} - RUL_i^{truth}\right) \quad (7)$$

The scoring function gives higher score for the same error in early prediction than late prediction. It thus penalizes late prediction than the early ones. With RUL_i^{truth} as the ground truth RUL for turbofan i, $RUL_i^{predicted}$ the predicted RUL for turbofan i, and M as the total number of turbofans.

SHAP Explainability & Uncertainty Quantification
Uncertainty quantification will be evaluated via the rolling standard deviation plot of the HI distribution sequence. An increasing trend indicates a growing uncertainty of the prediction while the contrary signifies that the model is more and more confident with the estimation. As for explainability, SHAP library will be used to analyze the predicted HI distributions sequence of each turbofan.

Result and Discussion

Case Study: CMAPSS Turbofan Dataset

The CMAPPS (Commercial Modular Aero Propulsion System Simulation) Turbofan run-to-failure datasets consists of 4 complete sets of training, testing and ground truth RUL for numerous turbofan engines, published by Nasa Prognostic Centre (PCoE) of Ames Research Centre, denoted as FD001, FD002, FD003 and FD004 (Ramasso & Saxena, 2014). This data was produced by adjusting the operational conditions and injecting faults of varying degradation degree to the simulated turbofan system using CMAPSS software (Saxena et al., 2008).

The FD002 data is chosen in this study. This data consists of recorded turbofans degradations whose health condition deteriorate after certain cycle as shown in Table. 1. Each turbofan is associated with time series sequence comprising of Time (Cycle), 3 Operating Conditions (OC) and 21 sensors measurements corresponding to temperature, pressure, various ratios, and bleed enthalpy of the system. The OC refers to different operating regimes combination of altitude (O-42K ft.), throttle resolver angle (20-100), and Mach number (0-0.84). High levels of noise are incorporated, and the faults encountered are hidden by the effect of various operational conditions (Saxena et al., 2008).

HI Target Calculation

To obtain the RUL target for the model's training, piece-wise linear degradation model is assumed (Li et al, 2018; Wu et al., 2019). Each fleet health is thus considered stable in the beginning until the failure start point which initiates a linear degradation until failure.

Each time series sequence corresponds to the total operational duration of a turbofan and the last cycle indicates the final instance before failure. Thus initially, the RUL of a turbofan is assumed to be equal to the value of the last cycle and degrades linearly until 0 as shown in Figure 1(a). In this example, the turbofan 1 training data has been recorded in a total cycle of 192.

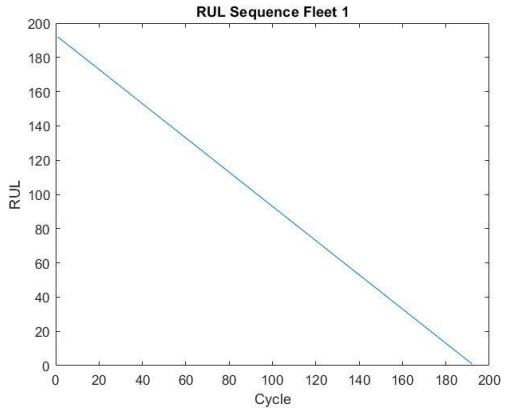


Figure 1(a)

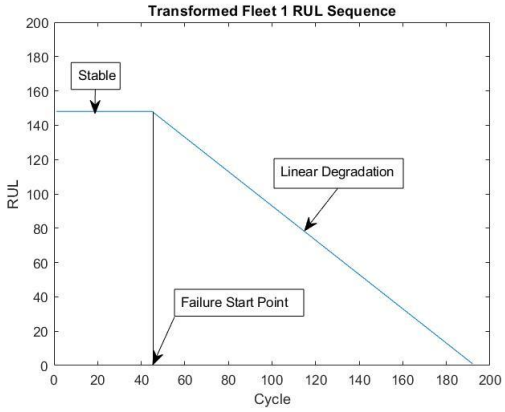


Figure 1(b)

Figure 1(a): Initial RUL Assessment and Figure 1(b): Final RUL Assessment

Table 1: CMAPSS Dataset FD002

Data	Fault Modes	Operating Conditions	Train Units	Test Units
FD002	2	6	260	259

The failure start point for each sensor is calculated using Cumulative Sum (CUSUM) anomaly detection technique, which returns the first index of the upper or lower cumulative sums of each sensor's measurement that have drifted beyond 5 standard deviations from the target mean, indicating the initiating point of degradation (Matlab, MATHWORK). This index is thus equal to the cycle in which the degradation appears. The mean of all these indexes is taken as the failure start point. Combining the linear degradation obtained earlier and the failure start point, the transformed RUL sequence is presented in Figure 1(b).

The HI measurements are calculated from the RULs as indicated below with $RUL(t)$ as RUL at time t, RUL_{max} as the healthy state RUL and RUL_{min} is equals to 0, or failure state.

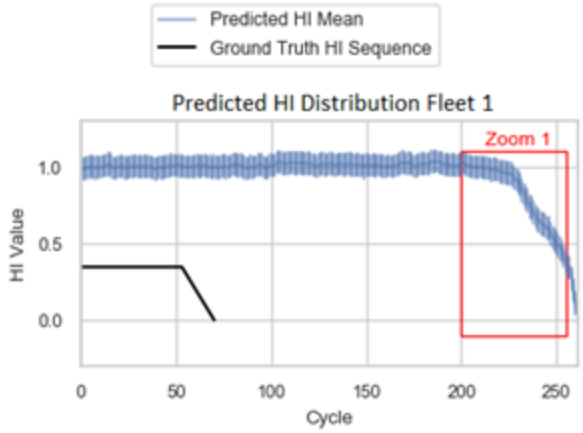


Figure 2: HI Sequence Prediction Turbofan 1

As shown in Table 2, the proposed method's performance is comparable to known publish works in both RMSE and score results. The best results in both metrics are highlighted.

Sequence Prediction and Uncertainty

To analyze the prediction and associated uncertainty, results for turbofan 1 and 2 are presented as examples.

As seen in Figure 2, the prediction for turbofan 1 is not accurate compared to the ground truth HI sequence. This is translated by the growing trend in the standard deviation plot,

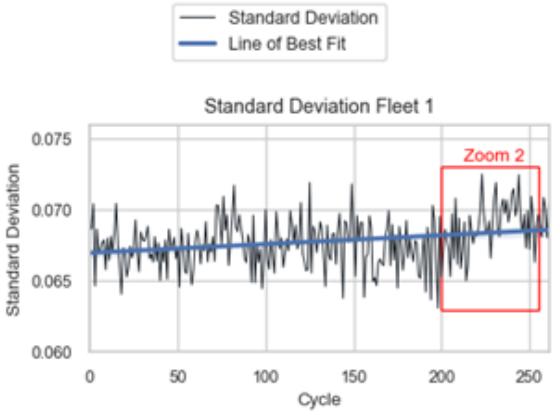


Figure 3: Prediction Uncertainty Turbofan 1

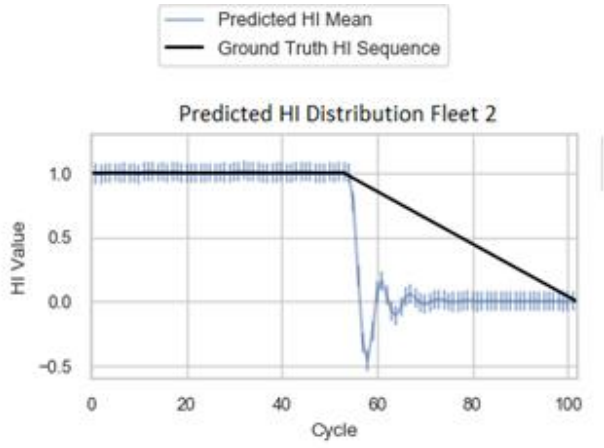


Figure 4: HI Sequence Prediction Turbofan 2

presented by the line of best fit in Figure 3, indicating that the model is increasingly not confident with its prediction.

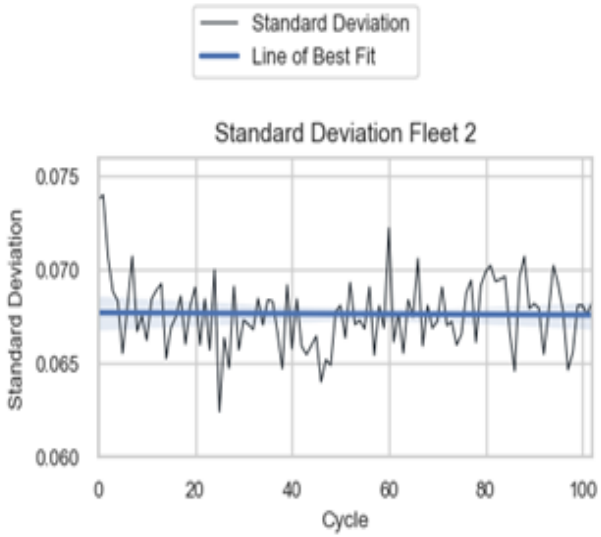


Figure 5: Prediction Uncertainty Turbofan 2

Additionally, successive strong oscillations in standard deviation can be seen in Zoom 2 area in Figure 3, corresponding to Zoom 1 area in Figure 2. This area, as shown in Figure 2, relates to linear deterioration prediction. These extreme movements show that the model is very uncertain of its deterioration prediction.

As for turbofan 2, the HI prediction is quite accurate compared to the ground truth HI as illustrated in Figure 4. The model is confident in its prediction and this is expressed in the standard deviation plot in Figure 5. Here, the line of best fit trend is showing a decrease.

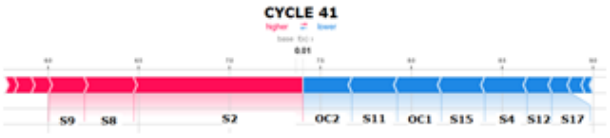


Figure 6(a)



Figure 6(b)



Figure 6(c)

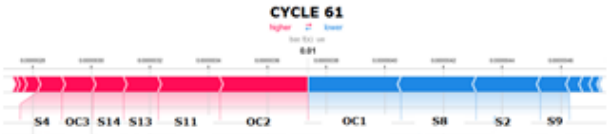




Figure 6(e)



Figure 6(f)

Figure 6: Local Explanation for Cycle 41, Figure 6(a), Cycle 51, Figure 6(b), Cycle 57, Cycle 6(c), Cycle 61, Figure 6(d), Cycle 72, Figure 6(e) and Cycle 80, Figure 6(f)

Prognostic Explainability

Local explainability is presented for turbofan 2 as the model is more confident in this case compared to turbofan 1 as shown before. The SHAP force plots are employed to visualize the local explainability.

The HI prediction, as shown in Figure 6 started to deteriorate at cycle 57, corresponding to the predicted failure start point, or anomaly detection. It is thus interesting to see the explanation before and after this point until the prediction stabilizes indicating failure at cycle 80 (HI = 0).

From the force plot shown above, a pattern on features influencing the prediction can be noted before and after the failure start point. Before the model predicts the start of degradation, various features can be seen influencing the healthy state of the turbofan as presented in Figure 6(a) and 6(b). However, after cycle 57, similar patterns of feature are repeatedly shown. These features are S9, S2, S8, OC1, OC2, S11, S13, S14, OC3 and S4 as illustrated in Figure 6(d), 6(e) and 6(f). The apparition of these features gradually starts from cycle 57 as seen in Figure 6(c). The red color features drag the prediction positively while the blue color features influence the prediction negatively. Omitting the operating condition features (OCs), the description of the features influencing the failure state of the turbofan is presented in Table 3.

Sensor	Influence	Description
S8	Negative	Physical fan speed
S2	Negative	Total temperature at LPC outlet
S9	Negative	Physical core speed
S11	Positive	Static pressure at HPC outlet
S13	Positive	Corrected fan speed
S14	Positive	Corrected core speed
S4	Positive	Total temperature at LPT outlet

Table 2: Features Influencing Turbofan 2 Failure

Conclusion

In this paper, a probabilistic, single input, multi-outputs LSTM with explainability that can express its prediction uncertainty is presented. The ability of this model is demonstrated in an RUL prognostic problem involving turbofan engines. SHAP model agnostic explainability approach is employed to explain the regression task while probabilistic layer produces HI distribution prediction characterizing the aleatoric uncertainty. The model is thus able to express its prediction confidence and explain its sequential outputs. These indicators are very valuable as user

depends on them for correct decision making in real world AI applications. The performance of the model is also comparable to other known methods in published works.

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Role Play in Developing Emotional Intelligence

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Abstract:
With the advent of new techniques in Educational Arena Role Play acts as a newly evolved learning structure where a person assumes the role of another person for acting in a given situation. Emotional Intelligence is regarded as a particular ability to understand one's own feelings, emotion and also to perceive, manage and evaluate different kinds of emotions. Thus the proper knowledge of Role play in classroom can be effective in developing Emotional Intelligence among the student teachers. This specific study was done with 60 teacher trainees from 4 Teachers' Training Colleges of Kolkata Region. The result of the Experimental Study revealed that the Training of Role Play played a great part in the development of Emotional Intelligence among the trainee teachers. There was no significant difference in the development of Emotional Intelligence by Role Play between the male and female trainee teachers. Urban Trainee Teachers showed greater level of development in Emotional Intelligence by the Training of Role Play than the teacher trainees of rural area.

Keywords:
Role Play, Emotional Intelligence, Teacher Trainees.

Learning Innovation in ECE Literacy Teaching Through Action Research: a Case of Two Pre-Service Teachers

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Abstract:

The study explores the importance of action research in implementing 21st century skills and visual arts to improve literacy teaching. Reflections of the two pre-service teachers, who underwent action research in two different case settings, were analyzed by using Nvivo 12 software. The action research experience of the respondent included training, observations, mentoring, research, and teaching in a (research-based) course. The findings of the study are, thus, based on practical and field experience of the pre-service teachers who are teaching practicum placement in Emirati ECE context. The findings suggest that pre-service teacher's value the authentic practical field research experiences in teaching literacy through innovative approaches. Action research sensitize them about the importance of incorporating 21st century skills and visual arts in teaching literacy and enables them to engage students and enhance their learning of literacy by incorporate 21st century skills and visual arts in their teaching practices. The study also underlines benefits of adapting these innovative practices in literacy teaching and furnishes recommendation for improvement in teacher education programs.

Keywords: *action research, innovation in ECE, pre-service teacher education, visual arts, literacy*

Anti-Radiations Fabrics: - Protection from Electro-Magnetic and Ultraviolet Radiations

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INTRODUCTION:-
Anti-Radiation fabrics are extensively used to provide protection to human body from electromagnetic and Ultra Violet radiations. These are also used in nuclear and other chemical-physical industries where any sort of hazardous radiation is generated. Anti-radiation protective textiles are widely used in defense, nuclear research, astronomy, hospitals, chemical industries, electricity power plants etc.

Polypropylene yarn that is resistant to ultraviolet (UV) radiation and offers protection against fire is a commonly used yarn to make anti-radiation textiles. Cotton and polyester cotton is also extensively used for making anti-radiation textiles.

Advantages of these textiles are:
Provides health security to human body from harmful radiation

- Light weight
- Non toxic
- Lead free fabric
- These textiles are an ideal option for office computer staffs, maternity woman, production staffs, broadcasting and radio communication workers and medical staff.

Abstract
The utility model discloses an anti-radiation fabric, which comprises a skin-fitting layer, an anti-radiation layer and a wearing layer from inside to outside. The layers are adhered by adhesive or connected by means of sewing. Compared with the prior art, the anti-radiation fabric has the advantages that the fabric is comfortable to wear next to skin and non-irritative to skin as the skin-fitting layer is sewn with natural fibers such as cotton and linen yarns and the like, the fabric is flexible, washable with water and fine in anti-radiation effect as the anti-radiation layer is sewn with anti-radiation fibers, and the fabric is wear-resistant, fine in dyeing performance, is glossy and colourful in appearance since the wearing layer sewn with chemical fibers serves as an outer layer.

Reference:-

I. https://patents.google.com/patent/CN201878772U/en
II. http://www.bch.in/anti-radiation.htm

Strategically refueling SMEs to revive economy of India post COVID 19: A developing nation's perspective

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Abstract:

Purpose – This study seeks to highlight the areas where SMEs can work on for their sustainability and growth in this post pandemic situation. Aim of study is to analyse the changes SMEs need to adopt due to change in perspective of people in this pandemic. Critical analysis of the situation of SMEs pre and post pandemic scenario will be done to analyse various ways that can help businesses to recover themselves in this difficult situation.

Design/methodology/approach- Critical analysis and review of Pre and Post pandemic situation of SMEs of India will be analysed with the help of existing research papers and case studies. Also paradigm shifts adopted by pioneered SMEs in India to look for.

Research limitations/implications – The study is only analysing the secondary data available. Primary data is not collected for the study.

Practical and Social implications –This study aims to understand the changes SMEs need to implement during covid 19 pandemic for their growth and sustainability.SMEs are contributing in Creating employment, Poverty alleviation, Improvement in the standard of living for the people of India. SMES contribute to business birth rates and empower industries creativity. The study will help in policy formulation and implementation which are concerned to SMEs.

Keywords- SMEs of India, SMEs strategy in pandemic, Reviving Indian Economy, pre pandemic situation of SMEs of India, post pandemic situation of SMEs of India.

The image of historical tourism in the area of the Ayutthaya Historical Park affecting the decision to visit of Thai tourists in Phra Nakhon Si Ayutthaya

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Abstract— This research study aims to 1) study the personal factors influencing the decision to visit among Thai tourists visiting the Ayutthaya Historical Park area 2) study the image and decision making in the historical tourism in the Ayutthaya Historical Park of Thai tourists. The study was a quantitative research. The sample was 400 Thai tourists traveling to Ayutthaya Province. The research tool was a questionnaire. The data were analyzed by using statistics including frequency, percentage, mean, standard deviation and multiple regression analysis.

The results of the research found that the level of opinion on the historical tourism image in the Ayutthaya Historical Park area in terms of the image towards the overall place was at a high level ("X" = 4.17). When considered individually, it was found that the item with the highest average was Ayutthaya Historical Park as a valuable tourist attraction for society and the nation ("X" = 4.34), followed by the Ayutthaya Historical Park, which is a historic tourist attraction ("X" = 4.25), Ayutthaya Historical Park was a valuable tourist attraction in the field of art ("X" = 4.20), Ayutthaya Historical Park was a world famous tourist attraction ("X" = 4.09) and the Ayutthaya Historical Park was a tourist attraction with a revered temple ("X" = 3.99), respectively.

Index Terms— ***image, historical tourism of Phra Nakhon Si Ayutthaya Province***

I. INTRODUCTION

Thailand has a wide variety of tourism resources. At present, tourism in Thailand has expanded considerably. The growth of the tourism sector has to be adapted to keep up with the times. Tourism development must be balanced through niche marketing, promoting Thai ways and building confidence among tourists, which will give tourists confidence in their safety including things that will enhance the experience for tourists. The issue is set out in a government strategy that focuses on enhancing image, quality and safety. Developing the image and confidence in quality will focus on communicating the value and image of Thailand as a high - quality preferred destination to tourists and creating awareness among tourists through various channels (National Tourism Policy Committee, 2017) {1}

In promoting the marketing and image of Thailand to many civilized countries, the public sector has focused on promoting the identity of Thailand and local. In this regard, the Thai identity will be communicated to be understood in the world stage, such as creating Thai value in products and services through the "Thainess" symbol on products and services that maintain the Thai identity and communicating Thai identity through creative and innovative media. It also promotes domestic tourism and balanced tourism by building awareness of products, services and tourist attractions, as well as promoting domestic tourism under the project "Thai Teaw Thai" such as marketing campaigns with specific goals. In this regard, the government has promoted cooperation with stakeholders by promoting cooperation among various sectors in marketing, such as cooperating with communities to create tourism products and services that reflect the community identity, promotion of public-private marketing and promotion of the use of marketing support technologies such as applications that promote tourism marketing and online databases about Thai tourism (National Tourism Policy Committee, 2017) {2}.

Phra Nakhon Si Ayutthaya Province is very outstanding in terms of cultural tourism resources due to the presence of a historical park that has been registered as a UNESCO World Heritage Site. Ayutthaya Historical Park is a place full of various ancient sites built since the Ayutthaya period. The 417-year prosperity of the Ayutthaya Kingdom has created a very valuable civilization, whether it is the places that remain until the present. Even though they are just the

ruins of the consequences of past wars, these places are still valued by their unique beauty. Ayutthaya Historical Park has been declared a World Cultural Heritage by the United Nations Educational, Scientific and Cultural Organization (UNESCO) at the 15th Commonwealth of the World Heritage Committee in Carthage, Tunisia on December 13, 1991, it is the World Heritage List on the list of 576 (Arts and Culture Club, 2017) [3].

The researcher is therefore interested in studying the historical tourism image that affects the decision to visit in Ayutthaya Province. This may be something that can be used for the development of the Ayutthaya Historical Park. It is also a way to create a tourism image for tourists traveling in the Ayutthaya Historical Park area including the publicity of tourist attractions in the area is better known. As a result, tourism in the Ayutthaya Historical Park can be a sustainable tourism area in the future.

II. Research Objectives

The objectives of this research article were 1)To study the personal factors influencing the decision to travel to the Ayutthaya Historical Park of Thai tourists.

2)To study the image and decision making in the historical tourism in the Ayutthaya Historical Park of Thai tourists.

III. Research Methods

Research scope

Area of Studies

In this research study, the researcher conducted the study in the Ayutthaya Historical Park area, Phra Nakhon Si Ayutthaya Province.

Data source scope

The researcher has collected the primary information (Primary data) in the following way.

1. Questionnaire Surveys were characterized by Closed-ended question and Open-ended question.
2. 400 questionnaires were applied to Thai tourists taking historical trips in the Ayutthaya Historical Park area.
3. Quantitative data collection, the researcher collected data from a sample of 400 Thai tourists in the Ayutthaya Historical Park area.

Study duration

The researcher conducted the research from January 2020 to January 2021.

Methodology

1. Resources

The researcher assigned Thai tourists traveling in the Ayutthaya Historical Park area to be the sample used in the study. The researcher could not know the exact size of the population, but did know that the population was large. The researcher then determined the sample size using the Cochran formula (referenced in Theerawut Ekakul, 2000) [4] by estimating the proportion of the population. Thus, a sample group of 400 respondents was obtained.

2. Data Collection Tools

From the research study on "Historical tourism image influences the decision to visit Phra Nakhon Si Ayutthaya Province" was a quantitative research. The researcher then created a questionnaire to obtain complete information covering the content of the study by creating a data collection tool.

3. Data Collection

The researcher had collected the primary data by the following methods.

4. Questionnaire Surveys were characterized by Closed-ended question and Open-ended question.

5. 400 questionnaires were applied to Thai tourists taking historical trips in the Ayutthaya Historical Park area.

6. Quantitative data collection, the researcher collected data from a sample of 400 Thai tourists in the Ayutthaya Historical Park area.

4. Data analysis

The researcher had set the statistics for data analysis of the study as follows.

1. The personal factor variables of the respondents were used to determine the number of qualifying samples only. Therefore, the appropriate statistics for studying such variables were frequency and percentage.

2. For personal factors and the decision to travel to visit the Ayutthaya Historical Park of Thai tourists, the appropriate statistics for studying such variables were mean ("$\bar{x}$") and standard deviation (S.D.) (Kalaya Wanichbancha, 2012) [5].

3. Analysis of key data of interval scale variables using assessment as a rating scale based on the Likert's Scale, the sequence was displayed as interval scale divided into 5 levels, starting from 1 least to level 5 at most. Therefore, the statistics used for correlation testing were multiple regression analysis to study the image of Phra Nakhon Si Ayutthaya historical tourism that affects the decision to travel in the Ayutthaya Historical Park area of Thai tourists.

IV. Results

The table showed the number and percentage of the respondents on the image of historical tourism in the Ayutthaya Historical Park area. The researcher analyzed the data and presented the results of the analysis in all 6 areas as follows:

Personal factor	Number of people	Percent
Gender		
Male	181	45.2
Female	219	54.8
Total	**400**	**100.0**
Age		
Less than 20 years	47	11.8
20-29 years	160	40.0
30-39 years	120	30.0
40-49 years	50	12.5
50-59 years	6	1.5
60 years and over	17	4.2
Total	**400**	**100.0**
Status		
single	192	48.0
Marry	140	35.0
Widowed / Divorced	68	17.0
Total	**400**	**100.0**
Education		
Lower than bachelor's degree	129	32.3
Bachelor's degree or equivalent	214	53.5
Higher than bachelor's degree	57	14.2
Total	**400**	**100.0**
Occupation		
Student / student	89	22.3
Government officials / state enterprises	70	17.5
Private company employee	155	38.8
Private business	33	8.2
Self-employed	53	13.2
Total	**400**	**100.0**
Monthly Income		
Less than 15,000 baht	94	23.5
15,001-20,000 baht	131	32.8
20,001-25,000 baht	95	23.8
25,001-30,000 baht	15	3.8
30,001-35,000 baht	36	9.0
35,001-40,000 baht	17	4.3
More than 40,000 baht	12	3.0
Total	**400**	**100.0**

From the table, it was found that the majority of the sample was 219 women (54.8 percent), followed by 181 males (45.2 percent), respectively.

Most of the sample were between 20-29 years old, with 160 people (40 percent), followed by age between 30-39 years, 120 people (30 percent), age between 40-49 years, 50 people (12.5 percent), age less than 20 years, 47 people (11.8 percent), age 60 and over, 17 people (4.2 percent) and age between 50-59 years, 6 people (1.5 percent), respectively.

Most of the samples were unmarried, total 192 people (48 percent), followed by the marital status of 140 people (35 percent) and widowed / divorced status of 68 people (17 percent), respectively.

From the table, it was found that most of the sample group had an education level at the bachelor's degree or the equivalent of 214 students (53.5 percent), followed by lower than a bachelor's degree, 129 people (32.3 percent) and higher than a bachelor's degree of 57 people (14.2 percent), respectively.

Most of the sample were private company employees, 155 people (38.8 percent) followed by students, 89 people (22.3 percent), civil servants / state enterprises, 70 people (17.5 percent), freelance, 53 people (13.2 percent) and self-employed, 33 people (8.2 percent), respectively.

Most of the sample groups had monthly income between 15,001-20,000 baht, number of 131 people (32.8 percent), followed by monthly income between 20,001-25,000 baht, 95 people (23.8 percent), monthly income less than 15,000 baht, 94 people (23.5percent), monthly income between 30,001-35,000 baht, 36 people (9 percent), monthly income between 35,001-40,000 baht, 17 people (4.3), monthly income between 25,001-30,000 baht, total 15 people (3.8) and monthly income of more than 40,000 baht, totaling 12 people (3), respectively.

The table showed the mean and standard deviation of tourism image in terms of overall tourism attractions in the Ayutthaya Historical Park area.

Tourism image	$\bar{x}$	S.D.	Results
Image of the attraction			
1. Do you think that Ayutthaya Historical Park is a valuable tourist attraction for society and the country?	4.34	0.70	Highest level
2. Do you think that Ayutthaya Historical Park is a tourist attraction with historical value?	4.25	0.65	Highest level
3. Do you think that Ayutthaya Historical Park is a valuable tourist attraction in the field of art?	4.20	0.58	High level
4. Do you think that Ayutthaya Historical Park is a world famous tourist attraction?	4.09	0.81	High level
5. Do you think that Ayutthaya Historical Park is a tourist attraction with a respectable temple?	3.99	0.80	High level
Total	**4.17**	**0.47**	**High level**

From the table it was found that the sample group had a high level of opinions about tourism in the Ayutthaya Historical Park area of the overall location ("$\bar{x}$" = 4.17) (S.D. = 0.47). When considered individually, it was found that the items with the highest mean: tourists thought that Ayutthaya Historical Park is a valuable tourist attraction for society and the country ("$\bar{x}$" = 4.34) (S.D. = 0.70), followed by tourists thought that Ayutthaya Historical Park was a tourist attraction with historical value ("$\bar{x}$"= 4.25) (SD = 0.65), tourists thought that Ayutthaya Historical Park was a valuable tourist attraction in the field of art ("$\bar{x}$" = 4.20) (SD = 0.58), tourists thought that Ayutthaya Historical Park was a world famous tourist attraction ("$\bar{x}$" = 4.09) (S.D. = 0.81) and tourists thought that Ayutthaya Historical Park was a tourist attraction with a respectable temple ("$\bar{x}$" = 3.99) (S.D. = 0.80), respectively.

V. Discussions

The results of the study of historical tourism image in the Ayutthaya Historical Park area that correlate to the travel decision of Thai tourists

The results of the study showed that there were two aspects of image correlating to Thai tourists traveling decisions in the Ayutthaya Historical Park area: 1) image of perception 2) image of the place as a whole The researcher would divide the points in explaining the results of the research study as follows:

1. Image of perception - The image of perception in the sense that tourists may be exposed to media such as television, print media, Big Data media, or even social media, this was consistent with the research of Siripen Dabphet (2018) [6] that had been studied in the areas of tourism components and communication channels, the image of tourism for future tourists: case study of Phitsanulok Province. The results of the research revealed that tourists had a communication channel for perceiving Phitsanulok tourism information through traditional media (sayings of relatives / friends and television) and electronic media (social media) were the main communication channel for tourists, the details of the communication channel include magazines or journals related to tourism, word of mouth (of relatives, friends or acquaintances), Ads from television programs, social media, and websites that can provide information to tourists.

2. Image of the place as a whole - This also included tourism experiences that were relevant to the area of the Ayutthaya Historical Park, for example, the famous annual festival of Ayutthaya Province was "Ayutthaya World Heritage Fair" which was held annually in the Ayutthaya Historical Park area. Therefore, it made tourists perceived about the historical park area. Phra Nakhon Si Ayutthaya

very well, even though I have never traveled on a historical trip formally. At the same time, tourists may become aware of traveling to make merit in various important temples in the Ayutthaya Historical Park area because it was an area with many temples and was not far from Bangkok. The area around the Ayutthaya Historical Park is therefore popular for continuing to make merit. This is consistent with the research of Manoch Phrompanya and Siriwan Serirat (2015) [7] that had studied the sustainability of tourist attractions, motivation and attitudes towards temple tourism behavior in Phra Nakhon Si Ayutthaya district. The research found that Thai tourists viewed the sustainability of the tourist attractions at the 4 temples: Wat Phanan Choeng Worawihan, Wat Yai Chaimongkol, Wat Na Phra Meru Rachikaram, and Wat Tha Ka Rong were in a very high level of "sustainability".

In addition to being mentioned, the Ayutthaya Historical Park was also considered a relatively famous historical tourist attraction. As it was registered as a UNESCO World Cultural Heritage Site, the area has frequently appeared in the media.

All of this may be part of the tourism awareness of the context of the area, thus leading to the decision to travel to experience this valuable resource.

VI. RECOMMENDATIONS

From research studies, it was found that the Ayutthaya Historical Park still had some interesting things and the information obtained in this time could be used to promote and develop the Ayutthaya Historical Park as follows:

1. In terms of publicizing the image of tourist attractions in the Ayutthaya Historical Park, all sectors should continue to promote and publicize in order to create greater awareness among tourists.

2. Advertising could promote the strengths of historical and archaeological values in various channels that tourists can easily access, whether in the old channels such as television media and various print media and new channels should be promoted to suit the times, such as social media or the exchange of travel experiences in order to reinforce the identity of the destination to be more prominent.

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An Analysis of the Economic Solutions as in the Kutadanta Sutta: A Case Study of Chim Shop Chai Project

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Abstract— This Article aimed to analyze the economic solutions of the Chim Shop Chai Project in accordance with the Kutadanta Sutta's principles. This is a qualitative as documentary research. It has been conducted through Thai Tipitaka scriptures, books, documents, academic papers, and various researchers. The findings showed that 1) Solving the economic problems based on the Kutadanta Sutta principles was to solve macroeconomic problems. The way to do this was to provide funding to 3 groups of people who are diligent in their careers, namely farmers, merchants, and government officers. 2) The Chim Shop Chai Project aimed to stimulate the economy through domestic tourism promotion. 3) the economic solution analysis of the Chim Shop Chai Project in accordance with the Kutadanta Sutta's principles showed that the Chim Shop Chai Project has the same principles as the Kutadanta Sutta in 2 cases: (a) The government wanted to alleviate economic trouble for their people by giving money to the people. (b) The government wants economic circulation according to the principles of macroeconomics resulting in increased purchasing power in the country. For the differences, It is found that the government did not select participants in to the program according to the occupational groups but allowing all professions to participate in the program freely. Not only participants who are low income, but the high-income people can also join. The government therefore does not promote production factors for farmers in any way. When this happens, it is still not to encourage those who are diligent in their careers as exemplified in. Only merchants who are registered for this project will benefit directly from this project.

Keywords— *Economic Solutions; Kutadanta Sutta; Chim Shop Chai Project*

I. INTRODUCTION

The economic problem has been a problem that has existed in this world for a long time. Human beings of different eras had to find different solutions to economic problems. Unstable and sustainable driving challenges in knowledge, personnel, finance, networked costs, lack of operational strategies and causal factors will positively impact direct drive [1]. The government of each country is responsible for managing the country to be able to develop in various fields. Developing and solving the economy is essential to the well-being of the people. As for the management of economic activities at the national level, it is often related to the principles of macroeconomics [2]. The aim is for the country's economy to achieve stable growth, to achieve full employment, to distribute income evenly and fairly, to ensure people's well-being, having a good quality of life and a normal society coexistence with no thieves. On the other hand, if the economy is in trouble, people will not have enough income to live, which is the cause of social problems and crimes such as poverty, unemployment, crime and drug problems, etc. Therefore, there must be a process for planning, building cooperation or enhancing mutual benefits [3]

General Prayut Chan-o-cha, Prime Minister of the Kingdom of Thailand passed a cabinet resolution on 20 August 2019; it was presented by the Ministry of Finance for the issuance of a measure to promote tourism in the country commonly known as the "Chim Shop Chai" project[4]. This measure is aimed at promoting tourism in the country. The government will sponsor a limit of 1,000 baht per person by transferring to an electronic wallet (g-Wallet) as a right to purchase products and services from participating entrepreneurs. In addition, the government will support cash back at the rate of 15% of the actual expenses paid, but not more than 4,500 baht per person, to encourage tourism in the provinces that are not their home country. The government is expected to distribute income to various communities. The

purchase of such products and services must be travel expenditures through the "Paotang" app to purchase products and services from a payment entrepreneur with the "Thung Ngern" app. To participate in this program must be 18 years of age or over on the registration date. The measure is said to have a wide range of both positive and pessimistic impacts on the economy and society. Those who have benefited from this measure will appreciate and mention the advantages of it. In contrast, the unprofitable may be questioning the drawbacks of the measure in various ways because the government gives money to people to travel, where the people who receive the money do not have to do any work, as if encouraging lazy people to work, which instills the wrong values among the people. On the part of economics scholars have different opinions, which show that under conditions of extreme change, leaders who have the characteristics of transformational leadership will be able to cope with various organizational situations and produce great organizational effectiveness [6].

Buddhism has been born for more than 2,500 years, from the time the Lord Buddha enlightened in the stage of "intuition is self-enlightenment" until parinirvana. There were different styles of governing. Since when the Lord Buddha was still alive, he ruled the Sangha by using sovereignty principles, the act of law and discipline, the administration of the Sangha and the religion, judgment of the monks by the Buddha as a Dharma, with Saributr as the facilitator of the work, together with Mahamokkallana and the Thera, and the assignment of the monks to meet together to do the sanctification, meeting attendees should live equally according to the principles of discipline in the areas of physical, verbal and mental control [7].

The doctrine of Buddhism contains teachings for solving economic problems in both Buddhist scriptures: The micro economy is an individual economy. The teachings that were used to solve this level of problems also existed, such as the Rich Man's Spell, vice6 (channel of decay and death), Saraneeyatham 6 (Dharma was the site of remembrance and principle of coexistence) It is a principle that works for the benefit of the present or a principle that benefits the practitioner. If this principle is applied, it will improve the economy, resulting in better living of community members as well [8]. For solving macroeconomic problems, it is a view of the economy at the overall level of the country [9]. This also appears in the Kutadanta Sutta, the Buddha's Sutra that the Buddha answered the question that the Kutadanta Brahmin had asked about the sacrifice. He has answered the right to sacrifice and can solve the economic and social problems of the country to be peaceful. Mahawichitrach King accepted the Brahmin Priest and gave plants and food to the energetic citizens of agriculture and cattle rising, bestowed a cost to citizens who are enthusiastic in the field of commerce and gave food and salaries to the diligent government officials in his country. When those citizens were determined to do their work, they did not persecute His own country, thus making the country peaceful and without harassing one another. Therefore, people rejoice with each other, be happy with their family and live without having to close their doors [10].

From the preliminary presentation, it could be seen that the Brahmin Priest gave MahawichitrachKing advice to give the people a living factor. The current government is giving away money to people in the "Chim Shop Chai" project, 1,000 baht per person, for 10 million people who participated in the project. For this reason, the researcher wishes to analyze the main economic solutions in Kutadanta Sutta with the "Chim Shop Chai" project about similarities or differences because solving economic problems according to Buddhism will be the mental development at the same time, which is called "good economy and beautiful mind" to be used as a guideline for solving economic and social problems for those who are interested in the future.

II. RESEARCH OBJECTIVES

To analyze the economic solutions based on the Kutadanta Sutta principles with the "Chim Shop Chai" project.

III. LITERATURE REVIEW

Kutadanta Sutta made known solutions to economic problems. The principle in Kutadanta Sutta was caused when Mahawichitrach King wants to worship the Great Sacrifice but the brahmin priest asked him to suppress the thief before the sacrifice and must not use the method of suppressing the thief by arresting and punishing the past. The brahmin priest had therefore proposed the first solution to the thief caused by poverty by promoting wealth to the lower three who are diligent in their livelihoods. These included farmers, merchants, and government officials [10]

The "Chim Shop Chai" project is not a project to help the poor, but a project to solve economic problems by stimulating the economy through domestic tourism. The idea is to alleviate the economic distress of the people by giving money to the people who participate in the project to spend on tourism in order to achieve economic turnover. This will alleviate the suffering of the people. The "Chim Shop Chai" project will provide 1,000 baht into E-Wallet1 to 10 million people who have successfully registered for the project via mobile phone system and give cash back 15% but not more than 45,000 baht into E-Wallet2 of specific project participants who spend outside their province. The government expects that there will be 310,000 million baht in

circulation in the system, calculated from 1,000 baht in the E-Wallet1 and 30,000 baht from the E-Wallet2, combining both E-Wallets, the amount is 31,000 baht per person, totaling 10 million people (Thai government, 2019).

Kutadanta Sutta was the Buddha's Sutra that the Buddha answered the question that the Kutadanta Brahmin had asked about the sacrifice. He has answered the right to sacrifice and can solve the economic and social problems of the country to be peaceful. Mahawichitrach King accepted the Brahmin Priest and gave plants and food to the energetic citizens of agriculture and cattle rising, bestowed a cost to citizens who are enthusiastic in the field of commerce and gave food and salaries to the diligent government officials in his country. When those citizens were determined to do their work, they did not persecute His own country, thus making the country peaceful and without harassing one another. Therefore, people rejoiced with each other, were happy with their family and lived without having to close their doors (Maha Chulalongkorn Rajavidyalaya University, 1996).

From the preliminary presentation, it could be seen that the Brahmin Priest gave Mahawichitrach King advice to give the people a living factor. The current government is giving away money to people in the "Chim Shop Chai" project, 1,000 baht per person, for 10 million people who participated in the project. For this reason, the researcher wishes to analyze the main economic solutions in Kutadanta Sutta with the "Chim Shop Chai" project about similarities or differences because solving economic problems according to Buddhism will be the mental development at the same time, which is called "good economy and beautiful mind" to be used as a guideline for solving economic and social problems for those who are interested in the future

IV. RESEARCH METHOD

This research is qualitative research, separated into the following studies.

1. To study solutions to economic problems that appear in Kutadanta Sutta in Theravada Buddhist scriptures, Primary Source: tripitaka, commentary and secondary source using documents, books, texts, articles of Phra Thera, philosophers, experts and Buddhist scholars.
2. To study solutions to economic problems in the current government from the Cabinet resolution "Chim Shop Chai" project, press release papers, articles from economic analysts and other related academic works.
3. To use all information, including facts, concepts, theories and interviews to study, analyze and distinguish whether there is a conflict or coherence.

V. RESEARCH RESULTS

A. Economic solutions based on the principles in Kutadanta Sutta.

According to the study of Kutadanta Sutta, the solution to the main economic problem of Kutadanta Sutta in the sense, when Mahawichitrach King wanted to perform a rite of worship, but the Brahmin, but the priest asked him to suppress the thief before the sacrifice, without using the method of suppressing the thief with the conviction of the past. The brahmin priests therefore proposed the first solution to the thief arising from poverty by promoting funds to three groups of lower-ranking people who are diligent in their livelihoods, including farmers, merchants, and government officials.

After the thief problem was gone with the solution to the economic problem. Mahawichitrach King then asked for cooperation in the worship of the Great Sacrifice from the top 4 groups of people to become a follower of the Holy Ghost. This is to want those four youths to acknowledge and accept a solution to the problem of thieves by solving economic problems. Once the four young men accepted this new solution to the thief problem, the new sacrifice was made using only clear butter, oil, condensed butter, curd, honey and sugarcane juice. This was the result of a revolution in the belief of traditional sacrifice that required mass killing of animals. Considering the advantages of using thick butter, curd milk, honey and sugarcane juice in sacrifices (Phra Prayudh Payutto, 2018), it had been shown to stop slaughter but instead to promote agriculture.

B. Solving economic problems of the "Chim Shop Chai" project

The "Chim Shop Chai" project is not a project to help the poor, but a project to solve economic problems by stimulating the economy through domestic tourism. The idea is to alleviate the economic distress of the people by giving money to the people who participate in the project to spend on tourism in order to achieve economic turnover. This will alleviate the suffering of the people. The "Chim Shop Chai" project will provide 1,000 baht into E-Wallet1 to 10 million people who have successfully registered for the project via mobile phone system and give cash back 15% but not more than 45,000 baht into E-Wallet2 of specific project participants who spend outside their province. The government expects that there will be 310,000 million baht in circulation in the system, calculated from 1,000 baht in the E-Wallet1 and 30,000 baht from the E-Wallet2, combining both E-Wallets, the amount is 31,000 baht per person, totaling 10 million people.

1) Advantages of this project

This project is to increase purchasing power or increase demand for the domestic economy. The result is that the

participating merchants need to be more diligent in order to support more customers, thus increasing their income. It also encourages people to be more alert to use the app to prepare to access the cashless system. The government who owns the project will receive more popular votes from the people.

2) Disadvantages of the "Chim Shop Chai" project

This project does not select the participants according to the necessary occupation groups, but allows all occupations to join the project independently, thus causing the person in real trouble to not receive help. As the project does not promote the inputs for farmers, the government should address this problem by attracting more agricultural-related stores into the project. Therefore, the policy should be introduced by all government officials to invite more agricultural-related shops and retail shops to apply for the project. Also, because of the problem of registering through the mobile phone system, the really troubled people will not receive help and found that this project does not support those who are diligent in their careers, so they will not be able to solve the problem of criminals in any way because it does not directly solve the problem of poverty for those who need help. As for the shops, it was found that this project was an opportunity for large wholesale merchants to participate in this project. The lastly point, this project does not support the principles of wholesome course of action10 because the proceeds from this project can be used to buy alcohol and cigarettes.

C. Analysis of economic solutions based on the principles of Kutadanta Sutta with the "Chim Shop Chai" project

The value of Kutadanta Sutta is used with the "Chim Shop Chai" project, it is considered to fill a gap or close the disadvantage of the "Chim Shop Chai" project for the benefit of the country as follows.

1) The "Chim Shop Chai" project that aims to stimulate the economy through tourism and can use the money in the project to buy cigarettes and spirits, therefore, it is considered to support the allegation. It is better if this project prohibits the use of money from the project to buy cigarettes and alcohol in order to further promote the good morals of the people.

2) "Chim Shop Chai" project aimed at stimulating the economy through tourism should be adjusted to be more usable by attracting shops with agricultural equipment and essentials such as fertilizers, plant tonic, seed and agricultural equipment, to join the program to benefit farmers who are the country's foundational economy. This will be considered in line with helping farmers in accordance with the principles of Kutadanta Sutta.

3) In the "Chim Shop Chai" project that aims to stimulate the economy by tourism and open for successful registration to receive 1,000 baht to spend, the project should have a selection system for only those who are diligent or have a volunteer spirit to participate in the project only in order to encourage those who are diligent and behave appropriately to be a model of merit in society.

4) "Chim Shop Chai" project aimed at stimulating the economy through tourism It is a temporary solution to economic problems because at the end of the tourism season, the economy will be sluggish as before, which is like weeding by cutting off the roots of weeds. Therefore, this project must expedite all retail stores to enter the "Chim Shop Chai" system so that every spending of the public will receive 15% cash back and the retail stores will have more sales as well.

5) The "Chim Shop Chai" project, aimed at stimulating the economy through tourism, should select only those in need of living factors for participating in the project who receive financial assistance. However, that money should not be taken for tourism because at the end of the holiday season, the economy will return to its sluggishness as before. The money should be used for further education in their own careers by using the "Chim Shop Chai" project money to support their studies instead of spending money on vacation because the use of education is to increase knowledge and skills for himself, which is considered to teach him to raise fish in order to truly solve economic problems in the long run or called "Chim Shop Chai" for education.

6) The "Chim Shop Chai" project aimed at stimulating the economy through tourism, taking into account the political values of Kutadanta Sutta, this project should choose a store that has the intention of working but lacking funds for their occupation to join the project. This will help retail merchants to capitalize on expanding their trade to be more effective in their careers that meet the Kutadanta Sutta principles. This project may be called "Chim Shop Chai" project for investment.

VI. DISCUSSION

The results of the research revealed that the analysis of the economic solution based on the KutadantaSutta principle with the "Chim Shop Chai" project found that, the "Chim Shop Chai" project had the same principles as Kutadanta Sutta in 2 cases: The government wanted to alleviate the economic distress of its people by giving money to the people and to achieve economic circulation. This was because governments in each country had administrative duties to enable the country to develop in various fields, developing and solving economic problems was essential to the well-being of the people, management of economic activities at the national level dealt with the principles of macroeconomics. The aim was to achieve stable economic growth, full employment, a fair and even distribution of

income, to make people live well and had a good quality of life, and enable society to live together happily and to accept change with a neutral mind This project was to increase purchasing power or increase demand for the national economy. The result was that the participating merchants need to be more diligent in order to support more customers, thus increasing their income. It also encouraged people to be more alert to use the app to prepare for a cashless login. The government who owns the project would receive more popular votes from the people. The government thinks that this kind of stimulation would be the right way. However, every configuration had its own imperfections and can lead to weaknesses to be developed to be appropriate in each context.

VII. CONCLUSION

Kutadanta Sutta is a formula of economic solution. The brahmin priest had proposed solving the robbery of poverty by promoting wealth to three lower-level people who are hard working in their careers including farmers, merchants, and government officials. "Chim Shop Chai" project is a project to solve economic problems by stimulating the economy through domestic tourism. The idea is to alleviate the economic distress of the people by giving money to the people who participate in the project to spend on tourism and to promote economic turnover. The advantages of the program are income generation, job creation, and state taxation. The disadvantages are the selection of the project participants, or the lack of focus on the truly in trouble.

VIII. SUGGESTION

In conducting this research, it is a qualitative research focused on solving economic problems based on the principles of KutadantaSutta with the "Chim Shop Chai" project. The government also has several other projects to solve economic problems, so the researcher would suggest as follows.

A. Suggestions for the use of research results

The government must focus on solving economic problems to three diligent low-income groups: supporting inputs such as seeds and funding for small farmers, supporting low-interest loans for small merchants and increasing salaries and welfare for minority officials. If the government has a project that answers these questions, solving domestic economic problems will be more efficient than at present.

B. Suggestions for further research

1) Study and analyze economic solutions based on Kutadanta Sutta principles and the "Shop Chuay Chart" project.

2) Studying and analyzing solving economic problems according to principles KutadantaSutta and the "Rice Price Guarantee" program

3) Study and analyze economic solutions based on Kutadanta Sutta principles and the "Rice Pawn" project.

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The Strengthening of Peace Organization by Buddhist Integrations

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Abstract— *Fostering a peaceful organization in the workplace requires the collaboration of its members join together in one direction for any organization to move forward that requires the cooperation of its members. The purpose of this article was to propose a way to live together happily by integrating Buddhist principles. Ten objectivity principle was used for speech that should be spoken, which before the speaker says anything should be considered. Ponder the impact of the message on whether it will affect the situation in a positive or negative direction. It is also necessary to consider the context of the audience and adjust the idioms, expressions, and attitude while talking to focus on the success of communication in a positive direction. This article will present the issue of managing conflicts, managing happiness, by integrating 10 objects in the administration of happiness organizations, hoping that when applying principles. The members of the organization will be happy to work continuously.*

Keyword— *The Strengthening, Peace Organization, Buddhist Integrations*

I. INTRODUCTION

A happy organization is something that organizations seek to foster happen in their respective units. In working together, there must be communication, because humans are animals, society must rely on others to help them live their lives but the practice of working together can lead to conflicts [1]. If the workplace is compared to a large machine, a machine to function requires a combination of several small gears that work together and synchronize in one direction. For any organization to move forward, it requires the cooperation of its members [2] with the ultimate goal of organizational success and happy coexistence [3].

Humans are living beings with complex dimensions and mechanisms. Some mechanisms may be overloaded, resulting in conflicts and unrest in the workplace. This can be seen from the news of the workplace conflict in various media, for example, a chief of a hotel employee in Chiang Mai argued with a colleague, and then took a machete that was more than 20 inches long and stabbed the other party. The perpetrator, Navin, waits to surrender himself to the police with his machete. Mr Navin confessed that before the incident, there was an altercation with Mrs. Chanpen over the work and there are challenges, causing a fight so violent that it causes anger to stab the opponent with a machete until death. [4] In an incident where a Chinese chief argued with his subordinates over uncontrollable wages, while his subordinates fiercely retaliated in front of the boss, they were hit by the boss in the face, causing the subordinate who was deeply upset to react by repeatedly hitting the boss before someone stopped him. [5]

The website of a Chinese news agency reported that an altercation occurred during a meeting of a company in Huainan City, Anhui Province, CCTV footage showed the boss and a female employee arguing on opposite sides of the conference table. Before the boss slapped the table and raised the chair next to him preparing to strike at the female employee. As the female attendant saw this, he grabbed another chair and threw it at the boss until it staggered back and fell to the ground with a chair still in hand. The female employee then threw the same chair at the boss's body, with other employees in the incident trying to stop it. The female employee said the boss claimed she owed him. She said that if she really owes him, then let him make a document out of it until the end of an argument arises. The woman was detained by police for six days and fined 200 Yuan (nearly $ 1,000) for assault, causing intentional injury to others.

In the case of an example, it is an example of the use of violence that is not effective in any case; this research proposes a way of living together happily by integrating Buddhist principles [7]. The principle of Kathavatthu10 will be proposed. Kathavatthu10 (Subjects for talk among the monks) is the principle of what to say, that is, thinking before speaking, considering whether the impact of the message will affect the situation in a positive or negative direction. In addition, the context of the audience must also be considered, and then adjust the expressions,

expressions and expressions during the conversation in order to only lead to the success of communication in a positive direction. This article presents the issue of Conflict Management and Happiness Management by integrating Kathavatthu10 into the management of happiness organizations. In this regard, it is hoped that once the principles are applied, members of the organization will be happy in their work continually.

II. LITERATURE REVIEW

Concepts and theories affecting peaceful organizations

A. POCCC Theory of Management

The POCCC Theory is based on the 5 functions of Henri Fayol [8] which were established for the management of the organization. Each function is important, linked and interrelated to ensure a successful and successful work. Details of the 5 functions are as follows:

P - Planning: Planning is the determination of an action plan or path that will be performed from start to finish and cover all processes. It is a set of guidelines for future work. This planning is born out of a vision combined with a forward-looking management imagination, which is transmitted as an action plan and goals must be achieved

O - Organizing: Organizational organization determines the positions, duties, duties, responsibilities, as well as the number of people to cover all work processes including the organization of the position and organizational structure to prioritize management and command. If the organization has a systematic management, a clear and non-overlapping division of work and the amount that is suitable for people will surely make the work more efficient and have a high chance of success.

C - Commanding: In mass order commanding operations, a commander is required to run smoothly. Therefore, the organization as well as the working structure will clearly show the chain of command and priorities as well as the authority to command. The advantage is that it allows for timely decision-making. Decision-makers must be able to analyze things carefully and make decisions quickly.

C - Coordination: Coordination refers to the obligation to connect the work as well as the compatibility of the workforce. Maintaining the same goal and facilitating the work to achieve the desired outcome. Good coordination is required at all levels, from individual to person, supervisor to subordinate, department to department, to executive to every department in the organization.

C - Controlling: Controlling means supervising and managing everything to be accomplished as planned and the implementation of the operation according to the specified framework in terms of time frame, operating standards, work procedures, co-ordinate all parties to be smooth. This control also includes non-human resource management such as raw material resources, machinery, output, as well as all operating budgets in order to work as efficiently as possible.

B. Principles of Management based on the concept of Henri Fayol

1) Division of Work: Organizational structure and work will allow us to clearly see the duties and work of each person in the organization. This brings about the complete division of labor into different parts. The division of labor should be divided according to individual skills and expertise to achieve the most effective work.

2) Authority & Responsibility: Having received the authority to work, it must also be responsible for the work performed. Decision, issuance and management must be held accountable for their actions in accordance with their assigned authority.

3) Discipline: Discipline is a framework for mutual practice, obedience, mutual respect and work together in the best that is clear and straightforward. In mass work, everyone needs to be disciplined in their work so that they can easily be productive and successful. Discipline should be governed from top to bottom, with principles and penalties clearly supporting the offender.

4) Unity of Command: Only one commander is needed to have absolute power to command and to enable decisions to be executed in a timely manner.

5) Unity of Direction: Work should have only one master plan. Even if a backup plan is available, it is best to stick to the master plan first to avoid confusion. Working as a group, agency or even an organization, it is important to have a common goal that allows everyone to see a clear course of action and drive them towards a common goal.

6) Subordination of Individual Interest: Morality is an important thing that should be adhered to in the workplace. The interests of the organization and the interests of the public should precede personal interests, which should also be based on the basis of justice, accuracy and suitability.

7) Remuneration: Actions must be agreed to and enjoyed by both the employer and the employee in terms of suitability, fairness and unfair advantage. It should also be adjusted according to the appropriate situation such as other forms of compensation such as rewards, benefits, other forms of benefits, training and praise. These things can also satisfy employees.

8) The Degree of Centralization: Centralized power will be easy to control, direct and timely. Powers may be decentralized, but they need different priorities and different authorizations for systematic control and ease of operation.

9) Scalar chain: Scalar chains allow us to clearly see the power of command as well as the level of administration in order to facilitate the flow and process. It makes work more systematic and manageable, solving problems quickly and to the point. It also helps to establish communication regulations, transfer information and organize the content of communication accordingly.

0) Order: Tidiness makes work more efficient and easier to achieve goals.

11) Equity: Equality, as a human being, should be entitled to humanitarian rights and treatment and not take advantage of each other.

12) Stability of Tenure of Personnel: Stable performance makes employees feel comfortable, worry-free, and work-hard.

13) Initiative: This is the strength of the organization. The organization should encourage self-expression. Employees should have the liberty of expressing their opinions and presenting new things. This will give rise to an initiative character that is a good foundation for any job, regardless of style or career.

4) Esprit de Corps: All employees must work in unity and in a team, cooperation, and deal with the problems that arise in order to reach the point of mutual success [9].

In POCCC management theory, the emphasis is on comprehensive management, starting from planning to operations.

Organizational structure to work control in accordance with the set standards can be adjusted to suit and according to the organizational context. The advantage of Henri Fayol's principle of management is its all-round attention and a comprehensive emphasis on human and non-living production processes. The key to management principles is "Unity", a common purpose, one direction, to unity and harmony towards success.

C. Conflict theory

Wanchai Watthasap [10] explains that conflict is a normal thing that can happen to everyone, which is not a bad thing. If able to extricate them in a creative way and lead to a solution or find a solution, we cannot prevent conflicts, but we can create a process for resolving them or disputes. Conflicts and disputes have a similar meaning. Conflict is a matter of differing opinions or beliefs, but the parties can still work together but disputes are matters that stakeholders aim to overcome in order to achieve their goals.

Sermsak Wisalaporn [11] said that conflict is a social process. Conflicts arise when each party has incompatible aims and different values. These differences are often perceived rather than actual. It is an interpersonal relationship involving a purpose or method, or both, but a negative dependence. It can be broadly said that a conflict refers to the individual's needs mismatched, whether it is the actual need or the likelihood of a desired one.

D. Reasons and factors that cause conflict

Humans are social creatures, so there is a psychological need to coexist in groups in order to feel safe. With contexts that differ according to individual characteristics and in the midst of limited resources [12] [13] it is inevitable that conflicts will arise.

Conflicts in human society are divided into broad categories:

1) Comments: Matching opinions help people to mingle smoothly. But if their opinions are inconsistent and one party doesn't accept the other's opinion as correct, then a conflict will arise.

2) Guidelines: People with the same viewpoint are likely to work together. People who share the same opinion of principle but may disagree with the other person's practice A conflict may arise from this in another way.

3) Benefits: What everyone wants or satisfies each other, conflicts because their interests can be seen most clearly and occur in most everyday life, especially those in the economy and politics.

Therefore, in situations of coexistence with different contexts based on individual characteristics, when differing opinions and different practices share irrational interests, conflicts cannot be avoided. Conflicts because of their interests are most visible and arise in everyday life.

E. Kathavatthu10 (Subjects for talk among the monks): Principles of conversation.

The Lord Buddha realized the importance and the benefits of speech and therefore established principles and teachings about the word in the Tripitaka. What is generally perceived is one that should be discussed.

Kathavatthu10 is the principle that matters to be said.

Before someone speaks or says anything, the context of the situation and the audience should be considered. Then adjust the expressions and expressions to suit that context in order to achieve post-conversation peace. Because people and workplaces have details, forged and unique, social conduct and attitude must be adapted to the context in which it is facing. An example

of a Buddhist doctrine on matters that should be discussed, Kathavatthu10 [14], is applied and integrated into the context of conflict management communications for peaceful organizations.

1) Talk about or favorable to wanting lit: The subject matter of smallness is adapted to create a peaceful organization - raising awareness of the identity and the lack of wanting to follow others until it causes jealousy, where jealousy is a negative force that creates a negative atmosphere in the workplace

2) Talk about or favorable to contentment: Solitude, adapted to create a peaceful organization - separating from a group to slander others and the inextricable communication group, which is a wasted waste of time each day

3) Talk about or favorable to seclusion: The matter of seclusion has been adapted to create a peaceful organization - isolation from any conflict to revisit and find a solution in a constructive and peaceful way

4) Talk about or favorable to not mingling together: The matter of inaction by listening, seeing the physical conversation and coexistence are applied to create a peaceful organization - lack of gossip, no sneaky talk, not spreading rumors, and not showing sarcastic behavior because those behaviors destroy the happy atmosphere of coexistence

5) Talk about or favorable to strenuousness: Proposals about the complete physical and mental diligence will be adapted for the formation of a peaceful organization - the training of the mind to tolerate the detriment of deterioration, whether it is anger in the cause of strife and tolerance for duty not to commit fraud, even if there is an opportunity to cause it.

6) Talk about or favorable to virtue or good conduct: The issue of integrity through organic focus, purity living and consideration of four factors will be adapted to create a peaceful organization - self-realization, necessary living expenses appropriate to economic status, not obsessed with unkindness, not being too extravagant until it leads to corruption in duties to bring compensation to be spent on things that result in the deterioration of life.

7) Talk about or favorable to concentration: The matter of perfection through meditation will induce the meditation and apply it to the formation of a peaceful organization - commitment to unity and commitment to the development of agencies and organizations to progress, not giving up when encountering obstacles, but bringing the problems found to discuss and resolve for further development.

8) Talk about or favorable to intelligence: The matter of perfection with wisdom is adapted to create a peaceful organization - executives should promote activities and provide knowledge or sending personnel to train to increase knowledge in the field, develop potential and work skills and to increase self-esteem along with creating motivation for work

9) Talk about or favorable to deliverance: The matter of perfection that leads the mind away from desires and suffering will be adapted to create a peaceful organization - when a conflict arises in an agency, the management arranges for the parties to work together to negotiate to find a peaceful and constructive solution.

10) Talk about or favorable to the knowledge and vision of deliverance: Convincing interest and understanding of knowledge and opinion in the state of liberation from passion and suffering will be adapted for the formation of a peaceful organization - taking the conflicts found in the organization to take lessons in order to find solutions and prevent repeated incidents including bringing the points found to develop the organization to prosper and become a peaceful organization.

Strengthening the Buddhist Integration Peace Organization

Organization of happiness is something that organizations try to promote in their respective units. This is because working together must be communicated, because humans are social animals that need help with other people in their life. When working together, there may be conflicts or not understanding each other. Therefore, the integration for peaceful coexistence can be presented in Table 1 and Figure 1.

Table 1 Buddhist integrated - approach peace organization

POCCC Management Theory	Buddhist principles	Results of Integration
Planning: Planning is a set of action plans or paths that will be carried out from start to finish, covering all processes and goals that must be achieved.	-Talk about or favorable to concentration -Talk about or favorable to intelligence -Talk about or favorable to the knowledge and vision of deliverance	The management sets the action plan and leads the operator to have an understanding of the work plan including unity and determination to achieve success in the implementation of the plan indefinitely.
Organizing: Organization is	-Talk about or favorable to wanting lit	Executives structure the

structuring the position, duties, responsibilities, as well as the number of workers covering all processes.	-Talk about or favorable to contentment -Talk about or favorable to the knowledge and vision of deliverance	positions, duties and the number of people to suit the workload to prevent grouping, talking, gossiping and unintentional work, using human potential at the right time and persuading operators to understand within the context of their workload for a smooth and successful work.
Commanding: The command of command is a structure of work that results in a clear line of command as well as the authority to command. The advantage is that it allows for timely decision-making. Decision-makers must be able to analyze things carefully and make decisions quickly.	-Talk about or favorable to the knowledge and vision of deliverance	A good leader, in addition to making careful and quick decisions, also has a fair mind, in the event of any disagreement that requires a definitive judgment, in decisiveness, there must be compassion, including compassion, guiding solutions, forgiveness, and providing opportunities to find a peaceful solution to conflicts.
Coordination: Coordination refers to the obligation to connect work as well as the working compatibility of manpower, governance that is aligned towards the same goal and enabling smooth operations to achieve the intended results.	-Talk about or favorable to strenuousness -Talk about or favorable to concentration -Talk about or favorable to deliverance	People in the coordination function to achieve the goals must be people who have psychology and persuade the operator to understand the guidelines for the common goal, it also encourages perseverance and does not give up halfway before reaching the achievement of the goals that have been set.
Controlling: Controlling means managing everything to be carried out as planned and in accordance with a set frame, in terms of time frame, operating standards, work procedures to co-ordinate all parties to be smooth in order to work as efficiently as possible.	-Talk about or favorable to the knowledge and vision of deliverance -Talk about or favorable to intelligence -Talk about or favorable to deliverance	Persuading staff members to focus on and understand knowledge in a path towards success, and provide compassionate guidance when obstacles and problems arise in work, giving opportunities to express opinions and openness to proposing new solutions to problems.

Table 1 Buddhist integrated - approach peace organization

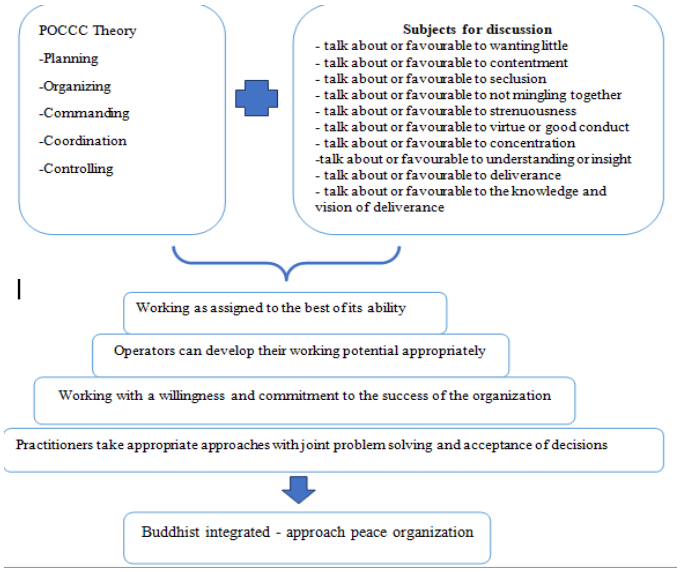


Fig. 1 Buddhist integrated - approach peace organization

III. Conclusion

An organization that has a work in progress must rely on the cooperation of its members. This means that a machine to run smoothly must be achieved through the systematic interaction of small cogs. Humans are living beings with complex mechanisms. When people from different contexts and backgrounds come together with one specific purpose, conflict can arise. When a conflict arises, whether it is violent or is characterized by a hidden conflict, it affects the work environment. This article presents the issue of happiness management in the workplace with the introduction of Kathavatthu10 (Subjects for talk among the monks) to integrate in happiness management. It is hoped that when applied, the members of the organization will have a working atmosphere with peace and compassion.

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