



Proceedings of

The 7th BENJAMITRA NETWORK

National & International Conference

on From Sufficiency Economy to Sustainable Development

ISSUE 5

May 27th, 2017

Lampang Inter-Tech College, Lampang, Thailand

173/1, Phaholyothin Road, Muang, Lampang, Thailand, 52100



Lampang Inter-Tech College
วิทยาลัยอินเตอร์เทคลำปาง



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Conference Opening Remarks
by Asst. Prof. Dr. Chakkrapan Pornnimit, President of
The Lampang Inter-tech college, Lampang, Thailand

His Excellency, Dr. Surin Pitsuwan, Chairman of the opening ceremony and keynote speaker of the 7th Benjamitr Academic Conference.

On behalf of Benjamitr academic network, which comprises of 8 private higher education institutes of Thailand, I am delighted to have His Excellency with us today at Lampang Inter-Tech college the venue for the opening ceremony and the academic conference of the 7th Benjamitr Academic Conference.

Benjamitr Academic Conference were held by its 5 co-founding institutes including Thonburi University, Bangkok Suvannabhumi University, North-Bangkok University, Rajapruet University, and South-East Bangkok College since 2011. Later on the membership was extended to include Far Eastern University and Lampang Inter-Tech College. Last year, FEU hosted the 6th National and the first International Benjamitr Academic Conference which was successful and had indeed excelled Benjamitr academic network among the international academic. This year, with its membership extended to North Chiangmai University as the 8th institute, Benjamitr academic network assigned Lampang Inter-Tech College to host the 7th national and the 2nd international Benjamitr academic conference which includes 322 articles in forms of papers presented orally and exhibited posters from Thailand and abroad. The articles range from social science, humanities, educational administration, science and technology.

The theme of this year conference is entitled “From Sufficiency Economy to Sustainable Development” to honour the late and beloved king Bhumibhol Adulyadej whose philosophy of sufficiency economy was not only acknowledged by his humble subjects but also by the people worldwide. Bearing in mind with such facts, the executive board of Benjamitr academic network agreed to invite His Excellency Dr. Surin Pitsuwan who served as a minister of foreign affairs of the royal Thai government during the reign of His Majesty King Bhumibhol Adulyadej and as Secretary-General of the Association of the South-East Asian Nations or ASEAN between 2008-2013 as today’s chairman of the opening ceremony and as a keynote speaker to deliver a speech on “From Sufficiency Economy to Sustainable Development” to share with us his experiences of sufficiency – economy philosophy and the implementation of such philosophy in the economic-driven society in this fast-economic growing region

Ladies and Gentlemen, please give our warm welcome to Mr. Chairman and today’s keynote Speaker : His Excellency Dr. Surin Pitsuwan

**The 7th BENJAMITRA NETWORK
National & International Conference on
“From Sufficiency Economy to Sustainable Development”
27 May 2017
The Lampang Inter-Tech College, Lampang, Thailand**

Rationale

Based on their awareness of a university’s research mission to develop new body of knowledge and learning innovation for society in both basic and applied research level, seven higher educational institutions including North Bangkok University, Thonburi University, Bangkok Suvarnabhumi University, Southeast Bangkok College, Rajapruk University, The Far Eastern University and Lampang Inter-Tech College have formed an academic cooperation network known as “Benjamitra Network” on February 5, 2011. The network members aim to join hands to develop teaching and learning, student, teacher and researcher capacities, research work and research publication. This form of academic cooperation will allow the exchange of knowledge and research experience in various contexts. In addition, Benjamitra network plans to link up with other academic networks in the future.

Realizing these important matters, Benjamitra Network organizes “The 7th Benjamitra National and International Conference” on May 27, 2017, having Lampang Inter-Tech College as the host institution.

Conference Objectives

1. To be a place for scholars from both public and private sectors, as well as for graduate students, to publicize their research articles, academic papers and theses;
2. To create an opportunity for scholars and researchers to exchange their knowledge and views and to seek cooperation among them;
3. To promote cooperation and collaboration among the members of Benjamitra Network in improving their research and academic work.

Target Audiences

1. Researchers and academicians
2. Graduate students
3. General public

Organizers

Lampang Inter-Tech College, Thailand
Bangkok Suvarnabhumi University, Thailand
North Bangkok University, Thailand
North-Chiang Mai University, Thailand
Rajapruk University, Thailand
Southeast Bangkok College, Thailand
The Far Eastern University, Thailand
Thonburi University, Thailand

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**The 7th BENJAMITRA NETWORK
National & International Conference on
“From Sufficiency Economy to Sustainable Development”
27 May 2017
At Lampang Inter-Tech College, Lampang, Thailand**

Time	Program
08.00 AM – 09.00 AM	<ul style="list-style-type: none">• Registration
09.00 AM – 10.00 AM	<ul style="list-style-type: none">• Welcoming speech by the President of Lampang Inter-Tech College• Opening ceremony by the presidents and executives from all participating institutions• Awards offering ceremony<ul style="list-style-type: none">-The Best Paper Awards-The Most Paper Award• Panel Discussion by Dr.Surin Pitsuwan
10.00 PM – 4.30 PM	Parallel sessions of Poster presentations At Hall Building 1
10.00 PM – 4.30 PM	Parallel sessions of oral presentations At LIT 2004 Building, 1 th - 4 th floor

Peer Review

No.	Name	Affiliation
1	Professor Dr. Abhijeet Shelke	Dr. Babasaheb Ambedkar Marathwada University, India
2	Professor Dr. Narawade Sunil Sheshrao	Dr. Babasaheb Ambedkar Marathwada University, India
3	Professor Dr. S. T. Sangle	Dr. Babasaheb Ambedkar Marathwada University, India
4	Professor Dr. Sanjay Bhagerao Salunke	Dr. Babasaheb Ambedkar Marathwada University, India
5	Professor Dr. Walmik K. Sarwade	Dr. Babasaheb Ambedkar Marathwada University, India
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8	Assosiate Professor Dr. Krishna Bhandari	Tribhuvan University, Nepal
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40	Dr. Eva Tuckyta Sari Sujatna	Padjadjaran University, Indonesia
41	Dr. Zahaira F. González Romo	Universitat Internacional de Catalunya, Spain
42	Dr. Wanniwat Pansuwong	RMIT University, Vietnam

Oral Presentation Schedule (Education+ Sciences & Technology)

May 27th , 2017 10.00 a.m. – 2.00 p.m.

International Session LIT (2004) Building, 2nd Floor Room No. 8203**Moderators:**

- | | |
|----------------------------------|------------------------------|
| 1. Nithat Boonpaisarnsatit ,Ph.D | The Far Eastern University. |
| 2. Juajan Wongpolganon ,Ph.D | Lampang Rajabhat University. |

Coordinators:

Aj. Yadarat Inthakhan

No.	Time	Presenters	Acticle Title /Affiliation
1	10.00 - 10.15	Shengjiang Shan Dayuan Fu	Internet+-based Internationalization of the Higher Education Curriculum □ An Innovative Development Path to Explore
2	10.16 - 10.30	WenShuo Zhang MengJunWu YouZhi Zhang ShouGuang Wang	Research on the reform of vocational education and teaching mode under the background of school-enterprise cooperation ——A case study of Shandong Kaiwen College of Science & Technology
3	10.31 - 10.45	Nattakan Sukchuen	An Evaluation of English Reading Proficiency of Office Personnel at Rajapruk University
4	10.46 - 11.00	Maricel Nacpil Paras	Discovering the Instructor’s Insights in Thailand Based on Language Learning Experience in Different Classroom Environments”
5	11.01 - 11.15	Waris Rattananimit Pitchaya Jamjantr	The Efficacy of Computer Assistant Instructor: Augmented Reality in Biology(Plant)
6	11.16 - 11.30	Laddawan Petchroj Benjamas Saisud	The Improvement of the English Placement Test for the First Year Students of Rajapruk University
7	11.31 - 11.45	Ho Thanh Huy Hitoshi Matsumoto Vu The Dang Hiroki Miyoshi Takekazu Ishida	Vortex configuration in mesoscopic superconductors with sector defect
8	11.46 - 12.00	Phan Van Phuong Nguyen Phu Thach Huynh Quang Vu	On some properties of Forman’s Combinatorial Differential Forms
Break 12.01 - 13.00			
9	13.01 - 13.15	Le Tu Thanh Hiroshi Bandow	Efficient Biodiesel Production as an Alternative Green Fuel from Waste Cooking Oils by Using an Ultrasonic Reactor
10	13.16 - 13.30	Nguyen Chi Nhan Duong Hoai Nghia	A Pulse Generator Ultra-Wideband for Inner/ Inter-chip Wireless Interconnection using LC differential oscillators topology

No.	Time	Presenters	Acticle Title /Affiliation
11	13.31 - 13.45	Vo Hong Hai Nguyen Quoc Hung Tran Kim Tuyet Masaharu Nomachi	Development of FPGA-based readout electronics for cosmic rays detector and environmental radiation real-time monitoring system
12	13.46 - 14.00	Somsanouk Pathoumvanh Chanthavong Phompackdy	Matlab Simulation on the KARAOKE Scoring by using MIDI matching Algorithm

Oral Presentation Schedule (Humanities and Social Sciences)

May 27th , 2017 10.00 a.m. – 3.15 p.m.

International Session LIT (2004) Building, 2nd Floor Room No. 8200**Moderators:**

1. Pichaphob Panhpae Assistant Professor,Ph.D ChiangMai Rajabhat University.
2. Weerasak Prokati,Ed.D Maejo University.

Coordinators:

Aj.Janak Pandey

No.	Time	Presenters	Acticle Title /Affiliation
1	10.00 - 10.15	Prof. URATatsuo	Hot Spring in Thailand
2	10.16 - 10.30	Phan Van Phuong Nguyen Phu Thach Huynh Quang Vu	Derivatives and Products of Forman's Combinatorial Differential Forms of Degrees 0 and 1
3	10.31 - 10.45	Somchai Lertpiromsuk Punyanut Youngtinnung Tutchpong Amatyakul	The Relative Valuation of U.S. Commercial Banks Using Accounting Numbers
4	10.46 - 11.00	NanthiyaTantraseub, Warach Madhayamapurush	Developmental dynamics of Culinary tourism from different Lanna eras in local communities of Chiang Mai i
5	11.01 - 11.15	Arpornraanee Infahsaeng	Possibility of bringing lohas to private universities in Thailand
6	11.16 - 11.30	Rutchapong Chatchawan	An Analysis of the Components of Transformational Leadership Which Affect Innovative Work Behavior
7	11.31 - 11.45	Anupong Infahsaeng Panus Aunhabundit	Creative Conflict Management : For Organizational Success
8	11.46 - 12.00	Wanida Wadecharoen	Bangkok Brand Power Image via the Perspective of Japanese and South Korean (JK) Tourists: A Study on Focus Group Methodology
Break 12.01 - 13.00			

No.	Time	Presenters	Acticle Title /Affiliation
9	13.01 - 13.15	Wanida Wadecharoen Somchai Iertpiromsuk	India as Thailand's High Purchasing Powers Tourist Market: A Study on Country Destination Satisfaction
10	13.16 - 13.30	Banjert Chongapiratanakul	Literacy Perceptions and Perspectives
11	13.31 - 13.45	Dr.Sarinrat Sertpunya	Strategies and Uses of English Conversation be- tween Front Office Staffs and Foreign Guests in Five Stars Hotel Bangkok
12	13.46 - 14.00	Nongyao Bousri	English Teaching in Cross-Cultural Adaptation of Under-Graduate Thai Students in University, Pathumthani
13	14.01 - 14.15	Natnicha Bhoosahas	An Analysis of Tourism Advertisement in English Newspaper: Bangkok Post

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“Discovering the Instructor’s Insights in Thailand Based on Language Learning Experience in Different Classroom Environments”

Maricel Nacpil Paras

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Southeast Bangkok College, Bangkok City, 10260, Thailand

Abstract

The main purpose of this paper is to discover the instructor’s insights to help English language learners in tertiary level in Thailand based on language learning experiences in different classroom environments. The area of focus for the research is to find out pieces of information with the purpose of gaining intuitive understanding on a specific cause and effect within a model, context, or scenario. Without a solid foundation in learning a foreign language in a classroom setting, the students will be struggling hard on their schooling and adult life. This study presents different discoveries on English language acquisition inside a classroom in order to inspire teachers and remove language barriers between the teacher and the learners. Classroom research was done to explore this method with a group of 32 second year Business English major students and 8 MA/PhD students from Thai universities who are currently using English in their courses. Seventy-one percent of this population is currently studying in different language centers with native English speakers. It aimed to find out if the development of an English language classroom research model can be more effective for English teachers and can further enhance language acquisition for students. The objectives of this study were to: 1) to provide features of supportive learning environments; 2) to find solutions to make connections for students through careful pairing and grouping, but still have difficulty in answering, “how” and “why” questions; and 3) to build a strong foundation in different classroom setting that will make learners remove language barriers in schooling especially for the adult learners through participation in communicative activities with more expert communicators of English. The research set up a course lasted for thirty (30) hours and the main concentration was conducting an analysis on the language needs and competencies of Thai learners regardless of ages and professional development. The researcher explored instructors’ keen observation through one/one, small and large grouped assessments, and learners’ problems in communication using the second language. The findings revealed that after thirty (30) hours of teaching, experimentation, and assessment, an evaluative model was attained including participants’ reactions, learning outcomes, behaviors, project results and language proficiency improvements. Overall results revealed variations on the following: L1 versus L2 used in the classroom, pronunciation focus, acquiring lexicon, pair and group work and emotional quotient. It was suggested that teachers can set an interesting place for the students to remove tension, nervousness, and anxiety, which can overcome language barrier. In addition, they have been encouraged to learn by themselves, paired, and group work. Moreover, for future researchers, these should be sensitized enough to understand the impacts of multicultural approach and consequences on the social sustainability of the students.

Keywords acquisition, classroom environments, competencies, insights, language learning

Introduction

In the emergence of English speakers, both native and non-native in Thailand society, most Thai students are now receptive in the acquisition of English language. However, many instructors realize that without learning new insights on how to develop a strong foundation in different classroom settings, their learners will struggle hard in schooling especially for the adult learners. Lately, there has been an increasing debate about the status of English language in Thai society: Is it a necessity? And how to improve it? Thailand believes that imposing English language on Thai people is against their culture, heritage, and their unique identity society (The Nation, 2012, p. 1). The same group also argues that Thailand was never colonized, so why Thai people have to be bothered to learn English. They firmly believed that English is the language of the British colonies; indeed, it has no place in Thai society (The Nation, 2012, p. 1). Nowadays, English is no longer a cultural imposition; it is the language of the internet, face book, twitter, e-mail, line, and other forms of communication. It has become the language of the global markets. How can English become a powerful tool by students and in turn appears more likely to learn in different approaches and scenarios? Well, in Thailand English teaching and learning, do problems can be solved by employing “native speakers”? The classroom will be creating an interesting experience for the students to remove tension, nervousness, and anxiety by focusing on the five areas of study: L1 versus L2 use in the classroom, pronunciation focus, acquiring lexicon, pair and group work and emotional quotient. English language can become a common language for Thais and act as a magnet for them to have a major role in globalization. Consequently, there should be more English language based newspapers, magazines, radio stations and television shows focused on creating insights. In the broadest sense, this will learn cultural differences that include how people think, what they do, and how they use things to sustain their lives. Different classroom environments must be created to facilitate learning English whether inside or outside the four corners of the classroom. Henceforth, language learning is based on the sights and sounds surrounding the learners.

Objectives of the Study

The study aimed

1. to provide features of supportive learning environments
2. to find solutions to make connections for students through careful pairing and grouping, but still have difficulty in answering, “how” and “why” questions
3. to build a strong foundation in different classroom setting that will make learners remove language barriers in schooling especially for the adult learners through participation in communicative activities with more expert communicators of English

Research Questions

1. Is classroom learning environment beneficial to develop language learning in English?
2. What are the positive learning experiences on different classroom environments?

Definition of Terms

a. Classroom Learning Environment refers to the diverse physical locations, contexts, and cultures in which students learn.

b. Classroom Management can be defined as a set of steps that any mentor/ teacher/trainer should apply to ensure that the classroom lesson is both good and without any trouble as well as dynamic in spite of students’ behavior.

c. Insight is the ability to understand people and situations in a very clear way.

Methodology and Research Procedures

The sample in this research consisted of 40 Thai students. The selection technique is purposive sampling. A type of non-probability sampling technique was employed to 40 students aging 18-34 years old: 11 are males and 29 are females. Classroom research and experimentation were done to explore this method with a group of 32 second year Business English major students and 8 MA/PhD students from Thai universities who are currently using English in their courses. Seventy-one percent of this population is currently studying in different language centers with Native English speakers. The participants of this study were adult learners. The researcher gave 15 lessons to the 40 students consisting of 32 students on the second year bachelor degree level and 8 students on the post graduate level. They have been studying English from 8-10 years and 80 percent of their

subjects is speaking and writing in English. They still find difficulty in cross-cultural communication among foreigners, adaptation of varieties of English media such as newspapers, radio and television, pronunciation stress, intonation during conversation, familiarity of words connotation, paragraph development and finding implications in answering questions why/how. Most of their writing tasks are involving English for recreational purposes, writing a summary, supporting statements, explaining reasons, giving a personal reaction, commenting and writing attitude for connecting ideas into sentence structures. 56.25 percent of this population is currently studying in English in different academy/learning centers; still, they find difficulty in writing comprehensively. The main purpose is to get evaluation of the pronunciation of different English inventory words and determine which variants should be taught to my students. It represented two varieties of English pronunciation: English Accent and Thai Accent in order to identify the best variety to adopt in teaching English pronunciation in Thai schools. The test had two parts: pronunciation drill performed by the students and connotations by writing the meaning of the words on the space provided.

The first part of the test is pronunciation, wherein the student pronounced the word once and the teacher evaluated his/her accent. On the second part of the test, the students themselves took part in thinking and working in paired group on the correct connotation of the words and phrases. Regardless of the level whether pre-intermediate, intermediate, and advanced level, or contact status (having studied or not having studied at least two years with a native speaker), educational level (second year college, bachelor degree, and post graduate) and language background, English accent was the most intelligible of the three varieties.

Review of Related Literatures

Successful teachers take into account student differences in developmental levels in different environments. Most language teachers become instructors because they are fascinated by language. They are intrigued by differences between native and non-native tongues, Thai and Foreign teaching approaches, and enjoy the process of helping their students to learn. As the Thai Ministry of Education is genuinely interested in upgrading the level of English proficiency of Thai students, such actions

are consequently done. First, there should be an improvement on the quality of Thai English teachers where there is a clear indication that teachers of English have to be good. For example, it would be very natural for young Thai students to say “*If my teacher can do it, I can do it, too.*”. Second, if Thailand really wants to employ a foreign teacher, then he/she must be a real qualified language teacher, not just a native speaker where there is evidence that he/she has a high degree in language or linguistics. Third, there should be more and more English language based newspapers, magazines, radio stations and televisions showing focus on creating sights and sounds that can immerse the learners in an environment that facilitates learning of English language (The Nation, 2012, page 1). One of the research studies has found out that like most teachers, the communicative benefit of using only the target language in the classroom (Jin Wang, 2011, 229). Using students L1 can be appropriate and helpful, whereas, can be a crutch for the students and teachers. One benefit of the use of L1 in the classroom maybe that in some instances, the use of L1 early on the classroom cycle can help form a good relationship between teacher and student (Macaro, 2001, 10). However, some research shows that teachers’ limited use of L1 does not necessarily result in less student production in the target language (Macaro, 2011, 10). Weigle (2002) points out that the process of text generation or encoding internal representations or ideas into written texts, maybe disrupted by the need for lengthy searches for appropriate lexical and syntactic choices (Weigle, 2002, 36). The insufficiency of linguistic knowledge or limited choices of words for the students can hinder their competence which has a negative impact on writing proficiency as well as L2 writing quality. From Silva’s notion, a question like “Why are so many L2 writing specialists needed (Silva, 1993, 67-68)? It can be said that there are varieties of writing competences, comprising grammatical structures, organization, vocabulary, ability to give feedback and appropriate assessment of students’ written works. Matsuda asserts that there is insufficiency for a writing teacher to focus on it and L2 writing environment (Matsuda, 2000, 67). This is to say also that mother tongue, at times interfered with the student’s L2 writing, which eventually reduced her writing effectiveness. Silva explains that inadequate language knowledge, at times, leads to ineffective

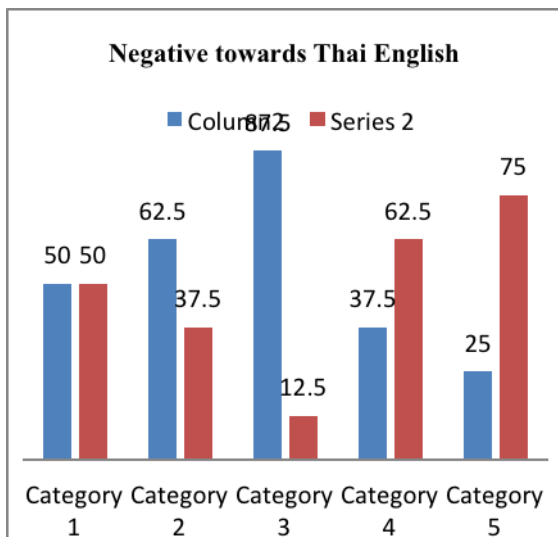
L2 writing on the differences between the first and second language (Silva, 1993, 67). Thep-Ackrapong (2005) points out “English and Thai are different at all levels: pronunciation, word, grammar and text” (Thep-Ackrapong, 2005, 51). L2 writers are dominated by the rules of their first language, which eventually, leads to committing errors in their written works. Jie supportively explains that the influence of the mother tongue affects L2 learning as “language is taken as a set of habits and learning as the establishment of new habits” (Jie, 2008, 36). As exemplified by Brown (1994) as cited in Peter (2000), describes mistakes as unsuccessful use of grammatical rules; that is, learners study the language structures comprehensibly, but fail when using them (Brown, 1994 as cited by Peter, 2000, 71). The use of pronunciation drills or exercises were not an important part of communicative learning which need more focused for able to communicate in English. Understanding and being able to apply linking, word rhythm, sentence rhythm, melody, and emphasis are all important aspects of communicative competence (Gilbert, 1994, 4.) On the other hand, an evidence has shown that an integrated approach, using a variety of methods that address issues with both segmental and discrete word pronunciation issues can help English language learners not only communicate more effectively, but more confidently as well (Morley, 1994, 481). More often than not, we place such emphasis on communicating with the target language that we can forget that comprehensible pronunciation, in whatever form, is an important part of this, and should not be sacrificed (Morin, 2007, page 4). As such, much of children’s success in academic performance in school depends directly on their ability to listen, because listening to correct pronunciation is the primary medium of classroom teaching. Like many other studying skills, these are learned behaviors that affect language acquisition. However, there is more distinct pronunciation which actually changes the sounds of the language. For example, most Americans speakers of English pronounce the “TT” in word letter as if it were spelled “dd”. When asked to pronounce clearly, they often change their pronunciation of the sound to “t”, thus distorting the language through an attempt to pronounce it “accurately”. Such distortions are not in the long-range best interests of the learner. Introducing any new vocabulary within a context clue, indicates

how each word or phrase is used—helps communication. Reading in the target language is also a good way to introduce students to new vocabulary, and the use of reading plus vocabulary enhancement activities has been shown too effective in helping students to acquire and retain a new language (Min, 2008, page 7). Using pair and group work allow the researcher to observe, monitor, and interact with the students; assessing how they were progressing. Pair and group work were also helpful in vocabulary acquisition. Students who collaborate to complete a given task involving new vocabulary had each other as a resource: working with one another can give students an opportunity to interact with a new word more frequently than if they simply complete a task on their own (Kim, 2008, p 6). Moreover, the students can contribute and learn more effectively when they are doing a role play in trying to structure their own styles. As such, teachers can plan for instruction and build a ground on the value of cooperative working groups composed of heterogeneous students with different levels of ability. Is learning English language becoming more stressful? Researchers have been proven that it can be difficult and stressful. Communicative anxiety was higher for students learning later in life than those learning a language at a young age (Dewaele, 2008, 3). Knowing that inside the classroom, frustration and anxiety are normal. However, teachers are more sensitive enough to observe their students at various stages of learning English. Language learning contexts have the potential to be stressful – but a good teacher is able to control his or her emotions inside the classroom of which the students are always looking up for a support and encouragement from their mentors. Creating a friendly atmosphere in the classroom made a big difference, and in turn to make the students successful learners. Emotions and thoughts cannot be separated, and thus emotions have a great effect on all learning. One of Caine and Caine’s (1997) guiding principles states that emotions are critical to the brain’s patterning (p. 105). Jensen (2005) puts it even more forcefully: “Emotions drive attention, create meaning, and have their own memory pathways.” As an addition to this principle, the role of emotions applies both to the types of experiences that we provide for the students and to the classroom atmosphere we create. There are many different ways to run a class throughout the

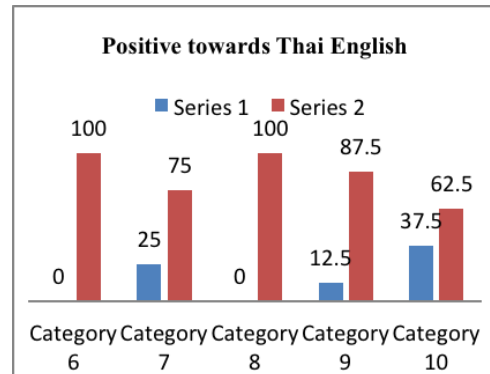
academic year in order to make the layout as suitable as possible to achieve any learning goal. It is true that some ways are way better than others, but any trainer/teacher must keep in mind that no matter what method is applied, two important goals while training/teaching your learners are: (1) increase motivation among students and (2) make activities run more smoothly. There are useful guidelines to reach your goal such as establishing a good rapport, using of body gestures, addressing voice/volume when speaking, setting up pairs and group works, adjusting time, increasing student time talking and positioning in the classroom. As such, language learning is based on the sights and sound surrounding the learners. The relationships between student and teacher with that of classroom environment, looking to the teacher for support and encouragement. By having a friendly atmosphere with different classroom setting will help students to become successful learners. English language is no longer a cultural imposition; it is just one part of the culture; it is the language of the internet, face book, and twitter, hence, becoming the language of the global markets. There is still hope that English can become a common language for AEC and act as glue that can bind the region together. Indeed, it is very clear that English language is playing a major role in the process of globalization.

Findings

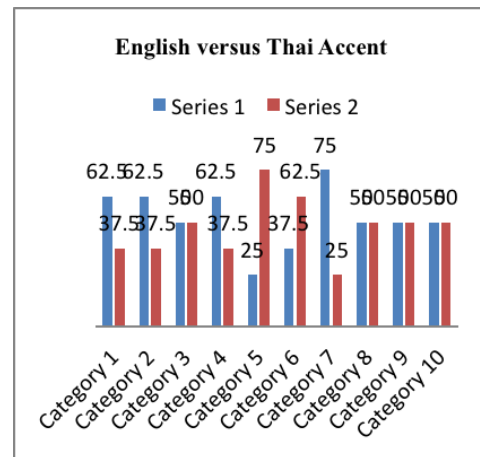
Graph 1 legend: blue color = strongly disagree (in%), red color (in%) = strongly agree



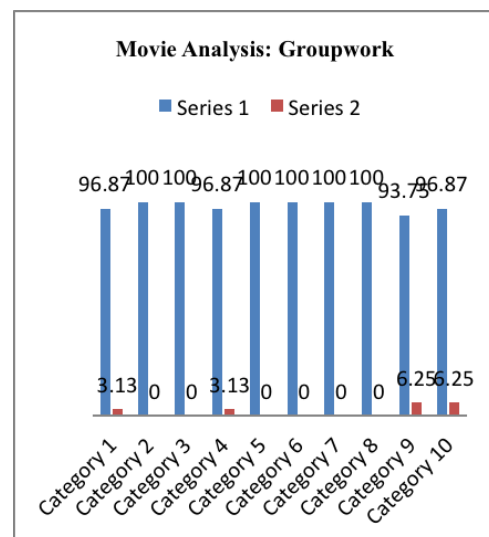
Graph 2 legend: blue color = strongly disagree (in %), red color = strongly agree (in %)



Graph 3 legend: blue color = English accent (in %), red color = Thai accent (in %)



Graph 4 : blue color = have the same answer (in %), red color = have different answer s (in %)



L1 versus L2 Use in the Classroom

As a general rule, any writing task use in English must use the L2 (second language; foreign language) way of writing more importantly with the English major students. Using students' L1 (first language; native language) in the English language classroom can be a conscious choice on the part of the teacher and can at times be appropriate. Like for an instance, the beginners' level can be helpful in clarifying instructions. Another benefit is the use of L1 early on in the classroom cycle can help form a good relationship between a teacher and student (Macaro, 2001, 3). On the other hand, it was observed that when grammatical structures are introduced in English by a native speaker, students follow the pattern more quickly in English. It is quite thrilling for the students when the teacher applies L2 and boosting self-confidence for them to communicate their ideas – which is a positive attitude in earning to communicate English. Second-language acquisition theory may help explain the puzzling situation of children who acquire languages more quickly and apparently with much less effort than do their parents when placed in a second-language environment (Pearson, 2009, 2). As it was seen on their writing style in a group work, students spend less time planning and organizing ideas. This does not have any contradiction with what Silva have found that L2 writers spend less time planning and organizing ideas (Silva, 1993, page 2). To counter this, L2 instruction include time for planning both content and form.

Pronunciation Focus

The use of pronunciation drills or exercises for the students is never stressed because the more concern is being able to convey the ideas to students. After the pronunciation drills were done to students at different levels, pronunciation task is an important part of learning to talk in English, especially in a foreign language context. In fact, it is the most important part of four basic skills and it would affect the listening process inside the classroom. More rephrasing and repetition as in practicing words, phrases, and sentences over and over again in a more realistic way, so they can properly train their mouths to pronounce correctly. In addition to this, the teacher can do more frequent meaning checks with the listener to make sure that the students understand. Without the pronunciation practice, students would not be able to communicate. Helping students to start with syllable stress, word, and sentence pattern will lead to increase communication. Thus, this can help English language learners not only communicate

more effectively, but more confidently as well (Morley, 1994, 101).

Acquiring Lexicon

Still, English teachers need to help students acquire new vocabulary words in order to enhance their understanding of the context clues. Introducing uncommon words to students within a context will enable the students to think how a word is used in a phrase; eventually combine phrases to form a complete sentence, then into paragraphs. Use of connecting words and found a great deal in learning language. New vocabulary acquisition has a positive impact on Thai students because the words used in textbook is not completely explained. In spelling quiz bee and movie analysis, it was found out that use of target vocabulary words can help students to write short reactions on the movie helped the students develop active vocabulary retention. The use of reading plus vocabulary enhancement activities has been shown to be effective in helping students to acquire and retain language (Min, 2008, 111).

Pair and Group Work

Students are more receptive in accepting corrections from their peers. On the other hand, it finds more reluctant and intimidating when receiving correction from the teacher. As evidently shown in the study, students are often feel more comfortable taking language risks with their classmates than they do with the teachers. Using pair and group work regularly have enhanced learning for many reasons. First, classes are at large; this will give them the chance to use English as frequent as with other students. Second, vocabulary acquisition wherein the students are more interested to acquire a new word from the teacher and share the meaning with their colleagues. Third, benefiting each other; wherein the stronger one can help a weaker one and the stronger one can have the confidence to teach what he or she knows. Fourth, capable students can participate with greater responsibility in a dialogue, role-playing, and group presentations. Fifth, favorable assessment; a teacher can observe keenly the problems in English acquisition. One of Ellis's principles (2008) affirms that "the opportunity to interact in the second language is central to developing second language proficiency". Activity based-learning such as quiz bees, games, role-plays and partner/small-group tasks motivate learners at the same time as they enhance learning. Giving the opportunity to hear others use a new word, this will lead to mind retention on the part of all students involved in the activity. The following are some of

the examples of simple social activities that I have done in the classroom:

- a. At the beginning of the class, the students greet me in a polite way in English. When I asked them to greet one another, students greet several people in a more motivating social partner activity.
- b. Students can practice classroom dialogues from the conversations seen on the power point without too much hesitation. They can even read to each other as a class activity.
- c. Students can do a paired-work conversation or small talks that would create other students to tell their partners to do the same actions.
- d. As an instructor, I enjoy students asking questions in the target language, and the students can be clearly seen that they have more opportunity to communicate with their peers without the teacher's too much involvement.
- e. Pair and group work can be helpful in vocabulary acquisition.

Emotional Quotient

Teresa Kennedy (2006, 479) identifies several implications of brain research for the language teacher, highlighting the importance of engaging many senses and an enriched environment. Many of student activities have positive emotions associated with them, such as games, songs, rhymes and lessons involving movement and physical activities. Instructors must create a warm, emotional climate in which students feel self-confident, free, and highly motivated is equally as important as providing activities that have emotional connections and yield to positive reinforcement.

Conclusions, Discussion and Recommendations

Discovering insights in a classroom learning environment can be developed over time. Moreover, this paper has dealt with the involvement of students' participation to develop coherence in expectations across the classroom, school and higher institutions. However, even if limited to the classroom, a non-confrontational approach, which focuses on students' emotional, as well as academic intelligence, has resulted in a more positive learning outcomes in the classroom which have also carried over into the learning ground and resulted in a more

relaxed and productive environment for English learners. However, there is a tendency that grammar usage and use of vocabulary words affect sentence structuring and main ideas presented to every paragraph. A reason for the imbalance between reading and writing is a fact and participants must have substantial awareness and control of their cognitive activities in writing while reading the text. As can clearly be seen from the data from Graphs 1-4, these can generalize insights based on the different types of classroom activity tasks like students who prefer study alone, by pair, and by group. Comparison and contrast are compared and presented. This indicates that a number of language experiences must be considered and proven. It was found out that there are deviant forms consisting of the following types: other substitutions meaning on a certain word, partially acquired expressions, and translations. In the emergence of the 21st century, as we discovered innovations and transformation in educational setting for Thai learners, it is imperatively implied that learning new insights and developing a dynamic classroom setting will enable students to speak English and overcome their language barrier. Whether the teacher is a native or non-native speaker, the classroom administration is a powerful tool for students to learn in different approaches and scenarios. Hence, teachers must set an interesting place for the students to remove tense, nervousness, and anxiety, which can lead to language barrier. The following are the implications:

- L1 versus L2 use in the classroom
Focus on English as much as possible because it is important for students' language development.
- Pronunciation Focus
Pay more attention on pronunciation focus as part of students' language production.
- Acquiring Lexicon
Use vocabulary enrichment activities that will enrich students' word box.
- Pair and Group Work
Use pair and group work to help students boost confidence, dynamism, and energy inside the classroom that would help interact and learn new vocabulary words and use with their classmates.

- Emotional Quotient
Reduce the anxiety inside the classroom by creating a more relaxed atmosphere in a more realistic way.

By organizing a foreign classroom for communication, designing pedagogy based on communication standards, two most important interpersonal domains can be achieved: transactional and interactional. It can be seen from the research results that the English language acquisition are skewed towards and still keep on changing through different approaches. The classroom discourse has its own role in learning. Through altruistic approach, there will be an oral interaction that occurs between teachers and students in classrooms regardless of cultural biased. Even though female population represents 72.5 percent of the total population in the research are female and 80 percent are above average students, this remarkably shown from the fact that Thai learners continuously grasp for a modern way of learning as compared with the old way of teaching as in a traditional classroom setting and subconsciously have accepted the value of “followership” with any challenges since the past until the present. Furthermore, this value has extended its force into the education system where teaching methods are good reflection of the transformed educational system. Moreover, for future researchers, they should be sensitized enough to understand the impacts of multicultural approach and its consequences on the social sustainability. Apart from this, it is supported by other study that student-teacher interactions, school environment, the curriculum design, and the extracurricular activities also hide the issues of discovering insights. Extracurricular activities are also made distinctive as what activity is for male students and what female students. The researcher believed that generalizability of this research can be expected from other types of research for transformatory education in the 21st century and currently used in the Thai educational system. Therefore, it becomes urgent for the governmental agencies; especially the Ministry of Education, to bring the issue of educational reformation as a national agenda. In the emergence of the 21st century, as innovations and transformation in educational setting through different classroom environment were discovered for Thai learners, it is imperatively implied that discovering insights in a classroom setting will

enable students to speak English and improve their writing skills. For future research studies, it is deemed important to share and reflect upon classroom experiences with other teachers which can be a rich source of support and comfort in developing language in learning English.

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An Evaluation of English Reading Proficiency of Office Personnel at Rajapruk University

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Abstract

The purposes of this study were to evaluate English reading proficiency and to investigate the relationship between English reading proficiency and reading strategies of office personnel at Rajapruk University, Nonthaburi. Purposive sampling was used to select 84 samples. The two instruments were: 1) a reading test, and 2) a reading strategy questionnaire. The questionnaire employed 5-point-Likert scale following Oxford, O'Malley and Chamot's concepts. The data were collected in the first semester of academic year 2016. Descriptive statistics were applied to analyze for means and standard deviations. To test the hypothesis, Pearson Coefficient Correlation was employed to analyze the relationships, and t-test and One-Way ANOVA were employed to test significant differences.

The results indicated that the English reading proficiency of the office personnel was at a very low level. Scores from the test demonstrated a significant relationship with two memory strategies. They were: 1) relating new information to already known concepts ($p < .01$), and 2) reading the passage more than once ($p < .05$). A significant relationship was also found between the scores and four compensation strategies. They were: 1) using context clues to guess the meaning ($p < .05$), 2) paying attention to reading for comprehension ($p < .05$), 3) arranging and planning the reading ($p < .05$), and 4) evaluating the answers to be certain that they are correct ($p < .05$). However, there was no significant difference between the scores, five cognitive strategies and the social strategy.

The findings of this study supported the teaching of reading strategies to enhance reading comprehension and also using English in daily life to improve English proficiency.

Keywords: English Reading Proficiency, Reading Strategy, Office Personnel

1. Introduction

English is one the most important international languages in the world. People around the world use English for communication both in business and education. Therefore, it is essential that the office personnel are able to use English in their work. English is not only used for personal contact, but also a means of acquiring new knowledge from foreign websites, books or other forms of media.

According to the national education policy, it is assumed that graduates from universities are proficient in English at a certain level. Because all

Thai students have learned English from primary school to university level to ensure that the graduates are proficient in English, some universities have an English test before the students graduate from their universities. However, it is found that not many people can use English effectively to perform their job. This is a problem in teaching and learning English in Thailand. Since the role of English in Thailand is a foreign language, most students do not pay much attention learning. It is not until they enter the work market that they realize English is important in their career. Although, they do not always use it in their work, they need some information that is written in English. This means

that reading is the English skill that they should be proficient in. Moreover, among all English language skills, reading is the English skill Thais use most frequently. Some studies have been conducted in second language reading. They indicated various perspectives about reading proficiency. However, there are several questions that required answers to explain problems in second language reading performance. MacNamara^[1] claimed that it was the interference of the students' first language. Other researchers such as Lee and Schallert^[2] tested the transfer of first language reading strategies and second language ability to second language reading ability. They found that second language ability contributed more to second language reading ability. This is consistent with other researchers, such as Koda^[3] and Carrell & Grabe^[4] who indicated that it was the inadequate linguistic knowledge in a second language that caused problem in second language reading, not the first language reading ability. According to this group of researchers, the language limitations interact with other factors such as background knowledge and culture, and affect reading comprehension. Additionally, some studies demonstrated that readers required the ability to select appropriate strategies to comprehend the context. Therefore, it is interesting to conduct a study in this area.

2. Second Language Reading

Research in second language reading at the beginning focused on the similarities between first and second language reading. This led to several studies assessing the relationships between the reading abilities in the first and second language and the similarity of the reading process between the two languages. Since there was no consensus agreement on this issue, Alderson^[5] questioned whether the problem of second language reading ability came from a reading problem or a language problem. Later studies reconsidered the relationship between second language reading comprehension and the development of L2 reading proficiency. Alderson set three hypotheses based on the previous studies. The first hypothesis was that readers are likely to transfer their reading ability from the first language to their second language reading. The second hypothesis was that the acquisition of reading skills by second language learners was different from the first language. The third hypothesis regarded the cognitive difference between the first and the

second language. His hypotheses were supported and rejected by various studies. Akamatsu's^[6] study results pointed out that low second language proficiency readers may rely on their first language reading strategies. However, other studies indicated different results. Readers did not always transfer their first language reading strategies to second language reading because different languages required different reading strategies. According to the studies into the first and second language relationships, Carson and others^[7] found moderate correlations between first language reading and second language reading scores. It was accepted that the reading ability was possibly transferred, but this transfer differed amongst first language backgrounds. In addition, Bossers'^[8] findings revealed that second language ability played a greater role in second language reading. Bernhardt^[9] noted that first language ability contributed only 20 percent to second language reading whereas another 30 percent was contributed by knowledge in the second language. Half of the factors were unexplained variances which affected reading comprehension. Those factors comprised cognitive strategies, interest, content and background knowledge. From the literature review, Hudson^[10] concluded that Alderson's hypotheses were not proven. However, the findings from previous studies were consistent in that readers with little exposure to the second language and differences between the two languages caused difficulties in reading. As revealed in several studies on second language reading, cognitive strategies are essential in the reading process. They described reading as an interactive process since readers interacted with the text to obtain meaning. These studies also demonstrated that effective readers were readers who were able to employ various reading strategies appropriately. This was supported by Flavell and others^[11] who stated that readers should apply cognitive strategies to monitor and regulate their reading process to solve problems while reading. As reading strategy is viewed as an interactive process that leads to the meaning of the text, research in second language reading indicated that skilled readers tend to use more effective strategies compared to less skilled readers. Moreover, research indicated that the effectiveness of comprehension-monitoring could predict the effectiveness of reading comprehension. It was also added that successful readers obtain linguistic knowledge, background knowledge and employed reading

strategies. These facilitated the readers to solve any problems they faced while reading. Further studies indicated that there was a relationship between the types of strategy used and second language reading ability. Although no research indicated specific sets of strategies that were used by skilled or less skilled readers; the primary concern was how they were employed. Zhang's^[12] study supported the idea that higher skilled readers employed a variety of strategies more effectively than lower skilled readers. Zhang also suggested the teaching of reading strategies to the readers so that they could use appropriate strategies in their reading.

3. Data Collection

Data in this study were collected in the first semester of academic year 2016. The 84 subjects were purposively selected from all of the office personnel at Rajapruk University. The data were collected using two instruments, a reading test and a questionnaire. Following Brown^[13] and Alderson^[14], the reading test was a norm reference test (NRT). The target language use in the test was authentic language. It was constructed from the reading materials found from web sites, correspondence, newspaper articles, electronic mail etc. The questionnaire was constructed following Oxford^[15], O'Mally and Chamot's^[16]. It employed a 5-point-Likert scale which was divided into two parts. The first part asked for personal information and the second part asked about the reading strategies the subjects used when they read. The questionnaire consisted of four sets of reading strategies. They were: 1) three memory strategies, 2) five cognitive strategies, 3) five compensation strategies, and 4) one social strategy. The test was validated and pilot-tested for content validity and reliability. Likewise, the questionnaire was also pilot-tested before it was used.

4. Data Analysis

Scores from the reading test were analyzed for frequency, mean (\bar{x}) and standard deviation (S.D.). The personal information was analyzed for frequency. Scores from the reading test were grouped into five levels. They were very good (25-30), good (20-24), fair (15-19), poor (10-14), and very poor (1-9). The frequencies of scores are shown in Table 1.

Table 1 Frequencies of scores.

Level	Scores	Number	Frequency
Very good	25-30	0	0
Good	20-24	0	0
Fair	15-19	4	6.4
Poor	10-14	14	22.2
Very poor	1-9	45	71.4
Total		63	100

Table 1 presents the numbers and frequencies of scores from the reading test. Among the 63 subjects, 45 subjects (71.4%) were categorized as very poor readers, 14 subjects (22.2%) were categorized as poor readers whereas 4 subjects (6.4%) were categorized as fair readers.

To determine whether educational background and type of education institution affected the subjects' reading ability or not, t-test analyses were computed to compare the scores of the subjects with different educational backgrounds and institutions. It was found that there was no significant difference in statistics. In terms of the amount of English the subjects used in their work, the subjects were categorized into three groups. The first group did not use English at all. The second group used English at a low level, and the third group used English at a moderate level. Further analyses employed One-Way ANOVA to test the significant differences between the three groups. The results from One-Way ANOVA indicated a significant difference. Thus, LSD was computed to test the significant difference.

Table 2 shows the significant differences tested by LSD.

Table 2 LSD test for significant difference

	N	\bar{x}	S.D.	Not use at all	Low level	Moderate level
Not at all use	63	7.45	1.968	—	-.082	2.545*
Low level	63	7.54	2.820		—	2.463*
Moderate level	63	10.00	3.821			—

* .05 significance level

Table 2 presents the LSD test of significant difference between the three groups of subjects on the amount of English they use in their work. The results indicated a significant difference at .05 level between the subjects who did not use English at all and the subjects who used English at a moderate level. A significant difference was also found between the subjects who used English at a low level and the subjects who used English at a moderate level.

Correlation coefficient was employed to analyze the relationships between scores from the reading test and the reading strategies. The first pair was between the test scores and three memory strategies. It was found that there was a significant relationship between the test scores and two memory strategies. They were associating ($p \leq .01$) and rereading ($p \leq .05$). The second pair was between the test scores and five cognitive strategies. The results indicated no significant relationship. The third pair was between the test scores and five compensation strategies. The results indicated significant relationships between the test scores and four compensation strategies. They were using linguistic clues ($p \leq .05$), paying attention ($p \leq .05$), arranging and planning the reading ($p \leq .05$), and evaluating ($p \leq .05$).

The fourth pair was between the test scores and one social strategy. The results indicated no significant relationship.

5. Discussion and Conclusion

This study evaluated English reading proficiency and investigated the relationship between reading proficiency and reading strategies of the office personnel at Rajapruk University. The first research hypothesis was rejected because the English reading proficiency of the office personnel was at a very low level. However, the second

hypothesis was partly accepted because there was a significant relationship between reading proficiency and some reading strategies. The results confirmed the findings from Abbot's^[17] research on second language reading that to be efficient in reading, the readers should obtain linguistic knowledge, background knowledge and reading strategy. The reading test results indicated that the subjects had low English proficiency. Therefore, they had inadequate linguistic knowledge in English and this caused them difficulty when they read. This is consistent to Alderson^[18], who summarized the threshold theory that to read for comprehension, the knowledge of the second language was more important than

According to the correlation coefficient analysis, there were significant relationships between reading proficiency and some reading strategies such as two memory strategies and four compensation strategies, but there was no significant relationship between reading proficiency, the social strategy and five cognitive strategies. The findings in the present study are consistent with Koda^[3], and Carrell and Grabe^[4] who found that the use of reading strategies was positively correlated with second language reading comprehension. Moreover, Lee and Schallert^[2], and Mokhtari and Reichard^[19] claimed that higher language proficiency ensured a more appropriate use of reading strategies. The results of those studies also mentioned that we could not expect learners to know how to use various reading strategies in a new language by themselves. They need support and chances to practice. Garner^[20] commented that second language readers needed to know what strategy to use, and when and how to use it. Therefore, this study supports the teaching of reading strategies to second language readers to enhance their reading comprehension together with more frequent use of English in daily life.

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Creation and Efficiency Validation of Mobile lesson On Topic of Data Structure and Algorithms Case study of Siam Technology College

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Abstract

This research was an experimental research aimed at creating and developing Mobile learning on data structures and algorithms. According to the Bachelor's Degree Program (4 years), Computer Technology, Siam Technology College. The tools used in this research were Mobile lesson on topic Data structures and algorithms. The content consists of 6 chapters, 41 chapters, 119 chapters, instructional materials (tutorials), 121 slides, 43 quizzes, 50 achievement tests, and Mobile learning on topic of data structures and algorithms. Created to experiment with the sample. 1st grade students in Technology Computer, Faculty of Siam Technology, College, 30 students. Have been taught in each lesson. Tested At the end of the lesson, the student completes the test and then the test data is analyzed and the results are summarized. It appears that the Mobile learning developed by the researcher was 81.32 / 80.80, which is well above the threshold (80/80)

Keywords : CAI, Data Structure Algorithm

1. Introduction

Today's education is a necessity. To be modern. Or keep up with the advancement in technology. Especially in Mobile technology. It can be seen that it is used in almost every field. Especially educational agencies. Both the government, state-owned and private sectors of the country. Current educational technology has evolved rapidly^[1].

While mobile phones, tablets, and other connected devices are becoming ubiquitous and affordable, wireless technology improves learning and digital content for students. Students like mobile technology and use it regularly in their private lives. So it's no surprise that young people want to use mobile devices to make their education more engaging and tailor to their specific needs.

Mobile has been used in the field of education. Thai educators are increasingly using mobile for teaching and learning, because nature is easy to use mobile. And better search than other media. Therefore, the mobile is a system that comes into play rapidly^[1]. And help in teaching to be more effective. In the near future, the price of Mobile is getting cheaper. It is good to use the Mobile in the

teaching and learning system so that the teacher can create the learning process to suit the learner.^[6]

Today learning Using Mobile Phones. It is a combination of teaching and learning with mobile. To solve the problem of traditional learning. Is learning anywhere, anytime. At present, the tools used in telephone communication have many capabilities. And there are a lot of users. It also has a small size to carry. So taking lessons into a mobile phone is another way of learning. Of current teaching^[2]

Mobile learning is an educational innovation that applies technology to manipulate still images. Animation, sound and interaction Blend harmoniously and systematically^[3]. To present the content of knowledge and organize the instructional activities in a structured way for the purpose of the lesson. Making the presentation of knowledge is effective and responsive to the learner well. Focus on student differences. As a result, teaching is more convenient and effective.

Therefore, teaching in the field of data structures and algorithms. It is therefore necessary to create a good foundation for the learner. Considering the content, the content is large and

difficult to understand in a limited time, only one lesson per day (50 minutes). And can not teach all students to understand at the time. Undergraduate students in computer technology. Students are divided into 2 groups:

graduated from high school and graduated from high school^[7].

Thus, the basic knowledge of the learners is different. They are measured by the basic knowledge test in basic and specialized subjects, so that the perception of each student's content is not the same. And to make the students understand all the content. need to use Mobile lessons help students understand the content more.^[8]

Which teaches using lessons on mobile phones. Will solve the problem of differences between individuals. Because the lessons on mobile phones can help learners to learn by their abilities, aptitudes, interests, and opportunities that are so different to their learners. And confidence to teachers Because in the production of lessons on mobile phones, the system uses the teaching media^[4]. Both the production of teaching materials, the activities, as well as instructions for use by the instructor can be used immediately. This helps in changing learning behaviors. To be more effective^[7]

This research sought to study students' learning achievement using mobile phone lessons, data structures and algorithms of first year diploma students at Attawit Commercial School To provide information on effective education. And produce a person with computer literacy in the future^[5].

2. Purpose of Research

1.2.1 To create Mobile Lessons on data structures and algorithms.

1.2.2. Test the performance of the generated Mobile lessons

1.2.3 To compare student achievement before and after learning data structures and algorithms. With Mobile learning

3. Research Methodology

This research was based on experimental research. One-Group Pretest-Posttest Design with pre-test and post-test results. It has the following format:

Table 3-1 One-Group Pretest-Posttest Design

Pre-test	Test	Post-test
T1	X	T2

3.1 Design and develop Mobile lessonson topic of Data Structures and Algorithms by defining the behavioral objectives derived from curriculum analysis. Using verbs that indicate the nature of the behavior that can be measured, such as explaining, calculating, and evaluating the importance of XIO, based on three levels of knowledge, namely, knowledge recovery (R), application of knowledge (A) To know (T) the total number of 41 behavioral objectives

3.1.1 Creating research tools.

3.1.1.1 Study courses. After the course And the course objectives. Researchers have studied the content of the course. It consists of the basic content of programming in total of 3 units:

1. Queue (Algorithm)
2. Stack
3. Tree
4. Array
5. Sort
6. Linked list

3.1.1.2 Content Analysis the topic.

Based on information from sources such as course descriptions, documents and textbooks, expert and instructor experience.

3.1.1.3 Assessment of the importance of the subject. Topics analyzed from various sources. Some topics are very important and some topics can be cut off without any learning impact. The criteria for the subject matter are as follows.

- To promote the ability to solve problems in learning.
- Promote the correct working skills.
- Encourage students to have a good attitude.

3.1.1.4 Define the behavioral objectives. When defining the content of the knowledge that the learner needs. Learn about each topic. To be defined as behavioral objectives. By using a verb that indicates the behavior that can be measured, such as describing, describing, compiling, calculating.

3.2 Assessment the quality of Mobile learning by experts. The researcher gave the Mobile lessons to the experts. The results of the evaluation

of the quality of Mobile lessons by the majority of experts' opinions were satisfactory. The results of the evaluation of the quality of Mobile learning by the experts in the lesson plan were 4.47 (4.47) and 4.27 (4.27) respectively. (4.27). The teaching media had an average of 4.56 and the mean of 5 items was 4.41.

3.3 Data collection

The researcher assessed the importance of the topic. By defining the importance of the subject as XIO.

- X is very important.
- I instead of medium importance.
- O instead of less importance.

Behavior measured is as follows.

- Knowledge Revival (R)
- Application of knowledge (A)
- Knowledge transfer (T)

When updating and editing E-Learning as suggested by the experts, the researcher conducted the experiment by introducing E-Learning to the sample. The steps are as follows.

3.3.1 M-Learning This is the researcher who conducts the teaching.

3.3.2 Clarify teaching and learning details with learners. To prepare for learning Learning aids And taking quizzes

3.3.3 Pretest test using the achievement test. Is a testing tool

3.3.4 Conducted E-Learning with 30 students at the undergraduate level, Faculty of Technology, taught 3 times a week, 3 times a week (180 minutes). At the end of each chapter to assess academic progress.

3.3.5 Post test (post test) When teaching all subjects. Repeat the test with the same test as the pre-test. Scores from the pre-test. Scores from the final test. And the test scores test the achievement of all lessons at the end of the course. The researchers used the data to analyze the E-Learning performance and to compare the learning achievement before and after the study.

3.4 Population and Samples

3.4.1 The population is composed of 50 undergraduate students in the Faculty of Technology.

3.4.2 The sample of this research. 30 students enrolled in Computer Program students as a group. Experiment with M-lesson. They came up with a simple random selection method of 30 people selected from a total of 50 students.

4. Results

The result of creating a lesson on a mobile phone. This is a 6-lesson data structure lesson that is used as a research tool.



Figure 1 Mobile learning

Figure 1 show the result of the creation. The lesson on mobile phones from Figure 1 is a lesson on the queue describing the behavior of a queue data structure.



Figure 2 Mobile learning

Figure 2 shows the result of creating a lesson on a mobile phone. This is one of the topics in the queue data structure. By introducing the theme of the lesson to be interesting. Preview a comparison of circular queue and normal queue operations.

Analyze the effectiveness of Mobile learning by comparison between scoring exercises. And the score from the quiz. Shown in Table 4-1.

Table 4-1. Finding the effectiveness of Mobile learning.

list	Full score	average	percent
Score from the final quiz (E1)	43	34.97	81.32
Score from Achievement Test (E2)	50	40.40	80.80

From Table 4-1, the scores for the final test The sample consisted of 30 participants, who were able to do 34.97 average of 43.3 points, or 81.32%, which was higher than the 80 criteria. The test was averaging 40.40 points out of a total of 50 points, or 80.80 percent, which was higher than the 80 score.

The performance of the lessons on mobile phones means the quality of the mobile phone. Measured by the learning outcomes of students Where to study from on a mobile phone The criteria is 80/80.

The first 80 is the average score of all the scores made by doing the exercises on a mobile phone. Percentage

The back 80 is the average score for all learners from the post-graduate quiz on mobile phones.

Table 4-2 shows the results of the analysis of learning achievement.

Testing	N	\bar{X}	t
Pre-test scores	30	29.73	12.00
Test scores after class	30	40.40	

From Table 4-2, 30 students were tested before and after the test. When testing the learning achievement between the pre-test and post-test scores using the t-test, it was found that the mean of the post-test scores was higher than the pre-test scores at the .01 level. According to hypothesis

5. Discuss the results.

This research was a one-way ANOVA. Pre-test and post-test were designed to construct Mobile learning in data structures and algorithms. By assuming that research. Mobile learning. It is 80/80

effective and after learning the Mobile learning, the achievement will be higher.

5.1 Effectiveness of Mobile learning on topic of data structures and algorithms. It was found that the E1 score in Table 4-2 was 81.32 and the achievement test score (E2) was 80.80, which was higher than the set performance of 80 (percentage). After finishing each chapter, students are able to memorize the content they have just learned so that the score from the final quiz is higher than the achievement test (E2). after each lesson, which contains all the lessons are quite a lot and quite a long time before a test is possible recognition of the student body may be reduced. Wash A score below average test lesson.

5.2 On the final test scores, see Table 4-2. The results of the final test are high. And there are some chapters that the students do at the end of the lesson have an average score lower than 80. Chapter 2 has an average score of 76.92 and Chapter 5 has an average score of 77.78. This may be because Chapter 2 and Lesson 5 are quite difficult. And it is calculated. Thus, the average score is lower than other

5.3 The learning achievement of the pre-test group was 29.73 after the study (Post-test) mean of 40.40. Arithm generated above the mean of the pre-test scores with a significant Mobile learning at .01 is based on the hypothesis.

6. Suggestions

6.1. In data structure and algorithms, there is also content in the structure of link data structures that do not contain teaching materials. And more prepared In order to complete the content of the course and in Chapters 2 and 5, students scored the final test at a low average.

6.2 In the next research to ensure that the research results in the use of the tools. Does it affect the sample? There should be two groups of samples. The experimental group was divided into the experimental group and the control group using the normal teaching method. How effective are the tools used in research that are effective and effective for the sample?

6.3 In the next research. There should be a measure of satisfaction with the use of Mobile learning by users of Mobile learning to determine the effectiveness of the Mobile learning

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Research on the reform of vocational education and teaching mode under the background of school-enterprise cooperation A case study of Shandong Kaiwen College of Science & Technology

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Abstract

School-enterprise cooperation is the inevitable trend of the reform of vocational education, and is also the booster of the rapid development of enterprises. Nowadays, school-enterprise cooperation has become a common research topic in the development of higher education throughout the world. This paper analyzes and discusses the typical case of the cooperation between the college and enterprises using the example of Shandong Kaiwen College of Science & Technology, summarizes the successful experience. It points out the problems that need to be solved and has some reference value for the reform of the teaching pattern of vocational education in the background of promoting the cooperation between colleges and enterprises.

Keywords : School-enterprise cooperation, vocational education

1. Introduction

In 2005, *the Decision of devoting major efforts in developing vocational education by the State Council* has clearly stated that we should “develop vocational education with enterprises and promote the intimate combination of vocational schools and enterprises”, “devote major efforts in carrying out the education mode of combining working and studying with cooperation of schools and enterprises”. In 2010, *the Outline of National Medium-and Long-Term Program for Education Reform and Development (2010-2020)* has stated that vocational education should “take service as the purpose, take employment as the direction and promote the educational reformation. Carry out the talent educating mode with work-study combination, school-enterprise cooperation and taking post for field work”. Strengthen the cooperation between schools and enterprises become an important strategic choice in developing vocational education.

School-enterprise cooperation and education combined with production realizes the resource sharing, complementation in advantages and joint development of both schools and enterprises. This

is the education that realizes modernization in vocational education and enterprise management promotes the production development and accelerates the collection of talents from the enterprise itself. It is also an important method in the sustainable development of education and production as well as an effective way to promote development in technology, economy and enterprises. Therefore, the school-enterprise cooperation is the inevitable trend of the reform of vocational education, and is also the booster of the rapid development of enterprises. Nowadays, school-enterprise cooperation has become a common research topic in the development of higher education throughout the world.

In May 2006, Shandong Kaiwen College of Science & Technology has tried school-enterprise cooperation and organizes the students to take posts for field work in Haier Corp., the No.1 brand of global large household appliances. After the field work, the students' technical abilities were improved, the field work results were highly evaluated and the enterprise had sought the talents needed. The win-win situation has first occurred among the school, enterprise and students. The

college was inspired by this success in school-enterprise cooperation, and they started exploring and researching in vocational education mode with school-enterprise cooperation in the background since 2006.

2. Specific measures

2.1 College-enterprise cooperation melted into top level design

College-enterprise cooperation is an inevitable trend of the development of the college and is a systematic project involving all aspects inside the college. The college must change the thinking, melt the college-enterprise cooperation into the top level design, introduce highly operational policies and systems and establish specialized agencies to put into effect.

(1) Set the college development goal of college-enterprise cooperation

In recent years, the college has been adhering to the college-enterprise cooperation as a new way of college development. In the college's "13th Five-Year" Development Plan, the "full implementation of college-enterprise cooperation" has been clearly mentioned as the development goal and college-enterprise cooperation has been included in the college annual work points and in the evaluation indicators of year-end department performance. During the period, special meetings have been held many times to increase publicity efforts, so that all teaching and administrative staffs can raise their awareness of college-enterprise cooperation, set clear objectives, sort out ideas to lay a solid foundation for the college-enterprise cooperation.

(2) Establish mechanism system for college-enterprise cooperation

Regarding the work of college-enterprise cooperation as an important supporting tool for the development, the college has founded a college-enterprise cooperation committee, composed of college leaders and the responsible persons for relevant departments, in order to coordinate and deal with the problems occurred in the concrete work of college-enterprise cooperation. "College-enterprise Cooperation Working System" has been formulated to give a clear division of labor, to allocate specific duty to specific person so as to ensure the normal operation of all the work. In the meanwhile, a series of management systems have

been developed, like the "Management Approach of Part-time Teachers" and the "Management Approach of Full-time Teachers to Business for Internship", for the sake of making sure of the smooth progress of college-enterprise cooperation.

2.2 College-enterprise cooperation to innovate the education pattern

In the cooperation between the college and enterprises, both parties seek common interests, which could not only enhance the ability to serve the society, but also improve the economic efficiency of enterprises. In recent years, the college has been innovating the education pattern of college-enterprise cooperation, breaking the old independent educating system, and has realized the new pattern of "two subjects" cooperative education, has selected those industries and enterprises with the basis of orders training for many years or with plenty of talent demand to co-construct specialties, and at the same time has built real scene training bases together with enterprises.

(1) Found associate college crossing the range of professional categories through college-enterprise cooperation

The college has reached an agreement with DingLi Corp., Ltd. to cooperate with each other to build 5 specialties crossing the range of professional categories and co-founded Dingli College of Shandong Kaiwen College of Science & Technology. The leader group of the college is composed of personnel from both the college and the enterprise. The college is responsible for the management of daily matters, students and laboratories, while the enterprise takes the responsibility for teaching, employment and operation management. The collaborative management conducted by the college and enterprise has enhanced the vitality and attractiveness of education, has complemented one another and has brought mutual development.

(2) Cooperate to cultivate talents by order training

The layout of specialty construction has been determined in accordance with the development requirements of leading industry in the "13th Five-Year" Development Plan and *Made in China 2025* Shandong Province Action Outline, combining the target for training and the needs for local economic development, highlighting the purpose of education is to provide services for

the local economic construction. Industries and enterprises know the best of what kind of talents they need. Several business specialties, meeting the development need of local economic construction, have been chosen for “order training”. In order to better serve the local economic construction of Shandong Province, the college has successively reached agreements with many enterprises, including Oracle (Shandong) OAEC Talent Industry Base, and DingLi Corp., Ltd., to jointly set up 7 college-enterprise cooperation titled order classes. Through the establishment of order class, it is ensured that the students will be trained to become high-quality skilled talents meeting the job requirements, the employment rate and the employment quality of students will be guaranteed and as for the enterprises, the talents in need are cultivated.

(3) Cooperatively build “real scene” training base

Training base construction is an important part of specialty construction and one of the necessary conditions to achieve the goal of professional talent training. The college has cooperated with seven companies including Oracle to build 10 real scene training bases on campus, taking up an area of 2,800 square meters, with the equipment value reaching nearly RMB 100 million. The building of “real scene” training bases, the equipment purchasing and the design of experimental work area all help create a good environment for the cultivation of project practicing ability of the students. In that case, students can experience real working scene and cultural atmosphere of corporations without going out the campus and the effects of college-enterprise cooperation as well as the collaborative cultivation of talents is brought into full play. In the college-enterprise cooperation, both parties are involved in the research and development of projects which are in line with the actual situation of the college and have a certain significance of setting good example. These projects are built, shared and managed by the college and enterprises. Besides, relevant rules and regulations about base management and operation have been introduced.

2.3 College-enterprise cooperation to build association for production, education and research

The college has set up a steering committee for specialty construction in order to further promote deep cooperation between the college and

enterprises, to straighten out the idea of cooperation between production, education and research and to establish an association for production, education and research. Technical backbones from the enterprises are hired as members of the committee to participate in specialty construction. To be more specific, the college has carried out cooperation in terms of joint educating, teacher training, curriculum reform, quality course construction, research project declaration and so on.

(1) Innovate teaching pattern

The college has cooperated with enterprises in closely linking the teaching process and the process of product development and production, with practice integrated into the actual production process of enterprises. Under the circumstances, the college and enterprises study and come up with practical, easy-operating implementation plans which have a certain demonstration meaning and will be gradually promoted in the following practice of teaching. The college and Oracle (Shandong) OAEC Talent Industry Base jointly revised the Class 2016 software technology (Oracle order training) professional talent training program and innovated “321 Talent Training Program”. In addition to this, the college has innovated “UBL + CDIO” new teaching pattern by using the opportunity of co-building training base and specialties crossing the range of professional categories, which is brought by the cooperation with DingLi Corp., Ltd. (with Ultrawise included).

(2) Share teachers to have cooperation in research and development

College-enterprise cooperation is a powerful way to solve the problem of “double qualifications” teachers. On the one hand, it is conducive for the future teaching that the full-time teachers of the college enter into enterprises for internship. Through the internship in enterprises, they can go deep into the business line, collect a wealth of teaching cases, improve skills structure and understand the needs of enterprises for talent. On the other hand, the coming of the professional technicians from the cooperative enterprises to the college to become part-time teachers can shorten the distance between theory and practice, while helping technicians themselves enhance their theoretical level. At present, the college has a stock of 80 part-time teachers from enterprises. At the same time, both the staffs from the college and

enterprises jointly carry out teaching and research, scientific research, technology development for mutual development, thus promoting the common interests of the college and enterprises.

3. Problems and outlook

3.1 Diversification of cooperation

To promote the deep combination of school-enterprise cooperation, analysis of the present succeeded examples in school-enterprise cooperation shows that the single-patterned school-enterprise cooperation cannot meet the multiple aspects of needs of the two parties. The cooperation at present has realized transition of complication, specification and multi-perspective, the depth, width and height of the cooperation is phenomenal. Diversified school-enterprise cooperation can be realized on the basis of co-development of both the school and enterprise. The diversified need has also promoted the diversification in school-enterprise cooperation development.

3.2 Fusion of the subject

The problem in fusion of the subject includes two main aspects, which are the fusion of school and enterprise, and the fusion of teachers from the enterprise and the teachers from the school. Practice has proved that the prerequisite as well as the basis for college-enterprise cooperation is to make efforts to seek the common interests of the college and enterprises, aiming at achieving “win-win”; if a win-win situation could not be achieved, it will be rather difficult to realize the college-enterprise cooperation and the in-depth integration of the college and enterprises. In the actual process, as the teachers from both the enterprise and the school are participated in the courses, there would be certain differences and gaps in teaching theories, teaching methods and organization of the teaching contents between the teachers, so the fusion of teachers from the enterprise and the school is also one important problems to be solved in the process of course proceeding.

3.3 The sharing of resources

One aspect of resource sharing is the sharing of teachers, and the other aspect is the sharing of training facilities and sites. The sharing of teachers is to let teachers from the enterprise participate in the teaching, which is a rather easy problem to solve. But the sharing of facilities and sites must

consider the actual situations of both parties, for instance if the enterprise wants to establish a training class using the on-campus training base to affect the surrounding schools, then the training must not affect the normal classes of the students or the people that the base holds.

4. Conclusion

In college-enterprise cooperation, common interests of both parties must be sought to achieve a “win-win”. Otherwise, the cooperation will be hard to succeed. In addition, the college must start from the reality, combine with the college’s educating conditions, specialty characteristics, nature and content of curriculum and the specific conditions of teachers and students, constantly sum up experience and gradually improve the relevant measures and practices. Only if the college and enterprises jointly establish scientific mechanism of operation and quality assurance system and seek advanced, operational vocational education teaching pattern can the task of cultivating high-end skilled and specialized talents be completed in vocational education.

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Internet+-based Internationalization of the Higher Education Curriculum: An Innovative Development Path to Explore*

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Abstract

Education is deeply integrated with Internet Thinking and modern information technology, effectively facilitating the optimized allocation of education resources and the innovation of teaching methods and models. Under the wave of “Internet⁺”, higher education curriculum internationalization is becoming more open, innovative and initiative. Besides, “Internet⁺” has a profound impact on the concept, objectives, conditions, contents, implementation and assessment of curriculum internationalization. Under the new circumstances, major innovative initiatives will be taken for the development path of higher education curriculum internationalization, such as application of “Internet⁺” based MOOC to curriculum internationalization, promotion of the cross-regional/ cross-institutional credit system and establishment of the curriculum internationalization unions among colleges and universities at home and abroad.

Keywords : Curriculum internationalization, development trend, development path innovation, “Internet⁺”, profound impact

“Internet⁺”, in the narrow sense of the term, can be construed as “Internet” plus “traditional industries”, meaning that traditional industries seek new areas of growth and development space by relying on internet platforms and information technology. Broadly speaking, “Internet⁺” is not a simple combination of the Internet and traditional industries, rather, it implies the upgrading of traditional industries and the creation of emergent industry environments through constant optimization of various productive factors including capital and technology by making comprehensive use of modern information methods and Internet-based innovation platforms. In 2015, “Internet⁺” was officially recognized as a national strategy in the government work report issued by the State Council, hereby providing policy support for the integration of traditional and emergent industries by relying on such innovative elements as the

Internet, cloud computing, and big data. As an in-depth integration of Internet thinking and modern information technology with education, “Internet⁺ education” has, to some extent, subverted traditional “teaching” and “learning”, promoted the optimal allocation of educational resources and the innovation of the mode of teaching, and ultimately boosted the quality of education and teaching as well as efficiency.

1. Trend of the internationalization of higher education curriculum in the context of “Internet⁺”

With the acceleration of the process of economic globalization, cross-border flow of technology, knowledge, and values is becoming more and more frequent and this is represented by even more prominent internationalization of education.[1] The internationalization of education

is not only an active response from government departments and the academic world in coping with globalization, it is also a positive counter-measure formulated by educational institutions to cope with the impact of globalization. The internationalization of curriculum is the introduction of international or intercultural content into the teaching, research and service of higher education. In higher education, it is a brand new concept of higher education curriculum and also a new system-design idea for higher education curriculum.[2] In the context of “Internet+”, the internationalization of higher education curriculum displays the following new trends.

1.1 Openness

In the ecosystem of “Internet+”, the internationalization of higher education curriculum is displaying an increasing trend of openness. At present, the internationalization of higher education curriculum has been incorporated into the overall strategic planning of higher education in most countries. Mutual reference to educational systems and mutual transplantation in curriculum content are the initial forms of the internationalization of higher education in developed countries. On the one hand, under the guidance of the open thinking of the Internet, higher education organizations in various countries in the world participate and actively introduce Internet competitive resources from outside their systems and carry out increasing rounds of exchange and interaction in the content of the internationalization of curriculum. On the other hand, the sources from which students obtain international knowledge through the Internet and other platforms are also greatly diversified, classroom teaching which traditionally dominates the imparting of knowledge has been completely discarded, and students now have convenient access to open international knowledge.

1.2 Innovation

“Internet+” is a new development form and a new industry format of the Internet motivated by innovation as well as evolution of the form of the Internet driven by the social innovation of knowledge. It can be said that “Internet+” is an important part of the development of innovation under new ever-

present circumstances. In recent years, modes of innovation in education based on “Internet+” such as Mooc, Micro-class, and Flipped-class have, to a certain extent, guided teachers to transform themselves from traditional one-dimensional “all-around” crammers into “limited” learning partners and guides. In the context of “Internet+”, technical means for the internationalization of curriculum attained constant progress in innovation with the support of the Internet platform. [3] This means the internationalization of curriculum is no longer face-to-face communication and interaction between the participants of teaching from different countries in traditional thinking, rather, it is increasingly represented by the sharing and utilization of teaching resources through the Internet and related platforms.

1.3 Initiative

A very important core element in the thinking of “Internet+” is to take the initiative to contact new things and to actively introduce new concepts and methods to solve bottlenecks encountered in development in an innovative manner. In the context of “Internet+”, higher education in the world today can no longer be confined to the traditional pattern of individual countries. Instead, it should take the initiative to join the global higher education system and must conduct an overall design of individual higher education curriculum in the context of the globe. It is necessary to maintain their own characteristics and advantages, in the meantime, it is also necessary to absorb the essence of the courses at colleges and universities in other countries. In specific applications of the concept, we should design a curriculum system according to our own actual situations to meet the requirements of internationalization, and allow the curriculum at emergent universities to truly combine with that of the applied higher education system in other countries, seeking common grounds and putting aside differences, achieving mutual promotion, and realizing parallel development.

2. The profound impact of “Internet⁺” on the internationalization of higher education curriculum

In an era when the internationalization of higher education is gaining more and more momentum, the internationalization of curriculum has become an important carrier and channel to realize the internationalization of higher education. The internationalization of higher education curriculum needs to solve six key urgent issues, which include the concept, goal, condition, content, implementation, and evaluation of the internationalization of curriculum. These six key issues constitute an organic whole. Proper configurations must be made and full play must be given to its synergies to effectively promote the internationalization of China’s higher education. The profound impact of “Internet⁺” on the internationalization of higher education curriculum in China is mainly embodied in the following six aspects, which constitute opportunity of breakthrough in innovating the approach to the internationalization of China’s higher education curriculum in the context of “Internet⁺”.

2.1 The concept of the internationalization of curriculum

The internationalization of higher education curriculum is the internationalization of curriculum philosophy in the first place. The internationalization of curriculum is the introduction of international or intercultural content into the teaching, research and service of higher education. The internationalization of higher education curriculum is a new concept of higher education curriculum and also a new system-design idea of higher education curriculum. With the development of the Internet and new technology, the boundaries between many industries have become blurred, and the use of high-tech in the communication of higher education is becoming more and more common. In the context of “Internet⁺”, colleges and universities around the world have increasing access to educational information and knowledge, and offer unprecedented convenience to the integration and sharing of international resources. For example, some well-known universities outside China follow the development trend of education

resources carried by mass media and achieve the integration and dissemination of courses or lectures through the internet platforms developed on their websites or commercial websites. Therefore, in the era of “Internet⁺”, the internationalization of higher education courses requires colleges and universities to put their curriculum in the context of globalization and make an overall design and focus on the common interests and fate of mankind. They should set up norms and systems concerning curriculum management according to international standards so that effective communication, contacts and dialogue could be conducted in the global university curriculum system; they should also see multiculturalism as their basis and break away from the shackles of traditional cultures and the “superiority of the West” theory in the discussion about culture; they should try to seek the integration of local culture with international culture.

2.2 The goal of the internationalization of curriculum

The goal of courses is an expectation of the results of the implementation of courses, that is, the concretization of the values on curriculum and the embodiment of the goal of talent training in curriculum. The design of curriculum content and the implementation of curriculum are basically based on people’s learning, understanding and adaptability of curriculum objectives. The implementation of curriculum evaluation is also based on the degree and level of the achievement of curriculum objectives. It can be said that the development and implementation of curriculum objectives is always in the whole process of course operation. People must be fully aware of curriculum objectives, make scientific studies of them, and make elaborate designs concerning the objectives before we can possibly achieve an ideal curriculum goal. In the context of “Internet⁺”, international courses should be based on cultivating an international vision, global awareness and capacity for participating in international affairs, and emphasize knowledge and pay more attention to participation, especially the capacity to adapt to globalization supported by Internet technology. This is the deepening and development of objectives of traditional curriculum.

2.3 Conditions for Curriculum Internationalization

The essential conditions for the higher education curriculum internationalization have been discussed in depth and studied globally. The most representative researches were delivered by the American Council on Education (ACE) and the Association of Universities and Colleges of Canada (AUCC). According to ACE, these essential conditions include to make sure that the active leadership gives priority to the curriculum internationalization; to build a framework for the strategies on actions; to offer opportunities to the faculty members; and to work on the different dimensions of curriculum internationalization. Nevertheless, the essential conditions proposed by AUCC include to search for successful partners to support transnational learning; to integrate foreign languages with the curriculum-based teaching and projects; to support the faculty in curriculum internationalization and keep their enthusiasm; to promote the transnational and cross-cultural learning on campus through the students' experiences; and to demonstrate the value of curriculum internationalization in the context of evaluating and measuring the students' learning outcomes. The above two have different points of focus. ACE highlights the metaphysical thinking, and AUCC puts particular emphasis on the physical contents. With the continuous development of the Internet, Big Data, Cloud Computing and other technologies, the colleges and universities engaged in curriculum internationalization should redouble their efforts to the training and import in terms of internationalization, and enhance the internationalization of teaching faculty. Besides, it is necessary for them to update their ideas; position themselves definitely, and prioritize their development tasks based on their own advantages and features; and make exchanges, under the concept of "Opening-up, Sharing and Win-win Development", with colleges and universities at home and abroad in terms of the policies, funds and resources in curriculum development.[4]

2.4 Contents of Curriculum Internationalization

The internationalization of curriculum contents is viewed as an important carrier of the higher education curriculum internationalization, and also the key for the colleges and universities to achieve the objective of internationalization. With the rapid development of the Internet, more educational resources for curriculum internationalization are pooled, and teachers attach more importance to making the contents more abundant and interesting. Nowadays, facing many worldwide problems in environment, population, poverty and war, every country is urgent to educate people about reaching a consensus on these worldwide problems and taking concerted actions to solve such problems. In the light of the western scholar Maurice Harare, the curriculum internationalization covers not only the development process of foreign language training and international region research subject, but also the process of "subject generalization" by introducing global perspectives into normal subjects. American professor Bern also mentioned it's necessary for the international education to teach in an international frame so that the students could pay more attention to the importance of the connections among countries, and the universal problems in poverty, racial discrimination and so on. Law of Education of Russian Federation regulates education shall ensure the social overall civilization and the professional civilization at the international level. And some universities in Western Europe work out many teaching contents in multicultural tolerance and understanding. Therefore, under the background of "Internet+", the core contents of curriculum internationalization lie in the global problems, consciousness and perspectives.

2.5 Implementation of Curriculum Internationalization

If you want to realize the curriculum internationalization and the curriculum contents, the curriculum implementation is a significant chain. Around teaching and learning, the higher education curriculum internationalization implementation is secured in 4 respects including creating the international teaching environment,

using the international lingua franca, adopting the modern teaching methods, and employing the modern teaching technologies. The curriculum internationalization could be implemented in various forms, such as the bilingual education, distance education and exchange teachers and students at home and abroad and other forms. Under the wave of “Internet⁺”, global education resources for various courses have been integrated through the Internet so that domestic universities could have access to the essential education resources easily. So the modern educational technologies based on the Internet are the foundation for the implementation on university curriculum internationalization. The modern educational technologies differ essentially from the traditional teaching methods in the following respects: centering on the students, the former makes each of them potential, active, innovative and unique; centering on the teachers and textbooks, the latter teaches them in bulk lacking personality and ego. The teaching in class is integrated with the modern educational technologies to foster talents with personalized and innovative educational thoughts. Of particular note, based on the information network technology, the informationalized platform of international higher education takes advantage of the widely application of electronic media and network techniques to alter the traditional limited lecturing-based teaching and share resources to the utmost extent.

2.6 Evaluation on Curriculum Internationalization

The curriculum management effectively guarantees the curriculum implementation. And the curriculum evaluation lays an important foundation for the curriculum optimization. The evaluation on the higher education curriculum internationalization covers whether the curriculum implementation reaches the curriculum objectives and whether universities create enough opportunities to help students achieve their expected goals, and also the teaching quality. The evaluation mainly includes the evaluation content, subject, standard and organization. Under the background of “Internet⁺”, the teachers should maintain the leading positions in class, and meanwhile enable the students to act at their own and develop the

learning plans based on the certain learning objectives so as to improve the teaching effect of the curriculum internationalization. Therefore, based on the evaluation on the higher education curriculum internationalization, the curriculum has to be reformed according to the internationally accepted standards. After recognized and respected universally by the global academic community, the evaluation should be applied to formulate the common regulations and evaluation standard among the courses of colleges and universities in every country. And the guide and evaluation functions of the examination methods also need to be pay much attention to. With the advancement of the higher education internationalization, the traditional examination methods grow outdated. Thus the reformation should move forward to the flexible and various examination methods, such as course papers, big projects, experimental operation and other examination methods which should all be added in the examination system. And the examination in the practice and experience should be especially taken into account. In short, the key to realize China’s higher education curriculum internationalization is to be in accordance with the global evaluation standards and to establish the global evaluation system of the curriculum internationalization.

3. “Internet⁺”-based Internationalization of the Higher Education Curriculum: An Innovative Development Path

According to the above six factors, in order to fulfill the higher education curriculum internationalization, the correct curriculum conception must be established first. And only with the guidance of correct conceptions, the appropriate objectives can be set which provide a basis for the selection of the curriculum contents. In the favorable condition of curriculum internationalization, only adopting matching curriculum implementation methods and evaluation system could develop the high-quality international curriculum with the global consciousness and international view so as to realize the goal of curriculum internationalization in a better way, and finally affects and feeds back on the curriculum internationalization conception. Under the background of “Internet⁺”, the resources

of the curriculum internationalization shift from the scarce and closed condition to the abundant and open one. The international mode of traditional higher education curriculum is changing profoundly, and the innovative development path and reform of the curriculum internationalization also should conform to the requirements of era development.

3.1 “Internet+”-based Application of the MOOC to Curriculum Internationalization

The Massive Open Online Course (MOOC for short), launched by Harvard University, Massachusetts Institute of Technology and other top colleges and universities in 2012 is a typical “Internet+” education mode. MOOC provides China’s colleges and universities with a salutary lesson in exploring an innovative development path of curriculum internationalization. Compared with the traditional teaching model, Compared with those of the traditional teaching models, MOOC has the following advantage: firstly, it facilitates learning. At present, most of the colleges and universities have been covered by campus network, network, ensuring the mobile learning and fragmented learning. Secondly, the students are more autonomous in learning. Thirdly, MOOC provides the customized solutions. Generally, in the traditional teaching process, the teacher-student relationship is of “one-to-many” type, in which the teachers can only make teaching plans in accordance with the students’ average acceptability of knowledge. While MOOC, an open and optional model, ensures the students to study on the basis of their own abilities and to make their own progress under the guidance of teachers. Finally, the students’ outcomes after having MOOC are fully presented. By means of report study, group discussion and Q&A, students are able to have a better understanding of knowledge, resolve doubts and identify shortcomings, providing experience in adjustment and improvement of the MOOC.

Owing to the fact that the MOOC model has been practically proved rational and dominant worldwide, the President of Stanford University compares it to “a digital tsunami” in the history of education.[5] MOOC has provided a new teaching context which contributes not only to the extensive sharing of quality educational resources

but to the forming of the ecology of curriculum internationalization beyond time and space. MOOC has changed the traditional educational concept, and can play a greater role in the promotion, implementation and evaluation of curriculum internationalization. Currently, MOOC consists of SPOC (Small Private Online Course) and MPOC (Massive Private Online Course). The former is smaller than the latter in size, and it not only has the features of the intelligent teaching context but also owns the advantages of MOOC’s online and autonomous learning. Other than that, it can make up the shortfalls such as traditional large-class learning and passive learning, and unlimited number of students in MOOC. On the circumstance that the teachers for internationalization are in short supply, the MOOC, especially MPOC, is the development trend of the higher education curriculum internationalization in the future.

3.2 “Internet+”-based Promotion of Cross-regional/Cross-institutional Credit System

The cross-regional/cross-institutional credit system is one of the models of “Internet+ Education”, which is also the latest exploration of curriculum internationalization of higher education. The system, by virtue of the advantages in Internet technologies and platforms, breaks the traditional teaching routine. With the help of the quality courses on the third party teaching management platform, students can select to study quality courses of other universities and gain credit points according to the agreement among universities. The credit points can be examined and verified by their own university. Therefore, it is a new teaching method based on the Internet. There are numerous online courses on the Internet, among those are mainly online learning mode, the content may cover everything in the universe. Mainly, those courses are presented by both domestic universities and overseas ones. Colleges and universities need to filter these online courses effectively, and select appropriate curriculum and recommend them to students. Additionally, the university teachers should design reasonable assessment methods for online courses, urging students to learn those courses effectively. Compared with the online course on campus, the off campus online course is more popular among

people, and more suitable for electives. Thus, it plays a supportive and supplementary role in the professional teaching and learning.

The cross-regional/cross-institutional credit system is an innovation on teaching model by using the Internet thinking, and it is of great significance to colleges/universities, teachers and students.[6] The cross-regional/cross-institutional credit system may alleviate such problems during the curriculum internationalization as insufficiency and low availability of teachers. In particular, if the system is applied to some optional courses which are highly internationalized, the teacher resources may be saved and the school-running cost slashed. The students can easily have better access to the most preeminent curriculum resources without stepping out of schools. By this means, it is convenient for them to receive quality education in diversity, which has promoted the fairness of education. These courses are mainly based on university courses, serving for university students and teachers; in the meanwhile they are to the society. It does not only include videos, courseware, homework, testing and etc. that are involved in teaching activities in university classroom, but also creates an Internet based learning environment that are both highly interactive and suitable for online study and communication. Accordingly, it creates more choices for university students and the public who wish to learning professional courses systematically.[7]

3.3 “Internet⁺”-based Establishment of the Curriculum Internationalization Unions among Colleges and Universities at Home and Abroad

Under the constant influence of the “Internet” on education, new type of online courses like Massive Open Online Course(MOOC)has recently witnessed a rapid development at the international level, causing a great revolution in teaching content, method, mode and management system, bringing about new opportunities and challenges to the development of the higher education curriculum internationalization. In the “Internet⁺” background, it is suggested that the educational management department of China and relevant universities follow the purposes “innovation, interconnection, opening-up and

sharing”, taking efforts to construct an international union in curriculum internationalization worldwide. The union should carry out specific work in the following five areas: the standard, manufacture, evaluation, sharing and academic exchanges of the internationalized curriculum. The union should aim at integrating quality worldwide intercollegiate curriculum in internationalized resources, and also form a sharing mechanism for quality curriculum by taking the advantage of modern educational information technology. Therefore, by this means, teaching methods can be enriched, so that massive open online platforms can be built, then a harmonious, qualified, digitalized higher education equalized can be accomplished. Owing to the facts mentioned, it promotes the levels of curriculum internationalization in domestic universities. With the help of the union of curriculum internationalization both at home and abroad, an effective mechanism can be exploited in a larger scale, and an Internet-based testing evaluation and marketing operation system can be achieved.

The Internet platform is a significant carrier that pushes, obtains, and communicates internationalized curriculum data.[8] Due to the “Internet⁺”-based establishment of the curriculum internationalization unions among colleges and universities at home and abroad, it is suggested that us focus on adhering to the development of curriculum internationalization, enhance the integration between the information technology and internationalization curriculum. Accordingly, the regional complementarity of high quality resources between colleges and universities at home and abroad can be realized. Apart from that, once the inter-disciplinary cooperation in the field of teaching reform is enhanced, we are able to promote the resources sharing of international curriculum in different regions. Therefore, we are able to maximize the benefit of high quality curriculum resources and improve the development of education fairness and equilibrium. Then, the resource aggregation and collaborative innovation can be finally fulfilled. For instance, it is suggested the all the union universities develop and construct a set of online open international curriculum platform which covers the whole platform. The extensive use of MOOC, micro-lectures, flipped

classroom and etc. enables us to enhance the effect and spreading speed of online courses, and thus strengthens the credit recognition between member universities of “curriculum union”. As a result, under the concussion of the “Internet⁺” mode, the current higher education curriculum internationalization is also experiencing a historic development opportunity in the Internet era. Both the government and the universities should fully be aware of and attach importance to it at the strategic perspective, and accelerate the pace of the fundamental revolution of the curriculum internationalization and management system.

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The Efficacy of Computer Assistant Instructor: Augmented Reality in Biology (Plant)

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Abstract

The goal of this research was to develop the CAI based on Augmented Reality of career and technology group subject the efficiency 80/80 criteria, to compare a learning achievement before/after and to study satisfaction of student the sampling group was Eighth Grade of 15 students The research shown instrument achievement, test lesson quality questionnaire and satisfaction questionnaire the static use in data analysis was the average and t-test Dependent

The study shown as follows (1) the efficacy the CAI Augmented Reality computer hardware was 81/84 (2) The sampling group was significantly higher than before using it at 0.05 level (3) satisfaction after using the CAI Augmented Reality was good average is 4.3 Standard Deviation is 4.36

Keywords : Computer Assisted Instruction, Augmented Reality

1. Introduction

Authors should prepare their articles in A4 size current technology Information for the study was conducted to develop the teaching process as well as knowledge of diverse knowledge that students can study at your own pace and relax at any time(Ammar H. Safar,2016), so the professor. Teachers have an important role particularly in sponsorships to learn new ways. Happening in the classroom in the teaching process. The media is necessary and important to carry out the study (Mehdi Mekni,2014). There was recognition that effective and durable. CAI (Computer Assisted Instruction), or CAI, is a type of media that plays an important role in the institution. The learning materials the students can learn on their own. Choose reusable In that learners do not understand. Time management is self-test after learning. And collect data to test each student on each test(Robert gagne,2005).

Both to help students develop the knowledge, understanding and skills practice

thoroughly can lead to additional training outside school hours. (Aroongrung Papapisit ,2553) Moreover, the savings in the budget. The purchase of additional computer equipment. Researchers have Prepare CAI To learn another way.

2. Literature Review

S. Caia,el proposed an study targeted “the composition of substances” segment of junior high school chemistry classes and, furthermore, involved the design and development of a set of inquiry-based Augmented Reality learning tools. Students could control, combine and interact with a 3D model of micro-particles using markers and conduct a series of inquiry-based experiments. (6) The AR tool was tested in practice at a junior high school in Shenzhen, China. Luca De Marchi, el proposed an augmented reality (AR) strategy in which a Lamb waves based impact detection methodology dynamically interacts with a head portable visualization device allowing the inspector to see the estimated impact position (with

its uncertainty) and impact energy directly on the plate-like structure. Raman IvanBarraza Castillo el presented a new software architecture for AR application development based on freely available components;it provides a detailed view of the subsystems and tasks that encompass the creation of a mobile AR application. (7) The typical task of plotting a quadratic equation was selected as a case study to obtain feasibility insights on how AR could support the teaching-learning process and to observe the student's reaction to the technology and the particular application. Abrar Omar Alkhamisi, el propoed a comprehensive study of AR including its history, architecture, applications, current challenges and future trends. (13) Hakan Tekedere el purposed is examining the reviews released on augmented reality applications in education, merging the results obtained in the studies that are independent from each other, and providing a new viewpoint for the studies that will be conducted in the future.(13) H. Chen proposed an overview of how MR is currently being used for education and training. Contributors are expected to demonstrate the versati lity of MR technologies for learning purposes, especially in any contexts or domains that MR has not been applied before. K. Kim,el proposed a theoretical model that explains continuance intention of users based on AR and motivation theories, and empirically examines the influencing factors with collected data from smartphone AR application users.(11) The results showed that information quality was the most influencing factor for AR continuance intention among AR factors, while perceived enjoyment was not a significant antecedent. A. Safar, el proposed an experimental research study scrutinized the effectiveness of using augmented reality (AR) applications (apps) as a teaching and learning tool when instructing kindergarten children in the English alphabet in the State of Kuwait.(13)

3. Hypothesis

computer assistant instructor Augmeted reality: Biology(Plant) has effecancy criteria over 80/80

Students with Teaching about Augmeted reality computer assistant instructor. Achievement before and after the class is over. And satisfied to a good extent

4. Research Method

The set of AR Tools we developed during this study ontains AR software 4 Makers and an activity form The Software contains 4 plants.

The interaction tool used with this software is the maker A (figure 1) set contain 4 makers print with the number 1-4 which are selectively applicable to different applications After the software installed Student can use different marker to control 3D-Model (figure 2) and conduct inquiry-based learning as instructed on the activity form and further generalize concepts and conclusions

By contrast to previous studies of AR we adopted a student-centered scenario in which student are learn in AR environment on their own They use markers to represent Computer Hardware in a laboratory we expect student to explore and read conclusion through this

The software is made on web base and the android application include Pixlive in addition to acculate modeling the essence of human-computer interactive with this software detect and record the position of each maker in camera view as the application will trigger different animation when the marker is different position The marker behavior can be consistant with real Hardware is some case

When student move other marker within the camera's view they will observe the model of Computer Hardware as show in figure 4.



Figure 1 Marker of Plant is 2D metarial propose for call 3D model



Figure 2 3D Model Plantmade from 3D sketchup

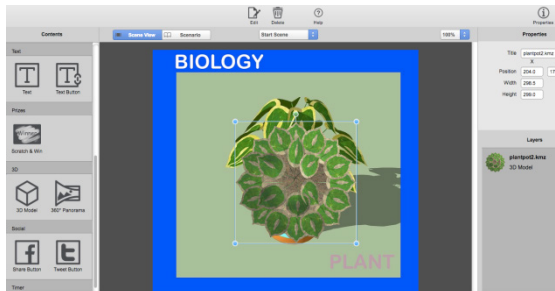


Figure 3 Matching 3D Model to Plant

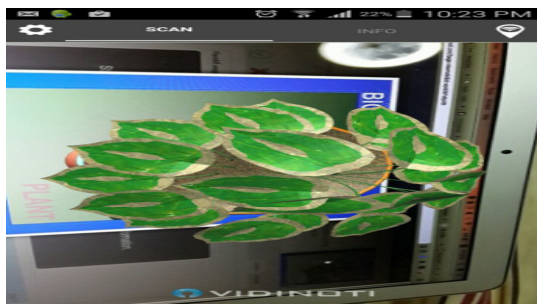


Figure 4 Learning with AR

After Student finish the inquiry-based learning Activity ,researchers expect them to (1) know that there particles that can identify types of plant (2) be able to tell the benefit of each plant (3) form any part of plant.

In this experiment we adopted quantitative method to explore the change in student score whereas we adopted quantitative method at the same time to delve deeper into their feelings and experience throughout the process

5. Data Analysis

The efficiency of the model: the standard criterion 80/80

1. For the first 80 percent of the average scores of students have quiz between classes.

2. After the 80th for the percentage of students scoring at the test after the class.

3. Comparison of scores before and after learning by testing the T-Test.

4. The results of satisfaction surveys of students using a Likert’s rating scale, which is defined by the fifth frame following questions and topics. The sequence of content, clarity of text and graphics. The attractiveness of lessons And the ease of using the average and standard deviation.

Table 1 The efficiency of the model: the standard criterion 80/80

Table 1 Table Test

List	n	Full Score	Score
Chapter 1	15	300	221
Chapter 2	15	300	247
Chapter 3	15	300	254
Pretest (E1)	15	300	241
Post-test (E2)	15	300	245

The performance characteristics of virtual teaching about computers. Found to be effective (E1 / E2) is 80.22 / 81.67, higher than the benchmark. Shows that it can effectively be used. Compare the difference between the pre and post tests using the T-Test.

Table 2 compares the results before and after learning of the test using the T-Test

List	n	Score	Mean	S.D	T-Test
Pre-test	15	200	66.67	1.12	
Post-test	15	245	81.66	1.04	8.87

The comparison with the previous study after study has found that student achievement has increased significantly at 0.05 to 1.76 in the above table show that the T-Test can be used.

The conclusion of the assessment of student satisfaction.

Table 3 summarizes the results of student satisfaction

List	Mean	S.D	Result
Content	4.45	4.95	Very good
Order of presentation	4.2	3.87	Good
Text and Image	4.4	4.80	Good
Interesting	4.7	5.36	Very good
User Friendly	4.3	4.36	Good

The results of the analysis of satisfaction.

The results of the satisfaction survey. Virtual Teaching The computer equipment The overall level of average = 4.41, S.D = 4.67. The amount of content in a very good average = 4.45, S.D = 4.95. The order process was good average = 4.2, S.D = 3.87. The clarity of text and graphics at a good level, mean = 4.4, S.D = 4.80 interesting lesson in a very good average = 4.7, S.D = 5.36. The ease of use is a good average = 4.3, S.D = 4.36, respectively, that can be put to use.

6. Conclusion

1. To determine the effectiveness of teaching about Virtual Computer. Found to be effective (E1 / E2) is 80.22 / 81.67, higher than the benchmark. Shows that it can effectively be used.

2. Results of the benchmarking study after study has found that student achievement has increased significantly at 0.05 to 1.76 in the above table show that the T-Test can be used.

3. The results of the satisfaction survey. Virtual Teaching The computer equipment Found that, overall, the level that can be put to good use.

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The Improvement of the English Placement Test for First Year Students of Rajapruk University

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Abstract

This study aimed to build a placement test, find out the quality and improve the placement test for the first year students at Rajapruk University. The sample used for this study was 100 first year students of Rajapruk University. The placement was used as a tool. The quality of the test was found out by validity, reliability, discrimination, and difficulty. Data was analyzed using difficulty, discrimination, KR-20, correlation, mean, and standard deviation.

The result revealed that the test has five parts with twenty questions in each part: the first part is vocabulary, the second part is error identification, the third part is passage reading, the fourth part is sentence completion, and the last part is passage completion. The quality of validity has an IOC value at 0.86 and the reliability at 0.81. The percentage of the test quality is at 85. Most questions are rather difficult. The best part is the vocabulary part, next is passage completion, passage reading, error identification, and sentence completion respectively. When considering the correlation, the first, third, and fifth part obtained the positive correlation, while the fourth and the fifth part obtained the inverse correlation by having the correlation value between .30 - .85. The test has been done by improving the difficult questions and distracted questions as well as improving the questions, alternatives, and distracters. The passage has been improved by selecting passages which are familiar with students, for example: appointments, telephone conversations, articles from newspapers or magazines, reading graphs, short reports, goods and services advertisements, describing a person in the form of writing, email writing regarding the course description.

Keywords: improvement, placement test, first year students

1. General information

To study in the higher education level by aiming students to get knowledge and skills for the future career as the standard of Thailand Qualifications Framework for Higher Education (TQF), (Office of the Higher Education Commission, 2009)

1 are 1) Being the person who gets to know how to solve problems and deal with the contradictions both in personal and group status. The person should have a leadership skill to seek for a new and proper way to use in a practical way, 2) The person should apply the genuine understanding in theory and process to do a research in his/her own major to solve problems and contradictions in other situations,

3) The person should be able to seek for and suggest solutions in academic or career fields by accepting the limitation of their own career field, 4) The person should participate, follow the improvement in their own field to reach the newest knowledge, and accumulate knowledge and understanding all the time, and 5) The person should have ethic and high responsibilities in the context of academic and career emphasizing in communication and information technology skills which mean being able to communication both speaking and writing skill in English and technology.

English is the official language using to communication with all nationalities around the world and have a crucial role to the living life of Thai people.

The basic knowledge of English is very important. Students should have knowledge of grammar, vocabulary, idioms, reading comprehension, general writing, writing of letters, listening skill, and speaking skill. (Wipha Yanwangsa, 2007)² Especially in the current situation in 2016, Thailand joined to be a member of Asean Economic Community which other members are Indonesia, Malaysia, Philippines, Singapore, Brunei, Vietnam, Laos, Burma, and Cambodia forming all together for the stability of ASEAN. The 3 main purposes are the ASEAN Political – Security Community aiming to 1) promote the cooperation of politic and stability to reinforce and maintain peace in regions, 2) be the ASEAN Socio – Cultural Community aiming to gather to make people have a good life without sickness, good environment, good unity, generosity, and sharing, and 3) be ASEAN Economic Community (AEC)

Joining in AEC will lead a positive impact to the Thai economy and also relate to skilled personnel having more chances to working in ASEAN countries. The agreement has done with eight careers which are: doctor, dentist, engineer, architect, explorer, nurse, accountant, and skilled personnel who are in service and tourism fields, to decrease the labor shortage. As the freely mobility of skilled personnel in ASEAN countries, for this change, skill personnel have more chances to work in those countries which can lead a negative impact to the students who is going to graduate in Thailand can go to work in ASEAN countries. Thus, the main point is, the students or graduates must be good in English so that they can get a job and compete in the labor market of ASEAN. Anyway, the result from the survey revealed that the problem of both public and private universities is the studying and teaching management of English, (Visanu Vongsinsirikul, 2012)³ this is why the universities have to improve the implementation such as the curriculum, teaching methods, instructors, and students. Moreover, the Office of Higher Education Commission, Ministry of Education is trying to provoke the universities to be active and improve the students and graduates to get ready for the upcoming change by adding extra English course in the curriculum of every faculty to make students realize the importance of English in ASEAN community.

From the crisis of problems in studying English, the research result, and also the evaluation of the quality of school education, the result of the O-Net (2015) examination revealed that the overall of learning outcome in English was below an

average so that lead to the problem in a higher education especially in private universities which are not much strict with the admission process. But after they are allowed to study, it is the very important for the universities to seek for an efficient way to improve them to have more knowledge and ability to be qualified graduates.

The Faculty of Liberal Arts, Rajapruk University, is aware of the mentioned above problem, we then created a project of the English placement test for the first year students in the academic year 2013 and found that they got low scores. (Faculty of Liberal Arts, 2013)⁴ Because of this problem, the researchers were interested to evaluate the level of English the students in the academic year 2014 have and to improve the English placement test in the academic year 2014. The researchers also would like to get a better way to test the students and also know how to improve the quality of teaching and studying and improve the ability of new students properly and efficiently.

2. Purposes of Research

1. To create and find the quality of the English placement test for the first year students.
2. To find the quality of the English placement test for the first year students.
3. To develop and improve the English placement test for the first students.

3. Conceptual Framework of the Creation and Improvement of the English Placement Test

1. Stand on the course description of English I and II of Rajapruk University which emphasizes on the activities in daily life, conversation in each situation, how to ask for a permission and an invitation, how to make an appointment, how to get a main idea from reading a newspaper and magazine, how to read tables, short reports, product and service advertisements, how to describe people's personality, and how to write e-mails.

2. Stand on Thailand Qualifications Framework for Higher Education (TQF: HEd) and the 21st century skill which emphasizes on the communication in English.

3. The evaluation of essential skills in learning English which are 1) validity: this is what we can measure validity and meet the behavioral objectives evaluated by professionals seeking for Index of Item of Objective Congruence (IOC) at .50 or more. 2)

reliability: to find the KR-20 (Kuder – Richardson 20) rate means you will get the same result, no matter how many times you measure, you will get the same result, 3) objectivity: all questions are clear and obvious. Everyone completely understands and interprets the same thing and the way of marking examination has to be the same, get 1 point for the right answer and get 0 point for the wrong answer, 4) difficulty: the percentage of answering the right answer should be from 20 to 80, and 5) discrimination: this means the quality of the test should distinguish between stronger students and weaker students, stronger students will choose the right answer while the weaker students will choose the wrong answer. Grouping the stronger students and the weaker students by the scores they get from the highest to the lowest, popularity at the percentage of 27 or 35. The rate discrimination can calculate by the amount of the students who choose the right answer in a high group minus the amount of the students in a low group and divided by the amount of a high group or low group. A good rate should be a plus at more than .20.

4. Research Methodology

The population was comprised of 400 first year students from every faculty in academic year 2014, and 520 first year students in academic year 2015. The simple random sampling was used by selecting 100 first year students from each academic year.

Tool is an objective test which was made up from a course description of the first year students' English subjects. There are three levels of proficiency testing which are: memorization, comprehension, and application. The test has five parts. There are twenty questions with four choices in each part. The first part is vocabulary, the second part is error identification, the third part is passage reading, the fourth part is sentence completion, and the fifth part is passage completion. The quality of the test was found out by 3 experts getting IOC value is equal to 0.86 and the reliability is equal to 0.81.

5. Data Analysis

Data was analyzed using frequency, percentage, the total of difficulty (p), discrimination (d), and Pearson Correlation Coefficient (p).

Criteria (Osterlind, 2012)⁵

1. Difficulty (p)

.80 - 1.00	very easy (v easy),
.60 - .79	rather easy(r easy),
.40 - .59	moderately difficult (mo diff),
.20 - .39	rather difficult (r diff),
and < .20	difficult(diff)

2.Discriminant (r)

1.00	excellent (E),
.80 - 1.00	very good (V Good) ,
.60 - .79	good (Good),
.40 - .59	fair(Fair),
.20- .39	poor(Poor)
and <0.20	very poor (V Poor) should be improved,
H =	high,
L =	low scoring groups of students,
Hc =	number of students who choose correct answer in high group,
Lc =	number of students who choose correct answer in low group, and
minus(-) =	Improve =number of student in H group choose less than L group

3. The methods for improvement were reviewing the stem or alternative choices by concerning difficult item, discrimination, especially $p < .20$ and $r < .20$ and the number of students choose not less than 5%.

The Result of Data Analysis

Table 1

Test analysis result of vocabulary part

It	1	2	3	4	p	Interpret	Lc	Hc	r	value
1	36	14	46*	4	.46	mo diff	9	19	.29	poor
2	11	66*	20	3	.66	r easy	14	33	.54	fair
3	55*	22	16	7	.55	mo diff	11	32	.60	good
4	23	56*	13	8	.56	mo diff	7	32	.71	good
5	17	14	17	51*	.52	mo diff	10	30	.57	fair
6	21	14	53*	10	.54	mo diff	7	33	.74	good
7	69*	13	13	5	.69	r easy	22	32	.29	poor
8	18	58*	14	10	.58	mo diff	13	31	.51	fair
9	15	29	47*	9	.47	mo diff	12	26	.40	fair
10	37*	17	21	23	.38	r diff	16	14	-.06	Im prove
11	10	20	49*	21	.49	mo diff	9	25	.46	fair
12	7	15	8	70*	.70	r easy	16	33	.49	fair
13	39	27	21	13*	.39	r diff	6	27	.60	good
14	12	76*	7	4	.76	r easy	21	32	.31	poor
15	62	16	13	8	.62	r easy	9	32	.66	good
16	21	58*	16	4	.58	mo diff	14	31	.49	fair
17	15	17	62*	6	.62	r easy	14	30	.46	fair
18	12	20	11	57*	.57	mo diff	12	32	.57	fair
19	53*	24	7	16	.53	mo diff	10	25	.43	fair
20	21	44*	26	9	.44	mo diff	7	26	.54	fair

From table 1, the result of the vocabulary part showed that eighteen questions have a difficulty at a good level, and 2 questions are at a rather difficult level. There were less than 5 students who answered four questions with distractors. The items needed improvement were 1, 2, 14, and 16. The test could discriminate between stronger students and weaker students well. There were five questions at good level, eleven questions at fair level, three questions at poor level, and one question which cannot discriminate and needed improvement. The question item 10 had a minus value which meant cannot discriminate and distract stronger students more than weaker students.

Table 2

The analysis result of error identification part

It	1	2	3	4	p	Interpret	Lc	Hc	r	value
1	30*	30	26	14	.30	r diff	7	11	.11	v poor
2	29	32*	25	14	.32	r diff	9	10	.03	v poor
3	14	32*	30	24	.32	r diff	5	19	.40	fair
4	32*	21	25	21	.32	r diff	8	15	.20	poor
5	22	29*	27	27	.29	r diff	9	12	.09	v poor
6	17	33	19	31*	.31	r diff	5	17	.34	poor
7	24	34*	29	12	.34	r diff	8	10	.06	v poor
8	38*	26	28	8	.38	r diff	10	15	.14	v poor
9	30	30	26*	13	.26	r diff	9	9	.00	v poor
10	24	38	21*	17	.21	r diff	2	11	.26	poor
11	18	25*	41	16	.25	r diff	10	8	-.06	Im prove
12	25	37*	27	11	.37	r diff	5	11	.17	v poor
13	22	28*	27	23	.28	r diff	8	8	.00	v poor
14	24	29	25	22*	.22	r diff	6	12	.17	v poor
15	20	26	32	22*	.22	r diff	5	9	.11	v poor
16	31	30*	24	15	.30	r diff	15	4	-.31	Im prove
17	21	33	29	17*	.17	diff	3	6	.09	v poor
18	26	32*	24	18	.32	r diff	10	9	-.03	Im prove
19	28	26*	24	22	.26	r diff	10	8	-.06	Im prove
20	15	21	28*	36	.26	r diff	10	5	.14	Im prove

From table 2, the result of the error identification part showed that there are nineteen questions was in rather difficult level and one question at difficult level. Most questions of the test, eleven questions, cannot discriminate between stronger students and weaker students. At least two questions can discriminate at poor level, one question can discriminate at fair level, and five questions had a minus value which meant cannot discriminate and distract stronger students more than weaker students.

Improvement Needed Part

The question item 17 is difficult and the questions that distracted the stronger students more than weaker students is question item 11, 16, 18, 19, and 20 and questions without discrimination value are questions item 1, 2, 5, 7, 8, 9, 12, 13, 14, 15, and 17.

The Improvement Method

Because this part of the test is the part that students need to consider the error point, so that the students who are weak at grammar and sentence structures could not do it because groups of vocabulary are similar as the question item 17.

The supervisor showed a noticeable dislike

A B C
for employee which were late.
D

The correct answer is D, but students chose alternative B, C more than the correct answer, then the correct answer needs to be improved to use other words.

Table 3
The analysis result of passage reading part

It	1	2	3	4	p	Interpret	L _{qⁿ}	H _{qⁿ}	r	value
1	38*	20	13	29	.38	r diff	9	17	.23	poor
2	21*	18	36	25	.21	r diff	4	5	.03	v poor
3	23	31	24	22*	.22	r diff	4	5	.03	v poor
4	28	36	19	17*	.17	diff	4	2	-.06	improve
5	28	19	40*	13	.40	modiff	3	12	.26	poor
6	24	34	19	23*	.23	r diff	8	15	.20	poor
7	29	43	12*	16	.12	diff	5	4	-.03	improve
8	23	22*	26	29	.22	r diff	8	16	.23	poor
9	36*	23	23	18	.36	r diff	8	14	.17	v poor
10	21	27	32	20*	.20	r diff	11	6	-.14	improve
11	33*	24	24	19	.33	r diff	3	3	.00	v poor
12	15	32	20	33*	.33	r diff	7	7	.00	v poor
13	26*	37	21	15	.26	r diff	8	11	.09	v poor
14	20	33	31*	24	.31	r diff	2	7	.14	v poor
15	22	34*	28	16	.34	r diff	7	6	-.03	improve
16	26*	36	22	16	.26	r diff	2	10	.23	poor
17	18	46*	19	16	.46	fair	8	11	.09	v poor
18	14	36	29	21*	.21	r diff	6	7	.03	v poor
19	27*	24	34	15	.27	r diff	5	6	.03	v poor
20	32	21	30	17*	.17	diff	5	8	.09	v poor

From table 3, the result of the reading passage showed that the level of difficulty was at rather difficult (seventeen questions), difficult level (two questions), and fair level (one question).

The discriminating power, the test can discriminate between stronger students and weaker students. Most of questions cannot discriminate and need to be improved (seventeen questions), and can discriminate less (five questions), and four questions of the test had a minus value which meant cannot discriminate and districted stronger students more weaker students

Improvement Needed Part

The difficult items are 4, 7, and 20. The part having the discriminating power and need to be improved are 2, 3, 4, 6, 7, 8, 10, 13, 16, 18, 19, and 20, because most students chose the distractors more than the correct answer because they are not good distractors.

The Improvement Method

Because this part of the test is the part that students need to read and find the main idea; thus, the student who do not know the meaning of vocabulary or sentence structure cannot answer the question because students need to understand all stories in the passage and then they can answer the question as an example from question item 4.

Nam: No, today's Monday. The homework has to be completed the day after tomorrow.
Thao: Well, that's a relief. Anyway, what did he say?

4. "Relief" is closest in meaning to ...

- a) lazy or bored
- b) exercise or homework
- c) teacher or educator
- d) good luck or happy

The correct answer is alternative D, only 17% of students chose it, while 36% of them chose B alternative. The alternative B or D needs to be improved.

Table 4 The analysis result of sentence completion part

It	1	2	3	4	p	Interpret	L	H	r	value
1	32*	30	22	16	.32	r diff	9	9	.00	v poor
2	40	31	14*	15	.14	diff	10	2	-.23	improve
3	33*	38	16	13	.33	r diff	6	5	-.03	improve
4	16	23	48*	13	.31	mo diff	4	2	-.06	improve
5	23	24	32	21*	.21	r diff	3	12	.26	poor
6	26/	28	15	31*	.31	r diff	8	15	.20	poor
7	40	17	26	17*	.17	diff	5	4	-.03	improve
8	21	28	36*	15	.36	r diff	2	10	.23	poor
9	31*	38	19	11	.31	r diff	8	14	.11	v poor
10	22*	33	24	20	.22	r diff	6	11	.14	v poor
11	43	38	12	7*	.07	diff	3	3	.00	v poor
12	35	34	22*	9	.22	r diff	7	7	.00	no distract
13	31	31*	15	21	.31	r diff	8	11	.09	v poor
14	17*	32	33	18	.17	diff	2	7	.14	v poor
15	22	22	35	21*	.21	r diff	7	6	-.03	improve
16	18	42*	27	13	.42	mo diff	12	20	.23	poor
17	28*	32	28	12	.28	r diff	8	11	.09	v poor
18	24	30	28	18*	.18	diff	6	7	.03	v poor
19	23	35	25	17*	.17	diff	5	6	.03	v poor
20	17*	34	31	18	.17	diff	6	8	.06	v poor

From table 4, the result of the sentence completion part showed that the level of difficulty of most questions was at rather difficult (eleven questions), difficult (seven questions), and fair (two question)

The discrimination power, most questions of the test cannot discriminate between stronger students and weaker students and eleven questions need to be improved. Four questions can discriminate less, and five questions of the test had a minus value which distracted stronger students more than weaker students.

Improvement Needed Part

The very difficult items are 2, 7, 11, 14, 18, 19, and 20. The questions that distracted stronger students more than weaker students are question items 2, 3, 4, 7, and 15, and the questions without

discrimination value are question items 1, 9, 10, 11, 12, 13, 17, 18, 19, and 20.

The Improvement Method

Because this part of the test is the part students need to fill in the blank of the sentence correctly; thus, the students who are not good at grammar and sentence structures cannot answer the questions because group of vocabulary are similar as in an example from question item 2.

Because Mary is so....., she is

- a) friendly despised
- b) unpleasant unpopular
- c) generous wealthy
- d) strange Fortunate

The correct answer is alternative B, but students chose alternative B less than alternative A, C, and D, so the alternative B needs to be improved.

Table 5 The analysis result of passage completion part

It	1	2	3	4	d	Interpret	Lc	Hc	r	value
1	49	16	30*	5	.30	r diff	5	16	.31	poor
2	39*	41	12	8	.39	r diff	9	19	.29	poor
3	33*	36	22	9	.33	r diff	9	16	.20	poor
4	20	38*	28	14	.38	r diff	9	17	.23	poor
5	21*	33	25	21	.21	r diff	4	7	.09	poor
6	20	33	25*	22	.25	r diff	11	7	-.11	improve
7	21	32	28	18*	.18	r diff	9	6	-.09	improve
8	18*	39	24	19	.18	r diff	3	9	.17	poor
9	29*	28	24	19	.29	r diff	9	11	.06	poor
10	25	34*	25	16	.34	r diff	12	10	-.06	no distract
11	26	30*	27	11	.30	r diff	10	10	.00	poor
12	31	32*	21	16	.32	r diff	11	11	.00	poor
13	21*	24	35	19	.21	r diff	5	9	.11	poor
14	34	30*	19	17	.30	r diff	10	11	.03	poor
15	26*	31	34	9	.26	r diff	9	10	.03	poor
16	23	35*	24	17	.35	r diff	12	13	.03	poor
17	28	27	23	22*	.22	r diff	4	10	.17	poor
18	20	24*	26	29	.24	r diff	13	7	-.17	no distract
19	17	24*	35	24	.24	r diff	4	9	.14	poor
20	21	31	27*	21	.27	r diff	8	14	.17	poor

From table 5, the result of the test showed that the level of difficulty of most questions was at rather difficult level (eighteen questions) and difficult (two questions)

The discriminating power, most questions of the test cannot discriminate between stronger students and weaker students and thirteen questions need to be improved. Four questions can discriminate less and f

our questions of the test had a minus level which distracted stronger students more than weaker students.

Improvement Needed Part

The very difficult items are 7 and 8 and the items distracted stronger students are 6, 7, 10, and 18, and the questions without discrimination value are question items 5, 8, 9, 11, 12, 13, 14, 15, 16, 17, 18, 19, and 20.

The Improvement Method

Because this part of the test is the part that students need to read short passages; thus, students need to understand the whole passage as in an example from question item 8.

Dear Mr. Wang

We..... these information in order to calculate the amount of incentive each sales executive is entitled to.

- a) attach b) need
- c) have d) ask

The correct answer is alternative A, but students chose least. The most chosen alternative was alternative B ;thus, the alternative A should be improved to other words.

Table 6 Difficulty (p) Discrimination(r) classified by part

p ar t	P m o d i f f	p d i f f	p r d i f f	p r e a s y	r g o o d	r f a i r	r p o r	r v e r y p o r	r i m p r o v e
1	12	1	1	6	5	11	3	-	1
2	-	1	19	-	-	1	2	11	5
3	2	3	15	-	-	-	5	11	4
4	2	7	11	-	-	-	4	11	5
5	-	2	18	-	-	-	4	12	4
รวม	16	14	64	6	5	12	19	45	19

From table 6, the result found that the English placement test is a good test by considering from the difficulty level which eighteen questions obtained a good level, sixty-four questions obtained a rather difficult level, sixteen questions obtained a fair level. The total was eighty-six (16+64+6=86) questions with 86%. When considering the discriminating

power, the result showed that 45% of the test cannot discriminate between stronger students and weaker students. 19% of the test distracted stronger students more than weaker students and 19% of the test can discriminate less. The best part of the test is the first part. Next is the second part, the fifth part, the third part, and the fourth part respectively.

Conclusions

1. The Placement Test for the first year students was made up with 100 question items and there are five parts with twenty questions items each. The first part is vocabulary, and the second is error identification, the third part is passage reading, the fourth part is sentence completion, and the fifth part is passage completion. The IOC value is equal to 0.86 and the reliability is equal to 0.81.

2. The result from the quality analysis of the test found that the test had 86% of quality at good level. Most questions, 64% had a difficulty at rather difficult level, next was 16% at moderate level, and 6% at rather easy level. When considering of the discriminating power, the result showed that the test cannot discriminate between stronger students and weaker students at 45%, distracted stronger students more than weaker students at 19%, and discriminated less at 19%. The vocabulary part is the best part of the test, next is the fifth, second, and third part respectively. The fourth part needs to be improved because the questions are difficult and there are many distractors.

3. The result of the placement test improvement for the first students showed that fourteen questions of the test need to be improved about the difficulty and nineteen questions need to be improved both questions and distractors.

After getting the analysis of data and results from each part, all lecturers both Thai and foreign lecturers in the department have done a brainstorming session together. The resolution ended up with the improvement that each part should contain vocabulary that used in daily life and vocabulary in each alternative should not be too close in meaning. The passage used in passage completion part should be longer and not too difficult by containing technical terms. The overall improvement is to select vocabulary that students are familiar with to help students understand and interpret correctly.

Discussions

1. The placement test for the first year students has five parts. The vocabulary part is the best part because vocabulary used in questions is about daily routine such as silence, nasty, laptop, etc. These words are on many kinds of media and easy to search for from electronic media and print media. Because there are many campaigns of preparation for ASEAN in the current situation, students then were able to do better on the vocabulary part than other parts and this is related to the information of Dollawan Paungvipat⁶ (2011), found that the students learning English from electronic tales before learning in class can get more durable knowledge and this is referred to Stewich's definition (2001)⁷, said that vocabulary is important because it's the basics of effective language learning of four skills. The way to select vocabulary for teaching should relate to the current situation (Mackey, 1997)⁸. The fourth part is sentence completion. This is the difficult part for students, because students need to read and understand the meaning of the whole sentence and then choose the correct answer, this is related to the research of Holaday and others (2010)⁹, found that the survey of 100 respondents who did the sentence completion tests (SCTs), gave a reason that they did not read the whole sentence because of carelessness. Anyway, Josefinaluu, (2013)¹⁰, suggested to find the main idea first and then look for the correct answer.

2. The result showed that the quality of the test had a good quality at 87%, the difficulty of the test was at 18%, the rather difficult level at 66%. However, this might be because of the error identification, reading passage, sentence completion, and passage completion part, students need to have to know and understand the contents of part of speech, sentence structure, and grammar usage. This might be because it is the first year of students and there was not a preparation course for them, related to Lele, (2011)¹¹ which said that doing a completion test and considering the error part, students need to have techniques, because the sentence structure is more complex, some sentences need to complete more than one part and they need to be consistent. The important strategy to overcome this kind of test is to understand the meaning first especially the first word, is usually difficult and ambiguous. Sometimes, the text is too long, the key words will help us to understand and the content is also important that we have to consider together at the same time, Cohen and Upton, (2006)¹², studied about the reaction strategy of TOEFL test which purposed to

test the reaction of upper group and lower group to find new techniques for TOEFL test and found that before choosing the correct alternative, we need to read the question first, then read the text and look for clue to answer which leads to the correct answer.

3. The improvement will be done by editing fourteen difficult questions both stems and alternatives. Nineteen Items with distractors will be edited both items and distractors because the questions are something beyond students' life such as electric car, electrical outlet, superchargers, tertiary student, compulsory, merit, etc. To make an appointment, talk on the phone, read a newspaper, magazine, information tables or short reports, advertisements and services, describe people, and write e-mail, might be easier and related to course description.

Suggestions

1. The placement test should be done repeatedly by the same groups of students.

2. After done improvements, the placement test should be brought to use with the first years students in the next academic year to compare the analysis result and to assure the quality of the test and improve it as an English placement test of a university in the future.

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Adaptation Process of Chinese Students Studying in Thailand

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Abstract

This study had two purposes: (1) to study the adaptation problems and (2) the adaptation process and factors affecting the adaptation of Chinese students studying in Thailand. This qualitative study was a case study of 5 Chinese students, using the method of in-depth interviews and participant observation as tools for data collection. During the data collection stage, the data were frequently analyzed and verified, using cultural adaptation theory as the guideline.

The results indicated that the adaptation process of most Chinese students could be divided into four phases: honeymoon phase, self-alignment phase, participation phase, and devolution phase. This adaptation process could be repeated in a loop. Chinese students were able to adapt to a new physical environment faster than to a new socio-cultural environment. The adaptation problems found in this study were food, climate, traffic, communication using Thai language, the relationship between Chinese and Thai people, and the Thai education system. The time needed for adaptation did not depend on one but several of these factors: personality, stereotype, preparation of knowledge of the new culture, cross-cultural experience, and communication skill in the new language.

Keywords: Adpation Process, Adpation Problem, Adaptation Factor, Chiness Student.

1. Introduction

People's Republic of China in the present has opened the free trade area and economic cooperation in the Greater Mekong Sub-region (GMS, 2009), which are Thailand, Laos, Cambodia, Vietnam, Myanmar, and China (Yunnan Province). One of the factors which affected the international economic cooperation is the ability to communicate with the native languages of neighbor countries. Therefore, the interest of learning these languages is rising in the present. And in China, there is a great demand of skilled Thai and Chinese speakers.

In accordance with this, Xishuangbanna Vocational and Technical Institute, a higher

education institute in Xishuangbanna in Yunnan Province of China, has opened the Department of Applied Thai Language and organized the Education Cooperation between Thailand and China Program (Project 2+1) to produce personnel who are skilled in communication and have an understanding of Thai society and culture. These personnel are expected to be the medium to connect and develop the commercial, economical, and social aspect of both countries.

The participants of this program were students who were majoring in Thai language. They took Thai language course in China for 2 years and then traveled to Thailand to study Thai language and culture for 1 academic year (about 8 months). To study and live in

Thailand, the students had to face the new physical and socio-cultural environment which was different from China. They had to adapt and learn to live happily in Thailand. However, the ability of adaptation depended on several factors, such as experience, economic status, language ability, place of residence, number of closed friends, time spent in that country, and accommodation. (Kono-Aimi, 1999; Li Jingyun, 1999; Chunnual, 1976)

As an adviser of the Chinese students participated in this program, the researcher saw the problems in their adaptation to the new environment. It is found that the adaptation skill also affected learning abilities of the students. With these reasons, the researcher was interested in studying the adaptation process, the adaptation problems, and the factors affected the adaptation skill of Chinese students. The result of this study will be useful to related organization dealing with oversea study, especially Xishuanbanna Institute and institutes in Thailand. It can be used to prepare and improve students' adaptation skill, so that they will be able to live happily in Thailand, and fulfill the objectives of the Project 2+1. It is expected to create the positive attitude to Thai people and society, which will result in good relationship between Thailand and China.

2. Objectives

1. To identify the adaptation problems of Chinese students in Thai Language and Culture course studying in Thailand.
2. To know the adaptation process and factors affecting the adaptation of Chinese students in Thai Language and Culture course studying in Thailand.

3. Scope of the Study

Subject: Chinese students in Thai Language and Culture course at a college in Bangkok (Bangkok branch), Thailand, in the academic year 2010.

Issue: To study problems of Chinese students in various aspects and to study the adaptation process and factors affecting the adaptation of Chinese students living in Thailand for 8 months.

4. Method

The study of adaptation process of the students was a qualitative study. In-depth interview was done with 5 Chinese students who were case studies. Participant observation was also used to observe 21 Chinese students studying in the academic year 2010 (for 8 months). Criteria of selecting the case studies was considered from students' personal monthly

records for Thai advisers who were responsible for reporting the improvement in study and living of the Chinese students, including problems found in those aspects. As a Chinese adviser, the researcher had been communicating with the students and learned that all of them had adaptation problems. Moreover, from the literature review, it is found that there were many factors affecting the adaptation, but the one which was common in every case was the language skill. In that case, language then was considered as one of the criteria for selecting the subject. 2 students with excellent language skill, 1 student with good language skill, and 2 students with average skill were selected considering from their grade reports in the 1st semester of the academic year 2010.

Apart from the 5 case studies, the data was collected from 3 teachers related to the course and Project 2+1.

Then the data collecting was done by designing the semi-structure interview, which was flexible and could cover all aspects which may be unexpected or forgotten. After the questions in the semi-structure interview were done, they were reviewed by advisers whether all the issues were covered, then they were improved and used in the process.

Apart from the in-depth interview and participant observation, note taking and

sound recording were also used to record the conversation between the researcher and the interviewees. Then the data was analyzed by the issues stated in the in-depth interview and participant observation, using the data from related document and the theory of cultural adaptation. The result was shown using the quotation of the interviewees, as the complement of some interesting issues.

5. Results

Five Chinese students could be divided into 2 male students and 3 female students, in the age range of 22-24 years. They had different hometown, economical status, experience, Thai language skill, and religion. Thai language communication skill of each student was varied and all of the students had no experience of studying abroad. Studying in Thailand was their first time.

Before studying in Thailand, these 5 students had learned basic Thai language in China, but their skill in language and experience was different. Therefore, problems, solution, and factors were also different. The adaptation process of these 5 students in the context of Thai society was as follow:

Honeymoon Phase

Students were excited with their first impression of the new environment. They experienced the culture and the other aspects as similar to their own or as their expectation. This phase could happen anytime. However, in the Honeymoon Phase, the person may experience the cultural shock when the new environment does not meet the expectation. The cultural shock tends to happen suddenly, sometimes after living in the new culture for the period or it can happen as soon as experiencing the new culture. Most of the Chinese students were excited when they first arrived in Bangkok.

Moreover, the result is found that there was a special case of no Honeymoon Phase. For example, in the case of Somying, who had confident personality and high expectation, she didn't know about the

educational institute or the environment of Thai capital city, and this resulted in the bad impression as soon as arriving in Bangkok. She disappointed with the environment both in the educational institute and the nearby area, and also Thai people's personality. This is considered to be the problems earlier found when coming to Thailand, and language was not the only major factor for the adaptation.

Self-alignment Phase

After the Honeymoon Phase, the students had to experience the change of their roles to fulfill the objective of the program. The students found that they had to adapt to different physical and socio-cultural environment, namely food, climate, traffic, language, Thai people's personality, and education system.

Participation Phase

Various methods were done to adapt to physical environment. For example, in the case of food, students chose the food which had similar taste with Chinese food, such as *Khao Man Kai* (rice steamed with chicken soup). It is found that many of the students had *Khao Man Kai* everyday for nearly 2 months until they could find other food which had similar flavor and suited their taste. Another method for this was cooking their own food at weekend or special holidays and sharing the expense. The culture of selling food on the footpath in Bangkok created the cultural shock at first, but when a period of time had passed, the students began to get familiar with it and they were able to buy food from those stalls.

It is noted that the physical adaptation or the inner adaptation, which means the biological adaptation (Apinya Chanapim, 1997), was not difficult and took a short period of time. Most students tended to prevent from being in the situation or find the solution. For example, when going outside in the hot weather, they chose not to go or go out as less as possible. Most students weren't familiar with air conditioner. Even though the weather was cooler than outside, but it was too cool for them, so most of them brought their jackets

every time they went to class. Some of them were always carsick when taking the public bus, so they chose not to take the bus and walk instead if the distance was not far.

The socio-cultural adaptation or outer adaptation took longer time. The time needed for adaptation depended on many factors, namely, personal background such as economical status, Thai language skill, students' personality, cultural background, and attitude to Thai people. For example, it is found that the student who had excellent skill in Thai language took no less amount of time of adaptability¹ than the one who had lower Thai language skill. Part of the reason was that the student had confident personality and high expectation for studying in Thailand. His/her goal was highly set and s/he still wasn't satisfied when reaching the goal. Social relation was one of the important factors of adaptation, because it would help them to make friends, especially with Thai people. Having Thai friends would help them improve Thai language skill greatly and make them more understandable about Thai people and culture.

Another student, who had average Thai language skill, had good attitude to Thai people and friendly, so she was loved by both Thai and Chinese friends and teachers. This student didn't have economical problem because s/he came from the family with high economical status, so s/he didn't have the pressure to be the best in class. While another student came from the family with low economical status and studying under the last saving money of the family, so s/he had high pressure for

success, and resulted in stress. The criteria the students used to define success in adaptation was the ability to communicate in Thai with Thai people. Therefore, the ones who had economical problems and low attitude to Thai people took longer time of adaptation.

As it was a short program, when living in Thailand over half of program's duration, students who still couldn't adapt to Thailand would be stressed. The students compared themselves to their Chinese friends. If the other could study and learn Thai language well while they couldn't, this would be the cause of stress. Another reason was the competitive atmosphere among Chinese students which produced more pressure.

Devolution Phase

At the last period of the program, these 5 students were able to adapt to Thailand and had more understanding about Thai people. 2 months before the program ended, in which the students worked as apprentices with Thai people, they had a chance to communicate and learn how to work with Thai people, so they had more understanding about Thai people and culture. However, students who had prejudice to Thai people couldn't use this chance to learn Thai culture. It is shown that stereotype was the major obstacle to the adaptation, and both institute in the program should consider this issue and find the solution. Nevertheless, after the program had ended, most students could adapt to the new culture and environment, and many expected to further their study in bachelor degree in Thailand.

6. Recommendations for Further Study

Apart from preparing students both physically and environmentally, organization dealing with oversea study, both public and private, should consider preparing students in socio-cultural aspects, including creating the positive attitude, building the relationship with other, and practicing learning habit. The good

¹ Adaptability is the ability to adapt both physical and mental, and is able to live in the new culture and environment happily. Unadaptability is the inability to adapt to new culture and environment, causing stress and cultural shock.

preparation will help students to live more happily abroad. Moreover, the preparation of language, especially communication skill, will be a key to support and help students to communicate with other.

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An overview of The Nature of Qualitative Research

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Abstract

All research approaches have advantages and disadvantages. One that is appropriate for one situation may not be appropriate for another. One of the challenges of learning to use research to effectively address real-world problems of practice is choosing the best approach for a particular problem.

Qualitative research is a method effectively in order to reach information deeply. Therefore, qualitative research aims to describe the social phenomena (contextual), in which certain social phenomena that cannot be explained for common reasons.

Keyword: Qualitative Research

Introduction

Holloway and Todres (2003, p.78) said that, “Qualitative approaches are incredibly diverse, complex and nuanced”. (As cited in Braun and Clarke, 2011). Mostly, qualitative research is aimed at understanding the meaning or interpretation of co-related to the phenomenon of social emotions, beliefs, attitudes, behavior and human culture, for example.

There are a myriad of ways to collect information on all the events, for example, interviews or observations. Researchers may incognito themselves with people within local communities, who wish to study in order to achieve information. Qualitative research does not focus on determining how to collect information and analysis of numerical data. Instead, it focuses on the interpretation and synthesis of findings based on the facts collected. Qualitative research question will be the characteristics of the “meaning or worth”.

The nature of qualitative research

Braun and Clarke (2011) emphasized this quoting, “It is worth briefly nothing

that qualitative research involves a series of questions, and there is a need to be clear about the relationship between these different questions. A research question might be very broad and exploratory” For instance, the research topic is nepotism and double standard in organization. Therefore the need to investigate the cause and effect of nepotism and double standard management is to illustrate each relation others, as some research refer, that the nepotism system can be lead to double standard management. Therefore, the research project will seek to explore and investigate by the following questions highlighting the following obstacles, for example:

- How do the nepotism and double standard management affect organization?
- What is double standard and how can it be measured if such an Organization occurs?
- How do employees who have been treated by nepotism and double standard management in an organization is perceive?

From Bell (2005) quoted that “Classifying an approach as quantitative or qualitative, ethnos graphic, survey, action research or whatever, does not mean that once an approach has been selected, the researcher may not move from the methods normally associated with that style. Each approach has its strengths

and weaknesses and each is particularly suitable for a particular context.”Therefore, those who understand the basic principles and techniques of both quantitative and qualitative often discovered the value of using research methods combination to provide answers of research question, more complete, following:

- Qualitative research can help design assumptions and quantitative research tools, including the selection of issues, questions and language used is appropriate for the population or sample studied in the survey questionnaire.
- Quantitative data may be background information for the design of qualitative research.
- After analysis of the quantitative data, collecting qualitative data at some point may help in the interpretation or discussion of quantitative information.

Qualitative researches do on sensitive topics

When dealing with spoken and written responses it can be easier to manipulate information”. According to, Bruke and Larry (2007) pointed out a weakness of qualitative research that the results maybe more easily influenced by the researcher’s personal biases and idiosyncrasies. The process of analysis collect data from interview or observation, for example, should not put anything that is not what the sample said in a record or tape during an interview. It should not describe or take notes over the reality of the events or situations observed.

when we do some research on a sensitive topic, anonymity and confidential may be issue during the presentation and analysis collect data because it may have a negative impact or disadvantage on the participants. It may be a private information of the participants that should not reveal the public to know.

From Susanne, Outi & Sarah (2013) explain that when qualitative researches do on sensitive topics; can be experienced as intrusive and distressing. Added to this, the relationship that develops between the researcher and the participants brings with it additional ethical demands. Nor are the ethical issues confined

to the process of data collection; further ethical issues arise in the process of analysis and publication, for example, with regard to the way in which participants are portrayed, and to protecting anonymity while presenting the data in a way that is accurate and sufficiently detailed. The decision of the research report is confidential or personal of contributors who cooperate in research should be considered of advantages of people for cooperation is essential.

Strengths and weaknesses in qualitative method and data

Patton (1990, p.86) once quoted “It is important to recognize that qualitative analysis guidelines are exactly that – they are not rule, and, following the basic precepts will need to be applied flexibly to fit the research question and data (as cited in Braun and Clarke, 2011).

In conclusion from Patton’s there are a myriad of strengths in qualitative method and data. First, it enables researchers to observe the behavior of a study in a natural environment. Second, qualitative research techniques also assist researchers to understand the phenomenon studied deeply, especially, phenomenon which no one has ever studied before. Finally, qualitative methods are flexible and this allows researchers to study something new.

However, there are some weaknesses in qualitative method and data. Qualitative data will be analyzed by researchers’ idea rather than defining hypothesis. In conclusion, Bruke and Larry (2007) believe the results maybe more easily influenced by the researcher’s personal biases and idiosyncrasies.

Qualitative data and method are not collected information they are analyzed by statistic explicitly. It is from observation, interview, thematic analysis, case study and so on as opposed data from qualitative method being analyzed and synthesis as a result of the research. It make “qualitative data is difficult to make quantitative predictions and data analysis is often time consuming.” (Bruke and Larry 2007)

Moreover, Demetrius and Bryan compared strength and weakness between quantitative and qualitative research that “it is not possible to automate qualitative-data collection as effectively as you can automate quantitative-data collection, it is usually extremely time consuming and expensive to gather large amounts of data, as would be typical for quantitative research studies. Therefore, it is usual to perform qualitative research with only 6 to 12 participants, while for quantitative research, it’s common for there to be hundreds or even thousands of participants. As a result, qualitative research tends to have less statistical power than quantitative research when it comes to discovering and verifying trends.”

Conclusion

To talk about strengths and weakness in qualitative method. Some talked about anonymity and confidential issue that it can arise in the process of qualitative research and involve with ethical research. It was talked about qualitative research is often used to study phenomenon of society. Some mentioned about researcher’s bias in qualitative research when they analyze and interpret collected data. It looks as the same idea of enhancing others to see relative research method both qualitative and quantitative research which could be mixed method research.

The main methods used in the analysis of qualitative data is a conclusion from a study of the collect data which are not used for statistical analysis, for example, interview and observation. Furthermore, there are various approaches to interpretation and analysis qualitative data, for example, thematic analysis, coding, Typological Analysis, Constant Comparison, Component Analysis, Analytic Induction and so on. Thus, analysis qualitative pattern should be linking and gathering into words to make the conclusion. Coding, data monitoring, including to compile words in order to describe different conclusions as answer of the research purposes.

One of us shared experience in using interviews in data collection he pointed out that advantage and disadvantage and how to use interviews for data collection? Others also

supported information about structure and questions are used in interview.

If statistics are not considered as a way to analyze in qualitative research, it will be considered as a supplemental information to the analysis of the qualitative data. The analysis should be knowledgeable about the concept and theory extensively in the research. They should have the ability of language to associate collected data and concluded as framework and interpretation of collected data.

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The Nature of Critical Thinking

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Abstract

This is probably a scenario that many people who have gone through graduate school would recognize. It highlights how “being critical” is generally defined in an academic setting. The academic community considers the capacity of being constructively critical or critical thinking to be one of the key skills which need to be developed. This is not to say that no differentiation is made between “criticizing” and “thinking critically.” To explore this difference, there will be become aware of how the capacity to think critically helps you succeed. Critical thinking is a more successful practitioner and leader in any field.

Keywords critical thinking, practitioner and leader

1. Introduction

Being critical allows us recognize the logical process in the analysis of the problem. It is the use of information and analysis of solutions help making decisions reasonably about what to do or to believe (Cottrell, 2005). As a leader, the skill of being critical help them can define what an important goal for his organization is clearly. Furthermore, being critical allows the leader know the factors of success in overcoming obstacles to achieve goals. For instance, leader with vision and think critically can know “what they should do?” and “what should be avoided?” more accurately and understand deeply the reason (Cottrell, 2005). Therefore, the challenges of “being critical” are significant leadership and management skills that might be:

Vision & Goal setting, to determine vision is beneficial for the organization and team. Critical thinking in leadership roles can also be used as a tool to determine the direction and scope of vision apparently.

Strategic thinking & Planning, leader should analyze and plan strategic appropriately. Brookfield (1987) stated that critical thinking can make us see what is appropriate or not from the analysis of the different aspects to find a good choice in reasonable ways for the best way. To think critically practice leader have the skill of strategic thinking and planning. They are able to look into the future and look at things from multiple perspectives. For instance, leader might think from the perspective of the environment, the current situation, the project and measurement in order to understand the relationships and interdependencies of the various factors that affect the organization. To make a hypothesis of what they want know and test various hypotheses. To simulate and test various scenarios which have not happened and is happening. These enable us to prepare to deal with what might happen in the future.

Systematic thinking & Problem solving, Cottrell (2005) noted that critical thinking skills are useful in professional life, it allows us can think systematically and be able to problem solving wisely and know the cause and

the reason and can correlate of step correctly. For instance, if we know the exact cause of the problem, we will solve them properly, analysis correctly, we can use resources to ensure the efficiency, not just effectiveness.

Thayer & Barbara (2000) conclude that most of theories have a tendency to explain critical thinking is universal activity. Brookfield (1987) also concluded that the evidences of the development of critical thinking are said in the way of economical and political activity. In conclusion of critical thinking, Brookfield (1987) once quoted “Critical thinking is a lived activity” (p.14). Critical thinking can be developed in any period of life, such as, to learn at school, to read or listen from several media in daily life and to use this skill in work. From my point of view, critical thinking is a universal activity that is bound with culture. All cultures of the various tribes already would have analysis, finding cause and results, finding the source, looking at future. As the well-being, housing and cultural differences, thinking occurred it is a concept that started from the culture of each group. However, when the other group took the concept which had influence and power exceedingly, it made the primitive concept of the group changed. Whenever any culture has spread so much, critical thinking will tend to follow that culture.

Critical thinking also need to use in everyday life

Critical personality is not only important for the leader but also in daily life. This skill will help in the use of information and solutions in order to make decisions rationally about what to do or to believe. Moreover, we can learn the way of thinking in the decision and solving problems. Cottrell (2005) also has expressed a similar view; skills that were improved by critical thinking will bring benefits such as;

- Redefine the problems
- Adopt a critical perspective
- Use analogies
- Think divergently
- Use heuristics
- Experiment with various solutions

We need to use thinking skills in activities of everyday life in order to help making decision on the accuracy of the information and choose from various choices which have myriad. People with skills in critical thinking will can do activities succeed. As teaching, we need to consider and think critically, what the level of content to teach student? which teaching methods are suitable for the children that they have the different abilities of in order to achieve good results?

There are many researches that find the good result about critical thinking in learning environment. La Point-O’Brien & Tammy (2013) studied the development of critical thinking skills of ninth grade students and they found that to ask appropriate questions and deduce information it allows student for a deeper understanding and a richer experience. The students would have the opportunity to provide

insight and reasoning into their comprehension, while cultivating their critical thinking skills.

Firstly, to start about the development of critical thinking in learning at school. When we were children, we think easily to understand. Teachers gave a simple example to think. For instance, ants eating sugar is a topic that the teacher encourages children generate ideas. The children would start to observe in real life that the ants eat sugar, is it true or not? It shows that the start of finding the actual evidence in order to support the idea.

When we study in the higher level of education, it might have a topic or analysis a case study. It encourages us do a research to find evidence for supporting. For instance, when I studied engineering, there is one subject that we studied the feasibility of the project. Students would analyze project by finding information and evidence to support, such as, reference to a theory, to explore an area, qualitative survey. Then bring information and evidence of result approach to a conclusion in order to make decision whether to proceed with the project or not.

To work, analysis of the problem would rely on experience with the practice. Critical thinking plays a big role in the practice to have a strong experience. Therefore, experience would support the reason for the decision. It will not only use the information or theory in textbook for giving reasons.

In daily life, Media tried to present information. We would practice critical thinking by finding the true which media want to present or hidden concepts with the media. According to Cottrell (2005) said critical thinking helps you to identify the obvious and the hidden messages more accurately, and to understand the process by which an argument is constructed (p.2). For instance, to present a policy or work by a political party that seems to be beneficial to the public, however, fact may be presented to benefit himself or a partisan. It may appease the public to keep themselves and their party to still be the government.

Critical thinking goes beyond ‘being critical’ and the challenges of “being critical” are significant leadership

Critical thinking goes beyond ‘being critical’, it involves the process of communicating clearly and applying the test of reasoning (Cottrell, 2005). This involves gathering and assessing relevant information to justify one’s conclusion. Reasoning asks questions of purpose, evidence and possible consequences (Paul & Elder, 2008). Reasoning says one should infer only what the evidence implies and should be fair minded, investigating all points of view.

As a leader, one is charged with managing the affairs of an organization and this involves team work toward common goals. Critical thinking is vital to a leader as this facilitates valued judgments and reflection in a way that allows growth for all partners. The group dynamics of working with different people of varying personalities and beliefs or value systems can affect the process of being critical. The emotional component of ‘being critical’ can evoke reactions that might cause feelings of discomfort or inadequacy. ‘Being

critical’ can also can led to varying amounts of communication challenges for a leader depending on the leader’s personality and astute sense of judgment and level of people skills. The process of being critical has the potential to be challenging for a leader in that the leader must convince the followers that the critical process is necessary for growth and the benefits can only be achieved if there is mutual agreement to submit to the critical process.

Leadership roles will vary in organizations, but many of those roles in an organization or institution have to do with motivating, encouraging and effectively managing people. In doing so, leaders have to think critically in order to make decisions to build maintain or sustain an organization. According to Cottrell (2005), critical thinking is a cognitive activity, associated with using the mind; therefore leaders should ensure that subordinates or employees are armed with the necessary information that will also help them be critical thinkers. This is particularly important in business settings where employees must know and learn about various industry specific issues and political and economic issues in order to gain invaluable insights to aid in their competition advantage in an industry.

In any situation in where there are both leaders and supporters, leaders can have leadership challenges as it relates to making critical decisions. Some of those critical decisions maybe; hiring new workers, firing people and expanding or contracting a department or a company and implementing policies in providing a better education system. Therefore, it can be quite challenging to be productive and positive Brookfield (1987) while pleasing everyone as both supporters and other managers may not think or feel the same way about the same issues.

Leaders are often responsible for helping build unity between staff members while working in achieving the goals of the organization. For example, being in charge of projects as a Project Manager, I had to ensure that my team was on task at all times. This meant that I had to figure out the best way in

meeting these deadlines. In addition, I had to provide weekly reports statuses to my boss and in return my directions on the projects were questioned and we both explored different ideas from what was the norm. This was quite challenging because we both had our different visions in attaining the same things in a different way. To deal with those challenges we had to find a way to bridge that gap by respecting each other's opinions and perspectives.

2. Conclusion and Implications

Critical thinking should be the balance between action and reflection. "Reflection on action" (Brokbank & McGill, 2007, p. 91) are closely related or as part of the process of critical learning due to critical thinking is to think and decide to believe or act on the basis of reflection rationally (Brokbank & McGill, 2007). Thus, critical thinking is a process that led to the practice of reflection and the development of intellectual potential to result in an action and effective solutions from critical thinking to critically reflective practice, as Brookfield (1998) point at four complementary lenses to discover, and research the assumption. Each time thinking carefully and rationally then doing, the result is likely to be as we thought. We, thus, can define an action from the thinking, predict the consequences from the actions and see the reflection from the ideas and results.

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Developmental dynamics of Culinary tourism from different Lanna eras in local communities of Chiang Mai *

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Abstract

This research studied the progression of local Lanna culinary tourism in Chiang Mai from the past to present in order to understand the economic development and trends, which can help the government and private sector develop policy to support creative culinary tourism. The information used in this study comes from a wide range of historical sources detailing Chiang Mai’s economy from the past to present, focusing specifically on tourism development since the Second National Economic and Social Development Plan (1967-1971). Results of this study show that there are factors effecting the local Lanna cuisine, such as influence from foreign merchants, changes in city planning, changes in the economic and political structure of Thailand, globalization, the availability of off-season produce and the growth of industrial food production. Moreover, this study presents a current business model of local food in Chiang Mai from the producer (Business side, Supporter Side) to the consumer.

Keywords : Local food, Lanna Cuisine, Chiang Mai, Culinary Tourism

Introduction

Local cuisine is the basis of culture. The cooking of each household in the community is unique and was originally intended for sustenance, however, through adopting ingredients from different local environments and using different cooking methods, according to the household’s level of prosperity, lifestyle, and the climactic conditions, rich food cultures have developed in every part of the world. Further, the Lanna society began to evolve rapidly with the arrival and influence of foreigners. Various welcome ceremonies were developed that use food as a central component, to formally welcome the increasing number of foreign travelers to Chiang Mai. In addition, this influx of foreigners changed the dietary demands as long term foreign residents sought out food that they are familiar with in addition to encouraging certain Lanna foods that were pleasing to the foreign palates. Tourist who are interested in novel foods and flavours of Lanna cuisine has started a new industry focused on Culinary Tourism that has

become increasingly popular through TV shows.

Lanna cuisine is unique, with a variety of ingredients according to the season. Moreover, there are traditions and ceremonies surrounding the presentation and consumption of food, for instance the *satok* or *khan-tok* (round wooden tray with Northern Thai dishes, often accompanied with traditional music and dance) is still preserved and is a popular tourist activity. There are many reasons why trying Lanna food is an appealing activity for foreign tourists: first, traditionally this food was only available in private households, though now it is widely available in local restaurants, giving foreigners access to the novel tastes that were previously hard to find. Second, the novelty of the culture surrounding the cuisine is interesting for foreign tourists. Third, most festivals and tourism events in Chiang Mai include food markets with Lanna cuisine, presentation and cooking demonstrations as a major attraction. Lastly, many visitors take short-term training in cooking courses designed specifically for tourists looking to learn about the methods and traditions associated with Lanna cuisine.

The local food culture has an important role in the tourist industry, leading to income distribution from cultural activities to local communities. Yenjit Thinkham (2009) said there are two predominant academic theories on the evolution of cultural heritage: Max Weber believed that the local culture should not be modified or adapted, in order to preserve the traditional culture. The traditional food culture is based on the original environmental conditions and should be preserved as part of the cultural heritage. On the other hand, Roland Barthes, was a French Semiotician, referred in who believed that the mass culture has an intrinsic value of its own. People's culture is a product of their social values and can be used as a good for exchange like any other product. This is consistent with the concept of consumption of sign by philosopher Jean Baudrillard, who described culture as symbolic exchange with intrinsic value in terms of capitalism that can be used to generate profit. This concept is apparent when analyzing the culture of Lanna cuisine as a basis for the culinary tourism industry in Northern Thailand.

Nowadays, the food culture has been modified, both in taste and ingredients to accommodate the different palates of tourists. Adapting cultural change is still controversial and leads to the dilemma of the best way to harmonize the inconsistency between accepting food culture as a tourism product and promoting fusion and adaptation, or preserving and sustaining the traditional culinary culture. This research focuses on the phenomenon of Lanna culinary tourism in Chiang Mai from past to present, including the economic development in Chiang Mai, and the adaptation of certain cultural and culinary aspects in Lanna cuisine.

Objective:

To study the progression of local Lanna food within the tourism sector of Chiang Mai over the past 700 years.

Keyword :

Culinary Tourism is the subset of cultural tourism that is related about travelling with food by eating and drinking experiences, include participating in food festivals, meeting farmers, cooking and learning local food history.

Materials and Methods

This research is a qualitative study that collected information from documents, books, research reports, journals and articles, on Lanna history over the past 250 years. The research focused on the economic development particularly as it relates to aspect of food production, demand and consumption. The data was then analyzed for content analysis to observe past phenomenon which affects the current economy, while also examining the trends of local Lanna culinary tourism.

Results

The tourism trade of Lanna over 700 years to Chiang Mai Trade

The Lanna culture dates back over 700 years. The geography of the Lanna kingdom over this period cannot be exactly specified, its mountainous topography with several broad river valleys including the Mekong, Salween and Ping rivers¹ provided water and a trade conduit for the habitants, whose occupation revolved around agriculture and handicrafts passed down from the ancestors of several ethnicities. This has led to a rich local culture, reflected in the clothing style, eating habits, religion, art and music. Being rich in natural resources, the land had been occupied by several distinct indigenous groups. At the end of the Mangrai Dynasty (1296-1311) the Lanna kingdom fell under the rule of Burma for more than 200 years until King Taksin of Siam (1767 – 1782), invaded and seized the Lanna kingdom, incorporating it into Thailand. Later Prince Phraya Kawila arrived to Chiang Mai and restored the city by repopulating with craftsmen, workers and slaves. This period was known as the time of “putting vegetables into the basket, putting the slaves in the towns” (*kep phak sais sa – kep kha sai mueang*), when Chiang Mai was economically reformed.

Since the reign of Phraya Kawila, the economy of Chiang Mai has been stable. The trade of cows and buffalo with the British led to an expanding market and more capitalism. However, full scale capitalism was still hindered by the fact that much of the population were still slaves and consequently not free to determine their own work or use money, meaning that societies during this time relied heavily on trade and barter systems (Sarassawadee Ongsakul, 2012). During that period there were also limitations on settlement and exchange of farm products. For instance, the

lowland populations grew rice, the highland people grew tea and tobacco, and the rest of foraged for wild products to exchange for rice. These local natural limitations made people acquire specific occupational expertise suitable for their surroundings, resulting in the development of local wisdom for agriculture.

During the time of Phraya Kawila there were weekly or specific day markets called *talad nat* or *kad nat* serving as the center of commerce and distribution of goods, including produce, herbs, spices and meat, as well as other consumer goods. One group that had a significant role in creating and distributing commodities in the economic system at that time were the ox carts. These middlemen traveled to collect and goods in different communities and villages, including iron tools and utensils. Fresh markets in Chiang Mai had mostly females selling the produce, while male merchants would sell mainly fresh pork. Cross border traders consisted of two major groups of Tai Yai and Haw Chinese, who would travel by ox cart from Burma and Yunnan to Chiang Mai. Capital used to maintain and manage towns would be in the form of tribute, levy or tax, with profits from the trade being divided among the city or town rulers, the ministers and their relatives. Table 1

Before rail transportation was introduced, boat transportation was used for commercial purposes. There were many boats traveling from Bangkok with a lot of mostly factory made commodities, such as clothes, soap and products from iron and salt. Products from Chiang Mai were mainly wild products like animal hides and lac from the lac insect.

The Role of Foreign Traders in the Lanna Kingdom

The Lanna economy changed dramatically due to increasing foreign trading, for example, the Lanna and Burma kingdoms had been trading with each other for hundreds of years and since the signing of the Bowring Treaty in 1855 during the reign of King Rama IV which established the British colony in Burma, many Burmese came to settle in the Lanna Kingdom, including Chiang Mai. Water transportation was the best for transporting ready-made products made in English factories, including clothes, kerosene and matches Table 1.

After the Bowring Treaty, the Lanna kingdom began exporting agricultural products to foreign markets. Most westerners from England worked or owned sawmills in Lamphun, Chiang Mai and Lampang. They were granted concessions

to log sometimes using large loans from Chinese bankers. The impact from these businesses contributed to large scale illegal logging of valuable tropical hardwood species, especially teak, with no program for planting substitute crops in the vast deforested areas. This resulted in soil deterioration and drought, affecting local people's living conditions and the environment around Chiang Mai and Lampang.

Chinese Merchants in Chiang Mai

Historically, the role of the local caravan traders and Indian and Burmese traders were reduced by the influx of Chinese merchant traders. Initially many Chinese merchants settled in Bangkok, so later groups of Chinese immigrant merchants had difficulty establishing businesses there and instead settled in Northern Thailand and Chiang Mai. These early entrepreneurs established new trade routes and during the Reign of King Rama V, some Chinese settled along the river making the area into a large commercial district, particularly around the front of Ket Karam Temple. There were many occupations available for Chinese, such as water or boat merchants, tax collectors and the shylocking. Most Chinese immigrants were very hard working, diligent and clever in trade. They were connected to the royal courts, supplying high end foreign merchandise to the aristocrats. Many of them worked in the government service and had special privileges and monopolies not available to the European merchants. The Bowring Treaty had clauses to eliminate special privileges for the Chinese merchants and open up markets for the British merchants.

By studying historical data, we found that the trade expansion of Britain in Asia, namely to China, Japan and Thailand, during the Industrial Revolution period was done through several treaties. England planned to have the populations of the these vast countries feed their military forces similar to India. In addition to Thailand's trade agreement with England, they also had treaties with Portugal, the Netherlands and France and mostly exported agriculture products including sugar, coconuts, wood, etc. Development of global trade networks pressured Thailand to export primary resources, such as rice, tin, and teak, in exchange for imported manufactured goods, a policy which did not support innovation, development and technological advancement in Thailand.

Table 1 : Different trade routes of ox caravans and local traders in Chiang Mai during the reign of King Phraya Kawila

Different trade routes of ox caravans and local traders in Chiang Mai during the reign of King Phraya Kawila					
Travelling Route	Trade Route to Chiang Mai		Merchant Group	In-bound Products	Trading Center
Land route	Long distance	Shan state and Moulmein	Thai Yai (Nio) *the local people who originated from Shan state of Myanmar	Wax, honey, fermented tea leaves, animal hides, dried chilies , cotton, etc.	Central Market, Chiang Mai
		Yunnan and Dali	Haw Chinese	Silk, wool, ceramic bowls, bronze-ware and opium	
	Short distance	Mae Tang, Chiang Dao, Sameng	Local people	Fermented tea leaves	
		Lampang Province	Local people	Field crops, pottery	
		Nan Province	Local people	Local vegetables, forest products, rock salt	
		Prae Province	Local people	Tobacco	
Water route/ Ship	Bangkok		Traders/ merchants	Salt, dry seafood, satin, mirrors	

* Adapted from Sarassawadee Ongsakul , History of Lanna,(516-522)

The Disappearance of Caravan Merchants during the Development of Rail Transportation in the Northern of Thailand

In 1901 the Thai government starts a railroad project to link Northern Thailand with Bangkok. This gradually replaced the old caravan merchants who used oxen or beasts of burden to carry goods to town, and a traditional conduit of cultural exchange between villagers disappeared. Motor vehicles were also introduced to trade routes, which further revolutionized the trading networks. To ease the exchange of goods monetary systems of trade based on currency and controlled by Chinese merchants, replaced the old barter systems. The wealth of local knowledge and understanding of the various ethnic groups and languages that the caravan traders used to employ became less important as villages and towns were connected, and many caravan traders entered local politics, becoming the sub-district chiefs in the villages

through which they used to ply their trade. (Choosit Choochat, 2006).

The Switching of the Economic Role Among the Northern Aristocrats During the Rattanakosin Era

When the central administration of the Rattanakosin government dominated the northern region, the economic status of the northern rulers also changed. Their income from trade monopoly, timber business, land rent, and irrigation fees were restrictive by the free trade policy. This policy greatly benefited foreign investors, like westerners established in the lumber trade and the Chinese merchants selling consumer goods in Chiang Mai. At that time, some of northern aristocrats had to switch from local lords to government officials. City planning from then on had to follow the Central Government with regards to communication and

transportation to support with the new society. Therefore the establishment of the railroad system made the old ox caravan and boat transport trading networks obsolete.

The Establishment of Centralized Capitalism in Chiang Mai

By the early 20th century, lots of industrial products were being transported to the northern provinces, these included ready-made clothes, comfort goods, as well as luxury goods, instead of the primitive consumer goods and raw natural resources. Rice was becoming an economically important exported crop and Chinese merchants in the north established rice mills and offered loans to native rice farmers with the agriculture fields used as mortgage insurance. The farmers' who defaulted on their loans had their paddy fields seized and migrated to the countryside, there converting more land to agricultural fields (Fang District of Chiang Mai, Chiang Saen and Phan Districts of Chiang Rai.). Meanwhile, the central government used urban planning to designate areas of Chiang Mai for specific land uses, for example the area inside the city wall was established for the government center, the commercial area were near the Ping River and the consumer products warehouse was set around the railway station area.

The Tourism Industry in Chiang Mai after World War II

At the end of World War II the city and the people of Chiang Mai suffered a great deal of damage to buildings and the economy. The expansion of a modern urban society followed, with the establishment of educational institutions, a university, a government center, aviation communication, and entertainment venues like cinemas and restaurants. Local people's behavior and habits began to change. They went out to eat more, entertaining guests at restaurants. Two famous restaurants in Chiang Mai during this time were the Siprakad, located in the Siprakad Hotel, and Sisumit restaurant, with the majority of customers being government officials and businessmen. Then came the development of tourism businesses to adequately handle the growth of tourists. This included hotels, entertainment businesses and continual expansion of tourism

leading to the 2nd National Economic and Social Development Plan (NESD Plan) (1977-1981) to boost the economy at that time. Included in the NESD plan was a Tourism Promotion Policy.

The economic boost which followed in Chiang Mai received cooperation from various sectors. Several newspapers and government agencies joined hands to publicize the Miss Chiang Mai Beauty Contest to promote the image of tourism of Chiang Mai, and local Lanna handicraft products for souvenirs, such as wood carving, northern woven textiles, silverware, pottery, as well as local food that could be preserved for a longer time so that tourists could take home as souvenirs. Traditional culture was also promoted, such as the *khantok* food for special guests. In a *khantok* dinner, Khun Kraison and Khun Chanya Nimmanhemmin came up with the idea to revive the Lanna food serving tradition in 1953. In the past the feast was arranged for special celebrations, or big merit making occasions. The food tray for serving is referred to as *satok* or *khantok*. It is a round wooden tray, or a rattan woven tray set on high legs or a stand. The tray is approximately 10-50 inches in diameter depending on the purpose.



Figure 1 Figure of *satok* and *khantok* from <http://antypupe.blogspot.com/> retrieved on October 14, 2015

Types of Khantok and Various Functions

Khantok luang or *satok luang* is made of wood 20-50 inches in diameter to carry or hold food served to guests of the noble court and for various rituals at a temple where people bring many kinds of food to serve at a large group of monks.

Khantok Ham is 17-24 inches in diameter to serve food to a large family or monks.

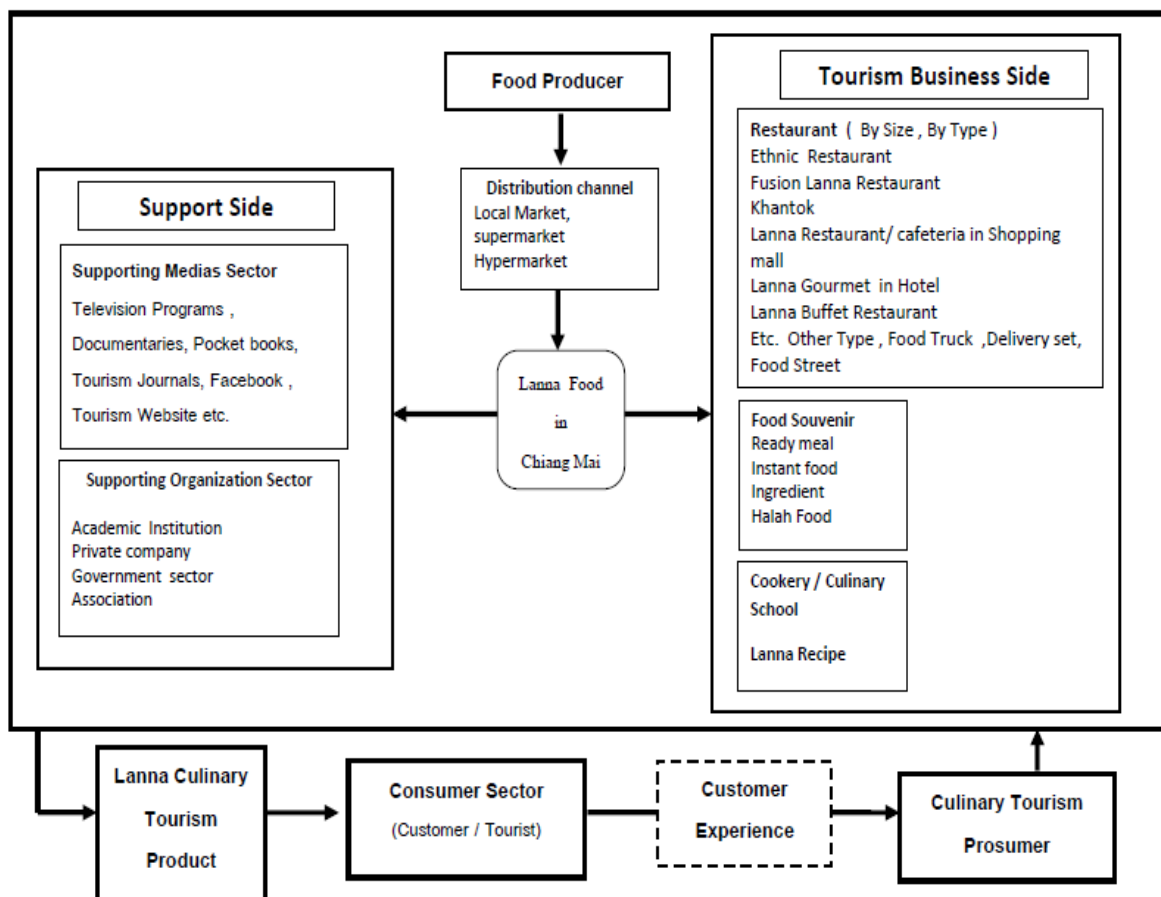
Small *khantok* is 10-15 inches in diameter for an individual meal in which a few dishes are served.

Usually accompanying the *khantok* dinner is a troupe of dancers and musicians performing

traditional Lanna songs in impressive costumes. Not long after that, it became a tradition to receive guests from other places with a *khantok* style meal. In 1971, the Old Chiang Mai Cultural Center was established to offer a *khantok* style dinner, along with some local style dances, assisting the tourism boom of Chiang Mai. Many food shops and restaurants sprang up around Chiang Mai to cope with the increasing number of tourists. Besides Lanna food shops, there are also foods of other countries, such as Japan, Italy, Korea, China, India, France, America, Vietnam and Mexico.

Development of Lanna Food in Chiang Mai until the 21st Century

Table 2: Factors influencing the growth and development of Local Lanna Food culture in Chiang Mai



Lanna people, or *khon mueang*, have had a food culture of their own since ancient times. The ingredients for cooking vary and mostly come from the surrounding environment, including the rich mountain forests. Seasonal fruits and vegetables are the foundation along with meat, insects, and medicinal herbs. Herbal medicinal plants have been used for a long time, and the local knowledge has been handed down from the ancestors. Cooking can be done by heat from fire or steam. Saifon Tutkhong, (2013) Thai Linguist, classified Lanna methods of cooking as grill, steam or cook in oil. These methods are also distinguished by using heat or no heat. She found 34 Lanna words and 40 cooking meaning ways for Lanna cuisine. This concurs with Wani Iamsrithong and Prayad Saiwichian (1995) Thai home economist, who surveyed the variety of northerner's method of varying cooking time and heat to make meat and vegetables tender. Less cooked dishes go with vegetables or side dishes like chili dips or sauces.

Narong Sikhiram (2014) Thai home economist, mentions that materials for Lanna food can be divided according to the seasons. The ingredients are vegetables from around the rivers, forests, residential areas, paddy fields, swamps or ponds, and home gardens. Locally grown kinds are Chinese cabbage, kale, cabbage, asparagus, straw mushrooms, and all kinds of spices for curries. Some meats come from natural water sources, dams, or ponds, such as fish and shrimp or prawns. Domestic animals include cows, buffaloes, pigs and chickens. Cows and buffaloes were killed for religious rites.

Rattana Phromphichai (1994) mentioned in her research about *laap chin* or *laap nuea* (minced meat spicy salad) made from beef or pork. The meat is minced and mixed with spices to improve the smell and then quickly cooked. Different areas have their own recipes or variations of *laap* depending on the ingredients in the chili paste or spices. Lanna people eat steamed sticky rice "*khao nio*" or "*khao nueng*". Narong Sikhiram (2014) wrote that sticky rice is grown in the rice growing season (*napi*) whereas regular or plain rice (*khao chao*) is grown in the off season (*naprang*). The sticky rice grain must be soaked in water overnight and then steamed in a special wooden container. When the rice is tender it is spread on a round wooden tray (*kua khao*) or put on woven bamboo trays (*kra dong*) and stirred with a wooden spatula to let the steam out, it is then kept in a bamboo or palm leaf woven basket, or box and served and eaten.

For Local Lanna Food culture in Chiang Mai, there are many kinds of markets (*gat*) in Chiang Mai –Table 2. In the past a market was in close proximity to a temple. Types of markets depended on the culture of the local people, such as a Muslim market, a forest product market, and a general fresh market, selling food to people. Usually the busy time for a market is in the early morning or "*gat chao*" where merchants bring their local harvest products to sell or some buy from a wholesale market. Products range from fresh vegetables, fruits, wild animal meat, spices, as well as ready-cooked dishes or food prepared on site, such as fried chicken, fried pork, northern style spicy sausages *sai uai*, steamed free range chicken, etc. The evening markets "*gat yen*" have similar kinds of products as the morning markets, but the customers want more ready-made goods. There is also a big wholesale and retail market of vegetables and fruit in Chiang Mai called "*talat mueang mai*." It is located in Chiang Mai near the bank of the Ping River and is open 24 hours a day. Merchants bring their farm products to sell to the retailing merchants, restaurant operators, and hotel chefs. The types of products in markets depend on the location and the customers' demand. Ready-cooked food dishes are more of the Central Thai style such as curry with coconut cream or milk, seafood dishes with some local food dishes. At a local market one can find some forest products, such as buffalo placenta, honeycomb, wild mushrooms, all kinds of edible insects, raw or cooked, buffalo meat, local vegetables, green water algae (*pham or khai nam*), including some vegetable stalks, *chiang da*, *phak wan pa*, and *pah ching chu chai*. That's include in supermarket and hypermarket. Tourists are also customers who are curious about different or unusual things unavailable in the area. This is a kind of tourism, focusing on interesting food for tourists to learn new things, where the sellers advise them about products, and how it can be used or eaten.

Tourists who come to Chiang Mai can easily find local restaurants plus the *khantok* dinner at some cultural centers with local dance and music performances, or even some Lanna fusion food, where adaptation is made in terms of taste, materials or ingredients, as well as its unique presentation - Table 2. There are all kinds of local food shops, and a variety of locations such as in hotels, pubs or restaurants in the tourist areas, where people can experience the local cuisine. Lanna food can be found around the Sunday Walking Street, in a temple, or various spots along

the route, readymade, or being cooked onsite to excite the on looking tourists. Additionally, one can find the mobile Lanna Food Trucks with sticky rice and pork with different styles of cooking and seasoning wrapped in banana leaves or served in banana leaf containers for passersby. One of the sellers said tourists are interested/fascinated with the simple kinds of local foods with banana leaf wrapping making them easy to take away, or eat near the food truck itself when there are some seats and tables available. Customers are a combination of Thais and foreigners- Table 2.

Cooking schools are said to provide firsthand experience in Thai cooking and culinary methods, with many registered cooking schools in Chiang Mai. Popular dishes are both Central Thai and Lanna dishes, like *khao soi*, *namphrik ong*, and *sai uai*. Tourists may come back for more lessons, or recommend it to their friends and family. They also buy ingredients to take back to their countries for cooking, or as souvenirs. Thus, the tourism food business has expanded a great deal. This includes the ready meals, instant food and halal food, which have been adapted to meet the diverse customers' demands. -Table 2

Such popularity of local food, plus the tourism policy to focus on "Thainess", makes Lanna food well known, and many promote it. The media, like television programs, present the introduction to Lanna food wisdom, including the ingredients, medicinal properties and so on. Several documentaries related to this have been presented along with cooking programs, pocket books, journals and magazines about Thai food, Thai cooking, and Thai culinary practices. Online, Facebook, Instagram and tourism websites, Wongnai or TripAdvisor are examples. This corresponds to the Thainess Year of Tourism, where several government agencies are promoting it through such activities as Food Festivals, Lanna Food Export and Exhibition. Some societies like the Green Beautiful and Fragrant Network have joined with several academics, local scholars, and business operators with the support from the Health Promotion Foundation Office, work together to preserve Lanna wisdom before it disappears. There are also organizations such as Agricultural Fairs to provide farmers the channels to sell their products and to get the academics and technocrats to look for healthy local foods and dishes to preserve Lanna food. However, despite all kinds of efforts as mentioned above, there still are some factors that cause changes in local Lanna food. The influx

of other cultures and civilization since the ancient times, the change in the city plan and the economic system, globalization, the lack of carrying on the Lanna language that is causing the younger generation to be unable to read the ancient texts or record the ancient local wisdom, all of these factors are causing the local food scene to evolve and change. At the same time, the attempt to change food to follow the rapid change of the modern times, due to the current hectic lifestyle with fast food, and food from other cultures being introduced along with cultural exchange, and culture interaction, make it expedient to maintain the balance of Lanna food, while accepting the culture of the tourists without losing the old identity, and to sustain the identity in this area for a stable future.

Conclusions

Local Lanna cuisine in Chiang Mai has evolved significantly in the 21st century as a result of economic and technological changes. Some traditional practices are still adhered to like the *kantok* dinner and local food festivals and TV shows promote traditional foods to help preserve Lanna cuisine. However, the theme of local food has changed over time with the influence of tourists as consumers. Some groups are working to preserve the authentic recipes, culture and history around eating, while there is an increasing market in fusion and hybrid foods. Tourist themselves embrace local cuisine by taking cooking courses, visiting festivals and interacting with the locals over dinners where Lanna food is served. The future of Lanna cuisine will be determined by tourists and Northern Thai's who together will decide the future direction of the Lanna culinary tourism model.

Recommended

This contents of study can suggest for Policy formulation for Lanna Culinary Tourism Supporting plan in Chiang Mai and guide for Lanna Restaurant Strategic Planning in Chiang Mai.

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DETECTING FINANCIAL STATEMENTS OF DELISTED COMPANIES IN THE STOCK EXCHANGE OF THAILAND

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Abstract :

This study examined financial statements and the delisting of the Stock Exchange of Thailand (SET). The primary objective of the study was studied the relationship between the financial models from financial statements and the delisted companies from The Stock Exchange of Thailand. The sample groups of this research were the delisted and listed companies in SET during 2011 – 2015 which 43 of them were delisted companies. The data had been collected for 3 years prior to the delisting, except for the delisted business in financial industry which consisted of banks, capital and property, insurance and life insurance, real estate mutual fund, real estate investment trust, and the companies with the incomplete 3-years data. Therefore, the sample group of this research were 24 companies; 12 delisted, and 12 listed companies. The study showed that some item from financial statements signaled the delisting which consisted of total Debt to Sale and Inventory to Total asset. They could effectively forecast the delisting and the leave trend from the Stock Exchange. The item from financial statements which was believed to be the forecasting indicator of the companies delisting had been analyzed, but it did not show significant influence toward the delisting in the Stock Exchange.

Keywords: Financial Statements , Delisted Companies

Introduction

The corruption in Worldcom Corporation, the telecommunications giant in America, and the bankruptcy of Enron Corporation, the world leading energy companies, had triggered the strain among the investors worldwide toward the window dressing and the transparency in accounting. According to these cases, many countries had reflected the Stock Exchange of their own countries which resulted in the Financial Accounting Fraud Detection (FAFD). It'd become the most mentioned topic. The importance and failure of the internal detection had brought to a special method in detecting the corruption which was known as Forensic accounting. Financial fraud was derived from the abnormality in financial statement due to the administrative corruption. It couldn't be detected by general internal or independent

auditors, so the statement would be elaborately dressed. As it focused on the personal operations in many concerned departments, it was difficult to detect with normal auditing procedure. (Pannipha Rodwanna, 2016). It had finally led to the delisting in many countries, including Thailand.

The principles and conditions of the delisting, according to SET (2012), was set to maintain the privileges of the shareholders. As it would affect those privileges and asset liquidity, it could be categorized into 2 groups as the followings.

1. The delisting from disqualification. The Stock Exchange might assign the delisting and termination of the operation. The delisting and termination could be divided into 3 groups below.

1.1 The companies that had reversal financial status and performance with the determinations of the Stock Exchange.

1.2 The registered companies is disqualified or seriously violated and ignored the regulations.

1.3 The registered companies had paid to terminate the business or the court had ordered receiverships. It was when the officials had ordered the business shutdown or the failed restoration which resulted in the court's order of receiverships or bankruptcy.

2. The companies had voluntarily requested the delisting. In this case, the Stock Exchange would consider the request as the agreement between the companies and the shareholders. So, if the shareholders had agreed to the delisting, with no less than 3/4 votes and 10% of dissenters, the request would be granted. However, the companies must offer the share repurchasing from the minor shareholders.

According to the data from the Stock Exchange, there were 216 delisted companies from SET during 1990 to 2016, such as Picnic Corporation Ltd. which was considered to have financial status restored. Window dressing was the root of the delisting according to the Stock Exchange regulations. From this incidence, techniques or tools were made to evidently detect the hidden frauds e.g. the application of financial ratio for detecting the corruption. It's consistent with Altman's research (1968) which found that Z-SCORE could forecast financial tension or distress that was one of the factors of the administrative corruption. The ratio used to analyze financial statement fraud was, for example, the Debt Management where high debt indicated the feasibility in financial statement fraud. This finding was conformed to the research of Persons (1995) and Charalambos T. Spathis (2002) who developed financial ratio as the auditing model of the financial fraud in Greece. With the reasons mentioned above, the researchers were interested to study financial auditing of the delisted companies in the Stock Exchange of Thailand (SET) and investigated the relationship between financial ratio model and the delisted companies in SET. The controlled companies were the listed companies in the same year with the same business size.

Research Objectives

To study the relationship between financial models from financial statements and the delisted companies from The Stock Exchange of Thailand.

Concept and Literatures Reviews

The delisting might occur from either the Stock Exchange's consideration on the disqualification of the registered companies to keep their existence as the companies, or the companies' agreement on the voluntary delisting. Whether it was for voluntariness or enforcement, it had brought the effects to the shareholders' privileges, such as the liquidity of the shareholders. Therefore, the Stock Exchange had determined on the delisting criteria, conditions, and procedures which could be divided into 2 cases. Firstly, the Stock Exchange provided channel for voluntary delisting request with clear procedure elaborated. Secondly, there's another factor which caused the delisting, e.g. disqualification, violation of the regulations, or 2 consecutive years of free float below criteria. It was consistent with the research of Thanawat Sakulsombat (2007) which found the positive relationship or the correlative change between free float and the variance of stock return. It could be said that high free float would consequently raise the variance of stock return. High free float might cause the short-term investment in order to speculate the price difference. Another factor of the delisting was the problem on financial statement, such as the conditional comments from the auditors, profitability deficiency, and business restoration failure etc. The Stock Exchange issued the announcement on the delisting of the disqualified companies. The codes were used with the explanations. NC (Non – compliance) was the possible delisted properties and SP (Suspension) was property selling suspension with 2-years business restoring period (NC and SP were the registered companies under REHABCO). If the companies was free from the delisting within 2 years, NC and SP would be cancelled and the property purchasing would be authorized by the Stock Exchange. On the other way round, the properties would be removed from the board to another group where their status as registered companies were remained. In holding their status as registered companies, they would be entitled to disclose the information and abide by the regulations. The companies in this group would be transferred back to the normal group when their qualifications were justified.

However, there would always be an early warning signal from the business financial failure forecasting prior to the delisting. Therefore, the executives must pay attention to accounting data as it could reflect the business performance. The forecasting on the delisting and bankruptcy was widely studied. It was consistent with the research of Beaver (1966) which had found that the best ratios

to distinguish 2 groups were Cash flow to Total debt, Net profit to Total asset, Total debt to Total asset, Working capital to Total asset, and Working capital ratio respectively. Two years later, Altman (1968) had found that Multivariate Discriminant Analysis (MDA) could create bankruptcy forecasting model which worked 95% accurately when forecasted for 1 year ahead. That model was the combination of 5 financial ratios which consisted of Working capital to Total asset, Accumulated profit to Total asset, Earnings before interest and tax to Total asset, Net sales to Total asset, Shareholder's market value to Accounting value of total debt. In addition, the research of Deakin (1972) focused on the forecasting of business' failures by the combination of discriminant analysis which were ANOVA Analysis and Regression Analysis. It's found that Cash flow to Total debt ratio was the best indicator for bankruptcy feasibility and dividing groups.

For the research in Thailand, there were many studies about business financial failure forecasting of the registered companies in the Stock Exchange. They were corresponded to the research of Beaver (1966), Altman (1968) and Deakin (1972). Supaporn Cherg-eam (2001) had studied the forecasting model of the possibly-delisted companies. It's found that out of 37 dependent variables, there were only 4 variables which were significant in model development. Those were Cash flow to Total debt, the variance of net profit in 3 years (non-monetary variable), long-term debt to total debt ratio, and the comments of the auditors (non-monetary variable). The finding was also conformed to the research of Apaporn Nammueng (2007) which found that TL/TA, NI/NS, and TL/TE influenced the categorization of the companies with successful and failed financial status.

According to the study of the delisting trend, it's indicate that the investors should carefully study financial statements. However, for the benefit of all general investors, they should be accurate without fraud or window dressing. They should also followed the accounting standard edition 1 (revised 2015). Financial status and performance must be presented formally, so it would truly be an advantage on economic decision making of the budget users. In addition, financial statement even supported users to forecast the time and certainty of the business future cash flow. The objective of the registered companies in SET was capital mobilization from general investors. It must be in accordance with the auditing standard edition 240 about the responsibility of the auditors in considering of the financial statement fraud that all forms of corruptions, window dressing or the

inappropriate use of property, would concerned with the motivations or pressure of corruption, chance for corruption committing, finding supportive reason for corruptions, presenting the corrupted financial statement in order to blind the budget users. Research of Beasley (1996) found that the excessive numbers of companies committee was related to the financial statement fraud. Angkarat Priebjrivat & Suchada Jiamsagul, (2010) had found that high numbers of independent committee would raise the future performance which could be measured from Total asset return to Common share. Those committee would be mechanisms which obviously controlled business operations and mostly affected earning management. Auditing standard edition 700 (revised 2016) on comment and the reporting on financial statement stated that the auditors must summarize if the statement had been created according to the content in the topic of financial report or not. It could be justified by considering qualitative features of the accounting practice, as well as the indicator of bias from the executive's discretion.

Weerapong Kitthiwong (2007) had found that changing auditing office did affected the profitability where the difference of the profits (loss) according to the accrual basis and cash flow from activities operated a normal. It's also found that the increasing of financial risks, the uncertainty of a constant operation, and financial capital were significant factors which affected profitability. The empirical study on the change of certified public accountant in Thailand of Thamanawan Pomsanam (2011) indicated that both registered companies with and without the change of certified public accountant would undergo earning management through accrual items and the same executives' discretion at 95% confidence level. The mean of the accrual items, that took the consideration of the executives in the companies with the change of certified public accountant, was less than one without change of certified public accountant.

The financial statement fraud was the abnormality of the statement due to the administrative corruption which couldn't be detected by normal internal auditing and independent auditors. The statement fraud would deliberately made up. As it concerned with the personal operations in many concerned departments, it was difficult to detect with normal auditing procedure (Phannipha Rodwanna, 2016). It was corresponded with the research of Pimchanok Kedsuwan (2012) which said that earning management by executives are likely to increase as it used only their decisions and discretions. This could happen any time during the

operations without the violation of the financial report standards. With the enforcement on the Sarbanes-Oxley Act, the intensive regulations and law were also raised. Earning management would be highly impossible. Tiranun Roongawang (2015) had found that working capital ratio, accrual items with the executives' discretion, and business size all affected the selection of window dressing format on expense recording, earning acknowledgement, declare and disclosed asset and debts. Moreover, the research on the factors which related to the profit management of Ponthiwa Kaowsa-ard (2012) found that the growth and compensation of the executives was correspondent with profitability management level as most of the activities would compensate the executives according to their performances, such as annual bonus by annual net profit, salary adjustment by the increased net profit etc.

As general auditing was not enough to detect the corruption, it had led to Financial accounting fraud detection (FAFD) by a special method known as Forensic accounting. One of the auditing method was financial statement analysis with 4 analysis tools which were the common-size analysis, trend analysis, capital flow statement analysis, and financial ratio analysis (Thailand Securities Institute, the Stock Exchange of Thailand, 2013). Financial ratio was used to analyze financial statement fraud, e.g. debt management. The increasing of debt was another factor of financial statement fraud. Persons (1995) had analyzed asset management ratio, such as accounts receivable turnover, which was the comparison between account receivable and net sales, inventory turnover ratio by Persons (1995); Stice, (1991); Feroz et al., (1991), cash flow to total debt by Beasley (1996); Spatish, (2002). Logistic regression was used to analyze. For tools development, any ratios concerning with profitability could be well applied for corruption forecasting. This was consistent with the research in the past that applied financial ratio for logistic regression analysis in order to forecast the corruption and the possibility of financial statement fraud. It could be done by separating business with and without corruptions to verify the ratio which was related to the corruption. Persons (1995); Summer and Sweeney,(1998)found that the increasing of sales and inventories were related or possibly caused the corruption. Financial ratio was also used with other forecasting, such as business financial failure, the detecting of financial statement fraud etc.

In Thailand, Eakkait Kem-nguad (2011) had discovered that the developed model for the

forecasting was highly accurate at 95.0% when forecasted for 1 and 2 years ahead the business financial failure. The influential financial ratios toward the business categorization were Earnings before interest and tax to Total asset and Total debt to Total asset. The research of Nattanicha Aramtientumrong (2011) indicated that Long-term debt to Total asset, Long-term debt to Total debt, Returns to Total asset could be applied for the forecasting of the companies which was at the financial failure risk. Moreover, the research of Pairin Chonlasarn (2016) stated that Returns to Total asset, Total asset turnover ratio, and Net profit ratio could also signal the business financial failure. The research on the effect of the financial ratio change toward the delisting and possible-delisting of Uraporn Rakmit (2015) had investigated those effects from the registered companies in SET in 2007. Financial ratio in financial report during 2003 – 2006 was used for logistic regression analysis. It's discovered that financial ratio didn't lead to the delisting. However, industrial type affected the delisting and the possible-delisting. The findings in the research might be affected by the economic crisis at that time, so the data didn't reflect to the actual complications.

Research Hypothesis

Data from Financial statements was related to the delisting of the registered companies in the Stock Exchange of Thailand.

Research Methodologies

Sample group

The sample groups of this research were the delisted and listed companies in SET during 2011 – 2015 which 43 of them were delisted companies. The data had been collected for 3 years prior to the delisting, except for the delisted business in financial industry which consisted of banks, capital and property, insurance and life insurance, real estate mutual fund, real estate investment trust, and the companies with the incomplete 3-years data. Therefore, the sample group of this research were 24 companies; 12 delisted, and 12 listed companies.

Research Methodology

There were 2 group of data. They were delisted companies and listed companies. So, ANOVA discriminant analysis was applied to test the variance between both groups. Binary logistic

was also used when dependent variables could only hold 2 values to investigate the relationship between independent and dependent variables. The research model was shown below.

Model

$$Y_{Delisted, Listed} = \beta_0 + \beta_1(DEBT/EQ) + \beta_2(SAL/TA) + \beta_3(NP/SAL) + \beta_4(REC/SAL) + \beta_5(NP/TA) + \beta_6(WC/TA) + \beta_7(GP/TA) + \beta_8(INV/TA) + \beta_9(TD/TA) + \beta_{10}(CHANGB) + \beta_{11}(CHANGCPA) + e$$

Where

Y = 1 delisted companies, Y = 0 Securities group Listed registered companies
(1 = Delisted, 0 = Listed)

- DEBT/EQ = Debt to Equity
- SAL/TA = Sale to Total assets
- NP/SAL = Net income to Sale
- REC/SAL = Receivable to Sale
- NP/TA = Net income to Sale
- WC/TA = Working capital to Total assets
- GP/TA = Gross profit margin to Sale
- INV/TA = Inventory to Total assets
- TD/TA = Total debt to Total Assets
- CHANGB = Change Board of Director
- CHANGCPA = Change Certified Public Accountant

Result and Discussions

The result from the auditing of financial report in the delisted companies in SET was shown in Table1.

Table1 Mean and One-way Anova Analysis

variables	mean		Std.dve.		F	Sig.
	Listed	Delisted	Listed	Delisted		
SHARE	.722	.868	.454	.346	2.04	.16
CPA	.722	.700	.454	.466	.04	.85
D/E	1.223	.814	1.83	3.60	.37	.55
SALE/TA	1.19	2.30	.585	5.00	1.75	.19
NI/SALE	-.25	-.74	1.26	3.23	.72	.40
REC/SALE	.121	.425	.096	.808	5.06	.03*
NI/TA	.100	-.032	.178	1.06	.53	.47
WC/TA	.115	-3.84	.237	16.0	2.2	.14
GPM/TA	.161	.240	.156	.680	.43	.52
INV/TA	.135	.067	.144	.095	5.60	.02*
TD/TA	.413	4.56	.216	16.08	2.39	.13
ALL	.423	.544	.258	.472	1.73	.19

Note *meant thatp-value ≤ 0.05

According to Table 1, the mean of Receivable to Sale of the listed companies was 0.121 and 0.425 in delisted companies (F = 5.06, p ≤ .05). The Inventory to Total assets of the listed companies was 0.135 and 0.067 in delisted companies (F = 5.60, p ≤ .05). Both of these ratios might cause the delisting as the Receivable Turnover to Sale explained the sales revenue. Most of the companies in the Stock Exchange would take credit system which lessens product volumes and the payment hadn't been settled as scheduled. This finally resulted in the business liquidity deficiency due to the lack of working capital. It could led to the operational risk and loss, or delisting.

The relationship between financial ratio and delisted companies in SET was shown in Table.2 below.

Table 2 Logistic regression test for the delisting feasibility analysis.

Independent variables	Unstandardized coefficient	S.E.	Sig.
SHARE	2.110	1.125	.061
CPA	-2.619	.189	.128
D/E	-0.047	.141	.739
SALE/TA	0.046	.167	.781
NI/SALE	0.883	.983	.369
REC/SALE	3.586	2.213	.015*
NI/TA	1.678	3.112	.590
WC/TA	2.981	2.778	.283
GPM/TA	-2.041	2.878	.478
INV/TA	-15.662	5.254	.003**
TD/TA	3.255	2.763	.239
ALL	-0.825	1.590	.604
R ²	54.20%		
N	72		

Currently predicted :

- Listed 86.10%
- Delisted 75.90%
- Overall 81.50%

Note *meant thatp-value ≤ 0.05, ** meant thatp-value ≤ 0.01

Table 2 was the use of logistic regression for the delisting forecasting of the companies in SET. It's demonstrated that Inventory to Total assets highly affected the delisting forecasting of the companies in SET (b=-15.662, p ≤ .01), as well as the combination of Receivable to Sale which could

forecast the delisting feasibility ($b=3.586$, $p \leq .015$). Change Board of Director, Change Certified Public Accountant, Debt to Equity, Net income to Sale, Working capital to Total assets, Gross profit margin to Total asset, Total debt to Total Assets couldn't be applied for the delisting forecasting as significant values were higher than $p \geq .05$.

Conclusion and Suggestions

Conclusion

This research aimed to study the financial report auditing of the delisted companies and investigate the relationship between the financial ratio models and the delisted companies. The data would be analyzed by ANOVA test in order to verify the difference of variance of both groups. Binary logistic regression analysis would also be applied when the dependent variable hold only 2 values. The relationship between independent and dependent variables could be found by using data of the sample groups which were the delisted and listed companies in SET during 2011 – 2015 and 43 of them were delisted companies. The data had been collected for 3 years prior to the delisting, except for the delisted business in financial industry which consisted of banks, capital and property, insurance and life insurance, real estate mutual fund, real estate investment trust, and the companies with the incomplete 3-years data. Therefore, the sample group of this research were 24 companies; 12 delisted, and 12 listed companies.

According to mean and the comparison of the groups' means, and the delisting forecasting, it's found that there were 2 factors which consisted of Receivable to Sale and Inventory to Total assets. It's noticeable that both factors highly affected delisting forecasting which was corresponded to the study of Beaver (1996) who had found that the best ratios to distinguish 2 groups were Cash flow to Total debt, Net profit to Total asset, Total debt to Total asset, Working capital to Total asset, Working capital ratio, and the time interval when the credit wasn't granted respectively. The use of univariate analysis can only indicate the difference of means of two groups but cannot identify the size of difference. Another one is Inventory to Total assets. Balancing inventory is the important part in small business management in terms of resources and cash flow. Excessive inventory will take valuable resources and couldn't be used for any other purposes. On the other hand, low inventory will not be able to meet customers' requirements. Appropriate inventory and total asset depends

specifically on the industry and business strategies. While the ratios which were believed to forecast the delisting such as Total debt divided by total equity, Net profit divided by Net sales, Net receivables divided by net sale, net profit divided by total asset, Working capital divided by Total asset, Gross profit divided by Total asset, Inventories divided by Total asset, Total debt divided by Total asset, Change of board of director within 3 years, and Change certified publicaccountant within 3 years cannot significantly affect the delisting of the companies in the Stock Exchange.

Some restrictions were found in this research. As the data had been collected back in 2008-2010 (3 years before delisted) but the regulation in changing accounting standards was enforced in 2011, so there are only 2 correlated outputs. Also, the equation used in this research might be suitably corresponded to the foreign Stock Exchange better than the Stock Exchange of Thailand. The outputs obviously explain low effect which might be resulted from the different environments of the Stock Exchange in each country. Therefore, the study of other variables concerning to the delisting should be included in the next research. Also, the Stock Exchange values from 2011 onwards should be used to lessen to restrictions.

Suggestions

It's found that there are only 2 financial ratios which indicate the delisting feasibility. So future research can be analyze data with more strategic tools, such as data mining, prediction model combining financial and non-financial ratios etc.

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The Relative Valuation of U.S Commercial Banks Using Accounting Numbers

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Abstract

Little is known about the valuation of commercial banks using accounting numbers, and financial services firms are often excluded from finance research. Therefore, this paper aimed to provide some insights into valuation practices and predictability of multiples-based valuation models on this complicated sector. Regarding the conviction of prior literature and peculiarities of banks, especially the special role of debts and the vague definition of reinvestment, this study focused on the applications of the Price-to-Earnings (PE) multiples and the Price-to-Book Value (PBV) multiples. The observation was based on U.S. commercial banks during the period from 2009 to 2013. This analysis aimed to provide critical evaluation on predictability of valuation models in terms of accuracy and capability to track stock price. The findings suggested that the model combining trailing PBV and two-year forward-looking PE multiples at equal weight accounts for smallest absolute prediction errors (highest accuracy) and highest ability to explain stock price.

Keywords : Bank valuation, commercial banks, valuation using accounting numbers

1. Introduction

“If the financial crisis of 2007 has a ‘merit’, it is its having renewed the interest of the financial community and academics in the topic of bank valuation” (Beltrame and Previtali, 2016: p.1).

Beltrame and Previtali (2016) inspire academic research into bank valuation on two fronts. First, the researchers’ work prompted studies on the importance of commercial banks to the entire economy when economic expansion depends on the health of those financial service companies. Second, the researchers motivated studies on how analysts and professional investors valued those fragile businesses without perceiving the upcoming failure of the banking system in 2008.

A century before the crisis, the enforcement of the Gramm-Leach-Bliley Act in 1999 which allowed U.S. commercial banks and investment banks to consolidate into a single entity, making business models of commercial banks even more diversified,

relative to traditional banking that realises profits from marginal interest between loan and deposit accounts. These days, commercial banks have become universal and capable of generating cash flows from various streams of income by offering a comprehensive range of services including corporate and retail banking, investment banking, insurance services, brokerage services and thrift (Damodaran, 2009). Apart from the Gramm-Leach-Bliley Act, the peculiarities of banks such as regulatory structures, special role of debts, unspecified definition of debts and unique business structure to pose challenges in bank valuation continually (Beltrame and Previtali, 2016). Insofar, Copeland et al. (2005) explicitly state that the valuation of banks is one of several remaining puzzles in financial research.

This research aims to analyse the predictability of multiples-based valuation models in commercial banks, which could reflect the usefulness of accounting numbers for relative valuation. However, this study focuses particularly

on equity-perspective valuation models following the conviction of Damodaran (2009) regarding the special role of debts in banking businesses.

2. Literature Review

Valuation models using accounting numbers can be broadly classified as multiples-based valuation models and accounting forecast flows-based models. However, individual model may not be useful in all circumstances because of its limitations. Moreover, each industry has unique properties, and any firm may be involved in specific events.

Since accounting practices have evolved over time and, therefore, lead to greater dissimilarities in general valuation practices, accounting numbers are arguable by the extent of an absence of substantive meaning. Ball and Brown (1968) studied the effect of annual income announcements, both timing and contents, on security prices as a predictive criterion. Their research suggested that accounting numbers are aggregated in security prices spontaneously following an income announcement and earnings numbers substantially affect investors' investment decisions. Research by Nichols and Wahlen (2004) applied the behaviour of security prices as a proxy for practical tests of usefulness of accounting numbers. Their empirical findings are consistent with those of Ball and Brown (1968). This consistency suggests that accounting numbers have become an integral part of modern equity valuation. Based on Morgan Stanley research, the dominant multiples-based models appear to be the Price-to-Earnings (PE) model and the Enterprise Value to Earnings before Interest, Taxes, Depreciations and Amortisation (EV/EBITDA) model (Fernandez, 2002). Remarkably, more than half of Morgan Stanley's analysts used the PE model for valuing European firms while the Price-to-Book Value (PBV) model accounted for less than one-fifth. However, the appropriate models vary across industries and valuation of the industry in general typically excludes financial service firms from analysis. Fama and French (1992) explained that financial service firms were omitted from the portfolio of the test assets because their high leverage could bias the overall results with an increasing exposure to financial distress. Financial firms were also excluded from the Courteau et al. (2015) study because they are heavily regulated

and report financial fundamentals under different accounting practices. Although the financial sector is not the only sector with high leverage and other unique features, the exclusion of financial service firms can force a rejection of certain valuation models of non-financial sectors (Foerster and Sapp, 2005).

The evidences from prior research on equity valuation may not be applicable for a valuation analysis of the financial sector. This section will discuss idiosyncratic identities of the banking industry in relation to equity valuation using accounting numbers.

2.1 Peculiarities of Commercial Banks

Commercial banks, as part of financial service companies, are under the same principal valuation concepts as non-financial firms, but they possess particular aspects that can influence how they are valued.

2.1.1 Regulation Overlay

Commercial banks are heavily regulated firms. Monetary policy can vary from country to country, but banks are required by laws and regulations to reserve sufficient funds in order to protect claimholders from taking excessive risks. Therefore, valuation models that incorporate information about growth rate and reinvestment can be dramatically affected by a shift in regulatory framework.

2.1.2 Special Role of Debt

The special role of liabilities of banks is considered a profitability factor rather than working capital because it is more like 'raw material' than a mere source of capital to maintain liquidity (Copeland et al., 2000; Damodaran, 2009; Adams and Rudolf, 2010). Hence, failure to estimate cost of capital accurately could yield substantial error in predicting the value of commercial banks.

2.1.3 Reinvestment

Measuring reinvestment of banks can be problematic regarding net capital expenditures and working capital that are not clearly defined by financial service firms. Banks invest their funds in intangible assets such as human capital and company creditability rather than fixed assets. Therefore, operating cash flows could show low or no capital expenditures and depreciation. Consequently, either reinvestment or cash flows cannot be precisely estimated if net capital expenditure and working capital cannot be identified.

designates book value **2.4 Provision**

Book value excluding commercial banks commonly set the provision for credit loss that will offset gross provisions in statements of financial position, and that uncollectible amount is expensed toward earnings. Allowances for bad debts are estimated by evaluating historical bad loans made by the company depending on its policy. Thus, a more conservative policy will result in a higher price earnings ratio, whereas a less conservative policy will keep earnings close to the original (Damodaran, 2009).

Book value estimated using **2.5 Fair Value Accounting**

Bank assets mainly account for financial assets which fair value is observable through an active market. Thus, marking to market does not require much subjective judgement. Therefore, financial assets are initially recognised at fair value rather than at acquisition price or book value. All financial assets held for trading are consecutively revalued to fair value. However, if non-liquid securities, such as structured credit, were marked to market, a huge swing would be created in the balance sheet (Davies, 2010). This practice, however, results in bank's book and market values being almost identical. Hence, using multiples related to book value and return on equity represents an update of market value rather than a measure of what was originally invested (Damodaran, 2009).

2.2 Multiples-Based Valuation Models

$$V_{i,t}^{MB} = VD_i \times \text{Benchmark}_{i,t}(\Phi_{i,t}) \text{ if } VD_i > 0 \quad (1)$$

Where V is stock price estimated from relative method and VD is value driven variable. Fernandez (2002) indicates that the PBV is the most widely used pricing multiple by analysts for predicting relative value, supporting by Barth et al. (1998), investigating the relationship of net income and book value as sources of value creation. They find that book value has a significantly higher explanatory power for determining stock prices of banking sector. This evidence may support the conclusion that the PBV is probably an appropriate multiple for commercial banks. Moreover, Harbula (2009) suggests that the combined current PE and realised PBV models constitute the minimal valuation error for the banking sector.

3. Hypotheses Development

This session addresses valuation models that accurately evaluate stock prices of publicly traded U.S. commercial banks. Prior literature provides notable impressions on the PE model and the PBV model for valuing financial firms regarding the peculiarities of banks. This research is designed to capture the magnitude of bias, accuracy and central tendency of value estimated from those models, which are also analysed for explanatory power and robustness.

Hypothesis 1: If the book value of equity of banks is highly correlated with their market value, the PBV model should explain the variance in stock prices better than the PE model.

Hypothesis 2A: The PE multiple exclusion of extraordinary and special items can reflect company core earnings. Therefore, it can explain and track variance in stock prices better than the PE multiple that earnings contains such special items.

Hypothesis 2B: Since sophisticated investors comprehend the dilutive effect of potential convertible securities on future EPS decline, fully diluted EPS is anticipated to reflect the company's future performance better than basic one.

Hypothesis 2C: The prospective PE multiple is expected to perform better than trailing PE in terms of accuracy and explainability.

4. Data and Sample Selection

All valuation data was retrieved from Standard and Poor's Compustat, the Institutional Brokers' Estimation System (I/B/E/S) and the Centre for Research for Security Prices (CRSP). Data was merged from the above databases based on a firm's specific identification and year. All observations of commercial banks were selected using 3-digit ISIC "602 commercial banks" from fiscal years ending 2009 to 2013, to avoid the impact of financial distress to the models, resulting in 1,262 firm-years from 317 commercial banks. Many fields of data of financial institutions were missing. Those missing fields were replaced with data from Compustat Banking. Briefly, beginning samples comprised of 1,262 firm-years before 25 firm-years with missing variables are ruled out of the data set to perform basic statistical analysis. To facilitate the estimation of relative value, 33

firm-years are Winsorized and 67 firm-years are trimmed from initial samples. After trimming outliers, our final set of observations contain 1,170 firm-years. As a result, the distribution of statistics is seemingly better, reflecting an improvement of overall data quality.

5. Hypotheses Testing

This research is based on the assumption that stocks are priced at efficient fair value and consensus of analysts' forecasted data reflects all information available at the time.

This section reviews the most accurate PE and PBV multiples from various perspectives to compare models. For the PE models, earnings are calculated whether basic or diluted, whether current or prospective (using one-year and two-year horizons). Diluted PE is introduced to account for dilutive effect on EPS as if all potential convertible securities were exercised. The basic EPS is adjusted by excluding special items, which aim to reflect only core earnings according to Liu et al. (2002). For the equity-based multiples, this paper adjusts the PBV by excluding intangible assets out of book value to arrive at the PTBV. Furthermore, this paper employs two-factor multiples combining trailing PE with trailing PBV at equal weight which is suggested to be the most accurate model for valuing banks (Harbula, 2009). This paper uses industry peers as comparable firms and does not require the same set of companies for every fiscal year during the test period. Regarding the limitation of each multiple, observation is not required to have all positive value drivers. All multiples are directly Winsorized at 1st and 99th percentile, resulting in the dispersion of the price multiples.

5.1 Summary Definitions

In general, price is collected four months after fiscal year end and relative values are estimated on a per share basis. Benchmark multiples are calculated using harmonic mean for each firm on an annual basis, supported by Liu et al. (2002), indicating that the performance of multiples-based models is improved when using harmonic mean, relative to mean and median, to compute industry multiples. value of each model is derived as follows:

$$V_{PE} = epspx \times PE_{industry} \quad (2)$$

$$V_{PE_spi} = EPS_{spi} \times PE_{spi_industry} \text{ if } EPS_{spi} > 0 \quad (3)$$

$$V_{PE_diluted} = EPS_{dilute} \times PE_{diluted_industry} \text{ if } EPS_{diluted} > 0 \quad (4)$$

$$V_{PE_fwd1} = EPS_1 \times PE_{fwd1_industry} \text{ if } EPS_1 > 0 \quad (5)$$

$$V_{PE_fwd2} = 0.5(EPS_1 + EPS_2) \times PE_{fwd2_industry} \text{ if } (EPS_1 + EPS_2) > 0 \quad (6)$$

$$V_{PE_fwd2_industry} \text{ if } (EPS_1 + EPS_2) > 0$$

$$V_{PBV} = bkvlp_s \times PBV_{industry} \text{ if } bkvlp_s_t > 0 \quad (7)$$

$$V_{PTBV} = tbkvlp_s \times PTBV_{industry} \text{ if } tbkvlp_s_t > 0 \quad (8)$$

$$V_{PE_PBV1} = \omega_1(epspx \times PE_{industry}) + \omega_2(bkvlp_s \times PBV_{industry}) \text{ if } epspx, bkvlp_s > 0 \quad (9)$$

$$V_{PE_PBV2} = \omega_1(0.5(EPS_1 + EPS_2) \times PE_{fwd2_industry}) + \omega_2(bkvlp_s \times PBV_{industry}) > 0 \quad (10)$$

5.2 Accuracy, Explanatory Power and Central Tendency

Estimation errors $\left(\frac{v-prc_4}{prc_4}\right)$ are scaled by stock prices at the end of four months after fiscal year ended for each firm. Signed and absolute prediction errors are computed using mean and median in order to compare models. High predictability models are expected to have high accuracy (low absolute error) and high explanatory power (high R-squared), whereas a significant proportion of predicted value clusters around 15% of the actual value.

Table 1 shows the result from bivariate regression analysis between price (dependent variable) and value estimate (explanatory variable) from each model (below).

Table 1: Summary Predictive Performance of Multiples-Based Valuation Models

Panel A: Bias	Obs.	Signed Error	
		Mean	Median
PE	955	0.0142	-0.0533
PE_spi	884	0.0098	-0.0690
PE_diluted	955	0.0128	-0.0496
PE_fwd1	1,067	0.0232	-0.0325
PE_fwd2	1,103	0.0354	-0.0295
PBV	1,170	0.0052	-0.0736
PTBV	1,132	0.0062	-0.0927
PE_PBV1	955	-0.0248	-0.0891
PE_PBV2	951	-0.0105	-0.0655
Panel B: Accuracy	Obs.	Absolute Error	
		Mean	Median
PE	955	0.3604	0.2291
PE_spi	884	0.3664	0.2437
PE_diluted	955	0.3583	0.2288
PE_fwd1	1,067	0.3304	0.1976
PE_fwd2	1,103	0.3066	0.1779
PBV	1,170	0.3132	0.2460
PTBV	1,132	0.3440	0.2717
PE_PBV1	955	0.2453	0.1886
PE_PBV2	951	0.2157	0.1515

Panel C: Test Statistics	OLS	t-stat	R ²	Central Tendency
PE	0.7574	20.53	0.6525	35.92%
PE_spi	0.7531	19.68	0.5193	34.39%
PE_diluted	0.7565	20.52	0.6527	36.44%
PE_fwd1	0.7709	27.17	0.6458	40.96%
PE_fwd2	0.8183	26.96	0.6722	43.25%
PBV	1.1595	21.97	0.6067	32.65%
PTBV	1.1212	15.84	0.5850	29.42%
PE_PBV1	1.0635	23.82	0.7255	40.63%
PE_PBV2	1.0574	26.28	0.6901	49.63%

According to **table 1**, median signed estimation errors could imply that all price multiples are more likely to estimate value in the magnitude of negative bias. In contrast, mean signed prediction errors seem to overestimate stock price. Considering the median absolute errors, PE_PBV_2 has the smallest errors for valuing commercial banks, accounting for 15.15%, followed by PE_fwd2 (17.79%) and PE_PBV (18.89%), respectively. Consistent with Lee (1999), the prospective PE models using mean analyst forecasts perform relatively well, supporting hypothesis 1C. Diluted earnings slightly increase the accuracy of the model (by 0.03%) with low economic significance. However, earnings before extraordinary items and special items does not improve the accuracy of the model to value banks, inconsistent with hypothesis 2A. Contrary to hypothesis 1, the two-year looking forward PE model appears to have higher precision compared to the PBV model (17.79% vs. 24.60%).

In terms of ability to explain stock prices, this paper focuses on adjusted R-squared, which accounts for different numbers of predictors. As expected in hypothesis 2C, the PE using two-year analyst forecast further improves the explanatory power of the PE model (67.22% vs. 65.25%). Overall, the combined model (PE_PBV_2) seems to have the highest adjusted R-squared at 72.55%. This implies that the PE_PBV2 outperforms those models in term of accuracy, inconsistent with Harbula (2009).

5.3 Sensitivity Analysis

This research avoids using firm-years during the financial crisis of 2008 because we expected financial service firms to be the sectors most affected by the crisis in many aspects including valuation method. Thus, we examine the impact of the financial crisis on valuation of commercial banks by applying observations from fiscal year 2008 comprised of only 280 companies.

Table 2: Summary Predictive Performance of Valuation Models During 2008

Panel A:		Signed Error	
Bias	Obs.	Mean	Median
PE	191	0.0498	-0.1060
PE_spi	183	0.1072	-0.4012
PE_diluted	188	0.0506	-0.1059
PE_fwd1	185	0.4666	-0.5776
PE_fwd2	199	0.4325	-0.4970
PBV	271	0.0094	-0.2591
PTBV	248	0.0062	-0.3588
PE_PBV1	188	-0.1164	-0.2686
PE_PBV2	176	0.1052	-0.4579

Panel B:		Absolute Error	
Accuracy	Obs.	Mean	Median
PE	191	0.4942	0.3659
PE_spi	183	0.9111	0.4501
PE_diluted	188	0.4898	0.3497
PE_fwd1	185	1.5390	0.5912
PE_fwd2	199	1.3356	0.5145
PBV	271	0.6032	0.4827
PTBV	248	0.6562	0.5229
PE_PBV1	188	0.3922	0.3477
PE_PBV2	176	0.9262	0.4710

Panel C:		Central Tendency		
Test Statistics	OLS	t-stat	R ²	Central Tendency
PE	0.7124	7.86	0.4868	25.65%
PE_spi	0.1301	1.22	0.0243	13.66%
PE_diluted	0.6871	9.42	0.5299	25.53%
PE_fwd1	0.0041	0.29	-0.0052	5.41%
PE_fwd2	0.0153	0.62	-0.0026	7.54%
PBV	1.6002	10.17	0.3589	13.65%
PTBV	1.5048	9.26	0.3732	12.50%
PE_PBV1	1.1265	9.33	0.5794	17.02%
PE_PBV2	0.0482	0.75	0.0013	10.23%

According to **table 2**, during the crisis, the models associated with prospective PE had no statistical significance ($t\text{-stat} < 1.96$). The models PE_PBV1 outperform other multiples-based models, but do not explicitly differ from PE_diluted models in terms of accuracy. The PE_diluted perform relatively well with median absolute prediction errors of 34.97%.

However, earnings-related multiples have a much smaller set of observations. Many firms suffered loss during the financial crisis, and the PE becomes meaningless when earnings are negative. Concerning the PBV multiples, the result shows considerably high estimator coefficient and negative bias. The reason seems to be a huge decline in book value of banks during the crisis (Calomiris and Nissim, 2014). Another remarkable issue is that only a small fraction of estimated value during the crisis, relative to the post-crisis period, bands within 15% central tendency for all models.

6. Findings

6.1 Result

This study is consistent with prior research in various aspects but has many differences. Firstly, removing special items from earnings numbers does not enhance predictability or the explanatory power of the PE model for pricing commercial banks. This finding contrasts with Nissim's (2010) finding that core earnings (earnings excluding non-recurring items) are more relevant to firm values for insurance company. Nonetheless, the conclusion cannot dismiss that persistent earnings are more correlated with firm values for general industry (Bhattacharya et al., 2003; Entwistle et al. 2010).

6.2 Discussion

It can be implied that investors might not expect bank earnings to be persistent. Moreover, the dilutive effect of potential convertible securities appears to slightly increase the predictability of the PE model. This is probably because sophisticated investors anticipate that the dilutive effect will decrease future earnings attributable to equity holders if those securities are exercised. Secondly, we found that using consensus analyst forecasted attributes can further improve the accuracy and explanatory power of valuation models, in accordance with Liu et al. (2002).

6.3 Recommendation

This study follows the conviction of prior research that combining PE multiples with PBV

multiples will yield higher accuracy in most cases (Chen and McNamara, 2000; Liu et al., 2007). The findings are consistent with those researches, but we find that incorporating PBV as a second relevant multiple following Harbula (2009) does not yield a significant difference from the two-year forward-looking PE model, in term of accuracy. Finally, my results suggest that the model combining prospective PE using two-year ahead analyst consensus and trailing PBV constitutes minimal pricing errors for the banking sector.

7. Conclusion

In conclusion, the relative valuation approach can be much less complicate than flows-based models in practice, but still yield significantly high accuracy, explanatory power and central tendency. To sum up, the PE model, which is frequently used by analysts to reach their target price, appears to be the dominant model for bank valuation. Since many aspects and limitations such as peer selection and other earnings adjustments are left unjustified in current academic research on bank valuation, there is plenty of room for future research to make discoveries. We expect this paper to explore only one of the puzzles of bank valuation using multiples.

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Hot Spring in Thailand

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1. Purpose of the study

The purpose of the study is to examine the actual situation of the hot spring tourism development in Thailand. According to Takahashi (2008), the number of hot spring resort in Thailand is approximately 200 places. However, further details and actual situations of hot spring resort are unclear. The author visits Rajapruk University and continues collaborative investigation since 2011. This presentation shows the simple history of the hot spring resort development with statistics data by the prefecture, then describing the hot spring resort in order to analyze the situation of location requirements and the management. As a result, North Thailand could be a concentrated area of the hot springs.

2. The statistics of hot spring (2016)

(1) Number of the Hot spring Resort Area (Onsen) About 200

The number of hot spring in Thailand is approximately 200 places (see Figure 1 and table 1). These locations are divided by 3 areas.

Location□

1. The north
2. The central
3. The south (peninsula)

(2) Characteristic of the hot spring

The character of the hot springs in north Thailand shows as follows.

1. Naturally
2. Geyser
3. High temperature
4. Mass hot spring gush

(3) Intensive area

The main investigation area is as follows.

1. Chiang Mai
2. Chiang Rai
3. Mae Hong Son
4. Lanphang (The north)

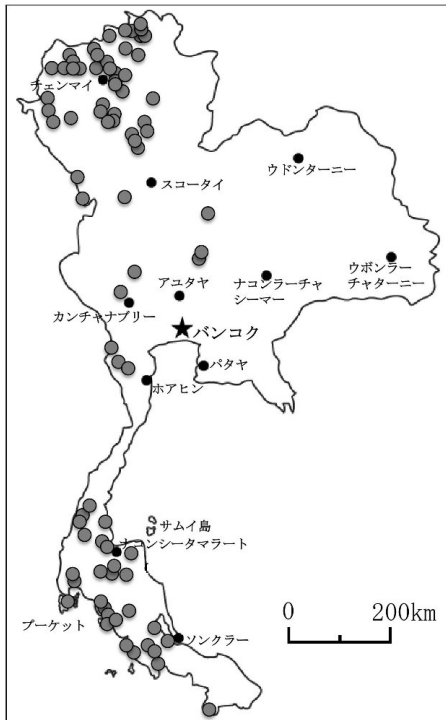


Figure 1 Location of the hot spring resort

地域	県名	Province	Onsen
北部 The north	チェンライ	Chiang Rai	10
	チェンマイ	Chiang Mai	20
	マエホンソン	Mae Hong Son	13
	ランブーン	Lamphun	2
	ランパーン	Lampang	7
	パヤオ	Phayao	1
	プレー	Phrae	4
	ナーン	Nan	1
	小計	Subtotal	58
東部 The east	チョンบุรี	Chonburi	1
	ฉะเชิงเทรา	Chanthaburi	8
	小計	Subtotal	9
中部 The central	สุโขทัย	Sukhotha	2
	กำแพงเพชร	Kamphaeng Phet	3
	เพชรบูรณ์	Phetchabun	4
	ลพบุรี	Lop buri	1
	สุพรรณบุรี	Suphan buri	1
	อุทัยธานี	Uthai thani	1
	小計	Subtotal	12
西部 The west	ตาก	Tak	5
	กาญจนบุรี	Kanchanaburi	6
	ราชบุรี	Ratchaburi	2
	เพชรบูรณ์	Phetchaburi	1
	小計	Subtotal	14
南部 The south	สุราษฎร์ธานี	Surat Thani	9
	นครศรีธรรมราช	Nakhon si thammarat	1
	พังงา	Phang Nga	3
	กระบี่	Krabi	5
	ตรัง	Trang	2
	พัทลุง	Phatthalung	4
	สตูล	Satun	1
	ยะลา	Yala	1
	小計	Subtotal	26
	合計	The total	119

Table 1 Distribution of the hot spring resort

(4) Mechanism of the hot spring (The north)

The characteristics of the hot spring gush are as follows.

1. Hot spring of the non-volcanic
2. Water on the granite with the heat became the hot spring (花崗岩)

The characteristics of Japan are as follows.

1. Volcanic hot springs are popular in Japan.
2. There are 110 volcanos in Japan.
3. There are many Large depth hot springs in the big city.

3. History of the hot spring resort

(1) “Animals bathing”

Before WWII, hot springs are mainly used by the animals in Thailand, especially for cows and deer. They eat the soil of the hot spring ingredient.

However, Thailand is not popular for the usage of hot spring □

(2) Japanese are the use, utilization

During WWII, Japanese people used a hot spring in Thailand, especially for Hin Dat (Kanchanaburi) and Phabong (Mae Hong Son).

4. Location of the hot spring resort

The hot spring resort can be divided by the location requirements as follows.

(1)Roadside

Mae Khachan (Chiang Rai), Huai Sai Khao (Chiang Rai)

(2)National Park

Pong Dueat (Chiang Mai), Fang (Chiang Mai), Chae Son (Lampang)

(3)Farm village

Pong Kwao (Chiang Mai), Pha soet (Chiang Rai), Pong Luang (Lampang)

5. Developers

Developers could be separated by public or private sectors.

(1)Public capital

National parks

(2)Private capital

Roong Aroon, Onsen, Sippa(Burilasai) (Sankamphaeng)

6. Management Style

Management style is divided same as developers.

(1)Public Management

National parks

(2)Private Management

Doi Saket(Chiang Mai), Lanna(Chiang Rai), Phu klon(Mae Hong Son)

7. Business Style

Hot spring resort can be classified by three types as follows.

(1)Eager

Sankamphaeng, Mae khachan(Chiang Rai), Phu klon(Mae Hong Son)

(2)Redevelopment

Ban pong(Chiang Rai), Pha ton(Chiang Rai), Phabong(Mae Hong Son)

(3)Dilapidation

Huai Sai Khao(Chiang Rai), Huay Mark Liam (Chiang Rai), Manlika(Chiang Mai)

8. Curious hot springs

Examples of characteristic hot springs.

(1)Hot spring in the temple

Wang Khanai (Kanchanaburi)

(2)Hot Spring water delivered from source by tank lorry

Yunomori Onsen & Spa (Bangkok)

Onsen Source: Wat Wang Khanai Hot Spring (Kanchanaburi)

Use of artificial carbonated spring (人工炭酸泉)

(3)Located in National park

Pong Dueat (Chiang Mai)

Fang (Chiang Mai)

Chae Son (Lampang)

(4)Developed by Japanese

‘Dokan Onsen’ Drainpipe Hot Spring (Chiang Mai) 土管温泉

‘Hotaru no Yu’ Firefly Hot Spring (Chiang Mai) ほたるの湯

9. Conclusion of the study

This study could be concluded as follows.

(1)Hot springs are naturally boiled□

(2)These hot springs contain sulfur□

(3)The water temperature is high.

(4)The bathtub has much personal use.

(5)Large number of foot bathing facilities can be used.

- (6) Curious hot spring facilities could be found □
 (7) Hot spring bath as private room is not popular □
 (8) Some hot spring facilities are outdated, might be problems in the future.
 (9) The entrance fee of the national park should be improved.
 At the moment, International tourists should pay higher fee than Thai people. □
 (10) In the case of a national park, the free enter for elderly people should be highly commended.
 (11) The public transport should be improved from the city to hot spring resorts.
 (12) Finally, every hot spring resorts should introduce its value on the own website! This is due to outstanding hot spring resorts can be seen in Thailand.

Figures

Sankamphaeng サンカンパエン							
温泉	Spa	Location	Development	Management	Opening year	Condition	Investigation day
Onsen	Onsen	C	A	A	2009	A	2011. 8. 26
ルンアルン	Roong Aroon	C	A	A	1987	A	2011. 8. 28
シッパ(プリラサイ)	Sippa(Burilasai)	C	A	A	2010	A	2011. 8. 28
公営	Sankamphaeng	C	B	B	1984	A	2011. 8. 28
注 1. 立地 Location A:道路沿い Roadside、B:国立公園 Nationalpark、C:農村 Farm village							
注 2. 開発 Development A:民間 Private、B:公共 Public							
注 3. 経営 Management A:民間 Private、B:公共 Public							
注 4. 経営状況 Business Condition A:Eager、B:Redevelopment、C:Dilapidation							

Chiang Mai Metropolitan Area チェンマイ周辺							
温泉	Spa	Location	Development	Management	Opening year	Condition	Investigation day
ポークアーン	Pong Kwao	C	A	A	2000	A	2012.8.23
フェイナナム	Huai Nam Dang	B	B	B	1997	A	2012.8.24
ポンドウアット	Pong Dueat	B	B	B	1997	A	2012.8.24
ドイサケット	Doi Saket	C	B	A	1998	A	2012.8.25
注 1. 立地 Location A:道路沿い Roadside、B:国立公園 Nationalpark、C:農村 Farm village							
注 2. 開発 Development A:民間 Private、B:公共 Public							
注 3. 経営 Management A:民間 Private、B:公共 Public							
注 4. 経営状況 Business Condition A:Eager、B:Redevelopment、C:Dilapidation							

Chiang Rai Prefecture チェンライ県							
温泉	Spa	Location	Development	Management	Opening year	Condition	Investigation day
メーカーチャン	Mae khachan	A	A	A	2003	A	2013.8.21
ランナー	Lanna	C	A	A	2011	A	2013.8.21
バンポン	Ban pong	C	B	B	2004	B	2013.8.21
フェイサイカオ	Huai Sai Khao	A	B	B	2003	C	2013.8.21
パーソット	Pha soet	C	B	B	2004	A	2013.8.22
ポンปราบาร์ท	Pong Phrabat	C	B	B	2003	A	2013.8.22
ปาร์ตวัน噴水公園	Pha ton	C	B	B	2003	B	2013.8.22
ฟอเอมาร์ควิยาม	Huay Mark Liam	B	B	B	2004	C	2013.8.22
注 1. 立地 Location A:道路沿い Roadside、B:国立公園 Nationalpark、C:農村 Farm village							
注 2. 開発 Development A:民間 Private、B:公共 Public							
注 3. 経営 Management A:民間 Private、B:公共 Public							
注 4. 経営状況 Business Condition A:Eager、B:Redevelopment、C:Dilapidation							

Mae hong son Prefecture เม่โฮงซอน県							
温泉	Spa	Location	Development	Management	Opening year	Condition	Investigation day
ターバイ	Thapa	B	B	B	1993	A	2014.8.21
ブークロン	Phu klon	C	A	A	1995	A	2014.8.21
パーボン	Phabong	C	B	B	1992	B	2014.8.22
ノンヘン	Nong Haeg	C	B	B	2012	A	2014.8.22
注 1. 立地 Location A:道路沿い Roadside、B:国立公園 Nationalpark、C:農村 Farm village							
注 2. 開発 Development A:民間 Private、B:公共 Public							
注 3. 経営 Management A:民間 Private、B:公共 Public							
注 4. 経営状況 Business Condition A:Eager、B:Redevelopment、C:Dilapidation							

Lampang Prefecture ランパーン県							
温泉	Spa	Location	Development	Management	Opening year	Condition	Investigation day
ボンローン	Pong Luang	C	B	A	1993	A	2015.8.19
ジェーション	Chae Son	B	B	B	1987	A	2015.8.19
注1. 立地Location A:道路沿いRoadside、B:国立公園Nationalpark、C:農村Farm village							
注2. 開発Development A:民間Private、B:公共Public							
注3. 経営Management A:民間Private、B:公共Public							
注4. 経営状況Business Condition A:Eager、B:Redevelopment、C:Dilapidation							

Chiang Mai Prefecture チェンマイ県							
温泉	Spa	Location	Development	Management	Opening year	Condition	Investigation day
土管	Drainpipe	C	A	A	2004	A	2013.3.24
ほたるのゆ	Firefly	C	A	A	2009	A	2013.3.24
ノンクロック	Nong khrok	C	B	A	2003	C	2015.8.20
ポンプアバーン	Pong ban baan	C	B	A	2011	C	2015.8.21
ボンアーン	Pong Arng	B	B	B	2000	A	2013.3.24
ファン	Fan g	B	B	B	2008	A	2013.8.23
マンリカ	Manlika	C	B	A	2013	C	2013.8.23
注1. 立地Location A:道路沿いRoadside、B:国立公園Nationalpark、C:農村Farm village							
注2. 開発Development A:民間Private、B:公共Public							
注3. 経営Management A:民間Private、B:公共Public							
注4. 経営状況Business Condition A:Eager、B:Redevelopment、C:Dilapidation							

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The Study of Factors Affecting Behavior on Reduce Global Warming of Undergraduate Students at North Bangkok University

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Abstract

The objectives of this research were to examine knowledge, awareness, and behavior on reducing global warming and to determine causal factors affecting the behavior of undergraduate students. The research was a survey research. The sample were 375 undergraduate students across 6 faculties at North Bangkok University. The instruments used in this research were knowledge, awareness, and behavior on reducing global warming questionnaires. Self-administered questionnaires were completed by the sample and data were analyzed using descriptive statistics, Pearson's correlation coefficient, and multiple regressions. The results showed that most of the students were male, first-year students, and studying Business Administration. The results of general knowledge of global warming tests indicated that the sample had very high scores in the test. Most samples know that global average temperature rising will affect increase and violence of the weather-related natural disasters. Moreover, they know that tree can absorb carbon dioxide. An average score of awareness of global warming effects was high. Most samples realized that global warming primarily caused by a human. An average behavior on reducing global warming of the sample was very high, particularly on reducing energy consumption behaviors. The highest average score was to turn off electric devices after class. The results of this research indicated that there was a statistically significant correlation between knowledge, awareness, and behavior on reducing global warming at a significant level of 0.05. The two factors, general knowledge of global warming (x_1) and awareness of global warming effects (x_2) affect the behavior on reducing global warming (y). A predictive equation for behavior on reducing global warming can be written as $\hat{y} = 1.375 + 0.144x_1 + 0.688x_2$.

Keywords: awareness, behavior, global warming, knowledge

1. Introduction

Research concerning climate change from the past to the 20th century revealed that the global average temperature has slightly increased since 1943 and then it has rapidly raised since the late 20th century because of the growth of the global economy, industry, and technology invented by a human. These developments have been the primary cause of greenhouse gas emissions in the atmosphere.

Carbon dioxide (CO₂) has been emitted by burning fossil fuels, burning firewood, and burning forest for agriculture. Methane (CH₄) has been emitted by fossil fuels distillation and distribution process, decomposition of dead plants, planting rice in the water, and animal farming. Nitrous oxide

(N₂O) has been emitted by burning waste, burning coal, and fertilizer manufacturing and utilizing the process. Chlorofluorocarbon (CFCs) has been emitted by freezers, air conditioners, foams, and aerosol spray products. Perfluoromethane (CF₄) has been emitted by the aluminum manufacturing process, particulate matter from power plants and transportation. The above-mentioned gases have been the primary cause of greenhouse effect, the process of the Earth's atmosphere traps solar radiation caused by the presence of greenhouse gases. Particularly, carbon dioxide has been tremendously emitted and remained in the atmosphere resulting in global warming, and then finally lead to extreme weather and climate change.

Climate change has obviously occurred all over the globe. In 2003 European heat wave, there were 71,310 heat-related deaths. The Russian heat wave killed 55,736 people in 2010. In May 2015, Indian heat wave has caused the deaths of at least 2,500 people. Including people living on the islands located in the Pacific Ocean near the equator needed to evacuate because of the disasters caused by climate change[1].

In Thailand, there wouldn't be drastically affected by climate change as the country located in the high latitude region of the Earth, however, a natural disaster has more frequently occurred than in the past and it has drastically increased its intensity each time. Moreover, Thailand has inevitably taken more risks of the drastically intensive tropical storm caused by global warming. Tropical storms and typhoons have been more potentially and directly veered into the gulf of Thailand. At present, the Thai government has practically regulated and actualized the climate change related acts as follows[2]:

1. The Office of Natural Resources and Environmental Policy and Planning (ONEP), Ministry of Natural Resources and Environment regulated the Climate Change Resilience Master Plan (2013-2050).

2. The government regulated the paradigms and directions for the integration of country development, low-carbon society preparation, and sustainable food and energy in the 11th National Economic and Social Development Plan (2012 - 2016).

3. Thailand Greenhouse Gas Management Organization (Public Organization) or TGO was established in 2007 to analyze, scrutinize and comment on issuing the certificate of carbon dioxide emission reduction project in accordance with the Clean Development Mechanism (CDM). At present, more than 282 CDM projects have been approved so far. The TGO also regulated the Domestic Voluntary Carbon Market Plan that aims to support carbon dioxide emission reduction process and the carbon market networks in many countries.

4. Ministry of Natural Resources and Environment regulated the 20-Year Energy Efficiency Development Plan: EEDP (2011-2030) that aim to reduce the intensity of energy consumption by 25% and the 10-Year Alternative Energy Development Plan: AEDP (2012-2021) that aim to utilize renewable and alternative energy by 25% in 2021.

Educational institutions have been an important part of the country development that needs to be planned and managed in accordance with the

government's environmental reservation policies. In the university, students have been the most people who have an impact on the environment including electricity and water consumption and waste disposal. The resource consumption has been a direct and indirect cause of global warming. Therefore, it is important and undeniable that the university has to participate in and solve the problem caused by global warming seriously.

According to the above mentioned key points, it's crucial that factors affecting behavior on reducing global warming of undergraduate students at North Bangkok University should be studied. The results of this research will be useful for organizations to take the right action, to develop media or program, and create an appropriate campaign that helps change people's behavior on reducing global warming positively.

2. Research Methodology

This research was a survey research. The target population in this study was 5,312 undergraduate students at North Bangkok University in 2016. The sample size was calculated based on Yamane (1973) with 95% confidence coefficient and with 5% margin of error. The 375 samples were selected by quota sampling method. The data were collected by questionnaires. The questionnaires consisted of 4 parts: (1) general data of the sample, (2) general knowledge of global warming tests consisted of 10 items (1 point for correct answer and 0 point for wrong answer), (3) awareness of global warming effects tests consisted of 10 items measured by five-point rating scales from 1 (very low awareness) to 5 (very high awareness), and (4) behavior on reducing global warming tests consisted of 15 items measured by five-point rating scales from 1 (never) to 5 (always). The content validity of the questionnaires was analyzed by three experts. The items obtained the IOC above 0.5 were acceptable and were selected to test with 30 undergraduate students. The difficulty index of the item in the general knowledge of global warming tests ranged from 0.21 to 0.81. The internal consistency reliability of awareness of global warming effects tests were 0.83 and behavior on reducing global warming tests were 0.75.

3. Statistical Analysis

The general data presentation of the sample and variables were analyzed using descriptive statistics (frequencies and percentages). The correlation among knowledge, awareness, and behavior on reducing global warming factors was analyzed by Pearson's correlation coefficient. Statistical hypothesis testing of behavior on reducing global warming predicted by knowledge and awareness factors were analyzed by multiple regression analysis at a significance level of 0.05. The data collected in this research were analyzed using statistical package software.

4. Results

In this research, the self-administered questionnaires were distributed and completed by 375 undergraduate students. The results of general data of the sample showed that most of the students were male (58.7%), first-year students (32.4%), and studying Business Administration (51.7%) (TABLE 1).

Table 1 General Data of the sample

Items	Percentage (%)
Gender	
Female	41.3
Male	58.7
Faculties	
Business Administration	51.7
Information Technology	17.1
Liberal Arts	20.5
Communication Arts	4.3
Political Science	5.1
Education	1.3
College Years	
First-year	32.4
Second-year	21.9
Third-year	23.4
Fourth-year	22.3

4.1 General knowledge of global warming

The results of general knowledge of global warming tests in this research indicated that the sample had very high scores in the test (83.48%). Consider each item in the test (TABLE 2), most samples know that global average temperature

rising will affect increase and violence of the weather-related natural disasters (drought, wildfires, tropical storms, typhoons, floods, soil erosion, etc.). Moreover, they already know that tree can absorb carbon dioxide (98.4%). Global warming caused by increasing of greenhouse gasses in the atmosphere and forest encroachment. Waste management such as reduce, reuse, and recycle were the best practices of global warming reduction (96.8%).

Table 2 General Knowledge of Global Warming

Items	Percentage of correct answers (%)
1. Global warming has been caused by increasing of greenhouse gasses in the atmosphere.	96.8
2. Today, carbon dioxide (CO ₂) is the only greenhouse gas that causes global warming.	34.9
3. Thailand has been a party to the Kyoto Protocol, a legally binding agreement under which industrialized countries will reduce their collective emissions of greenhouse gasses.	87.3
4. The burning of fossil fuels has been the major cause of global warming.	95.2
5. Forest encroachment and degradation has been another major cause of global warming.	96.8
6. The global average temperatures rise lead to pathogen thrive, dengue fever and allergies increase.	88.9
7. The global average temperatures rise will affect increase and violence of the weather-related natural disasters (drought, wildfires, tropical storms, typhoons, floods, soil erosion, etc.).	98.4
8. Waste management such as reduce, reuse, and recycle are the best practices of global warming reduction.	96.8
9. The tree can absorb and reduce carbon dioxide (CO ₂) in the atmosphere.	98.4
10. Global warming has been the major problem of the developed countries only such as the USA, Japan, and German.	41.3

4.2 Awareness of global warming effects

The average results of awareness of global warming effects ranged from 3.6 to 4.7 on the positive items and ranged from 2.4 to 2.5 on the negative items (TABLE 3). Considering each item, most samples realized that global warming primarily caused by human (4.7), an animal population will be lowered or some species might become extinct if a human doesn't help stop global warming (4.6), and waste disposal leads to negative environmental impacts (4.4) respectively.

Table 3 Awareness of Global Warming Effects

Items	Percentage of Awareness (%)					Mean±SD
	Very High	High	Medium	Low	Very Low	
1. At present, global warming primarily caused by a human.	66.7	33.3	0	0	0	4.7±0.5
2. Food waste affects global warming.	17.5	39.7	33.3	6.3	3.2	3.6±1.0
3. Waste disposal has a negative impact on environment.	50.8	39.7	9.5	0	0	4.4±0.7
4. It's not important that people should have knowledge of global warming. ⁻¹	20.6	12.7	9.5	6.3	50.8	2.5±1.7
5. An animal population will be lowered or some species might become extinct if human don't help stop global warming	68.3	25.4	4.8	1.6	0	4.6±0.7
6. Climate change lead to exacerbation of contagion such as mosquitos.	38.1	27.0	27.0	6.3	1.6	3.9±1.1
7. Pollution caused by human effects global warming and the floods in Thailand.	33.3	41.3	20.6	3.2	1.6	4.0±0.9
8. Waste management is a waste of time because at the end it will be dumped all together in the same place anyway. ⁻¹	9.5	23.8	12.7	12.7	41.3	2.5±1.5
9. Global warming solutions are the government responsibilities. ⁻¹	14.3	14.3	12.7	12.7	46.0	2.4±1.5
10. We should use electricity more wisely to reduce global warming.	60.3	23.8	9.5	3.2	3.2	4.3±1.0

Note: Awareness Levels: 1 = Very low awareness, 5 = Very high awareness

⁻¹the score of negative items will be inverted before the awareness levels of global warming effects were calculated.

4.3 Behavior on reducing global warming

An average behavior on reducing global warming of the sample was 4.4 (TABLE 4). Consider each item in the results, the highest average scores were on reducing energy consumption behaviors such as turning off electric devices (lights, air conditioners, fans etc.) after class (4.8). On reducing waste behaviors, the highest average score was to use both sides of sheets of paper and reuse it for study

next semester (4.5). On reducing global warming campaign behaviors, the highest average score was to persuade more people to help preserve the environment (4.5).

Table 4 Behavior on Reducing Global Warming

Items	Percentage of Behavior (%)					Mean±SD
	Always	Often	Sometimes	Rarely	Never	
Reducing Energy Consumption						
1. Travel by walking or bike cycling instead of using other fuel-based vehicles in the campus.	49.2	39.7	9.5	1.6	0	4.4±0.7
2. Always turn off electric devices (lights, air conditioners, fans, etc.) after class.	81.0	15.9	1.6	1.6	0	4.8±0.6
3. Use communication devices in the class as much as necessary or turn it off.	25.4	42.9	23.8	6.3	1.6	3.8±0.9
4. Use stairs instead of elevators when going up or down 2-3 floors in the building.	58.7	34.9	6.3	0	0	4.5±0.6
5. Turn the faucet off immediately or don't leave it on when it's not needed.	82.5	11.1	4.8	1.6	0	4.7±0.6
Reducing Waste						
1. Segregate waste by types (bottles, papers, plastic bags, etc.) before disposing.	57.1	30.2	11.1	1.6	0	4.4±0.8
2. Use both sides of sheets of paper and reuse it for study next semester.	66.7	20.6	9.5	1.6	1.6	4.5±0.9
3. Avoid using non-environmentally friendly packaging (foam, plastic, etc.) or aerosol spray products.	50.8	36.5	6.3	6.3	0	4.3±0.9
4. Use reusable shopping bags instead of disposable plastic bags.	47.6	25.4	20.6	6.3	0	4.1±1.0
5. Use toilet paper as much as necessary.	50.8	34.9	12.7	0	1.6	4.3±0.8
Reducing Global Warming Campaigns						
1. Persuade more people to help preserve the environment.	61.9	30.2	4.8	1.6	1.6	4.5±0.8
2. Cooperate with the reducing global warming campaigns in the campus such as consume food as much as necessary and waste less food.	50.8	36.5	7.9	3.2	1.6	4.3±0.9
3. Always active and never stop learning about reducing global warming.	58.7	27.0	12.7	0	1.6	4.4±0.8
4. Plant trees around the house or in the residents.	57.1	33.3	6.3	0	3.2	4.4±0.9
5. Attend reducing global warming campaigns (reforestation, recycle paper, travel by bicycle etc.) arranged by the university or the government.	61.9	23.8	11.1	3.2	0	4.4±0.8
					Average	4.4±0.8

4.4 Correlation among knowledge, awareness, and behavior on reducing global warming factors.

The results of this research indicated that there were a relationship between general knowledge of global warming and awareness of global warming effects ($r=0.233$), a relationship between general knowledge of global warming and behavior on reducing global warming ($r=0.160$), and a relationship between awareness of global warming effects and behavior on reducing global warming ($r=0.583$) at a significant level of 0.05 (TABLE 5).

Table 5 Correlation Coefficient between Factors

Factors	x_1	x_2	\hat{y}
x_1	1		
x_2	0.233*	1	
\hat{y}	0.160*	0.583*	1

Note: x_1 = General knowledge of global warming.
 x_2 = Awareness of global warming effects.
 \hat{y} = Behavior on reducing global warming.
*reject hypothesis at a significance level of 0.05.

4.5 Predictive equation for behavior on reducing global warming.

In this study, it was found that the two factors, general knowledge of global warming (x_1) and awareness of global warming effects (x_2) together statistically significantly predicted the behavior on reducing global warming (\hat{y}) ($P=0.05$) (TABLE 6). These results proved the research hypothesis that general knowledge of global warming and awareness of global warming effects together predicted the behavior on reducing global warming (TABLE 7). A predictive equation for behavior on reducing global warming can be written as:

$$\hat{y} = 1.375 + 0.144x_1 + 0.688x_2 \quad (1)$$

Table 6 Multiple Regression Analysis of Behavior Prediction

Model	ANOVA				
	Sum of Squares	df	Mean Square	F	Sig.
Regression	33.111	2	16.555	96.049	.000*
Residual	64.120	372	.172		
Total	97.231	374			

Note: *reject hypothesis at a significance level of 0.05

Table 7 Multiple Regression Analysis Model

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constants	1.375	.261		5.267	.000*
x_1	.144	.241	.026	1.596	.032*
x_2	.688	.052	.577	13.329	.000*

Note: x_1 = General knowledge of global warming.
 x_2 = Awareness of global warming effects.
*reject hypothesis at a significance level of 0.05.

5. Discussions and Conclusions

In the study of factors affecting behavior on reducing global warming of undergraduate students at North Bangkok University, it was found that most of the samples were male, first-year students, and studying Business Administration. The sample had very high scores in general knowledge of global warming tests because most of them periodically have studied, practiced and experienced about global warming. Moreover, there were a lot of news and information on the media for everyone to study. The results of awareness of global warming effects indicated that the sample had high awareness levels. Most samples realized that global warming primarily caused by a human. Considering the behavior on reducing global warming revealed that that sample had very high scores in the behavior, particularly reducing energy consumption. The highest score of the positive behavior on reducing global warming was to turn off electric devices after class.

The results of this study indicated that there was correlation among general knowledge of global warming, awareness of global warming effects and behavior on reducing global warming factors at a significance level of 0.05 which was consistent with Naiyapatana's research findings [3] revealed that there were correlation among knowledge, awareness, and behavior on reducing global warming of nurse students because the more they study about global warming, the more understandable and motivated they get. These causes lead to their reducing global warming practices.

The results of predictive factors of undergraduate students' behavior on reducing global warming study indicated that general knowledge of global warming and awareness of global warming

effectstogetherstatistically significantly predicted the behavior on reducing global warming ($P=0.05$) which was consistent withBreckler'sresearch findings [4] revealed thatifpeople get information from news in the media, it makes them realize and understand problems resulting in reactions and behaviorschange. In other words, thestudent should understand about global warming before they can realizeits effects and then result in their behavior on reducing global warming change.Finally, according to thisresearch,a predictive equation for behavior on reducing global warming can be written as

$$\hat{y} = 1.375 + 0.144x_1 + 0.688x_2$$

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Possibility of bringing lohas to private universities in Thailand

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Abstract

Changes in the environment affect the behavior of consumers today. The concept of environmental protection is becoming more popular in many organizations and is adapted to the context of their organization. Lohas were brought up in terms of a concept that attaches importance to sustainable eco-friendly. Socially responsible Including health consciousness. Many organizations have adopted lohas as well, which universities can also apply. Private universities are having problems operating because of the high cost of operating lohas. By creating participation from all sectors of the university and stakeholders to help drive such a high quality approach.

Keywords : Lohas ,Private University

1. Introduction

From the scientific and thermal environment that occurs in many countries. It's important to get people interested. One of the hottest trends is living in "LOHAS" style.

Lohas is an acronym for "Lifestyles of Health and Sustainability". It describes not a product or a brand, but a lifestyle, a way of life. It is all about responsible and sustainable consumption, in specific and broad terms.

The Lohas concept is a trendsetting lifestyle in the Green Lifestyle, covering all aspects. At the individual Community level and global overview It is a concept that attaches importance to being environmentally sustainable ,Social responsibility Including health care.

Lohas describes a type of consumer that actively seeks out healthier and more sustainable lifestyle, product and service options and also the market for the products and services they buy.

Lohas consumers' lifestyle and purchasing decisions are informed by their values regarding personal, family and community health, environmental sustainability and social justice.

These values and attitudes are driving the markets for products as diverse as renewable energy, solar hot water, organic foods, recycled and sustainable home wares, domestic rainwater tanks, sustainable timbers, natural cleaning products, alternative medicine, yoga and eco-tourism.

Lohas was born in 2000 in areas of Asia-Pacific where lohas has become a very popular trend. Japan is well-known for its consumer products as well as environmentally friendly technologies. It responds to the needs of lohas consumers who are enthusiastic about environmental issues and health consciousness, resulting in industry and business excitement.

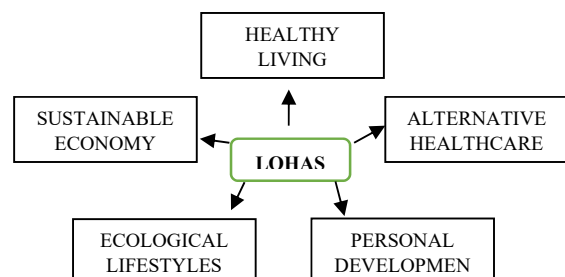


Figure 1 adapted from (Derryberry, 2005)

Five main market categories define the LOHAS set

HEALTHY LIVING:

This is the most common entry point to the LOHAS market. It encompasses organic foods, natural products, nutritional supplements, and a wide variety of health and fitness pursuits.

ALTERNATIVE HEALTHCARE:

LOHAS consumers actively seek out information and services related to integrative healthcare and holistic disease prevention, including practices such as acupuncture, chiropractic and homeopathy.

PERSONAL DEVELOPMENT:

Perceiving the connection between physical and mental health, LOHAS types take a strong interest in personal development and growth, including investigations of mind-body-emotion-spirit connections, self-help, leadership and life-balance topics. They are likely to take yoga, meditation and tai chi classes, as well as purchase books, videos and CDs on related subjects. They like to seek out new experiences and learning.

ECOLOGICAL LIFESTYLES:

Because they see their own health and the planet's health as inherently tied, LOHAS consumers tend to embrace recycling, green building, ecotourism and all sorts of eco-friendly home and office products. They are better informed than average about ecological topics.

SUSTAINABLE ECONOMY:

From renewable energy sources and socially responsible investing to fair-trade principles and "triple bottom line" accounting (which considers social and environmental performance, as well as fiscal profits), LOHAS consumers like to promote fair, ethical and sustainable business practices. They prefer doing business with companies that promote a holistic worldview and that share their values.

So lohas have come about because of their awareness of the changing environment, and consumers are increasingly turning their attention to environmental issues.

However, from research by Mobium Group's team of researchers, led by Nick Bez and Andy Baker. The result is that 90% of consumers said they were concerned about the environment, but

only 10% responded to the behavior and patterns of purchases that seriously reflect these concerns. (LOHAS, 2015)

Demonstrates that although the consumer is aware of the importance of lohas, in practice, the pathway is obvious. Therefore, every organization must promote lohas in all sectors to achieve real awareness.

2. Lohas in Thailand

Looking at thailand, we began to have many businesses start to adapt to respond to customers in the Lohas market. "SCG HEIM" home improvement that gives consumers fresh air at home. (Katanasarn, 2016)

Coca-Cola Business Group in Thailand "Nectar Thought for the World" with the new look and concept of drinking water through the latest campaign "Nectar, Soft Bottle ..." Eco-crochet "through innovative production environmentally friendly. This can reduce the use of plastic raw materials by up to 35% compared to conventional packaging. As a result, the bottle is light. And easy to twist when drinking. To reduce waste collection area, recycle. It can also reduce raw materials and resources. Both fuel and electricity are available in the production process.

The Coca-Cola Company's commitment to creating great things. LIVE POSITIVELY pays attention to the seven key components of sustainability : the quality / value of a drink, health, brightness, water, packaging, condition. Weather, community and workplace. (Hill, 2014)

But Coca-Cola's presentation of the World Water Bottle was not clear, so consumers knew that buying water and drinking it would have twisted the bottle, but did not know why.

While Japan has a clear bottle of "ILOHAS" that looks like a "nectar" of Thailand. The hidden stuff in the I Lohas Bottle is thought to be right, whether it is to reduce the plastic to 40%, but still the quality of the bottle to remain in shape. And when twisting the bottle, leaving the plastic weight to only 12 g. Thai people may feel that soft and light bottles cause problems for drinkers. Japanese people drink water from bottles or cans. It will twist the bottle and squeeze the can to be smaller before leaving. It's to reduce the area in trash bags and trash. The result is Municipal vehicles will be more garbage in a single run and reduce oil consumption. But in Sweden there is the highest recycling in the world,

just as there have been protests from distributors of canned baby bottles. Thais are not familiar with garbage separation. (Coffee, 2013)

Especially Thailand Believe that environmental protection is urgent and look. That the group wants to be responsible for the environment. Macro level is essentially a business organization. And see that the person needs to take care of their own community first. So the maintenance pattern. Keeping each person's environment It is easy to close such as planting trees. It is easier to understand than complex resource management.

In Thailand, the interest in lohas is not clear, even in businesses or organizations that are made to follow the world, but are not able to communicate to all consumers. So most consumers do not see the importance of living lohas.

3. Lohas in University

Applying lohas to universities is not as popular anymore because it is a trend that is not popular compared to being a green university.

At the same time, "LOHAS", a viewpoint of value, began to affect the modern way of life. Therefore to interpret the relationships between the two concepts: "LOHAS" and college students' leisure education and to probe in the practice path of the leisure education based on the new perspective, which can play indispensable roles on constructing the mode of college students' leisure education. (Yi-chen, 2013)

Especially Australian universities that have taken this seriously. Many Australian universities have developed sustainable environments. And create new ideas to deploy on campus.

With many Australian universities Updates have been made to regulate the use of related resources and affect the environment and education. Some of the top universities have been declared "Green University".

With a variety of courses and the conditions of various universities. There is a common set of changes that need to be made:

1. Create a curriculum for students to study ecology, the environment, sustainability, and things related to 'Green'.
2. There are rules governing research and curriculum.
3. Try to reduce as much carbon as possible.
4. Reduce energy consumption and water use. And enhance the balance of the ecosystem.

5. A carbonless university within 20 years.
6. Design and build buildings and utilities that receive Green Star.

All these changes and startups have started to take shape and become more reality. Because students value and follow the rules to create a green environment.

Health and learning :

What the building structure of the Earth is to have improved air quality, increased lighting and the use of environmentally friendly materials. From the study of America. It has been shown that adequate lighting and fresh air can improve students' potential by as much as 25%, which is clearly distinguishable from the students who study in old buildings.

In addition, the world-class building is also designed to reduce carbon emissions. And the use of natural resources Because it is designed with modern technology concept. Sustainable University The end result is that students use a robust and modern infrastructure. Benefit the quality of life. So it is not surprising that everyone is willing to turn their university into a green university.

Although it may seem chaotic and difficult at first. But the utilities and buildings in this world. It will help promote health. And help build a good school. America's education has resulted in a 41.5% improvement in the health of students and teachers by reducing the incidence of allergies, flu, and headaches.

Perception and education system :

In terms of perception and education systems. Universities provide courses and communication systems. To ensure that all students are aware of this change. In terms of utilities. (Water supply and electricity) and recycling

From the student's perspective The story of this green university seems to be a hassle and a hassle. However, as long as the results can be developed and clean the campus and then clean it up. They accept and act with sincerity.

University of Macau has managed to meet the lohas side. Beginning as a particular market segment focused on sustainable living and 'green' ecological inovates, LOHAS (Lifestyles of Health and Sustainability) has become synonymous with an opinion to slow down and live an eco-friendly lifestyle, and has gradually found its place in the midst of urban consumers. How do UM members

live an environmentally sustainable lifestyle and execute their mind and body on the campus?

Postgraduate student of communication Sally Li decided to become a vegetarian last year because she thinks it is heartless to kill animals for food. 'Eating meat is bad for the environment,' she says. 'Cows' flatulence produces the greenhouse gas methane, which contributes to global warming.' However the lack of support from her family in the beginning, Sally insisted on going vegetarian. 'My body sense better after I became a vegetarian. Even the skin allergies that used to bother me have reform.'

Alex Lam, head of the sports group of Choi Kai Yau College's House Association who is also a sports lover, believes it is significant to find balance in life. 'If you live a fast-paced lifestyle, it's better to slow down your body and mind with the help of exercises, and yoga is a good choice,' Lam says.

While some students diversification to a healthy diet, others practice yoga to stay in shape and reduce stress. Yoga classes are held on Wednesday evenings at Choi Kai Yau College. 'Yoga helps me relieve stress and relax my body,' says accounting student Christine Xu, 'I always feel refreshed after yoga class.' (MACAU, 2015)

Implementing lohas into a university is very popular in Australia as a good practice. While the University of Macau is keen to focus on student. Both are similar in that they take lohas into university policy. These policies will lead to practices and outcomes for students, staff, community and society.

4. Lohas in University of Thailand

The management of lohas in Thai universities has not yet become apparent. Because in Thailand lohas are not yet known and organizations do not see the importance.

While some universities are managed in a similar way to the lohas, the university is green. University of Health Promotion, etc.

At present, universities are trying to improve their environment. Whether it's banning smoking on campus, reducing tap water usage. It is very important that all students know what is going on. And what changes? (tulawan, 2013)

In the past 20 years, environmental concerns and environmental conservation It has become an important social issue for virtually every country in the world.

The author proposed. The university is able to perform as clearly as follows.

● Mahidol University

January 5, 2560. Mahidol University. Join the green university rankings of the world. Of the 516 universities in the world, Mahidol University is ranked as one of the top 100 global universities in the world. It is ranked 70th in the world and ranked 1st among 22 universities in Thailand

UI Green Metric World University Ranking 2016, conducted by the University of Indonesia, University of Indonesia (UI) on December 29, 2016, announced to Mahidol University. It is the 70th most environmentally-friendly green educational institute in the world and ranked number one in Thailand among the 516 participating universities in the world, with a total score of 5,992. The evaluation of 6 sides. (Mahidol, 2016)

1. Infrastructure planning
2. Energy Management and Climate Change
3. Waste
4. Water Management
5. Transportation
6. Education

From the "A Promised Place to Live and Learn with Nature" policy, we will study and we will live with nature.

By Mahidol University has done as follows. (MGR, 2017)

1. Infrastructure planning

This section focuses on the proportion of green areas to the number of students and staff. Including environmental budget and sustainable development.

2. Energy Management and Climate Change

This category focuses on energy management of the organization. The university is focused on activities and campaigns for students and staff to pay attention to energy saving seriously. Reduce electricity consumption. By using more renewable energy, such as using solar energy. The use of wind power to generate electricity for indoor use. Replacing bulbs in buildings to LEDs to save energy, etc.

3. Waste

With the waste sorting process and the recycling bank activity within the campus, Mahidol University scored this score well. And we have expanded this type of operation to schools in nearby communities.

4. Water management

Water Management The university has a policy to promote the reuse of water resources. By the construction of a total waste water treatment pond. To treat university waste before dropping into nature. Or reused to use such as watering trees. Car wash and bathroom sanitary ware. Modifications of equipment. To help save water.

5. Transportation

This category is a major problem for all Mahidol University and every campus. Because the Bangkok Noi and Phayathai areas have health care services. There are people outside the entrance into the hospital area. And the area with a lot of academic services from outside people. This is an inevitable limitation. In addition, personal consumption of personnel and students increased in Salaya area. Resulting in car volume And greenhouse gas emissions from cars increased. The University is also encouraging students and staff to use the University's shuttle bus service to travel between campus and campus instead of using a personal vehicle. The Salaya area has public bicycles. (White bike) varied. Service for students Personnel and contacts Trams are available for travel around the campus. To reduce the amount of fossil fuel vehicles. And release carbon dioxide on campus.

6. Education

The university has added an educational curriculum that is part of sustainable development. This is in line with the strategy of the Clinical Professor Dr. Udom Chishin, President of Mahidol University, who attaches great importance to being a leader in environmental and sustainable development in the higher education and civil society sectors.

● Thammasat University

“Asst. “Vice President for Sustainable Management and Sustainability, said,” The operation of the university is not just a green university. With environmental management only But it is a move towards being a sustainable university. The university has to produce sustainable people with a concept of sustainability. It's not just environmental policy and being a green university only

“Graduates must have the concept of sustainability in terms of perspective and work to maintain limited resources. Make use of the value. This is an important mission of today's university.

All graduate graduates who go out in every science every discipline must have awareness of sustainability as well. To apply for a living and to work to be a part of the sustainability of this world. And this is an important goal for TU to continue. “ (Prachachat, 2016)

Thammasat University has done the following.

Energy reduction Environmentally friendly And in each center of the TU requires the use of renewable energy such as solar panels from solarcell. Both on the land and on the roof.

In addition, the issue of reducing the use of resources will continue and will be more concentrated to change the values of students towards creating environmentally friendly people. It also gives all courses of sustainability into learning. Green space In particular, Tha Prachan will be an example of a university in the park.

These are the goals of the University of Sustainability. And to preserve the environment is to put the concept of sustainability into student learning. In order to create the personnel to bring these ideas to the global society. (Prachachat, 2016)

Universities in Thailand will only do green university, which is similar to lohas. But most universities that rank green universities from the rankings will be large government universities. Because of the availability of funds and more personnel than private universities.

5. Possibility of bringing lohas to private universities in Thailand.

In terms of business then. Educational administration of private universities is one type of business. Which students are customers. Therefore, organizations must provide services that respond to consumers.

Private universities should pay attention to the campus life style of students. Giving importance to lohas Because it is an important of returning students, they are customers. If you look at the overall picture, the university strategy does not do it for the students, but also for the public.

While private universities in Thailand do not really pay much attention to this issue. It may be because of many factors, such as high operational costs.

Of course it can be done! Because it allows students to better utilize the system, develop a working environment. And a clean and organized place.

The environment is the current issue of society. It is important for the university to communicate and educate students about this. Make them aware of the responsibilities while they are performing. Because lohas systems do not just develop the lives of students. It also affects the overall environment of the country and of the world.

You are helping people live a healthier or more sustainable life. (Ethos, 2017)

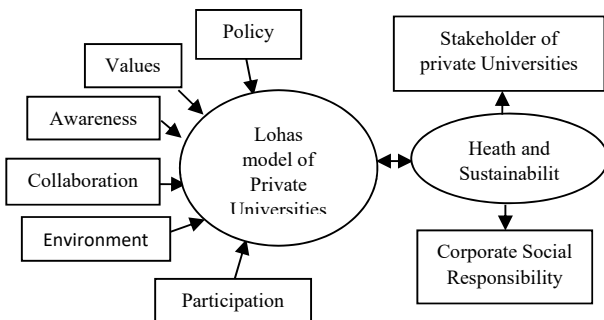


Figure 2 The conceptual framework of the lohas of private universities in Thailand. (Arpornraanee,2017)

Factors affecting the lohas of private universities in Thailand.

Policy :

University policies must be consistent with lohas.

Awareness :

Everyone involved must be aware of the importance of administering the university in accordance with lohas.

Values :

Changing people’s values about environmental consciousness.

Collaboration :

Collaboration between government agencies and private sector.

Participation :

Participation of all stakeholders, such as students, staff, parents, and the community.

Environment :

Campus environment and neighboring communities.

Of the six factors that will cause lohas of private universities in Thailand. From the lohas model, it will have a healthy and sustainable effect on

the stakeholders of private universities. And as a university, it has to be socially responsible.

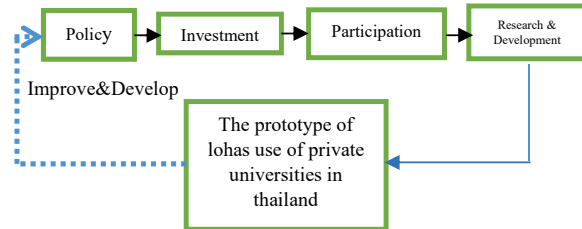


Figure 3 Lohas process of private universities in Thailand (Arpornraanee,2017)

Policy :

Universities need to set lohas policy to concrete. And it is a practice that all parties in the university must work to achieve the goals set. The important thing in shaping a concrete policy is that the university’s executives must understand in the context of lohas. By introducing lohas as part of the policy, executives must act sincerely, not because they are monitored by an outside agency or by a stream.

Investment :

Universities will need to invest more to ensure that lohas policies succeed. By investing in environmental friendliness ,Corporate Social Responsibility And health conscious. Such as wastewater treatment, use of solar cells , to reduce pollution, to grow non-toxic vegetables for consumption. In particular, the design and construction of buildings and utilities have been Green Star. And pay attention to health etc.

Participation :

Participation in the operation is not just an executive, but involves all parties involved in the university joining the lohas. Stakeholders with the university include students, university personnel, people, parents, community and society. With the participation of all stakeholders of the university into the board in all sectors of the lohas and so keep lohas operating for the sake of purpose and considered as something that everyone must do.

Linlin Suna, Dajian Zhua and Edwin H.W. Chan (2016) study in Public participation impact on environment NIMBY conflict and environmental conflict management Comparative analysis in Shanghai and Hong Kong. The results show that stakeholders, participation levels, participation and time have an impact. There is no public participation during the planning / project decision-

making stage in both cases. In Mainland China, manipulation and therapy participation, few participation approach and late participation led negative impacts on public acceptance to NIMBY facilities. Based on the findings in the case studies, involving key stakeholders, enhancing the degree of participation, purposely participation approach and timing participation in the project lifecycle process are suggested for environment NIMBY conflict and environmental conflict management. (Suna, Dajian, & Chan, 2016)

Research & Development :

Research and development is an important part of the university's approach to lohas. The university establishes research and development units to ensure successful lohas operations. For example, buildings design for the environment and energy saving for all people, be it the people, the elderly, the sick and the disabled.

The prototype of lohas use of private universities in Thailand :

The prototype of the use of lohas in private universities can be accomplished through the use of collaborative efforts by all parties, given the shared values of the university and the community.

By the following :

- Establishment of lohas committees by contributors are submitted to the university.
- Monitoring and improving performance.
- Include lohas in teaching by giving insights into the importance of lohas and in the workings of various activities.
- Campaign and raise awareness of the environment and resource use.
- Waste separation is common waste, recyclable waste, and hazardous waste.
- There is a growing green area within the campus, such as a library in the park.
- There is a place to practice after class. And enough sports equipment.
- Strengthening good relationships with the community.
- Has a policy to reduce the use of private cars. Let's share car And use the bike inside the campus.
- Energy-efficient building layout.
- There is an alternative energy campaign.
- Green building materials are used.
- The preparation of organic vegetables for the personnel.

- Cafeterias sell healthy foods such as clean foods.

- Provide vocational training for people in the community around the campus.

Private universities can take the lohas form, but administrators and stakeholders with the university must be very dedicated and aware of their importance.

This will result in a further social picture, for example, students are aware of the importance of environmental protection. Students will tell family, relatives or friends.

Improve&Develop

After applying the lohas approach to all sectors of the university, the committee must evaluate and bring improvement to the improvement. Improvements will be adjusted to university policies and the board conducts a conference planning lohas operation model to be effective.

6. Conclusion

Lohas lifestyle is becoming increasingly popular due to the adverse environment that directly affects consumers. Private universities are considered to be one of the best providers of quality and service to consumers which students. It must be considered an important policy of all universities to cooperate.

Although in fact we find that universities, especially private universities, are not able to effectively handle lohas. Due to the high cost of investment, this is an important issue that has made policy implementation difficult.

Therefore, the solution is to provide stakeholders with the university to play a role and contribute to the implementation of lohas.

This will enable the university to meet the needs of all parties as well as the social sector.

All organizations are involved in choosing healthier and more sustainable lifestyles for consumers.

So it is concluded that LOHAS lifestyle may not be a path sprinkled with rose petals. But to be sure it will take a slow time and creating sustainable production and consumption patterns.

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An Analysis of the Components of Transformational Leadership Which Affect Innovative Work Behavior

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Abstract

This study aimed to analyze the components of transformational leadership which affect innovative work behavior. A document research method was used in the study to present an analysis of relevant theories, research studies, books, and articles published in Thailand and in other countries. The findings reveal that transformational leadership plays an important role in developing innovative work behavior, which is critical to the survival of organizations nowadays. From a review of relevant literature, this study also presents the four components of transformational leadership, which consist of 1) Idealized Influence, 2) Inspirational Motivation, 3) Intellectual Stimulation, and 4) Individualized Consideration.

Keywords: innovative work behavior, transformational leadership

1. Introduction

“Innovation” is derived from the Latin word “innovare”, which means “to create something new” (National Innovation Agency, 2004). Innovation is an important and interrelated concept in economics, social studies, politics, and cultural studies. It creates structural changes in the manufacturing and service industries, as well as shaping the social structure. Innovation is an economic driver. It increases international competitiveness of the country (Yodyingyong, 2009). At present, rapid advancement in science and technology has gradually changed the global community to a knowledge-based society. In today’s economic competition, organizations and countries rely on knowledge to survive, grow, and assure their security. The current economic system does not depend on land, labor, or capital any longer. Instead, the economy is driven by knowledge and innovation. The studies of innovation initially focused on how to distinguish organizations from their competitors. Recently, a study of human behavior in connection with innovation was introduced and later defined as innovative work behavior means a person’s behaviors who has an important aim at creating new things and pushing on those new beneficial ideas

in which he is responsible for to the organization. Innovative Work Behavior can be measured by using 4 factors namely 1) Opportunity Exploration; it is the awareness of the happening things by searching for any problem situations which should be solved. 2) Idea Generation; is the idea happened by merging between new ideas and the existing former ideas for solving problems or improving working operations. 3) Championing; is when the ideas are generated, the person of the ideas would try to persuade those ideas to the others and makes them support the ideas. 4) Application; is the ideas which have previously been supported are needed to be used and generated substantially. (De Jong & Den Hartog, 2008).

In several research studies, it appears that innovative work behavior is influenced by both direct and indirect factors. It is found that transformational leadership strongly affect innovative work behavior. This concept is also supported by the studies of Mark et al., (2008), Rabia et al., (2009), Yaping et al., (2009), and Ghulam et al., (2012). The four basic components that underlie transformational leadership are Idealized Influence, Inspirational Motivation, Intellectual Stimulation, and Individualized Consideration (Bass & Avolio, 1996).

In this study, concepts, theories, and research studies related to the components of transformational leadership which affect innovative work behavior were analyzed and synthesized. It is hoped that this study is able to provide useful information for organizations to develop innovative work behavior among their employees to guarantee efficacy and success of the organizations.

Objective

To analyze the components of transformational leadership which affects innovative work behavior

Research Methodology

This study was conducted through a review of literature and document analysis. The data was presented in a form of descriptive report with an analysis of secondary data which was gathered from relevant documents and research studies, as well as from electronic database including Business Source Complete, Emerald Full Text, JSTOR, Science Direct, Scopus, Web of Science, Google Scholar and Wiley Online Library. The search terms used to retrieve data are Innovative Work Behavior and Transformation Leadership.

Results

1.1 Definition of Transformational Leadership

Several leading scholars have a common view on transformational leadership focusing on the employees' acceptance of objectives and missions of the organization to pursue and achieve their goals. Leithwood (1990) defines transformational leadership as a process of setting directions by communicating mutual missions and a positive response to a higher level of expectations in work behavior to achieve objectives through a structure and system of the organization. Transformational leaders make the followers feel that their leader has a special ability to incorporate positive power by building trust among the employees to overcome obstacles and bring pride to them. The followers associate a leader with a symbol of success and professionalism. Bass & Avolio (1994) believe that transformational leaders are able to inspire the followers and engage them in new perspectives of work to have awareness of organizational visions and missions and to increase their capacity and potential. Transformational leaders can motivate the followers to focus on greater

organizational objectives rather than their own aims. Transformational leaders inspire the followers to attempt higher than their expected level and challenge them to have high expectations and to achieve higher levels of idealized performance. Razik & Swanson (1998) define transformational leaders as those who can motivate employees to perform better than their usual levels and focus on achieving a high level of performance. Transformational leaders provide reassurance to employees to complete missions. Williams (2005) refers transformational leaders to those who make employees aware of and accept group objectives or goals and the benefits to the group. Van Woerkom & De Reuver (2009) state that transformational leaders incorporate an individual's goal with the organizational goals. In Thailand, Kecharananta (2003) suggests that a transformational leader is either a member of the organization or an outside collaborator whose main objectives are to bring in knowledge, skills, and experience to facilitate organizational changes effectively. Rakthai (2003) explains that a transformation leader is a person who sees the need to change and is in a position to work with the group to achieve the objective.

This study, therefore, concludes that transformational leadership refers to the leader's ability to motivate the employees, build trust and confidence, and influence them to attempt a higher level of performance in the best interest of the greater organization.

1.2 Components of transformational leadership

To increase the organizational efficacy and performance, transformational leaders require different dimensions of leadership to pose some changes to followers and the organization. Transformational leaders influence the employees' creativity directly by increasing their intrinsic motivation and indirectly by providing a supportive work environment to nurture the employees' experiments and initiatives without any fear of being punished if the results does not meet the expectations (Amabile et al., 1998). The concept of transformational leadership was a new paradigm of leadership models (Bass, 1997) which was further developed by Burns (1978) and Bass (1985). Transformational leadership establishes a paradigm shift from the traditional concept towards leadership because it entails power distribution, motivation and morale to encourage leadership among the followers through a variety of mechanisms. Transformational leadership is crucial to successful organizations in today's rapidly changing world (Mosley et al., 1996). Bass

& Avolio (1996) investigate and compare different leadership styles and leadership effectiveness in making the followers attempt higher levels of performance than their expectations and gain improved skills, as well as an ability to make the followers aware of the organizational missions and vision and to focus on the organizational aims more than their own ones. Bass & Avolio (1996) propose the four components of transformational leadership as follows.

1.) Idealized Influence

Idealized Influence involves transformational leaders who display intelligence, commitment, and determination to perform the work with a set of beliefs and values. They have idealized traits. They are admired by the employees. They are able to build trust and confidence in the team making the employees feel proud of working together. The employees see the leader as a role model. Leaders with the idealized influence component are those with a clear vision and who can translate the vision to the followers. They need to have great control of themselves in time of crisis. They need to maintain high moral standards and do not abuse leadership power for their personal gains. They are committed to achieve organizational objectives.

2.) Inspirational Motivation

Inspirational Motivation refers to the leader's ability to inspire the employees to have intrinsic motivation by communicating clear objectives and challenges to the followers. Leaders with inspirational motivation are able to stimulate the team with enthusiasm, optimism, and positivity. The leader's motivation inspires the employees to have commitment to perform to their best ability and to have confidence and determination in achieving the objectives.

3.) Intellectual Stimulation

Intellectual Stimulation is the leader's ability to encourage the team to think about problems and draw in different perspectives to identify solutions by using creativity and initiations, raising questions, making assumptions, and challenging the usual frame of thinking. Leaders with intellectual motivation support the followers by cleverly involving them in the problem solving process and encouraging them to think freely.

4.) Individualized Consideration

Individualized Consideration is an ability to pay attention and be concerned of the follower's needs and desires, as well as encouraging them to take up professional development programs. The leaders with the individualized consideration component act as a coach or a mentor giving advice and suggestions to the subordinates and

giving an equal support to all members in the team. Transformational leaders provides opportunities for each team member to take more responsibilities and help them to fulfill their potential talents in the organization.

Additionally, Aldag and Kuzuhara (2002) suggest that, apart from having the four above components of leadership, transformational leaders also require the following five unique skills.

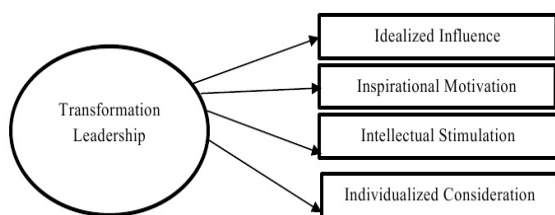
1. Anticipatory Skills, which involve the ability to systematically see and understand the pattern and the change of the environmental forces
2. Visioning Skills, which involve a process of motivating people or the team to perform the leader's or organizational objectives
3. Value – Congruent Skills, which involve the ability to value the needs of the employees and integrate their values into the organizational objectives
4. Empowering Skills, which involve the ability to delegate power and responsibilities to the employees to have ownership of the work and feel empowered with the successful outcomes
5. Self – understanding Skills, which involve the ability to recognize one's own strength and weaknesses and having a good understanding of the subordinates

A review of relevant literature and research studies in the field of transformational leadership show that similar components of transformational leadership have been proposed. In short, it is agreed that transformational leadership entails the ability to inspire employees to trust and believe in the leader. A transformational leader influences the employees to take up changes, work harder to achieve goals, develop their capacities, and contribute to the success of the organization. This study found that the following four basic components of transformational leadership have been extensively discussed by all leading scholars, as shown in Table 1.

Table 1: Components of Transformational Leadership

Scholar	Components of Transformational Leadership			
	Idealized Influence	Inspirational Motivation	Intellectual Stimulation	Individualized Consideration
Gholam et al., 2015	√	√	√	√
Kristen E. Williams, 2014	√	√	√	√
Rabia et al., 2009	√	√	√	√
Mark et al., 2008	√	√	√	√
Boyett, 2006	√	√	√	√
Bass & Avolio, 1996	√	√	√	√
Atwater & Wright, 1990	√	√	√	√
Bass, 1985	√	√	√	√
Kachorn kittiya, 2012	√	√	√	√
Siwapitak, 2011	√	√	√	√

Therefore, it can be concluded that transformational leadership plays a key role in promoting innovative work behavior. The main components of transformational leadership consist of Idealized Influence, Inspirational Motivation, Intellectual Stimulation, and Individualized Consideration as shown in Diagram 1.

Diagram 1: Transformational Leadership Model

1.3 A relationship between transformational leadership and innovative work behavior

Several studies support the idea that transformational leadership is an important factor to promote innovative work behavior. Boyett (2006) proposes that effective leaders must have a sense of authority, confidence, competence, a clear vision, core values, and commitment in achieving goals. They must focus on organizational goals rather than their personal ones. Transformational leaders make the followers feel proud to work towards the benefits of the team. Various factors related to

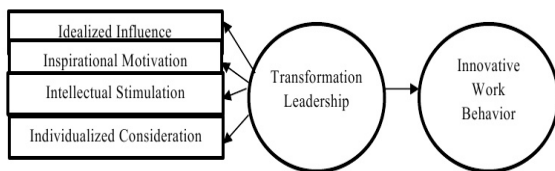
transformational leadership were studied in several previous research. Mark et al (2008), for example, investigate the gender of managers and employees and a relationship between transformational leadership and innovative work behavior. The project was conducted by the health services team in a period of three years and funded by Australian Research Council. The subjects of the study were 335 employees from 41 professions working in hospitals in Australia. Multifactor Leadership Questionnaire developed by Bass & Avolio (1994) and The Aston Team Performance Inventory developed by West et al (2005) were used in the study. The results showed a reliability score of 0.86 and revealed that transformational leadership and innovative work behavior have significantly positive correlation. In addition, it was found that more employees developed innovative work behavior when working with male leaders than when working with female leaders. However, the study found no statistically significant correlation between transformational leadership and the gender of the manager and the employees. Similar results were also found in a study of Rabia et al (2009), who investigated transformational leadership and innovative organization. The study involved 296 managers in the telecommunication sector in Pakistan. Hierarchical Regression Model was used to study a relationship between sizes of organizations and transformational leadership. It was found that sizes of organizations had a statistically significant correlation with all components of transformational leadership.

Moreover, innovative organizations showed a statistically significant correlation with the component of Individualized Consideration. It also showed that transformational leadership positively affected innovative organization and the two concepts significantly support one another (Gholam et al., 2015). These results are supported by the study of Yaping et al (2009), who investigated transformational leadership and employees' creativity. It was found that transformational leadership demonstrated a positive correlation with employees' creativity. Ghulem et al (2012) studied a relationship between transformational leadership and innovative work behavior in 200 educational institutions (schools, colleges, and universities). Multifactor Leadership Questionnaire (Almas, 2007), Innovative Work Behavior Scale (Butt, 2006), and Pearson Correlation were used in the research. It was found that five components of transformational leadership including Prestige, Idealized Influence, Inspirational Motivation,

Intellectual Stimulation, and Individualized Consideration were significantly correlated with the four components of innovative work behavior, which are idea acceptance, idea generation, affective commitment, and utilization. In conclusion, it is evident that transformational leadership has a positive correlation with innovative work behavior.

The relationship between the factors discussed above is presented in Diagram 2.

Diagram 2: Model of a relationship between transformational leader and innovative work behavior



5. Conclusion and Suggestions

This study aimed to investigate the components of transformational leadership which affect innovative work behavior. Extensive literature review of this study has demonstrated that there is a positive correlation between transformational leadership and innovative work behavior. The main components of transformational leadership consist of 1) Idealized Influence, which involves the ability to act as a role model and make their followers proud to be associated with the leader; 2) Inspirational Motivation, which involves the ability to motivate and inspire the followers to work with enthusiasm and optimism; 3) Intellectual Stimulation which involves the ability to encourage the followers to be aware of problems in the organization and seek innovative and creative solutions; and 4) Individualized Consideration, which involves the ability to deal with people as individuals with unique needs, abilities, and aspirations as well as making them feel valued by the organization. This study has shown that these components are evidently correlated. It is hoped that the results of this study have contributed to the body of knowledge regarding transformational leadership and innovative work behavior. The results of this study can also be used as guidelines to promote and develop transformational leaders on the organizations in the hope of encouraging innovative work behavior to increase the efficacy and performance of the organizations.

2. Acknowledgment

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Impact of Minimum Wage Adjustment on Small and Medium Enterprises in Sai Mai District, Bangkok

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ABSTRACT:

The study on the impacts of minimum wage adjustment on small and medium enterprises was focused on employers and employees in the enterprises with more than 100 employees located in Sai Mai District, Bangkok. This study was conducted to gather information, facts and opinions of employers and employees or workers related to the minimum wage rate, as well as to perceive the impacts of minimum wage adjustment on enterprise operations in various aspects, e.g., impacts on production, investment, labor cost, employee's welfare and employment in the enterprises, so as to be a guideline of problem solving in the future.

The findings of the study could be summarized as follows:

1. Impacts on cost of production: Most employers considered that the minimum wage raise led to increases in cost of production. Due to continuation of the economic expansion, employers could pay the new minimum wage rate. Moreover, the employers adopted several methods to reduce cost of production, such as, cutting unnecessary expenses, suspending employee recruitment, and increasing prices of products or services to compensate for higher pays to the employees.

2. Impacts on employees' welfare: After the minimum wage adjustment, the employers decreased some of employee's welfare; however, it was considered very little. Therefore, it could be concluded the rise in minimum wage rate had no impacts on employee's welfare.

3. Impacts on employment: Regarding the attention of employees after the minimum wage adjustment, the employees got higher rate of minimum wage and it should encourage them to perform more works to employers. However, the results of the research showed that the employees had the same attention on working. A few of them had higher attention due to the higher pays.

4. Impacts on investment: Most of employers agreed that the minimum wage raise led to decreases in investment because of lowering advantages of Thailand. It caused Thai or foreign investors to move investment bases into the countries with lower wage rate, e.g., Indochina countries with more open door policy.

5. Impacts on labor cost: The minimum wage adjustment had most impacts on employees in term of costs of living because they had to buy higher prices of products. There were no impacts on lay-off or decreases in working hours. However, it led the employees harder to find jobs because of less employment. Therefore, most of employees considered that the minimum wage adjustment resulted in both positive and negative consequences.

KEYWORDS : Impacts of Minimum Wage Adjustment

Introduction

Fixation of the minimum wage rate is considered an important issue which often causes trouble for labor management in every country, especially for developing countries or countries with economic recession. It is vital to set the minimum wage to be appropriate and acceptable for every relevant party because in doing businesses, employers or entrepreneurs intend to get the highest profits. Therefore, employers or entrepreneurs attempt to make the cost of production as low as possible. Wages are considered one of production cost, so the employers want to pay lower wages and meanwhile employees and workers want to get higher wages. This indicates that each party has his own reasons and struggles to get fair wages according to his opinion. Therefore, the concept of the minimum wage fixation is still different and conflicting all the time. As a result, the government needs to involve with the minimum wage fixation of employees or workers to create fairness for every relevant party. Each country has its own methods and reasons to set the minimum wage rate differently, such as, setting by employers, negotiating through representatives of the employer party and the employee party (bipartite), council setting the minimum wage rate which consist of representatives of employer party, employee party and government party (tripartite), setting as national mandatory laws, by studying and considering from facts on the wage rate the employees receive compared to wages other employees in the same condition receive, together with cost of living, standard of living, cost of production, price of products and consumer goods, capability of businesses, and economic and social conditions of the locality at that time.

Although the minimum wage adjustment is required to be done, as seen at the end of every year that employees and workers ask the government to adjust the minimum wage, each of the minimum wage adjustment increases employee's income and payment burden of employers and the government as well. Thus, there are questions whether the minimum wage should be adjusted or not and how much it should be increased. Up to now, a call for the minimum wage adjustment results from increases in cost of living, especially for Thailand with rapid changes in economy, society and politics. Furthermore, conducting the policy of

the government according to the national economic and social development plan from the income disparity distribution plan in the past several years has resulted in a larger gap between the rich and the poor and affected lives of general people, especially laborers, workers and low-ranking government officials with low income. The continual increases in prices of consumer goods necessary to daily lives cause troubles among general people and workers. Therefore, there is a call for the minimum wage adjustment every year to create income appropriate with the standard of living and the economic growth, as well as survival of the workers.

Although the minimum wage was adjusted with deliberation, there were reflections showing dissatisfaction with new minimum wage adjustment both from employers and employees, that is, employees were dissatisfied with the new minimum wage, whereas employers expressed their opinions that the wage raises certainly affected employment, cost of production and investment. Therefore, this research focused on following up the impacts possibly occurring due to the minimum wage adjustment in Sai Mai District, Bangkok in order to comprehend whether the new minimum wage adjustment had impacts on employment, investment, cost of production, labor cost, employee's welfare and employer's capability to abide by minimum wage laws, as well as perceive attitudes and opinions of employers, employees, and people involved with considering the minimum wage raise of the council. The information and facts gathering from this research were expected to be beneficial to planning wages in labor management of relevant parties in the future.

Research Objectives

1. To comprehend attitudes and opinions of employers, executives and entrepreneurs on the minimum wage rate.
2. To comprehend information, facts, and impacts of the minimum wage rate towards operation of enterprises in various aspects, such as, impacts on cost of production, employment, and human resources management of enterprises.
3. To comprehend information, facts, and opinions of employees or workers on the minimum wage adjustment towards employee's welfare and employment in the enterprises.

4. To comprehend problems and impacts of the minimum wage adjustment and to find out solutions of the problems.

Research Instrument

The enterprise's questionnaires according to a number of sample group consisted of most of closed-ended questions the same as every group and a few of open-ended questions for the respondents to describe reasons and provide suggestions as needed. The questionnaires consisted of

Part 1: Basic information of entrepreneurs

Part 2: Information on business types of the enterprises

Part 3: Information on impacts of the minimum wage adjustment. The questionnaires on impacts of the minimum wage adjustment would be 5-point Likert Scales.

Data Analysis and Statistics

were divided into two parts according to sources as follows:

1. Descriptive statistics: percentage, mean and standard deviation

2. Inferential statistics: t-test values, F-test values and correlation

Data Collection

were divided into two parts according to sources as follows:

1. Primary Data

In case of primary data collection or field data collection, the researchers collected data by using questionnaires to inquire about impacts of the minimum wage adjustment and adaptation of enterprises in Sai Mai District, Bangkok.

2. Secondary Data

In case of secondary data collection, the researchers collected data by studying documents or sources in the library or library research. The researchers studied data from the library and the internet.

Research Results

Employees: Employees should develop themselves to have knowledge and understanding on relevant laws, and meanwhile develop their skills to work with high-technology engines so as to build

bargaining power with employers.

Employers: Employers, who are small, medium or large entrepreneurs, need to find labor management methods to increase efficiency in production and decrease the turnover rate in order to reduce training cost. Employers provide additional welfare to boost morale of employees in operating at their best and find various measures to provide support so that the employees have a sense of life security and are ready to cooperate in operating with the employers.

Government: In establishing wage and income policy, the government should change from solely minimum wage fixation to system development in enterprises by developing the wage system to attract employers and employees focusing mutual benefits according to approaches of eastern countries, instead of focusing wage aspect, which is conflict of interests in accordance with approaches of western countries. This could be done by employers having a broader view that employees are not only cost of production but the investment to be developed as precious personnel with organization advancement. Development includes specialized skills and general knowledge so that employees have access to high-technology industry.

Impacts of Enterprises in term of employment

No.	Impacts on Employment	-	S.D.	Level of Impact
1	Minimum wage adjustment leads to the decline in employment of the enterprises in order to reduce expenses.	2.16	1.12	Low
2	Rise in minimum wage rate lowers a number of demand submissions from employees to adjust wage rate.	2.55	1.17	Low
3	Minimum wage adjustment lowers conflict and strengthens good relationship between employers and employees.	2.87	1.13	Moderate

No.	Impacts on Employment	-	S.D.	Level of Impact
4	Minimum wage adjustment lowers problems of absence from work, taking leave and turnover rate.	2.59	1.14	Low
5	Minimum wage adjustment leads employers to apply short-term contract employment.	1.75	0.84	Lowest
6	Minimum wage adjustment causes employers to hire daily-paid employees rather than monthly-paid employees.	2.09	1.07	Low
7	Rise in minimum wage rate causes employers to avoid laws by hiring alien workers.	1.57	0.87	Lowest
	Overall Impact	2.22	1.04	Low

Discussions

The minimum wage fixation in enterprises should adopt the negotiation method according to Bargaining Theory of Wages and Subsistence Wage Theory both in bipartite and tripartite system, that is, the minimum wage fixation to achieve objectives and philosophy of the minimum wage fixation to assure unskillful employees when starting working that they will get fair and sufficient wages for their daily lives should be conducted by the tripartite board, i.e., wage council consisting of representatives of employer party, employee party and government party (8 representatives / party) with equality of bargaining power and arbitration. The government party should not lead or arbitrate as intimidation of one party. In order to enable the bargaining system of the wage council to work efficiently and vigorously, it is required to establish the National Employees' Confederation and Employers' Confederation to be powerful. Moreover, people who would be representatives of employer party or employee party in the wage council have to be genuine representatives or representatives of the majority of their own career so as to actually bargain and protect benefits of their own group and the public.

Apart from bargaining at the level of tripartite board, bipartite bargaining in enterprises should be supported by using Productivity Theory

because labor and wage productivity should be considered simultaneously. If the wage is raised without productivity, it will increase cost of production. Therefore, in the expansion of industrial businesses, "wage" and "skills" are important factors in stimulating investment and trade advantage. The minimum wage should be set for unskillful newcomers. The wage fixation in each enterprise should be bargained by primarily considering working skills and types of work to create fairness to both parties and have no impacts towards economics and the general public.

In summary, in case of impacts of minimum wage adjustment and wage fixation, there is nothing more important than skills or positions. Most of entrepreneurs consider the worthiness of paying wage to employees because wage would reflect costs occurring to the enterprises. If the enterprise does not have enough skillful employees, it will lead to higher costs of the entrepreneurs.

Most of the entrepreneurs found that problems from minimum wage adjustment were related to welfare provided for employees, apart from wage. Mostly, accommodation, medical expenses would be provided for employees. Furthermore, it was not found that after the minimum wage adjustment, employers decreased welfare provided for employees. Therefore, it assured that rise in minimum wage rate had no impacts on employee's welfare.

Suggestions

1. Although the minimum wage raise has impacts on the economic system in various aspects, the minimum wage adjustment does not always mean increases in cost of production. According to the previous research, it was not found that the minimum wage fixation of Thailand had apparently negative impacts, such as, inflation, employment and labor cost, which were consequences of several different causes.

2. According to the previous minimum wage fixation, it could be said that the minimum wage raise corresponds with increases in standard of living based on Subsistence Wage Theory, which is one of measures in solving problems of workers' living. It is a short-term solution and only a living assurance of people with low income not below the standard of living too much. However, this does not help low income people to have better living conditions.

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Creative Conflict Management For Organizational Success

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Abstract

Organizational conflicts arise from misunderstanding of the problems or communication. There are different targeted data of various departments in the organization, which cannot be found a settlement together. Whenever doing individuals or groups have different opinions, inevitably results in conflict in the organization. Most people view conflicts as harmful and should be eliminated. But in reality, conflict is a good part, and it can be equally beneficial.

Any organization that is totally free of conflicts will have an atmosphere of inertia. It is ready to bring business to a depression. In contrast, any organization with a moderate level of conflict is justified as a tool to stimulate new creativity of management. Creative conflict creates the power to change. The different issues are not the conflict, but it is a way of leaders to bring the organizational success.

Keyword: Creative Conflict Management

Views on conflict

The views of academics are divided into three types of conflict. (1) The traditional ideas believe that conflicts should be avoided which are detrimental to the work of groups and organizations. (2) The concept of human relations are believed to be inevitable and natural. (3) The notion concept, conflicts are not only help to create a working power for the group, but they are also essential for the group to achieve its goals. This view is called the integrationist concept. (Suthep Pongsriwat , 2001)

The traditional view : An early-stage view of organizational management, conflict seems to be a bad thing to obstruct. Conflicts have been identified as damaging, dangerous and should be avoided. This is a view of the behavior of those who create too superficial conflict, only focus on the cause of the conflict and return to its original state.

The human relations : The humanistic view believes that conflicts are a natural occurrence in every group. Because conflict is inevitable, the humanistic concept supports and accepts the conflict. By these reasons support the ongoing conflict be motivated to promote the fulfillment of the objectives of the organization, especially difficult problems to be solved.

The integrationist view : While the humanistic view of acceptance of conflicts, the integrationist approach encourages conflict. The reason is that whenever a group or organization is united in peace. They will remain thinking or doing the same things. The lack of adaptability is no longer able to respond to changes and new innovations that take place all the time. So the concept of the interaction is encouraged important by the suggestion of the organization's executives who continue to conflict in the organization.

The concept of interaction is a belief that conflict is not all bad. But depending on what kind of conflicts should promote a creative conflict?

Meaning of Conflict

Incompatibility conditions that agree antagonism between persons or groups. It has an incompatible purpose caused by different purposes. Do not fall in love, desire, values, beliefs and attitudes. (Bowditch, Jamesl. and Buono,Nthony F, 2005 Summarized as follows

- There is a conflict of interest between individuals or groups.
- Accept different attitudes.
- It is believed that the opposing party interfered with their interests.

- There is clear evidence that such a hindrance exists.

The cause of organizational conflict

Organizational conflict consists of two main areas. (Greenberg and Baron, 2003) As follows:

1. The cause of the conflict caused by the organization.

Organizational conflicts contain many conflicting issues. But most importantly, there is a conflict in the limited resources available to each organization consist of financial budget, skilled personnel equipment used in the operation, including workspace as well. Since , these resources are less than the requested number, it is important to set fair allocation criteria in the line with organizational goals. In addition to the above mention, it also includes the ambiguity of the role of duty and responsibility of each agency. The result is a struggle to gain such power or avoid doing it because it is not sure whether or not they are responsible.

- Limited resources and inadequate organization tools, individuals or groups in the organization are making every effort to obtain such resources, which brings the beginning of the conflict.

- Reward the goodness that the organization gives. The way to make the payoff is unclear, resulting in a scramble for conflict.

- Uncooperative work from other workplaces affects the organization's missions. This is the cause of the conflict between agencies immediately.

- Inconsistency of responsibility, lack of decision-making power and self-defeating will result in conflict.

Organizational conflict is a key issue. If executives understand and monitor the cause of the conflict, it will continue to affect the organization.

2. Conflicts caused by personal relationships.

Work conflicts arise from interpersonal problems arising from two issues. Individual differences and individual personality, including structural elements of the organization as well.

- It is a controversy caused by people who face the public. Looking for revenge, thus

damaging the organization and the work of the group.

- From the understanding that people are watching, trying to obstruct the interests of such a person, trying to get rid of the person from his path, conflicts of this nature will often end in violence.

- Caused by misrepresentation or gestures to provoke others to be angry. The retaliation is back by not cooperating in the work.

- The lack of trust in each other, especially when there is a suspicion that one of the members of the group is distracted, the relationship with him will degenerate into conflict.

- Caused by the difference of personality is the unique feature off.

Conflicts caused by individuals are a matter for management to pay special attention. Because it will change faith. The attitude of the person is difficult.

The process of conflict.

The process of conflict. The dynamic operation is divided into 5 phases. As follows: (Robbins and DeCenzo, 2004) As shown in Fig. 1.1.

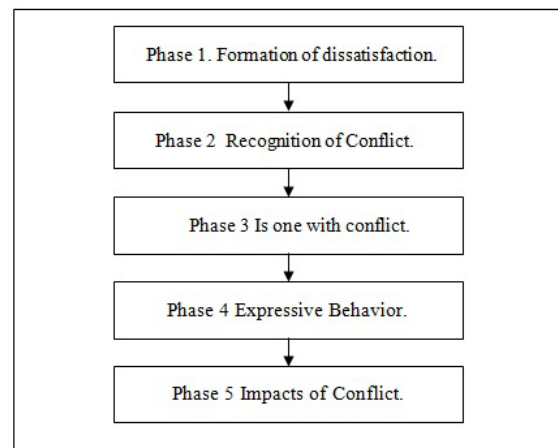


Figure 1.1 Steps to make a conflict of adaptation. (Robbins and DeCenzo, 2004)

Phase 2 Phase Recognition of Conflict Phase 1. Formation of dissatisfaction. The beginning of the conflict in this stage appears to have conditions that indicate a potential conflict. Not all conditions that directly cause conflicts, such as the terms of interpretation. Structural aspects and personal variables.

-The meaning of meaning

The nature of the tone that a person uses in communication, including gesture. Personality and communication can affect the interpretation of a faulty message. Getting incomplete information leads to an extension of the cause of conflict. Each individual has the ability to understand different interpretations of the text. Individuals will only recognize information related to themselves. The lack of sufficient information about others is the beginning of the formation of conflict in the order. Including inappropriate channels of communication can also create conflicts as well. The last is to manipulate or misrepresent the information for personal purposes, misleading others, causing conflict.

-Structural The size of the organizational structure, the specialized expertise of the group, is one reason for the conflict. When larger organizational structures are more specialized, there is a greater likelihood of conflict. Young people with less working age tend to be more contradictory, more likely to quit high employment.

-The aspect is a personal variable

Different personality traits cause conflicts. Conflicts sometimes arise out of racial, religious, and religious beliefs. The difference in personality and beliefs when working with the opportunity to conflict.

Phase 2 Recognition of Conflict.

From the conflict that occurred in Phase 1. Conflicts will intensify until the conflict is felt. Then there will be a more verbal expression of resistance. However, the perception of the conflict at this stage may still be unclear. Conflicts in this stage do not cause much concern, but people are different in their opinions, but they can also work together.

Phase 3 Is one with conflict.

It is a term when either party or both parties perceive the conflict. Emotional affect on conflicts. Efforts will be made to find a way to end the conflict Efforts are being made to find a way to end the conflict, which is an important period. Because it is a way to choose how to solve the conflict in a creative way.

At this stage, the opposition will try to deal with the conflict in five ways.

1. Competition. It is a way of resolving conflicts in which one party strives in its best interest Regardless of the impact that will arise on other parties involved. Try to show other people that

their views are correct. Try to solicit others who are not of the opinion that the parties themselves.

2. Collaboration. It is a way for individuals to cooperate in solving problems. All parties involved in the conflict are striving to meet the needs of all parties as much as possible. Collaboration is a way for all parties to solve their problems by looking for points that benefit both parties. Finding a settlement that all parties want is win with win. Can achieve the goals of both parties.

3. Avoidance. It is a way for a party to surrender to conflicts and to withdraw from the conflict. Accept no wish to settle with conflict. Trying to show constancy to the conflict by avoiding confrontation with conflicting individuals.

4. Accommodation. It is a way in which a contradictory partner tries to appease a party by taking into account his interests over self-interests. One party is willing to sacrifice their own goals to achieve the goals of the parties. By accepting and supporting others' opinions, they do not offer their own opinions. Will forgive the violator of the rules by accepting the results.

5. Compromise. It's a way that each party agrees to lose some of their own needs. The compromise is clearly no winner or loser. Equal distribution of the causes of conflict. By agreeing that the settlement cannot satisfy the two parties as fully as required.

However, the intention is to choose one of these methods. Conflict resolution depends on the objectives of each party, which is uncertain. But it may change a new way when one party looks at the problem in a new perspective.

Phase 4 Expressive Behavior

The period in which the conflict is manifested is a clearly visible behavior. With the expression of the contradictory couple, it becomes evident from the behavioral display. As follows:

- With the use of verbal language that leads to dissatisfaction of self.

- Acting out in undesirable ways with the person around.

- Retaliation by means of both parties.

Being open-minded and motivating. But sometimes, because of lack of problem solving skills, the behavior of the expression is reversed from the way that is intended to cause more violent conflict.

Phase 5 Impacts of Conflict

However, conflicts can also cause damage and good effect to the organization as well. Depending on the cause of the conflict. The situation and ability to properly manage conflicts in each case. The benefits and disadvantages of conflict in the organization are as follows.

1. The good results of conflicts that result in the success of the group and the organization include:

- Conflicts that have been overlooked or neglected have been considered and considered.
- Conflict is an incentive for both parties to understand the position of both parties.
- Often conflicts encourage new ideas and approaches. This will lead to something new in the transition.
- Conflict helps to make better decisions. Because the decision-makers receive information with a wide variety of views. Having more information covers more problems makes better decisions than ever before. It is necessary to prove the hypothesis and beliefs of each party. But in reality, most parties do not think so, letting the conflict escalate into a break up.

• Conflict encourages people to be loyal to the group. As a result, the motivation to work with the group or the agency that they belong to succeeds.

• Conflicts arise, especially the thought conflict. It will lead to openness in bringing those ideas into full debates. As a result, the involvement of the organization increased.

2. Disadvantages of Conflict, which resulted in unsuccessful group and organization.

• Conflict creates a strongly negative emotional bond. As a result, each party involved stress.

• Conflict hinders and obstruct communication paths between individuals, groups, and organizations. Affects the coordination in the operation, the deadlock.

• Conflicts affect intention and power.

• Conflicts affect leadership styles from participatory leaders, authoritarian leaders. Under the circumstances of conflict, all parties are highly stressed, the leader must come to the supervision and self-regulation. To avoid the direction of the organization's purpose to deviate.

• There is annihilation to stare at each other in different ways.

Conflicts in the organization result in both good and bad results in the organization. Executives with experience in conflict resolution use the opportunity of conflict to develop into a creative conflict.

We will find that the process that causes the conflict will be slightly different from the beginning. If not resolved, the conflict will widen, becoming a matter of escalation. Sometimes, the management of an organization cannot control it, so it can have an adverse effect on the organization. (Schein, Edgar H, 1992)

Creative conflict management: For organizational success

Due to the conflicts can be changed in the good of the organization. Any conflict that obstruct the growth of the organization should be resolved. However the conflict that leads to creative development should continue to be encouraged and to create a constructive conflict. Creative Conflict Management Process as shown in Fig. 1.2

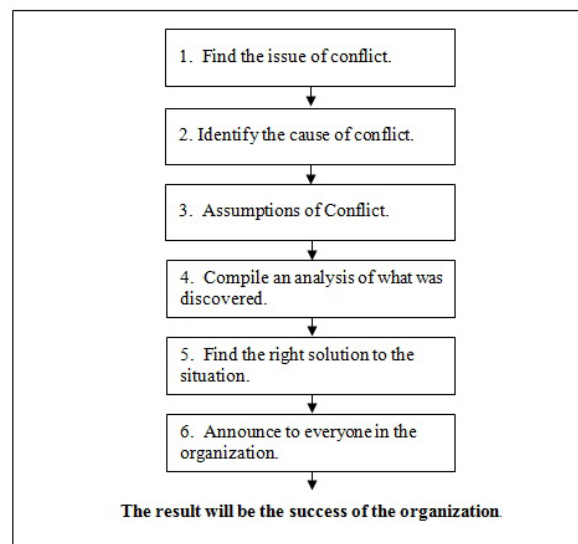


Figure 1.2 Creative Conflict Management Process: by (Anupong Infahaeng and Panus Aunhabundit, 2017)

From Figure 1.2 Conflict management in 6 steps as follow : (1) Find the issue of conflict. (2) Identify the cause of conflict. (3) Assumptions of conflict. (4) Compile an analysis of what was discovered. (5) Find the right fit for the situation.

(6) Notify everyone in the organization, with all parties agreements. The details are as follow :

Step 1 Find the issue of conflict.

This step is very important to find out what is causing the conflict. Managers can choose from a variety of searching methods according to the context of each organization.

Set up a team to find the facts by the involved parties. Operational guidelines allow the parties to express their opinions freely in all matters that are inconsistent. Or assign the expert at both parties to agree to the experts to find out the facts of conflict. In the other way, the manager can find out the facts of the conflict. The key point of this step is to find out.

(1) What is the real cause of the conflict?

Emotional benefits, attitudes, cultures, beliefs, religions, resources, or otherwise.

(2) Who related with conflict a person, group, organization, agency, leader, or other?

(3) Where did the resulting conflict come from? In the same agency, agency, from outside agency or elsewhere.

(4) What is the nature of the conflict? Controversy with the counterparts. Stubborn at work Create a resistance group in the organization. Or in other ways.

(5) Why are both parties disgruntled in the conflict?

When the team has thoroughly studied all the facts. Summarize the factual facts that people find to be used in the next step.

Step 2 Identify the cause of the conflict.

Bring the information from Step 1 to determine the magnitude of the problem that results in conflict. The involved people in the conflict are also involved in behalf of the board. Determine the level of the problem of conflict as follows. By having an intermediary, both parties accept the referee.

(1) Priority sort of problem before.

(2) The purpose of the parties is similar. Developed for the same purpose.

(3) Use bargaining tactics to allow each party to lose some of their desired.

Summarize the importance of the issues agreed at the meeting of the committee to the parties to acknowledge.

Step 3 Assumptions of Conflict .

This step assumes the different assumptions of the parties. To assess the severity of the conflict may well be the wish of both parties. Assumption is a step to gather the pros and cons of the conflict.

(1) Consider the consistency with the organizational performance of the organization.

(2) Take into account the culture, values, beliefs of the general members.

(3) Sometimes conflicts can affect the organization as a whole.

At this stage, management must consider the assumptions of each conflict. To take different assumptions into consideration, to solve the problem or to proceed in the next step is correct.

Step 4 Compile an analysis of what was discovered.

It is a step in gathering information and analyzing conflicts discovered. Analyze issues , isolate conflicting issues into categories as follows:

(1) Gathers the findings of a systematic discovery of past processes.

(2) Prepare documents relevant to conflicts discovered.

(3) Deliver the summary information to both parties.

At this stage, when the management collects the information, it will be sent to the relevant manager. The executives advised both parties to discuss whether the information provided by the Board was relevant or disagreement. To bring the issues to a creative conflict resolution solution in the next step.

Step 5 Find the right solution to the situation.

This step requires that the information obtained be assessed against the actual situation of the organization. Who is the impact on which groups? The current situation of the organization accepts any level of conflict by allowing all parties to share their opinions.

(1) Present the results of the assessment of the situation to all parties.

(2) Who has conflicts with whom?

(3) Jointly develop conflicts into a creative conflict.

(4) Agreed with all parties by the organization management.

When all parties are satisfied, the solution of the problem. Service providers collect all solutions agreed by all parties.

Step 6 Announced to everyone in the organization.

The last step is very important because most of the conflicts in the organization are of interest to everyone. It is certain that the event of a conflict in the organization will be discussed with infinity. Executives must declare conflict resolution results to everyone in the organization. To change the perspective of conflicts and develop a creative conflict.

The result will be the success of the organization.

When all parties achieve common goals, it will be beneficial for the organization in various fields. Everyone in the organization will cooperate in performing duties. Dedicated to the work they are responsible for.

- Conflicts are turning to cooperation.

When all parties lose some of their benefits and remain partial, satisfaction will arise. Collaboration is evident.

- Conflicts are useful, new perspectives. Different ideas, when taken together, lead to new ideas. It is the ability of executives to explain or decide what new ideas are happening. How does the organization benefit?

- The recognition of the needs of the good of all parties. When all sides know the other party's opinion. Every party will be careful not to act as a conflict.

- Competitive forces show in areas where the parties think that they help develop the growth of the organization. When some part of their party is backed up, they are satisfied. Ongoing creates the power of competition that their opinions are correct.

- And others that drive the organization to succeed.

The solution to the above mentioned steps in 6 steps. It does not mean losing the conflict in the organization. But it is a conflict that has developed into a creative conflict. Finally, the result is the success of the organization.

Conclusion Creative Conflict Management: For organizational success means:

● Organizational leaders must recognize that organizational conflicts can occur at any time, inevitably. Therefore; when conflicts arise, it should be analyzed first that conflicts are caused by good intention and hope or caused by bullying.

● From the article, it is sometimes found that conflicts affect the workforce of employees. The reason for the job to be responsible for the acceptance of management results in achieving the organization's goals.

● Resolving conflicts according to the steps presented in the article, the organization discerns differences among members of the organization regarding values, attitudes, beliefs, and differences are to be the norm of the organization.

● The development of conflict in this article is consistent with the viewpoint of the interactions.

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Bangkok Brand Power Image via the Perspective of Japanese and South Korean (JK) Tourists: A Study on Focus Group Methodology

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Abstract

Bangkok city is the popular tourist destination recognized by international tourists around the world. More than 18 million international tourists have visiting Bangkok annually. Despite, international tourists understand Bangkok a capital of Thailand in holistic view as well as “*The Land of Amazing*”. Most of the international tourists view Thailand as a cheap destination rather a leisure destination nearly 20 years ago. To persuade a quality tourists from Japanese and Korean which contribute to Thailand tourism income worth 1,647 to 1,656 million US\$ annually come to visit Thailand destination. Therefore, it is necessary to persuade Japanese and Korean tourist attitude and positive experience about Bangkok city image and correct the negative tourist’s perception in order to motive Thailand tourism industry. Thus, this study aims to identify Bangkok brand power city into five attractive characteristics defined by Tokyo brand power in order to make Bangkok as a premium tourist’s destination like ever.














Keywords: Bangkok, Image, Japan, Korean, Tourist

1. Introduction

Thailand tourism industry has been contributing up to 9.2 percent of national gross domestic product (GDP). Thailand travel and tourism generated 2,314,000 jobs directly in 2016 or 7.0 percent of national employment and this is forecast to growth by 14.3 percent in 2027 (The World Travel & Tourism Council, Thailand, 2017). After Thailand military coup in

May 2014, Tourism Authority of Thailand (TAT) uses the slogan ‘*Amazing Thailand: Discovery Thainess*’ campaign to promote Thailand internationally. As the result of TAT promoting plan, Thailand becomes the top-ten most visited country in the ‘*World Tourism Ranking*’ with 29.9 million international guests visiting Thailand in 2015 and continue increasing up to 32.5 million international tourists in 2016, an increase of 2.33 million or 8.91 percent from 2015 (refer to TABLE 1.1).

Table 1.1: Thailand Tourist Situation from 2012-2016

Rank	Country or territory	2016/2559	2015/2558	2014/2557	2013/2556	2012/2555
*	ASEAN	8,658,051	7,886,136	6,641,772	7,282,266	6,281,153
1	 China	8,757,466	7,934,791	4,636,298	4,637,335	2,786,860
2	 Malaysia	3,533,826	3,423,397	2,613,418	3,041,097	2,554,397
3	 South Korea*	▲1,464,218	1,372,995	1,122,566 ▼	1,295,342	1,263,619
4	 Japan*	▲1,439,629	1,381,690	1,267,886 ▼	1,586,425	1,373,716
5	 Laos	1,409,456	1,233,138	1,053,983	976,639	975,999
6	 India	1,193,822	1,069,149	932,603	1,050,889	1,013,308
7	 Russia	1,089,992	884,085	1,606,430	1,746,565	1,316,564
8	 United Kingdom	1,003,386	946,919	907,877	905,024	873,053
9	 United States	974,632	867,520	763,520	823,486	768,638
10	 Singapore	966,909	937,311	844,133	955,468	831,215
11	 Germany	835,506	760,604	715,240	737,658	682,419
12	 Vietnam	830,394	751,091	559,415	725,057	618,670
13	 Australia	791,631	805,946	831,854	900,460	930,241

Visitor Statistics, 1998–2016”. Department of Tourism Thailand. Retrieved 10 January 2017

Despite international tourists still understand Thailand’s image as “*The Land of Amazing*”, they concerned Thailand is a cheap destination rather a leisure quality destination nearly 20 years ago (Suchat Siritama, 2016). Since 1997, the government has launched “*Amazing Thailand*” campaign; Thailand tourism has growth up based on the number of international tourists of which the quality seems to degrade over time. Thailand tourism has become mass tourism whereby tourists spending most of their time visiting and taking photographs of interesting places. As of this point, to enhance a leisure quality destination Thailand needs shift of interests from tangible cultural resources to intangible resources (Richard, 2010). To persuade quality tourists to think and react positively to the destination, it is necessary to rebranding Thailand brand image by highlighting on specific activities like shopping, nightlife, cuisine, sport, atmosphere, adventure, history, good value for money, history, gastronomy, culture, golf, nature, and secure destination, these are recognized as an important determinant of brand loyalty (Kim & Kerstetter, 2016; Suhartanto, Ruhadi & Triyuni, 2015; Montenegro, Costa, Rodrigues and Gomes, 2014). Thus, it is undoubtedly, city image and tourists attitude are interrelated (Lita, Surya, Maruf & Syahrul, 2014), and the attitude toward a particular place or city influence overall city image (Han, Hsu & Lee, 2009). One of the world’s most vibrant cities, value for money and time affordable costs, it is not surprise Bangkok is the world’s fourth ranking most visited destination

after Hong Kong, London and Singapore (Barry Neild, 2016). Similarly, “*Time Magazine*” reported that in 2013 Bangkok was identified as the most global destination visited city in the world, while Suvarnabhumi Airport was the most geo-tagged location on Instagram (Kristene Quan, 2013; Ben Abramson, 2013).

Bangkok city is the popular tourist destination welcomes international tourism arrival 18.5 million following by Phuket 8.3 and Chonburi 7.2 million tourists (Ministry of Tourism and Sport, Thailand 2015). This evidence indicated that Thailand tourism is not as common industry but rather, it is a social and economic activities running across business sectors and pushing national economic development forward. In case of Japanese and South Korean (JK) tourists are the major Thailand tourism market and seem not to be decline for several decades. Japanese and Korean tourists averagely stay in Thailand 7-8 days and capital spending per day 5,188 Baht to 5,418 Baht, respectively. These tourists contributed to Thailand international tourism market worth 1,647 and 1,659 million US\$ (Department of Tourism, 2016). According to Pike, (2002) confirm that tourist perception on city image influence on tourist behavior such as length of stay, frequency of visits and perceived value of city brand. Therefore, it is necessary to persuade tourist attitude positive experience about Bangkok city image and correct the negative tourist’s perception in order to motive Thailand tourism. Tourist’s attitude neither very unpleasant/ very pleasant toward a tourist city

plays influence to city image and also city image significantly influence on tourists visit intention (Doosti, Jalivand, Asadi, Pool & Adl, 2016). Thus, this study aims to identify Bangkok brand power city into five attractive characteristics defined by Tokyo brand power in order to make Bangkok as a premium tourist's destination like ever.

2. Literature Review

2.1 Destination Image

Destination image consists of two dimension namely 'cognitive' and 'effective', such cognitive component can be understood as a beliefs of knowledge about physical characteristic for those particular destinations while an effective refers to tourist attitude and feeling toward destination environment (Baloglu & MacCleary, 1999). Thus, destination image is the attitudinal concept of tourism beliefs, ideas and impression of a destination (Machinda, Serirat, Anuwichanont & Guild, 2010; Crompton, 1979). Rendering of several studies indicate that to be a successful destination must have a strong positive image to influence tourist behavior and the travel decision making (Milman & Pizam, 1995; Woodside & Lysonski, 1989; Pearce, 1982). Despite, the limitation of destination images promoted by tourism authorities does not fully match the tourist's perception and demand in the following aspects; lack of regular monitoring and evaluation procedures cause difficult to defined strategy, de-concentration on the supply side while ignore the demand side, lack of consistency messages, generating confusion and discouragement regarding to possible visit, inadequacy of the communication channels make it difficult to achieve the target (Montenegro, Costa & Gomes, 2014). These factors are the major source of inefficiency to promote tourist destination image for supply and demand sides. Hence, based on the cognitive and effective images congruence we can conduct that image can be promote by tourism destinations and markets' perception. Moreover, cognitive and effective images congruence has a positive influence on tourist satisfaction and intention to revisit in Shanghai marathon tourism (Mao, Wang & Zhang, 2015).

2.2 Tourist Experience

Tourist experience occur underline on the interaction between subjective responses of customers (Tourists) and objective feature of a product (Country) (Addis & Holbrook, 2001). Since, tourist's expectations of the region are often formed based on the experience of previous

trips, advertisements and other incentives and the quality of services. In tourist research, tourist experience has been concerned with visiting, seeing, enjoying, learning and living different lifestyles during trips (Stamboulis & Skayannis, 2003). Thus, tourist experience has been shape as a unique of human mind with the high personal value and also played a main construct in travel and tourism (Oh, Fiore & Jeoung, 2007, Mcintosh & Siggs, 2005). Reviewing literature, several studies have found that 'tourist's experiences' and their revisit intentions are positively related (Hosany & Witham, 2010; Cole & Chancellor, 2009, Oh, Fiore & Jeoung, 2007). Since, tourists are satisfied with their travel trip then they are more likely to repeat it (Petrick, Morais & Norman, 2001). According to Lee, Lee, and Lee, (2005) point out those tourists with a favorable destination image would perceive their on-site experiences positively, which may lead to a higher satisfaction level and behavioral intentions to revisit the site.

Chang, Backman and Huang, (2014) investigated the relationships between tourists motivation, experience, perceived with revisiting intention to creative tourist destination in Taiwan. The results indicated that 'tourist experience' was the most influential antecedent of revisit intention to creative tourism sites. These creative tourism sites are such as pottery, crafts, arts, workshops and other creative activities that integrate authentic culture to engage tourists with fulfilling and meaningful experiences. The study has suggested that if country of creative destinations would like to attract repeat tourists; they should pay more attention to make understanding of what tourist needs and meets what they wants when they visit creative tourism attraction. Prior studies point out that a tourist's experience has a direct relationship with revisit intentions (Cole & Chancellor, 2009; Hosany & Witham, 2010; Hsu & Crofts, 2006; Oh, Fiore & Jeoung, 2007). Most of them found that tourists' experiences and their revisit intentions are positively related. In other words, tourists' intentions to revisit are believed to influence their positive evaluations of the experience (Um, Chon, & Ro, 2006).

3. Research Design

The objective of this study attempts to investigate and identity the essential of five characteristic of Bangkok city image via the perspective of Japanese and Korean (JK) tourists. The expected outcome of study is to improve the attractiveness of Bangkok as the capital city of Thailand and to boost up its international

competitiveness and increase the number of foreign visitors particularly Japanese and Korean visitors to Thailand destination.

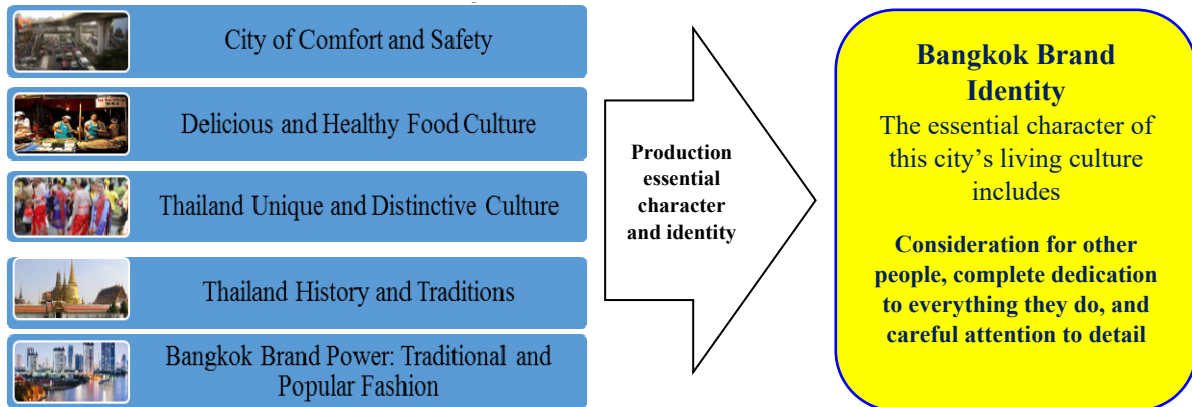


Figure 1: Bangkok Brand Power Image

Sources: Five attractive characteristics that are the admiration of the world adapted from Tokyo Brand Power : The Mori Memorial Foundation

4. Methodology

Focus Group Study

To answer the research objective *‘what are the Bangkok brand power via the perspective of Japanese and Korean tourists?’* As of this research question, the focus group study was used to interpret Thailand brand power image by using semi-interview structure. This is because focus group interview possessed the capacity ideas to emerge from the group discussion than individuals alone don't possess (Krueger, 2015).

Simi-Structure Interview Development

This study use semi-interview structure adapted from the Mori Memorial Foundation (MMF) represented the concept of Tokyo brand power classified into five attractive characteristics that are the admiration of the world. There are five sections was designed for to investigate and collecting the interview data such as (1) city of comfort and safety; (2) delicious and healthy food culture; (3) Thailand unique and distinctive culture (4) Thailand history and traditions and (5) Bangkok brand power: Traditional and popular fashion.

Sample Group Study

This study interview the two difference sample groups are as Japanese and Korean tourists separately. Twenty tourists from each country were identified as the target group study. The data collected from the several times in difference places as exhibited in the following TABLE 1.2 below.

Table 1.2: Data Collecting on Focus Groups Study

No	Place	Date	Nationality	Country	Sample
1	Toyo University Tourism Contest: 'About Inbound-Outbound Thai-Japan Tourism	15 Oct 16	Japanese	Toyo University, Tokyo Japan	15
2	Suvarnabhumi International Airport,	5-6 Feb 17	Japanese Korean	Bangkok Thailand	10
3	Korean Town Plaza, Bangkok	30-31 Jan 17	Korean	Sukhumvit Road, Bangkok Thailand	15

Beginning the Focus Group Discussion

Starting the focus group discussion the moderator (interviewer) introduced the overall of the topic and objective of the study. The moderator asked the respondents to given useful information about your perception on Thailand brand image. We want to know *“what do you like”* and *“what you*

don't like”, both in positive and negative aspects (Krueger, 2002). There are no wrong answers please feel free to share your idea and please remind that we are interesting in negative comments rather than positive. The negative comments are helpful that might be enhancing Bangkok image. By using focus group interview enable the researcher access to valuable insights Bangkok brand power image investigation (Wadeecharoen & Lertnaisat, 2015). By using the interview methods can help the research to gain a deeper understanding of specific issues by discover the actual problem relate to statement of the study (Dabphet, Scott & Ruhanen, 2012) The results of the study will be analysis by using analysis and classified into five parts as in the following section.

5. Results of the Study

The focus group discussion method was used for collecting data given by Japanese and Korean tourists whose have known and been to Thailand for several time (repeat visitors). The total of 40 target sample cases were given the information regarding to Bangkok image both negative and positive aspects as will be discussion in the following;

5.1 City of Comfort and Safety

Japanese tourists have an attitude and felling on Bangkok city and safety in the positive aspects such as sanitary and infrastructure in Thailand are higher as compare to neighboring country like Cambodia, Vietnam, Myanmar and Lao, the medical service in Bangkok is very famous and recognize. Bangkok shopping centers are good with cheap price, hotel is safe and secure, Thai police look after international tourist's security and safety. Thus, in summary Bangkok city is clean and safe place.

Bangkok negative image are such as communication problem with local people and taxi drivers drive so fast and unsafe that always make an accident happen. *Tuk-tuk* taxis ask for 3 times over price as compare to taxi meter. Even taxi drivers don't want to open the meter that they supposed to do. Pickpocket in shopping center make tourists scary to go to crowed shopping place, *'crowded stress and traffic jam become a characteristic of Thailand capital atmosphere'*. Pollution and decadent environment in Bangkok is reflect Thailand image, electrical wires near the sidewalk and cross to bridge street look scarcely and unsafe. Local road is narrow and having a

hollow on the road surface. Local water can't drink direct from the tap. Traffic in Bangkok is horrible makes unconvinced to go to target place as expected. Some of tourist places in Bangkok like Kha-san and Nana Street are not safe and secure. Thailand hot weather and high thermal make tourists feel frustrated. Some of shopping center, the commodities price are not display while the same location sale the same thing but different price. The facility of Public transportation is limited, crowed and rather danger cause by careless driving. There is sanitary problem such as garbage and toilet are unclean and insufficient that may affect Bangkok image.

Korean tourists have an attitude and felling on Bangkok city and safety in the positive aspects such as cost of living rather low while high standard. Most of Korean tourists love Bangkok as the second home country. Hotel near the center Bangkok is safe and clean, thus, Bangkok is a safe place for tourists even on day and at night.

Bangkok negative image are such as traffic jam in Bangkok seems like to be Thailand major problem and reflect Thailand traffic problem never improve since I came here for long time ago. Bangkok traffic jam is very frustrated make tourists inability to change or achieve a meeting. Pollution in Bangkok become a major problem and seems to be characteristic of Thailand capital city. Bangkok city atmosphere is very hot and crowed with pollution, cross-road in Bangkok are very difficult, dangerous and unsafe. Addicts come to Thailand for Drugs, unavailable of sanitary and toilets in Bangkok skirt area. Thai taxi driving is horrendous and they don't care how the passenger fell about security. A lot of places in Bangkok are very dirty making afraid of infection.

5.2 Delicious and Healthy Food Culture

Japanese tourists have an attitude and felling on Bangkok city and safety in the positive aspects such as Thai food along road side is attractive, amazing test and cheap price. Even it's not well sanitary but acceptable and popular for Japanese tourists. Bangkok negative aspects are such as food along the road side is not sanitary, the street vendors welcome to try to force to buy fruits. Thai Food Street is very cheap but the bad thing is sanitary problem. Korean tourists have an attitude and feeling on Bangkok city and safety in the positive aspects that *'we love Thai food and Thai traditional massage'*. There are so many types of Thai restaurants, from lowest up to highest standard. Thai fruits are very unique and so amazing

like durian and rambutan. Thai food is healthy, low calories and tasty. Korean tourists are more favorable because Thai restaurants are available in variety in Bangkok make them convenience to find their favorite meal.

5.3 Thailand Unique and Distinctive Culture

Japanese tourists have an attitude and felling on Thailand unique and distinctive culture in the positive aspects such as people are friendly and helpful, the demise of the king is an amazing Thailand phenomenal, multicultural and traditional performance in Thailand differently from regional like fingernail dance (*Fawn Lep*) in north and shadow play in south. Thailand natural resource like beaches and national parks are very beautiful. Thai people are very friendly, kindness and always giving smile that is '*charming of Thailand*'. Thai people culture respect to the king make so impressive Thai hospitality same like '*Japanese Omotanashi*' (Japanese hospitality) make feel at home. Thai people are very religion and honestly. There are a lot of Buddhist temples in Bangkok so it is usual to see monks wearing saffron-colored robes when they are out gathering morning alms. Most of Thai people are very nice, kind and helpful. In negative aspects Thai society poor-middle-rich gap are highly different.

Korean tourists have an attitude and felling on Thailand unique and distinctive culture in the positive aspects such as Thai people are very kind, sincere, helpful and warmest hospitality. Thai culture are respectful to foreign visitors, they are very active and look so powerful energy in a daily life. Bangkok people are friendly and fashionable, their smiles make very attractive with warmest hospitality. Bangkok girls are very beautiful, friendly and open minded. Thai massage and spa is very popular and it is a recommend thing for foreign visitors.

5.4 Thailand History and Traditions

Japanese tourists feel that Thailand historical thing is very interesting, particular Thai traditional house is simple but very attractive. A lot of temples in Thailand are most like to visit. Thai cultural and history in Ayutthaya is similar to Japan history. Thailand scenery like temples and beaches are attractive. Korean tourists felt that Thailand history and traditional are varieties such as lot of beautiful temples and sightseeing around Bangkok.

5.5 Bangkok Brand Power: Traditional and Popular Fashion

Japanese tourists feel that Bangkok is traditional and has popular fashion. A lot of famous shopping centers in Thailand can become a paradise of shopping. Bangkok city is called the "Venice of the East" because the Chao Phraya River, which runs through the city, is connected by several canals. The special sightseeing attractive program in Bangkok is Chao Phraya cruise. In Bangkok city can be travel for 24 hours, it could be defined as '*night trip paradise*'. Thailand is a good travel tourist place; Bangkok is a life city with providing a lot of staffs from all over the world. In negative aspects some of shopping center didn't display the commodity price and ask extra price as compare to local. Hotels and shoppers make a different price between Thai and foreigner.

Japanese tourists feel that commodities in Bangkok are very cheap and fashionable. Thai fashion is very model while the price is three times lower than Korea. The shopping center and cheap markets are everywhere in Bangkok even along roadsides. Traditional and modern commodities are sold along together make excited. Bangkok is the modern city and variety on day and night. There is shopping in Thailand because '*Bangkok is the City of fashion*'. In the negative aspects is shopping venders are close to the footpath look so scary.

6. Conclusion

Bangkok is one of Southeast Asia's most exciting and dynamic cities. This city offers Japanese and Korean tourists wonderful mix of ancient and modern cultures. The reason why is Bangkok the popular destination chosen by Japanese and Korean tourists? This is because Thai traditional unique and distinguished culture such as, Thai people have a simple way of life, archaeological things like Golden Mountain and Grand Palace are arguably the most popular sightseeing attractive for foreigners to visit Bangkok as tourist destination. This result is similarly supported by Montenegro, Costa, Rodrigues and Gomes, (2014) given the reason '*why Portugal was the destination chosen for tourists holidays?*' The 32 percent of respondent declare that Portugal is beautiful and specific country; 28 percent attributed the reason to the unique cities, traditional history, people hospitality, unique culture and 4 percent attributed to architecture of places.

Bangkok has many wonderful restaurants and it is renowned in among Japanese and Korean tourist about street food stalls that make a variety of testy dishes. Despite, street food is not well

with sanitary but acceptable whereby most of the customers are concerned on cheap price. A variety of street foods stalls are very preferable by Japanese and Korean tourists, they called Bangkok the food capital of Asia. Undoubtedly, the best Bangkok product rate by Japanese and Korean tourists is street food, Thai fruit, Thai traditional massage and spa, respectively. Similarity to Portuguese tourism products were food, wine and city breaks (Montenegro, Costa, Rodrigues and Gomes, 2014). Based on the results food is the most important factor effecting on Singaporean, Malaysia and Laotian on Thailand destination satisfaction (Wadecharoen, 2016). In additional, the research asked what the key Thai menu food should be promotes and communicate internationally. There are top five Thai food menu voted by Japanese tourists such as Tom Yam, Pad Thai, Som Tam, green curry and sticky rice. Korean Tourists vote Pad Thai, Tom Yam fried rice, Tom yam seafood, grill chicken and Som Tam.

Tourism Authority of Thailand (TAT) are promoted *Pad Thai* menu and communicate internationally via simple cooking video of Pad Thai. As of Dr. Yuthasak Supasorn, TAT governor said, "This Pad Thai viral video marketing firms part of our Amazing Thailand Discover Amazing Stories initiative aimed at attracting travelers from around the world to explore the charms in everyday life of the Thai people that boast a mix of culture and traditions that epitomizes *"Thainess"* and make the country stand out as offering unique experience to all visitors who visit Thailand". The Pad Thai viral video marketing has attracted over 1.5 million views within a few days after it was posted on the social media channels and has become a popular Thai menu through social media sharing (TAT News, 8 February, 2016). The Thai food is tasty, healthy and low calories, it's become a popular menu available in Thai restaurant and street food stalls in Bangkok. This city is unless of happiness by traditional culture and shopping. In every year many Japanese tourists travel to Bangkok city to appreciate Thailand's special cultural traditional. There are a hundred Buddhist temples surround the city so it is usual to see monks wearing saffron-colored robes when they are out gathering morning alms. Japanese tourists discover Thai way of life and impressive Thai culture, traditional, heritage. An awareness of Thai culture will stimulate international tourists travel driven by the unique identities of multicultural communities across Thailand (The Government Public Relation Department, 2016). Thai trip is complete unless tourists have experienced Bangkok's vibrant nightlife. The

city become alive at night, there are many venue to enjoy and become nigh trip paradise. Korean tourists perceived Bangkok brand image as *'city of fashion'* whereby shopping centers are several varieties in the city (Suhartanto, Ruhadi & Triyuni, 2015). Japanese and Korean tourists consider Bangkok is safe place and clean environment. Despite transportation facilities has not sufficient, Taxi driver do not act on the regulation such as using meter, drive carefully and safely reach to destination. Pollution and decadent environment in Bangkok is reflect to Thailand image. These are the important factors effecting on international tourists destination satisfaction (Arasli & Baradarani, 2014). Hence, this study point out the important factors to fulfilled of Japanese and Korean tourists satisfaction. All respondents were agree to revisit Thailand for the next 2 years and will recommend Thailand for their friend and relative. This is because of they are impressive on Thailand travel experience whereby associated with using word of mouth among prospective tourists (Jalilvand & Samiei, 2010). Thus, making strong brand image such as shopping, nightlife, transportation, scenery, fair, cities, cuisine, safe, climate, beach, accommodation, atmosphere and hospitality will be directly associate with willingness to visit on destination (Kim & Kerstetter, 2016).

7. Suggestions for Further Research Study

Japanese and Korean tourists describe the negative and positive perception up on five characteristics of Bangkok. In positive aspects should be point out outstanding factors for making further qualitative and quantitative research study. What are most important and attractiveness factors should be promoting Bangkok internationally.

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The Performance of Japanese subsidiary development in Thailand : An empirical investigation via Japanese Headquarter Perspective in Tokyo, Japan

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Abstract

The main objective for global business is for maximize profit in oversea countries. This is including Japanese investment in Thailand. Japanese excusive directors and managers well know how to cover operating expenses and achieve a stable profit. This is because they can determined the success factors for making their subsidiary successfully. Selecting an appropriate performance measurement is the primary determinant of a successful Japanese subsidiaries in Thailand. Hence, *“what are the perception and evaluation of Japanese headquarters to evaluate their subsidiaries in Thailand?”* In order to investigate this research question, in-depth-interview with Japanese headquarter manager in Tokyo monopolistic will be investigate empirically.

Keywords: Japanese, Subsidiary, Performance, Tokyo, Thailand

1. Introduction

The role of Japanese investment and their subsidiaries in Thailand has been discussing as significant private investment indicator affecting on national economic development in several decades. The trend of foreign direct investment (FDI) trend to increase in term of projects whereby the major investment come from Japan worth 293,334 Million Baht in year 2014 (refer to Table 1.1 and Table 1.2). As a result, it brought a national prosperity into a recipient developing countries through financial

investment inflows, enhanced local government revenue, improved national gross domestic product, generated national employment and enhanced job opportunity (Wadecharoen, Worapongpat, Lertnaisat, Lertpiromsuk & Teekasap, 2015a:b). Particularly, the majority Japanese firm were engaged in Thailand automobile and electronic parts (refer to Table 1.3 and Table 1.4). This research attempt to investigate the performance of Japanese subsidiaries in Thailand via the headquarter perspective in Tokyo, Japan.

Table 1.1: Japanese Investment (No. of projects, Total investment and Total capital)

	2013	2014	2015	2016
No. of Projects	2,014	1,662	2,237	1,688
No. of Projects (Japanese Projects)	686	417	-	-
Total investment (Billion Baht)	1,026.43	724.74	809.38	861.34
Japanese investment (Million Baht)	282,848.5	293,334	-	-
Total Registered Capital (Billion Baht)	136.54	99	173.45	253.48
Thai	75.91	40.83	87.09	209.49
Foreign	60.63	58.17	86.37	43.99
Employment	240,599	128,606	183,208	139,137

Sources: International Affair Division, BOI, As of February 20, 2017

Table 1.2: FDI Projects Apply to BOI 2017 (Jan-Feb) Comparing to 2016 and 2015 Ranking by Investment

Country	2015			2016			Country	2017 (Jan-Feb)		
	No.	Invest	Ranks	No.	Invest	Ranks		No.	Invest	Ranks
Total FDI	534	95,960	*	900	293,281	*	Total FDI	99	15,341	*
Japan	163	28,459	1	263	55,267	1	Japan	36	6,136	1
Singapore	80	17,032	2	105	35,993	2	Hong-Kong	5	2,035	2
Indonesia	2	15,737	3	3	4,972	10	Malaysia	5	1,995	3
PRC (China)	53	12,382	4	104	32,537	3	Singapore	11	1,121	4
U.S.A	18	6,810	5	27	5,274	9	Germany	4	660	5
Hong-Kong	26	3,796	6	35	20,110	5	Taiwan	8	625	6
Taiwan	23	2,364	7	42	6,652	8	PRC (China)	4	261	7
Korea	20	1,726	8	35	8,998	7	U.S.A	2	216	8
Netherlands	11	1,499	9	41	29,924	4	India	3	180	9
Malaysia	13	1,074	10	33	3,667	12	Korea	7	143	10

Source: International Affair Division, BOI, As of February 20, 2017

Table 1.3: Investment Classified by Sectors (Billion Baht)

Sectors	2014		2015		2016		2017 (Jan-Feb)	
	No.	Invest	No.	Invest	No.	Invest	No.	Invest
Agriculture and Agricultural Product	234	63.68	341	88.94	320	166.10	26	4.88
Mineral, Ceramics and Basic Metals	49	31.49	55	31.96	40	30.81	4	0.21
Light Industry	47	12.04	88	27.06	47	14.28	7	1.55
Metal Products, Machinery & Transport Equipment	378	302.62	434	128.26	216	85.29	18	16.18
Electronics and Electrical Appliances Industry	227	76.84	319	116.89	365	68.56	62	3.19
Chemicals, Plastics and Paper	156	48.81	292	128.69	128	186.45	16	2.43
Services and Public Utilities	571	189.27	708	287.59	572	309.84	69	26.83

Source: International Affair Division, BOI, As of 9/3/ 2017

Table 1.4: Japanese Investment Classified by Sectors (Million Baht)

Sectors	2011		2012		2013		2014	
	No.	Invest	No.	Invest	No.	Invest	No.	Invest
Agriculture and Agricultural Product	14	8,102	22	7,917	16	7,405	4	1,732
Mineral, Ceramics and Basic Metals	21	14,944	21	19,150	15	25,044	17	5,205
Light Industry/Textiles	13	4,045	17	6,512	22	11,999	7	8,466
Metal Products and Machinery	234	66,851	337	169,861	316	14,370	193	147,950
Electronics and Electronic Products	83	36,886	142	87,075	110	49,545	52	6,511
Chemicals and Paper	51	25,745	100	46,366	88	20,962	37	7,790
Services	68	2,395	122	11,550	119	11,167	107	4,177
Total	484	158,968	761	348,430	686	290,492	417	181,832

Source: International Affair Division, BOI, As of January 2015

Note: ¹Japanese Investment projects refer to projects with Japanese capital of at least 10%

Since, 1990s, multinational enterprises (MNEs) from developed countries trend to spread their subsidiaries through Asia (refer to Table 1.2). Especially, Japanese multinational corporation (MNCs) disperse many subsidiaries in Asia. These subsidiaries have individually their own business roles in their countries. And also, international joint venture (IJV) has become a popular mode used by Japanese manufacturing (MNCs) to enter Southeast Asia region in general (Julian, 2005) and Thailand in particular (Wadecharoen, 2015). As of this perspective, the view of network is very meaningful for the paper.

Despite, the failure rate of IJV could be as high as 42 percent during a two-year period from 2005 to 2006 as officially reported in Ho Chi Minh City (HCMC) in Vietnam, this cause a total capital of 694.9 million. The reason behind high failure rate (42 percent) cause by financial losses (Cao Minh Tri, 2012). However, Fogler and Reichert, (2002) show that IJVs failure rate could be as high as 70 percent. As of this point, forces the question into two point that are “*is this 70 percent IJVs failure rate is true?*” and, “*why it valid for all fiscal year leading to 2009?*” Base on this reason, force the question ‘why IJV become a popular strategic entry mode use by multinational enterprise. Thus, there needs to be empirically examine why IJV failure rate remains so high and what can be done to mitigate this trend.

The main objective for global business is for maximize profit in oversea countries. This is including Japanese investment in Thailand. Japanese executive directors and managers well know how to cover operating expenses and achieve

a stable profit. This is because they can determined the success factors for making their subsidiary successfully. According to the literature review and past research studies has shown that there is no dominant indicator with respect to successful IJV performance. However, Barden, Steensma and Lyles, (2005) found that a consistent relationship between resources contribution and control is necessary for each partner receive an optimal return while not missing any resources. Thus, selecting an appropriate and effective control mechanism is the primary determinant of a successful IJV in Thailand (Cao Minh Tri, 2012).

2. The Performance of Japanese subsidiary in Thailand

This study evaluate the performance of Japanese subsidiaries in Thailand based on the secondary data survey on Business Sentiment of Japanese Corporations in Thailand for the 2nd half of 2016 reported by JETRO Thailand. According to the JETRO Thailand and Wadecharoen, Kanjanavanikul, Lertnaisat and Teekasap, (2013) evaluated the performance of Japanese subsidiaries in Thailand such as sales results for 2016, pre-tax profit/loss, capital investment (manufacturing sector) and export trend. As of the survey data by JETRO and JCC economic survey team distribute questionnaire to 1,724 JCC member firms on Nov 7, 2016 and response deadline on Dec 6, 2016. The total number of firms responding to this questionnaire 508 firms, approximately 29.5%. According to sampling of JCC, Japanese firms classified in to two sectors (1) manufacturing sectors such as included 288 firms and (2) non-manufacturing sectors included 220 firms. The first measurement indicators is ‘*sale volume*’ and the

result for 2016 exhibited in Table 2.1

Table 2.1: Sales Result for 2016

	Industry	Increase				No Change	Decrease			
		Total	More than 20%	10-20%	Less than 10%		Total	Less than 10%	10-20%	More than 20%
1	Food	6 (86)	0 (0)	2 (29)	4 (57)	0 (0)	1 (14)	1 (14)	0 (0)	0 (0)
2	Textiles	5 (38)	0 (0)	3 (23)	2 (15)	5 (38)	3 (23)	3 (23)	0 (0)	0 (0)
3	Chemicals	25(56)	6 (13)	3 (7)	16(36)	9(20)	11(24)	8(18)	3(7)	0(0)
4	Steel/Non-ferrous metal	18 (45)	7 (18)	1 (3)	10 (25)	9 (23)	13 (33)	7 (18)	3 (8)	3 (8)
5	General machinery	12 (50)	8 (33)	1 (4)	3 (13)	3 (13)	9 (38)	1 (4)	5 (21)	3 (13)
6	Electrical/electronic machinery	30 (48)	9 (15)	12 (19)	9 (15)	12 (19)	20 (32)	7 (11)	8 (13)	5 (8)
7	Transportation machinery	30 (52)	6 (10)	11 (19)	13 (22)	7 (12)	21 (36)	12 (21)	7 (12)	2 (3)
8	Others	19 (53)	3 (8)	6 (17)	10 (28)	9 (25)	8 (22)	3 (8)	5 (14)	0 (0)
	Manufacturing sector total	145(51)	39 (14)	39 (14)	67 (20)	54 (19)	86 (30)	42 (15)	31 (11)	13 (5)
1	Trading	47 (57)	13 (16)	20 (24)	14 (17)	11 (13)	24 (29)	15 (18)	8 (10)	1 (1)
2	Retailing	6 (67)	2 (22)	1 (11)	3 (33)	1 (11)	2 (22)	0 (0)	1 (11)	1 (11)
3	Finance/Insurance/Securities	9 (60)	0 (0)	4 (27)	5 (33)	6 (40)	0 (0)	0 (0)	0 (0)	0 (0)
4	Construction/Civil engineering	6 (22)	5 (19)	0 (0)	1 (4)	5 (19)	16 (59)	3 (11)	2 (7)	11 (41)
5	Transportation/Communication	19 (54)	5 (14)	5 (14)	9 (26)	6 (17)	10 (29)	8 (23)	2 (6)	0 (0)
6	Other	22 (67)	9 (27)	5 (15)	8 (24)	11 (33)	0 (0)	0 (0)	0 (0)	0 (0)
	Non-Manufacturing sector total	109(54)	34 (17)	35 (17)	40 (20)	40 (20)	52 (26)	26 (13)	13 (6)	13 (6)
	Total	254(52)	73 (17)	74 (15)	107(20)	94 (19)	138(28)	68 (14)	44 (9)	26 (5)

Source: JETRO, As of February 2017

Based on Table 2.1 sales results for 2016, the majority of Japanese firms in manufacturing sectors were engaged in electrical machinery and transportation machinery. Japanese subsidiaries in Thailand manufacturing has increase sales of 51%, whereby most of the samples have increase sale less than 10%, 54% has not change sale volume and 30% have decrease sales volume where by most of the samples have decrease sale volume less than 10%. In non-manufacturing sectors most of Japanese firms were engaged in trading business, finance, insurance and securities. Japanese subsidiaries in non-manufacturing has increase sales of 54%, whereby most of the samples have increase less than 10% and 26% have decrease sale volume where by most of the samples have decrease sale volume less than 10% (refer to Table 2.1).

Regarding to pre-tax profit/loss, the ration of firm reporting “Profit” reaches 74%. Firm reporting an “Increase” in their pre-tax profit (including the cases that loss will diminish or vanish or balance achieved) account for 42% while 37% report a “Decrease” (Table 2.2). Particularly in electrical/electronic machinery industry, 77% of sample companies have perceived profit, 5% balance while other 18% have lost their profit. 32% of Japanese firms in electronic industry, have gain more profit while 47% of sample profit have decline as compare to year 2015.

Table 2.2: Pre-tax profit/loss in 2016

	Industry	Profit	Balance	Loss	Total	Increase	No change	Decrease
1	Food	7 (100)	0 (0)	0 (0)	7	6 (86)	1 (14)	0 (0)
2	Textiles	12 (92)	0 (0)	1 (8)	13	4 (31)	5 (38)	4 (31)
3	Chemicals	34 (74)	6 (13)	6 (13)	46	28 (61)	8 (17)	10 (22)
4	Steel/Non-ferrous metal	33 (83)	2 (5)	5 (3)	40	23 (58)	7 (18)	10 (25)
5	General machinery	16 (73)	3 (14)	3 (14)	22	10 (45)	2 (9)	10 (45)
6	Electrical/electronic machinery	48 (77)	3 (5)	11 (18)	62	22 (32)	13 (21)	29 (47)
7	Transportation machinery	49 (83)	3 (5)	7 (12)	59	28 (47)	9 (15)	22 (37)
8	Others	27 (75)	2 (6)	7 (19)	36	14 (39)	9 (25)	13 (36)
	Manufacturing sector total	226 (79)	19 (7)	40 (14)	285	133(47)	54 (19)	98(34)
1	Trading	59(72)	5(6)	18(22)	82	34(41)	15(18)	33(40)
2	Retailing	5(56)	2 (22)	2 (22)	9	4(44)	3(33)	2(22)
3	Finance/Insurance/Securities	11(73)	0 (0)	4 (27)	15	8(53)	4(27)	3(20)
4	Construction/Civil engineering	12(43)	4(14)	12(43)	28	5 (18)	7(25)	16(57)
5	Transportation/Communication	31(89)	1(3)	3(9)	35	11(31)	8(23)	16(46)
6	Other	26(58)	4(9)	15 (33)	45	14(31)	12(27)	19(42)
	Non-Manufacturing sector total	144(67)	16(7)	54(25)	214	76(36)	49(23)	89(42)
	Total	370 (74)	35 (7)	94 (19)	499	209 (42)	103 (21)	187 (37)

Source: JETRO, As of February 2017

The amount of planned capital investment (in the manufacturing sector) in 2017 decreased by 6.3% from 2016 (The total number of responding firms is 283). The ratio of firms anticipating and “Increase” in their capital investments in 2017 is 33% whereas 22% anticipate a “Decrease” (Table 2.3a). “Replacement” is the predominant reason for capital investment in both 2016 and 2017 (Tables 2.3b-2.3c).

Table 2.3(a): Capital Investment in 2016

	Industry	2016	2017		Increase	No change	decrease	Undecided	Total
		Amount	Amount	Increase					
1	Food	2,069	2,503	21.0	3 (43)	3 (43)	0 (0)	1 (14)	7
2	Textiles	3,122	1,587	▲ 49.2	3 (23)	3 (23)	7 (54)	0 (0)	13
3	Chemicals	4,787	5,435	13.5	20 (47)	15 (37)	4 (9)	4 (9)	37
4	Steel/Non-ferrous metal	4,112	3,989	▲ 3.0	15 (37)	14 (34)	8 (20)	4 (10)	39
5	General machinery	356	464	30.5	7 (30)	8 (35)	5 (22)	3 (13)	20
6	Electrical/electronic machinery	18,931	16,203	▲ 14.4	18 (29)	21 (33)	13 (21)	11 (17)	54
7	Transportation machinery	21,322	21,314	▲ 0.0	20 (35)	14 (25)	19 (33)	4 (7)	56
8	Others	4,817	4,256	▲ 11.7	8 (22)	19 (53)	7 (19)	2 (6)	32
	Manufacturing sector total	59,515	55,750	▲ 6.3	94 (33)	97 (34)	63(22)	29 (10)	258

Source: JETRO, As of February 2017

Table 2.3(b):Details of Actual Capital Investment in 2016

	Industry	New	Expansion	Replacement	Streamlining	Others	Total	No. of firms
1	Food	3 (43)	4 (57)	6 (86)	1 (14)	0 (0)	14	7
2	Textiles	4 (31)	4 (31)	8 (62)	5 (38)	0 (0)	21	13
3	Chemicals	14 (38)	7 (19)	23 (62)	17 (46)	1 (3)	62	37
4	Steel/Non-ferrous metal	10 (26)	7 (18)	23 (59)	9 (23)	0 (0)	49	39
5	General machinery	7 (35)	3 (15)	13 (65)	6 (30)	2 (10)	31	20
6	Electrical/electronic machinery	21 (39)	12 (22)	34 (63)	18 (33)	7 (13)	92	54
7	Transportation machinery	31 (55)	15 (27)	27 (48)	23 (41)	3 (5)	99	56
8	Others	9 (28)	8 (25)	19 (59)	11 (34)	0 (0)	47	32
	Manufacturing sector total	99 (38)	60 (23)	153 (59)	90 (35)	13(5)	415	258

Source: JETRO, As of February 2017

Table 2.3(c): Details of Actual Capital Investment in 2017

	Industry	New	Expansion	Replacement	Streamlining	Others	Total	No. of firms
1	Food	4 (57)	3 (43)	6 (86)	1 (14)	0 (0)	14	7
2	Textiles	4 (31)	3 (23)	8 (62)	5 (38)	0 (0)	20	13
3	Chemicals	14 (38)	13 (35)	22 (59)	13 (35)	1 (3)	63	37
4	Steel/Non-ferrous metal	9 (23)	9 (23)	21 (54)	10 (26)	0 (0)	49	39
5	General machinery	7 (35)	8 (40)	11 (55)	8 (40)	2 (10)	36	20
6	Electrical/electronic machinery	17 (31)	14 (26)	35 (65)	19 (35)	7 (13)	92	54
7	Transportation machinery	29 (52)	11 (20)	33 (59)	24 (43)	3 (5)	100	56
8	Others	7 (22)	4 (13)	23 (72)	13 (41)	1 (3)	48	32
	Manufacturing sector total	91 (35)	65 (25)	159 (62)	93 (36)	14 (5)	422	258

Source: JETRO, As of February 2017

The percent of firms reporting and “Increase” in their exports in the second half of 2016 is 31% while that is the first half of 2017 is 39%, which both exceed “Decrease” of their term. As for the 2016 full-year exports, the firm anticipating an “Increase” account for 35%, exceeding “Decrease” (17%) by 18 points (*Tables 2.4*).

Table 2.4: Export in 2016 (Second half)

	Industry	Increase			No. Change	Decrease			Total		
		Total	More than 20%	10-20%		Less than 10%	Total	Less than 10%		10-20%	More than 20%
1	Food	6 (86)	1 (14)	1 (14)	4 (57)	1 (14)	0 (0)	0 (0)	0 (0)	7	
2	Textiles	5 (38)	1 (8)	1 (8)	3 (23)	3 (23)	5 (38)	4 (31)	1 (8)	0 (0)	13
3	Chemicals	19(41)	7 (15)	6 (13)	6 (13)	20 (43)	7(15)	5(11)	1 (2)	1 (2)	46
4	Steel/Non-ferrous metal	9 (24)	2 (5)	1 (3)	6 (16)	24 (63)	5 (13)	1 (3)	2 (5)	2 (5)	38
5	General machinery	3 (17)	1 (6)	2 (11)	0 (0)	14 (78)	1 (6)	0 (0)	1 (6)	0 (0)	18
6	Electrical/electronic machinery	25 (42)	5 (8)	15 (8)	15 (25)	21 (35)	14 (23)	7 (12)	4 (7)	3 (5)	60
7	Transportation machinery	16 (28)	1 (2)	7 (12)	8 (14)	21 (37)	20 (35)	9 (16)	5 (9)	6 (11)	57
8	Others	10 (30)	1 (3)	1 (3)	8 (24)	17 (52)	6 (18)	4 (12)	1 (3)	1 (3)	33
	Manufacturing sector total	93 (34)	19 (7)	24 (9)	50 (18)	121(44)	58 (21)	30 (11)	15 (6)	13 (5)	272
1	Trading	18(24)	4(5)	3(4)	11(14)	53(70)	5(7)	2(3)	1(1)	2(3)	76
2	Retailing	0 (0)	0 (0)	0 (0)	0 (0)	2(100)	0 (0)	0 (0)	0 (0)	0 (0)	2
3	Other	1(25)	0 (0)	0 (0)	1(25)	3(75)	0 (0)	0 (0)	0 (0)	0 (0)	4
	Non-Manufacturing sector total	20 (23)	4 (5)	3 (3)	13 (15)	61 (70)	6 (7)	2 (2)	1 (1)	3 (3)	87
	Total	113(31)	23 (6)	27 (8)	63 (18)	182(51)	64(18)	32 (9)	16 (4)	16 (4)	359

Source: JETRO, As of February 2017

2.1. Research Focus

Control system is regarded as performance evaluation system in management accounting. Like this, performance evaluation system of subsidiary is critical issue of this paper.

2.2 Research Objectives

2.2.1 To determine a success predictor for Japanese subsidiary in via Japanese headquarter perspective.

2.2.2 To examine the type of control mechanism use by Japanese headquarters to evaluate their subsidiaries in Thailand.

2.2.3 To determine a proper control mechanisms necessary for Japanese subsidiary in Thailand.

2.2.4 To examine the performance of Japanese subsidiary in Thailand during year 2015-2016.

3. Literature Review

3.1 The definition of term

3.1.1 Multinational Cooperation (MNCs)

Multinational corporation (MNCs) or worldwide enterprise can be defined as the following statement *‘an organization that owns or controls production of goods or services in one or more countries other than their home country’* (Christos & Sugden, 2000).

It can also be referred as *‘International Corporation’*, *‘transnational corporation’* or a *‘stateless corporation’* (Voorhees, Seim & Coppett, 1992).

3.2.1 International Joint Venture (IJVs)

The term ‘IJV’ has many different meaning but the most common definition is *“a separately legal*

business venture that involves two or more entities with different nationality working together to achieve mutually agreed on business objectives”.

3.2 Successful Predictor of Japanese Subsidiaries

Generally, the most important successful predictor for Japanese subsidiary performance is *‘mechanism control’* by Japanese headquarter. *‘What are the type of control mechanism use by Japanese headquarters to evaluate their subsidiaries?’* Bases on the relevant literature, there are several past research studies pay attention to both human factor, financial and non-financial evaluation in the following below;

3.3 Control System Structure

In management accounting, control system is referred in the context of management control. Anthony and Welsch (1981) notice, there are three different types of planning and control processes. They are (1) strategic planning, (2) management control and (3) operational control. This management control is defined as the process by which management assures that the organization carries out its strategies effectively and efficiently¹). This management process is applicable to the relationship between Japanese headquarter and foreign subsidiaries in this multinational corporation. This group of headquarter and subsidiaries is consolidated into corporate group. Management in Japanese headquarter must affect the manager of foreign subsidiary toward the right direction in which MNC’s overall strategy is realized. If this is possible, each subsidiary can attain high financial performance of MNC as a whole. This relationship suggested by Nakammaru, (2015) is exhibited in Figure 3.1 below.

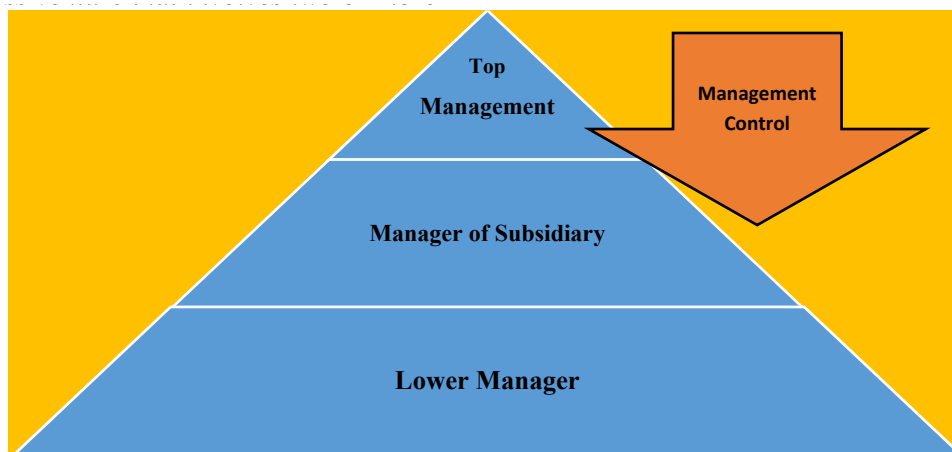


Figure 3.1: Management Control Structure in MNC

Source: Nakammaru, (2015)

Top management shows Japanese headquarter and middle shows foreign subsidiary manager. Like this figure, top management controls manager of subsidiary by many management tools. For management control, many management tools are used. As management tool, many types of management accounting information can be used to subsidiary. For example, budget is the most typical management accounting tool for subsidiary. This budget is used as one of principal performance measures for subsidiary manager. This budget is compared to actual result. In this situation, there are four foreign responsibility centers which can be applied to analyze budget variance.

Table 3.1: Type of Budgets Variance

No.	Type of budget	Definition and Term
1.	Cost center	Cost budget is compared to actual result of cost
2.	Revenue center	Revenue budget is compared to actual result of revenue.
3.	Profit center	Profit budget is compared to actual result of profit.
4.	Investment center	Profit is compared to actual result in relation to investment.

3.4 Control Mechanism

Goa Minh Tri, (2012) investigated the successful IJVs predictor in Vietnam. The study was used four popular control mechanisms such as action-control, result-control, and personal-control mechanisms co-exist in a closely-knit environment yet still influence each other in a process assisted by relationship control mechanism. As a condition for success, an IJV should have at least **one control mechanism** at a high level of importance with **no control mechanisms positioned** at a low level of importance.

Table 3.2: Comparison of control mechanisms

	Action-control mechanism	Result-control mechanism	Personnel-control mechanism	Relationship-control mechanism
Definition	Partners can take steps to ensure, through legal, physical, administrative means, that certain desirable actions are taken or undesirable actions not taken	Partners can monitor results and intervene when necessary	Partners can take steps to ensure either that IJV personnel are willing and able to perform well or that the IJV's culture leads them to perform well, such as through socialization and peer control	A process in which people are centered in compliance with IJV wishes
Departments and divisions should apply	Customer service, finance, accounting, administration, planning, operation, engineering, construction, documentation, factory and plant	Sales, import- export, marketing, IT, design, project, environment and development -budget → actual result -output control	All	Middle and top managers
Affecting factors	1. Interdependency 2. Bargaining power 3. Cultural differences 4. Conflict resolution techniques	1. Commitment 2. Trust 3. Communication	1. HRM	1. Trust/commitment\ 2. Information sharing 3. Interactive skills

	Action-control mechanism	Result-control mechanism	Personnel-control mechanism	Relationship-control mechanism
Level of importance	4 IJVs were high and 3 IJVs were medium	3 IJVs were high and 4 IJVs were medium	All 7 IJVs were high	All 7 IJVs were high
Advantages	1. Guarantee right to make or approve certain key decisions 2. Physically secure valuable company assets	1. Ensure that IJV employees are promised rewards for producing the desired results 2. Increase IJV autonomy	Focus on the main factor, the source of the success or failure of any organization, i.e. human resources	Establishing clear performance indicators lets partners measure performance and can give them early warning of potential problems. At the same time, partners should aim for a flexible relationship
Advantages	3. Require IJV personnel to follow certain pre-approved policies or contract terms	3. Employees are at ease in work and activities		
Disadvantages	1. Conflict with the high need of IJV autonomy 2. Costs a lot of money, personnel, time and effort 3. Easy to make the whole IJV feel stressed at work	Partners are always worried that the IJV could go in the wrong direction → “prevention is better than cure”	HRM is very complicated because human nature is very complicated. Thoughts are sometimes clear but sometimes inconsistent	Even in the best relationship, partners will almost certainly have problems from time to time
Conclusion	Should be applied in some departments, divisions in IJV	Should be applied in some departments, divisions in IJV	Should be applied in all departments and divisions in IJV	Integral part of an IJV

Closely-knit, influence each other in a process that is assisted by the relationship-control mechanism

Source: Goa Minh Tri, (2012), page 80

Harzing’s typology uses two dimensions ‘*personal/impersonal*’ and ‘*direct/indirect*’, to generate four distinctive groups of control mechanisms employed by MNCs. The four different groups are defined as follows (also see Table3.1).

1) Personal centralized control denotes the idea of hierarchy. It relates to decisions taken at the center or **top level of companies**, followed by direct personal surveillance of their execution.

2) Bureaucratic formalized control, the other direct behavior control mechanism, is by contrast, impersonal. Written manuals attempt to standardize the behavior of employees by clearly prescribing courses of action to be followed.

3) Output control resembles market approaches to coordination by **focusing on outputs rather than on behavior**(as the other three mechanisms do). **The firm measures outputs such as production, sales or financial data.** By comparing these results with pre-specified goals, the final output is evaluated and controlled, rather than controlling inputs, i.e. the behavior of single employees.

4) Control by socialization and networks describes all other control mechanisms; in other words, mechanisms that are not hierarchical, bureaucratic, formal, or output oriented. There are three main subcategories: (1)Socialization by sharing organizational values and goals (2)

Informal and horizontal exchange of information with an emphasis on non-hierarchical flows between all managerial levels

(3)Temporarily formalized cross-departmental relations in the form of task forces or cross-functional teams.While personal centralized control and bureaucratic formalized control aim at controlling behavior directly and explicitly, the two other groups do so indirectly and implicitly. Similarly, personal centralized control and control by socialization and networks are based on personal exchange and social interaction. The other two are clearly of an impersonal and bureaucratic nature (for a more detailed description, see Harzing, (1999) in Table 3.4).

Based on the typology presented above, Harzing conducted a far-reaching international survey in 1995/96 that identified similarities and differences in the subsidiary control mechanisms of MNCs from the US, Japan, and seven European countries. Covering more than 120 MNCs operating in eight different industries and some 1,650 subsidiaries in 22 different industries, this survey is by far the most encompassing and systematic to date. The results of the study offer the best data base for comparisons of the various patterns of IMC employed by multinationals of different countries, from different industries, and with different organizational models (see Harzing, 1999).

Table 3.3: Classification of control mechanisms

	Personal/Cultural (founded on social interaction)	Impersonal/ Bureaucratic/ Technocratic (founded on instrumental artifacts)
Direct/ Explicit	Personal centralized control	Bureaucratic formalized control
Indirect/ Implicit	Control socialization and by networks	Output control

Source: Harzing 1999, 21

Table 3.4: Use of control mechanisms in subsidiaries of MNCs of different countries

	Japan	US	Germany	Sweden
Personal centralized control	Medium	Medium	Very high	Low
Bureaucratic formalized control	Low	Very high	Medium-high	Medium
Output control	Very low	Medium-high	high	Medium
Control by socialization and networks	Low	Medium	Medium	High
Expatriate control	Very high	Very low	High	Medium

Source: Harzing, (1999)

According to Harzing, (1999) display the characteristic of Japanese control mechanism compare to those three countries such as US, Germany and Sweden due to distinctive different IMC model. It is clearly that, Japanese headquarter feature control is very rely on expatriate control, as it level of expatriate control is very high. Similarly to Germany MNCs that also rely on expatriate as well as reply on personal control and output control. US companies are more rely on bureaucratic formalized control and output control while foregoing the use of expatriates as a means of control. Thus, US MNCs control are exact opposite of Japanese control. Swedish MNCs are evidently differ from Japanese counterparts, due to they are strongly reliance on socialization and networks control (refer to Table 3.4).

Bartlett and Ghoshal, (1989) defined Japanese MNCs as the 'Global Organization Model'. Based on Harzing's finding, Japanese MNCs employ large number of expatriate in their oversea subsidiaries and strongly rely on them to control and coordinate their oversea activities. As of this point, enable us to conclude that Japanese expatriate control has been taken a form of substitution of personal surveillance (personal centralization) by the headquarters in Japan. This is because of most Japanese MNCs are in automobile and electronics industries characterised by standardized consumer needs, price competition and economic of scale. These industries emphasize highly on effective production system and secure, thus, here is a partly explain very high degree of expatriate control.

4. Japanese Subsidiaries Performance Measurement

Through these questions, we want to clarify the control systems on which Japanese headquarters depend for high financial performance. As the constitution of interview shows, two aspects are important. To control performance, it is necessary to pay attention to both human factor and performance evaluation. These two factors become effective management tools for high performance. And also, excellent human resource management is a cause of high financial performance. Excellent performance evaluation system is a cause of high financial performance. High financial performance is the effect of this excellent human resource management and performance evaluation system. High performance companies deploy these excellent human resource and performance

evaluation system bilaterally. This can be shown as follows:



Figure4.1:Relationship between Control system and financial performance

Source: Nakamura, (2015)

According to Nakamura, (2015)evaluated the performance of Japanese subsidiaries in term of financial and nonfinancial factors. He suggest that effective evaluation of Japanese subsidiaries, not only financial measures but also include nonfinancial measures as important for continuous

growth. This is one remarkable attribute of Japanese management. Share of capital by Japanese headquarter Industry Financial measure nonfinancial measure

Table 4.1: Performance Evaluation (Financial & Non-financial Measure)

No.	Japanese headquarter Capital Share	Industry	Financial measure	Non-financial measure
S1	60%	Service	No answer	No answer
S2	85%	Manufacturing	Operating profit rate	Spoilage rate, delivery claims
S3	95%	Logistics	Net profit after tax	Safety, compliance
S4	100%	Manufacturing	Dividend	No answer
S5	66%	Manufacturing	Dividend	No answer
S6	90%	Manufacturing	Profit rate	No answer
S7	83.4%	Manufacturing	Operating profit, contribute margin etc.	KPI (Key Performance Indicator), Inventory

Source: Nakamura,(2015)

5. Research Design

This study using the multiple case study, secondary data reported by Japan External Trade Organization, or JETRO (Japanese government-related organization that promotes trade and investment) will be used to evaluate the performance of Japanese subsidiaries in Thailand. Following by in-depth-interview with Japanese headquarter in Tokyo to confirm the performance of Thailand investment and economic stability. A successful Japanese headquarter in Tokyo, Japan will be examine by reviewing their business records and in-depth face to face interviews with chief- executive organization (CEO), senior management and staff.

5.1 Sampling Size

Since the most of Japanese subsidiaries in Thailand were engaged in automobile and electronic industry (Wadecharoen, 2015). Thus, Japanese president/ director of Thailand subsidiaries was identified as the gate keeper for this study. Thus, to capture the real performance of Japanese subsidiary in Thailand, the qualitative study with five Japanese subsidiaries in dynamic metropolitan area were examined by reviewing their business records by personal interview with senior manager and companies presidents. To examine the type of control mechanism used in Thailand subsidiaries, a largest electronic company headquarter in Tokyo metropolitan, Japan was interview with chief-

executive organization (CEO) and senior management. The information reviewing by Japanese headquarter in Tokyo will back up the data from Japanese subsidiaries in Thailand. This sampling methods was back by Yin, (1994), suggest that six to ten cases are required as an acceptable population to survey, depending on a comprehensive data and information.

5.2 Research Instrument

Interview structure were adapted from Coa Minh Tri, (2012), he made in-depth face to face interview with seventy five staffs from different management level at seven success international joint venture (IJVs) in Vietnam. The interview guide included a wide rank of open-end questions that will use to collecting data such as general information, criteria to access IJV performance and performance satisfaction. A qualitative research data used to determine a proper control mechanism in Thailand subsidiary via Japanese headquarter perspective. The qualitative research data was collected via semi-structure interview adapted from Nakamaru, (2015).

5.3 Data Collection Processes

To be well preparing of collecting data processes, head office director, president and top manager were originally contracted by telephone to refine the purpose of the study. Directly, follow up by a cover letter to inform an information via email to each respective director, president and manager.

After a week, the interview dates will be follow-up by telephone and confirm by e-mail. The estimate time for interview duration are expected about 30 to 60 minutes up on the greater information giving by the interviewee. To manage effective interview and time consumption, essential personal information such respondent's name, nationality, present position, functional department and general responsibility were received before make up an interview. Bangkok metropolis and perimeter is the target location for five Japanese subsidiaries in Thailand and one Japanese headquarter in Tokyo city is the target location for this research. This is because of Tokyo is the Japan largest and most economically dynamic metropolis in Tokyo area.

Table 5.1 Research Data collection Plan

No.	Statement	Duration	Sources/Location
1	The performance of Japanese subsidiary in Thailand	2016- 1 st of 2017	- Board of Thailand Investment(BOI) - Japan External Trade Organization (JETRO)
2	Five sampling of Japanese Subsidiaries in Thailand	1 st of 2016	- Bangkok dynamic metropolitan area
3	Japanese headquarter	Oct 2016	- metropolis in Tokyo area

6. Research Finding

The qualitative finding of the study is based on the interview data given by five Japanese firms' presidents in Thailand automobile and electronics subsidiaries. Following by Japanese oversea manager of electronic largest corporation in Tokyo Japan. These interview data will be complementing with secondary data reported by Japan External Trade Organization (JETRO) and statistics record by the content of Thailand broad of investment (BOI). By reviewing of multi data sources enable to confirm good health and sentiment of Japanese subsidiaries performance in Thailand location.

Five Japanese subsidiaries in Bangkok metropolitan were review up on subjective performance. Three of five come from electronic industry (60%) and another two companies (40%) come from automobile assemble. First company produce brass part for air-condition manufacturing and perceived performance between 2015 to 1st 2016 that they gain less profit due to highly competition. This is similarly to next company who produce electronic panel supply for computer and mobile brands. In company three electronic sensor technology perceived strong satisfaction with profit performance between 2015 to 1st of 2016. This company has 90 % Japanese shareholder and major product on camera and sensor supply for automobile industry. In another two automobile assemble produced surface treatment chemical and common rail system are satisfy with profit performance in 2015 to 1st of 2016. Based on these interview data are similar to secondary data report by JETRO

Table 6.1: Research finding of five Japanese subsidiaries in Thailand

No.	Japanese Shareholder	Industry	Product	Position	Success Factors	Performance 2015 to 1 st of 2016
S1	51%	Electronic	Brass part	President	1. Customer relationship 2. Employee relationship 3. Supplier relationship 4. Infrastructure	Less profit (3-5%)
S2	51%	Electronic	Electronic panel	President	1. Political stability 2. BOI support 3. Labor supply 4. Quality assurance	Less profit
S3	90%	Electronic	Electronic sensor technology	President	1. Understanding local market & national culture 2. Good partner 3. Distribution Chanel 4. Logistic system 5. Infrastructure 6. Quality assurance	Strong profit
S4	80%	Automobile assemble	Surface treatment chemical	Vice President	1. Technical center 2. Human resources development 3. After sale service 4. domestic consumption 5. Quality assurance	Strong profit
S5	90%	Automobile assemble	Common rail system	Managing Director	1. Human resources development 2. After sale service 3. Quality assurance 4. Logistic system 5. Infrastructure	Strong profit

6.1 To determine a success predictor for Japanese subsidiary in Thailand via Japanese headquarter perspective.

Based on the interview data of five Japanese subsidiaries in Thailand in Table 6.1 shows the several success factors up on the types of business industries. Despite, the overall perspectives Japanese firms in Thailand consider successfully cause by national standard infrastructure, government support by given benefits to the investors via Board of Thailand Investment (BOI). To confirm this result Japanese headquarter in Tokyo was reviewing on company profile and determine

the success predictor of Thailand subsidiaries. The largest headquarter in electronic, company main products digital camera, technology sensor and so on. In global share market 60% produced from Thailand and 40% from China. Sale offices are all over the world such as in Asia Singapore, Hong-Kong, Taiwan, Indonesia and Malaysia and so on. They are appointed local manager subordinate in Thailand subsidiaries both manufacturing and sale offices. In their perspectives view Thailand as the successful business location as they given the supported reasons in Table 6.2.

Table 6.2: Interview data finding determining a success predictor of Thailand subsidiaries

No.	Statement	Results
1	Why do you selected Thailand?	<ol style="list-style-type: none"> 1) The domestic consumption is rather mutuality and comprehensive. 2) The majority of Thai population is in new aging generation which is the company target customer. 3) We look for product other production line to supply Thai customers demand. 4) In the last quarter of 2011, our manufacturing was effected by folding crisis this cause about 5 to 6 months non-production. The production still continues in China, however, even though the product is different from these in Thailand.
2	What is your perception about Thailand market?	We established the company in 1996, Thailand market is challenging successful in some particular product such as mobile camera and lens.
3	What is the successful criteria of your company?	<ol style="list-style-type: none"> 1) Thai population with high purchasing power 2) Attractive product 3) Distribution channel and logistic system 4) Stability of production such as price competitiveness 5) Marketing division in sale office such as Singapore
4	According to those criteria, are your subsidiary in Thailand successful?	Successfully

6.2 To examine the type of control mechanism use by Japanese headquarters to evaluate their subsidiaries in Thailand.

The objective 2.3 of the study “*what are the types of control mechanism used by Japanese headquarter to evaluate Thailand subsidiaries*”. The interview finding shows that subsidiary in Thailand was control by budget in term of annual quota and quarterly quota. Sale production control

by demand and adjusting mouthy. Global sale volume in digital camera approximately 400 Billion Yen and 60 percent of market share produced by Thailand manufacturing, following by Japan and China. These are the major control strategy used by Japanese headquarter in Japan (refer to Table 6.3 for more detail).

Table 6.3: Finding determining a success predictor of Thailand subsidiaries

No.	Statement	Results
1	How do you appointed subsidiaries manager in Thailand?	<ol style="list-style-type: none"> 1) Job hobbling by appointed Japanese manager 2) Localization strategy by using local manager at the middle organization level. 3) Employee requirement qualification; <ul style="list-style-type: none"> -Enable to speak and write Japanese and English -Enable work with Japanese culture and dealing with headquarter
2	How do you control your subsidiaries in Thailand?	<ol style="list-style-type: none"> 1) Control mechanism: our subsidiary in Thailand was control by budget in term of annual quota and quarterly quota. 2) Sale production control by demand and adjusting mouthy. 3) Global sale volume in digital camera approximately 400 Billion Yen and 60 percent of market share produced by Thailand manufacturing, following by Japan and China.

6.3 To determine a proper control mechanisms necessary for Japanese subsidiary in Thailand.

Based on the interview finding show that “*localization*” is the proper control mechanism used

by Japanese headquarter. This strategy used local subordinate to monitoring the overall organization. Despite, the top manager was appointed by parent company in Japan (refer to Table 6.4)

Table 6.4: Finding determining a proper control mechanisms of Thailand subsidiaries

No.	Statement	Results
1	What are the control mechanisms used in Thailand?	1) A proper control mechanism is required by localization. 2) Localization strategy is applied for the overall organization structure and control.

6.4 To examine the performance of Japanese subsidiary in Thailand during year 2015- 1st of 2016.

Based on the secondary data and JETRO reported the performance of Japanese subsidiaries in Thailand still in a good health and attractive Japan investor

particularly in manufacturing sector. Similarly to interview data finding confirm Thailand subsidiary is highly satisfaction via Japanese headquarter in Japan. This is because Thailand market is quite unite and attractive as compare to China and ASEAN countries.

Table 6.5: Finding determining performance of Thailand subsidiaries during 2015- 1st of 2016

No.	Statement	Results
1	Do you satisfy with Thailand market?	The Thailand subsidiary is highly satisfy. Thailand market is quite unite and attractive as compare to China and ASEAN countries.
2	How do you perceived about Thailand performance during 2015-1 st of 2016?	The performance of subsidiary in Thailand during 2015 to 1 st of 2016 is medium to low due to Thailand market growth is mutually in digital products.
3	What is the strategy for your business performance improvement?	Keeping move on Kaizen like Toyota way while most of the idea come from local staff who working closely with just-in-time system.

7. Conclusion and Discussion

Japanese investment is the largest investors on Thailand economic for several decades. This study attempt to investigate the performance of Japanese subsidiaries in Thailand both internal and international perspective. For the internal perspective five Japanese companies were review their business record and performance satisfaction both in electronic and automobile industries. The finding from interview data come out with the similarity result both Japanese subsidiaries in Thailand and headquarter in Japan are satisfies with their profit performance rate from less to strong profit (refer to Table 6.1). As of Yin, (1994) suggest that six to ten cause are required an acceptable population to survey, depending on comprehensive data and information. In this study to support the qualitative or interview data, the performance of Japanese subsidiaries in Thailand were review by several indicators such as sale results for 2016 (refer to Table 2.2), pre-tax profit/loss in 2016 (refer

to Table 2.3:a), capital investment in 2016(refer to Table 2.3:b), capital investment in 2017 (refer to Table 2.3:c) and export in second half of year 2016 (refer to Table 2.4) reported by JETRO. As of the survey data by JETRO and JCC economic survey team distribute questionnaire to 1,724 JCC member firms on Nov 7, 2016 and response deadline on Dec 6, 2016. The total number of firms responding to this questionnaire 508 firms, approximately 29.5%. Based on JETRO report enable to confirm that Thailand still an attractive location for Japanese investors. Despite, the performance of subsidiary in Thailand during 2015 to 1st of 2016 is medium to low due to Thailand market growth is mutually in digital products. However, they still want to stay long-term in Thailand location as long as the domestic demand is largest and they still have an opportunity to keep continuous improvement of moving on Kaizen. Thus, the benefit of the study is giving the information to foreign investor who are interest to make an investment in Thailand should

determine proper control mechanisms necessary for success subsidiary. This study will be useful for foreign investors and Thai-government in order to use these results for jointly develop successful subsidiaries in Thailand host country. Ultimately, for the benefit of Thai's economy and society.

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India as Thailand's High Purchasing Powers Tourist Market: A Study on Country Destination Satisfaction

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Abstract

The objectives of this study are to examine the Indian tourists perception based on the concept of *'Amazing Thailand: Discover Thailand'* and the factors affecting *'Indian tourist's destination satisfaction'*. This research will be captures the ideas of Indian tourist's behavior on shopping, accommodation, food and beverages etc. Secondary data and statistical analysis will be used to interpreting research output. The primary data will be collecting via research questionnaire follow up by focus group study. The expected outcome of this study will be increasing the number of Indian tourists and increasing foreign exchange earnings in Thailand tourist industry. Short-term campaigns for fulfilled Indian tourists needs and specific tour package will be served to Indian tourists.

1. Introduction and Problem Statement











Tourism has emerged as one of the world's largest service industry with sizeable economic benefits and immense opportunities. Tourism industry has predictable to be one of the important driven economic growth, employment generation, contributing to national income and balance of payment in developing countries (Mishra & Padhi, 2012). In case of Thailand tourism industry, it is directly contribute 8.6 percent of national of to gross domestic product (GDP). Thailand travel and tourism generated 2,210,000 jobs directly in 2014 or 5.8 percent of national employment and this is forecast to growth by 0.2 percent in 2015 (WTTC Travel & Tourism Economic Impact: Thailand, 2015).

After Thailand military coup in May 2014, the number of international tourist arrivals declined by 38.25 percent in June 2014 as compare to the same month in 2013. At that time, India's rank was 6th while the numbers of Indian tourists were declined by 10.94 percent from 2013. This indicates that Thailand international tourists including Indian tourists are not confident on Thailand's political situation lead to cancellation of their travel itinerary. Since, India is a high purchasing power of Thailand tourism market expending 5,505 Baht/day, follow

up by China 5,097 Baht/day. In addition, Indian tourist is the biggest spenders in shopping items worth 2,048 Baht/day, while Chinese, Americans and French tourists are spent 1,347 Baht/day, 887 Baht/day and 727 Baht/day respectively. To recall tourist's confidence and Thailand reputation from International tourists in general and Indian tourists in particular, safety and security are the main concerns for their decision and holiday's destination satisfaction.

Despite, at the commencement of 2014, the Thai tourist industry had been suffered from the political turmoil erupted in October 2013. The shutdown of Bangkok's governmental offices on 13 January 2014 by anti-government protesters, prompted some tourists to avoid the Thai capital, Bangkok. As the result of anti-government protests in Bangkok affected 70 percent fall in Chinese tourist arrivals in January, 2014 (Bruce Einhorn, January 10, 2014). Tourism Authority of Thailand forecasted a number of arrivals may drop by around 5% in the first quarter of 2014, with the total number of arrivals down by 260,000 from the original projection of 29.86 million. Tourism revenue is also expected to decline by 0.01 trillion THB from 1.44 trillion THB.

Table 1 Thailand and Top-Ten Most Visited Nationalities in 2013-2014

Rank	Country	2014	2014/ 2013	% 2014/13	2013	2013/ 2014	% 2013/12	2012
1	 China	4,623,806	▼	-1.75	4,705,173	▲	40.71	2,789,345
2	 Malaysia	2,644,052	▼	-13.31	2,996,071	▲	14.52	2,560,963
3	 Russia	1,603,813	▼	-8.3	1,736,990	▲	24.15	1,317,387
4	 Japan	1,265,307	▼	-21.54	1,537,979	▲	10.84	1,371,253
5	 South Korea	1,117,449	▼	-16.08	1,297,200	▲	9.87	1,169,131
6	 India	946,249	▼	-10.94	1,049,856	▲	3.23	1,015,865
7	 Laos	934,253	▼	-18.39	1,106,080	▲	14.01	951,090
8	 United Kingdom	909,335	▲	0.34	906,312	▲	3.99	870,164
9	 Singapore	864,681	▼	-8.3	936,477	▲	12.32	821,056
10	 Australia	835,517	▼	-8.65	907,868	▼	-2.50	930,599

Source: UNWTO World Tourism Barometer (2013)

Table 1 shows the top-ten most visited nationalities tourist arrivals in Thailand during 2013 to 2014 declined from 1.75 up to 21.54 percent. India was in 6th ranked after South Korea and the number of Indian tourist was decline to 10.94 percent from year 2013. Particularly after Thailand military coup in May 2014, the number of tourist arrivals declined to 1.49 million people from 2.06 million people, changed 38.25 percent in June 2014 as compared to the same month of 2013 (Immigration Bureau, Police Department: 17 Dec2014). This figure indicates that international tourists including *'Indian tourists are not in confidence in Thailand's political situation, causing their cancellation'*. This is because of Thailand political stand-off in the early part of 2013 till the 22 May, 2014 coup affecting the major international tourism market. The top-ten most visited countries like China, Malaysia, Russia, Japan, South Korea, India, Laos, United Kingdom, Singapore and Australia that dropped down due to Thailand political uncertainty (referred to Table 1). Thailand's position in the global tourism rankings in 2013 as the civil unrest had taken its toll on both arrivals and receipts. In 2014, Thailand received 24.8 million tourists, its ranking slipped down to 14th in 2014 from 10th place in 2013. Similarly, The Thailand's 2014 tourism earning chart also drops to 9th from 7th place in 2014 (World Tourism Organization cited in Boonsong Kositchoththana, 2015). According to Minister of Tourism and Sport Kobkarn Wattanavarangkul said *'the drop in tourist numbers also results in 5.8 percent less revenue'* (Boris Sullivan, February 4, 2015).

In 2014, Thailand's image in the eyes of the world's tourists was worse than the previous year in term of tourist safety, according to Thailand's poor score. Military coup in May and the unsolved murder of two British backpackers in September, 2014 effect to international tourists perception justified Thailand as one of the most dangerous tourist destination on earth (Natalie Paris, 13 Nov 2014). Safety is the main concern for international tourist visiting. According to Tourism Authority of Thailand (TAT) survey on Thailand's destination image concluded that *'safety problems'* are destroying the image of Thai tourism (Chinmaneevong, 2012). Safety and security is being ranked by international tourist as their primary factors for planning their holiday (Ingram, Tabari & Watthanakhomprathip, 2013). Thus, to maintain of Thailand tourism competitive advantage, its reputation and confidence is significantly needed to be implemented via promotion and marketing. Its influence on the aspect of investment in the tourism industry plays an extensive role on national income as well. Hence, to avoid risk of losing tourists to other destination, Thailand's reputation and confidence must be recalled to draw attention of international tourists to keep coming back to Thailand.

2. The Significant Role of India as a High Purchasing Powers Tourist Market in Thailand

Table 1 shows the top-ten most visited nationalities in Thailand and China is taken the first place with the largest number of tourist visitors followed by Malaysia, Russia and Japan at the 4th place. Among Thailand and top-ten most

visited nationalities, the largest tourism expenditure in Thailand, China was about US\$ 6,147.50 million in 2013, followed by Russia worth US\$ 3,986.40 million, Malaysia US\$ 2,280.14 million, Australia US\$ 2,100.58 million, United Kingdom US\$

1,949.68 million, Japan US\$ 1,878.56 million, USA US\$ 1,771.62 million, **India US\$ 1,315.50 million**, France US\$ 1,244.02 million and Singapore US\$ 1,010.76 million (refer to Table 2).

Table 2 Top-Ten Tourism Receipts from International Tourist Arrivals

Country of Residence	No. of Arrivals	+/- (%)	Length of Stay (Days)	Per Capital Spending			No.	Tourism Receipts		
				Baht/Day	+/- (%)	US\$/Day		Mil. Baht	+/- (%)	Mil. US\$
ASEAN	7,410,441	+14.67	5.80	4,556.88	+6.11	148.29		195,857	+35.28	17,408.18
-Brunei	16,181	+21.49	6.24	5,253.38	+6.74	170.95		530.53	+33.74	17.26
-Cambodia	487,001	+13.11	8.01	3,985.82	+2.13	129.70		15,548.22	+11.09	505.96
-Indonesia	595,015	+32.41	6.00	4,925.51	+4.11	160.28		17,584.49	+33.40	572.23
-Laos	984,886	+0.39	6.13	3,549.45	+7.62	115.50		21,429.28	+5.62	697.34
-Malaysia	3,031,072	+19.05	4.88	4,737.05	+6.75	154.15	3	70,068.56	+26.57	2,280.14
-Myanmar	173,272	+33.58	8.32	4,369.42	+3.64	142.19		6,299.07	+37.13	204.98
-Philippines	315,040	+12.28	8.08	4,628.42	+4.08	150.62		11,781.73	+17.59	383.40
-Singapore	1,067,286	+7.30	5.40	5,389.38	+5.61	175.38	10	31,060.79	+11.47	1,010.76
-Vietnam	740,688	+16.21	6.56	4,436.06	+4.52	144.36		21,554.43	+21.28	701.41
China	4,609,717	+66.95	8.04	5,097.20	+5.61	165.87	1	188,912.67	+78.31	6,147.50
Russia	1,745,779	+33.13	15.19	4,619.51	+3.25	150.33	2	122,501.98	+44.39	3,986.40
Australia	906,004	-2.58	13.19	5,401.68	+6.16	175.78	4	64,550.97	+1.88	2,100.58
UK	847,678	+5.96	17.80	3,970.76	+4.92	129.21	5	59,913.68	+9.14	1,949.68
Japan	1,515,718	+13.02	7.74	4,920.72	+4.14	160.13	6	57,728.20	+15.61	1,878.56
USA	788,819	+8.58	14.56	4,740.17	+2.91	154.25	7	54,441.99	+9.41	1,771.62
India	1,028,414	+4.31	7.14	5,505.39	+4.24	179.15	8	40,425.36	+8.59	1,315.50
France	580,061	+7.75	17.52	3,761.68	+1.54	122.41	9	38,228.78	+12.42	1,244.02

Source: Department of Tourism, Ministry of Tourism and Sports (2013)

The table 2 shows the top-ten tourism receipts from international tourism arrivals based on the data provided by Department of Tourism, Ministry of Tourism and Sports in 2013. China is the largest contributor to the tourism industry in term of per capital spending worth 5,505.39 baht/day; their length of stay is 7 days while numbers of tourism arrivals are 1,023,414 people. As compared with Thailand's main tourism markets such as China, Malaysia, Russia and Japan; tourists per capital spending from these countries are 5,097.20 baht/day, 4,737.05 baht/day, 4,619.51 baht/day and 4,920.72 baht/day. Particularly, the stay of tourists who are from Australia, Russia, France, USA and UK for an average of 15 - 18 days in Thailand while per capital spending is 3,761.68 up to

5,401.68 baht/day. This data indicates that tourists from Europe and America come to visit Thailand's tourist attractions due to cheap price with no entry visa. Passport holders from these countries can visit Thailand without a visa for the maximum of 30 days stay per entry with a total period of stay not exceeding 90 days within 6 months from the date of first entry into the Kingdom (Royal Thai Consulate, 2015). Tourists from Europe and America may visit Thailand for a purpose of long-stay orientation and using Thailand local resources. Thus, Europe and America tourists may not be the actual target for Thailand to generate national income via indirect export of commodities.

Table 3 Average Expenditure of International Tourist Arrivals by Expenditure Items

Country of Residence	Total	shopping	Entertain	Sightseeing	Accommodation	Food & Beverage	Local Transport
ASEAN	4,556.88	1,347.21	464.95	202.88	1,320.46	894.54	456.85
China	5,097.20	1,287.30	584.07	286.09	1,391.94	956.74	506.99
Russia	4,619.51	1,043.44	583.41	217.21	1,345.83	909.69	464.45
Australia	5,401.68	1,113.74	734.68	235.80	1,765.58	983.62	500.23
United Kingdom	3,970.76	590.98	526.93	188.52	1,270.96	883.22	468.37
Japan	4,920.72	974.66	653.77	180.15	1,641.62	940.12	471.96
USA	4,740.17	887.23	600.73	191.75	1,565.75	903.37	535.60
India	5,505.39	2,048.43	536.21	195.90	1,306.96	838.92	488.95
France	3,761.68	727.27	411.83	116.58	1,244.54	763.16	466.06

Source: Department of Tourism, Ministry of Tourism and Sports (2013)

The table 3 shows the average expenditure of international tourist arrivals by expenditure items such as shopping, entertainment, sightseeing, accommodation, food and beverage, and local transport. International tourist arrivals contribute to indirect export via shopping. *‘India is the most influencing country spending on Thailand shopping worth 2,048.43 baht/day’*; followed by China worth 1,287.30 baht/day. While, USA, UK and France spend on shopping items less than 1,000 baht/day. International tourism is a significant component of international trade as seen in export earnings from international tourism and passenger transport sectors reached \$ 1.5 trillion in 2014. According to UNWTO secretary-general Taleb Rafai said in the statement below;

“With decreasing commodity prices, spending on international tourism grew significantly in 2014, providing the sector’s capacity to stimulate economic growth, boost exports and create jobs.”
(Cited in Boonsong Kositchothana, 2015)

Hence, to increase the national income and employment, Thai government should emphasize

on Indian touristspenders by developing marketing promotion, infrastructure development, creatively Thailand’s destination image and recalling Indian tourist confidence for choosing Thailand as first destination in the ASEAN region’. The data provided in Table 3 and the statement above, enable the study to preview international tourist arrivals are significant to national employment and income via services business sectors: (e.g. hotel, guest house, and service apartment), entertainment, sightseeing, and local transport business providers (e.g. taxi, limousine, bus, and van). Thus, to promote national economic sector via Thailand tourism industry, marketing promotion should be focused on these top-ten original tourist countries in general and *‘India in particular as for Thailand’s high purchasing power tourism market focused’*.

3. Objective and Expected Outcome of the Study

The objectives and expected outcome of this study are exhibited in Table 4 below;

Table 4 Summary of research Objective and Expected Outcome

Research Objective	Expected Outcome
1. To examine the status of tourist arrival and foreign exchange earnings in Thailand.	1.1 Target the status of international tourist arrival and foreign exchange earnings in Thailand.
2. To examine the Indian tourist perception based on the concept of <i>‘Amazing Thailand: Discover Thainess’</i> .	2.1 Thailand tourist campaign has been promoted to Indian tourists. 2.2 Indian tourist understanding <i>‘what inside Thailand’ and ‘how could they find it out’</i> . 2.3 Indian tourists have confident on Thailand country holiday destination.

Research Objective	Expected Outcome
3. To examine the factors affecting 'destination satisfaction' of Indian tourists visiting in Thailand.	3.1 Promoting in particular tourist sectors such as hotel and restaurant, tourist attractions and shopping place. 3.2 Providing Indian tourist package tours in specific types such as shopping tourism, traditional medical tourism, adventure tourism and so on. 3.3 Improving the important factors for determine of 'Indian tourist holiday behaviors' such as effective safety zone in tourist place.
4. To examine the 'destination satisfaction' of Indian tourist and their positive word of mouth with Thailand destination.	4.1 Increasing the number of Indian tourist in Thailand 4.2 Increasing foreign exchange earning in Thailand tourist industry.
5. To examine Indian tourist intention to revisited Thailand country	5.1 To develop short-term campaigns for fulfilled Indian tourists needs 5.2 Providing specific tour package for Indian tourist.

4. Research Methodology

This part discusses the overall research design, research framework, planning process, methodology and rational using of quantitative and qualitative methods. The techniques and instrument for collecting data and analysis are discussed in this section. The data used in this study was collected from primary data, secondary sources materials, and documentary evidence. Indian tourists who had travelled to Thailand not over 2 weeks were identified as the population of the study. 400 Indian tourists who have budget spending over 5,000 Baht/day were identified as research sampling of

the study. Moreover, focus group interviews will be applied to tourist's research sampling who had travelled to the same destination more than once. Each of these data sources provided the study with specific types of information which enable to contribute and support the objectives of the study empirically.

4.1 Research Design

The research methodology will follow on the objective and source of data analysis as exhibited in Table 5 below;

Table 5 Thailand Research Objectives and Analysis Methods

Thailand Research Objective	Source of Data
1. To examine the status of tourist arrival and foreign exchange earnings in Thailand.	1. Secondary data sources (documentary evidence recorded by government office statistic data and newspapers) and relevant studies from past research studies
2. To examine the Indian tourist perception based on the concept of 'Amazing Thailand :DiscoverThainess'.	2. Primary data collected through observation, questionnaire.
3. To examine the factors effecting 'destination satisfaction' of Indian tourists visiting in Thailand.	3. Primary data collected through observation, questionnaire.
4. To examine the 'destination satisfaction' of Indian tourist and their positive word of mouth on Thailand destination. 5. To examine Indian tourist intention to revisited Thailand country	4. Primary data collected through - Observation, questionnaire - Semi-interview structure - Focus group with sample who has travelled to the same destination

The data of this study is based on ‘secondary information and documentary evidence, primary data collected through observation, questionnaire and focus group interview. By using documentary evidence enable the study to supports the role and status of Thailand tourism industry (refer to objective 1). The purpose for using multi-data sources is to utilize the significant information to support each research objectives and confirm the reliable of research finding by interview data supported (refer to objective 2and 3). Thus, by using these multiple sources of data enable to improve the quality of research objective (Patton, 1990).

4.2. Research Framework

The use of quantitative research is possible to investigate, evaluate and explore the impact factors for development of Indian tourist’s

destination satisfaction of those who have visiting Thailand countries (Arasli & Baradarani, 2014; Mishra, 2013). The semi-structure interview was used for conducted interview data and analysis by qualitative technique. These multiple sources of data (primary data, secondary data and documentary evidence) are enabling to improve the quality of research (Patton, 1990).

Moreover, this study uses the special technique for collect the data by focus group with tourists who have been repeat visiting Thailand more than once. The aim of focus group used to collect qualitative data from a focus discussion among participants. A discussion topic and a precise definition of each research objectives must be similar to each other in a way that is important to the researcher to get through the information they needed (Krueger & Casey, 2000)

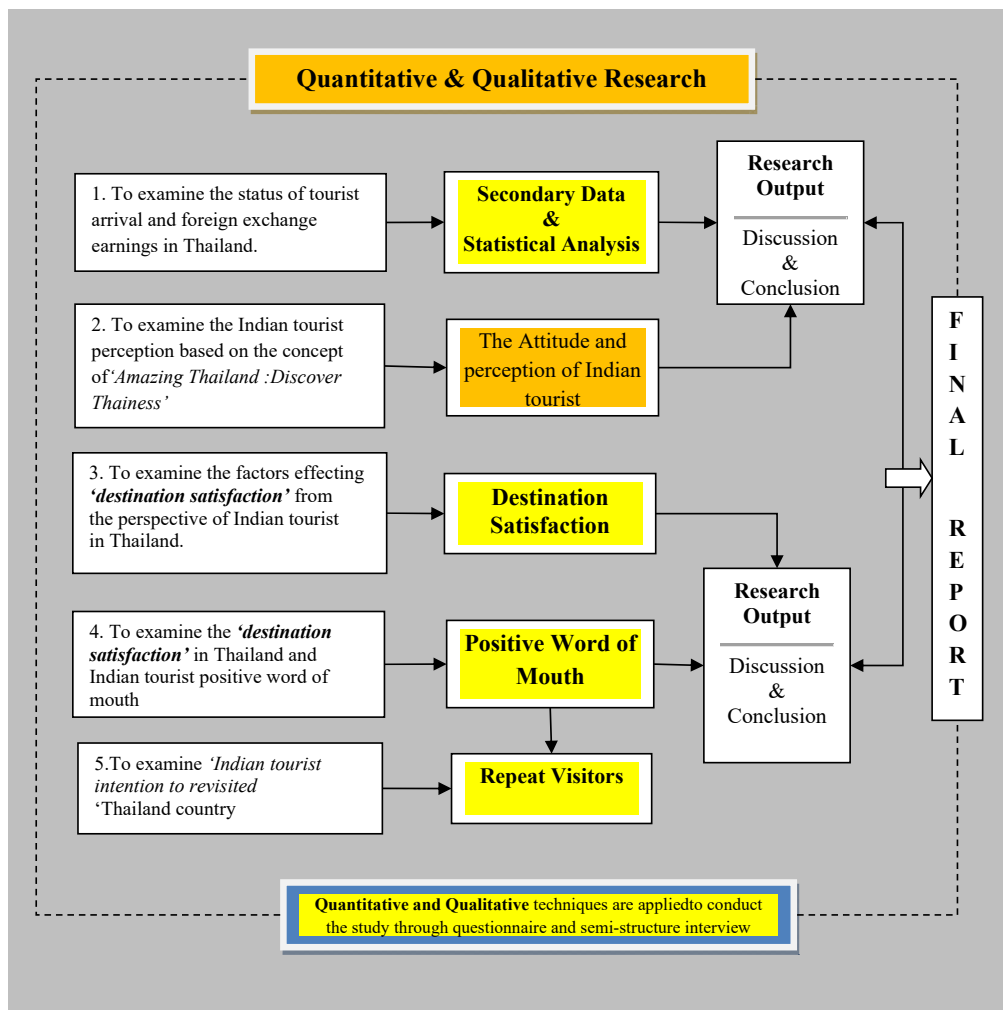


Figure 1: Research Framework

4.3 Research Instrument

Research questionnaire has been designed as the research instrument in order to obtain the primary data through survey method. The measurement development for this study was designed using multiple-items measurement scale that has been empirically validated and reliable over 0.8 consider acceptable(Nunnally, 1978). There are some minor changes or adaptation of instrument statement so that it was more appropriate for the tourism sectors (Appendix 1:Summary of Research Measure).

4.4 Research Sample and Analysis Methods

In order to examine the factors affecting ‘*destination satisfaction*’ from the perspective of

Indian tourist in Thailand, the purposive sampling method was employed to set up 400 sampling collecting from Indian tourist in Thailand. To collect the data, travel agent is the main distributor of research questionnaire to Indian tourists who has spent their holidays in the capital city of Thailand, BKK. The sample was collected from 3, 4 and 5 star hotels in BKK. The list of hotels and address were collected from Thai Hotels Association (THA). The questionnaires will be filled out by a self-administered manner. The data will be tabulated and analyzed using a database designed specifically by using SPSS. The frequencies, descriptive statistics and multiple regressions will be used for interpreting data results empirically.

4.5 Planning Process

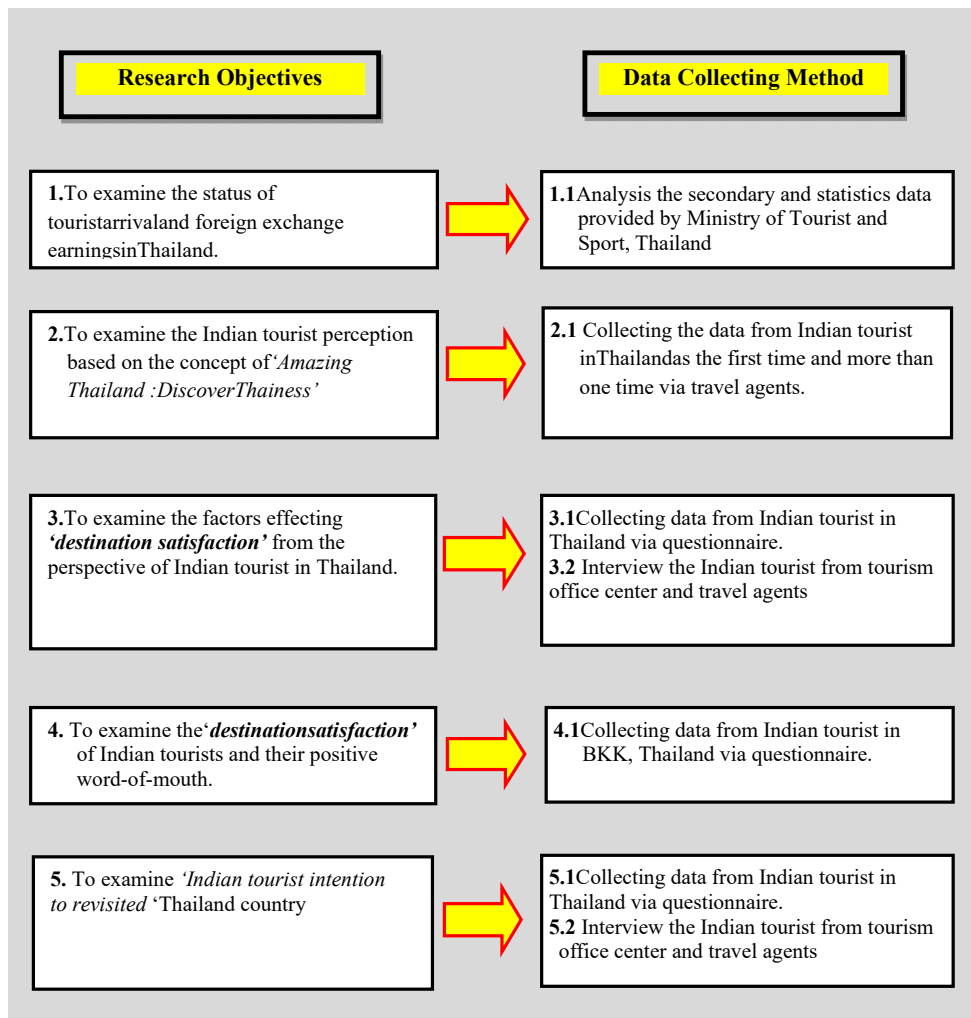


Figure 2: Planning Process

4.6 Research Hypothesis

According to above research framework and research planning, the following proposition and hypothesizes are proposed as in the Table 6 below;

Table 6 Thailand Tourism's Research Proposition and Hypothesis

	Thailand Research Objective	P/H	Proposition & Hypothesis	Proposition/ Hypothesis test
1	To examine the status of tourist arrival and foreign exchange earnings in Thailand.	P1	The status of tourist arrival and foreign exchange earning in Thailand are in a good health and secure.	Documentary analysis
2	To examine the Indian tourist perception based on the concept of ' <i>Amazing Thailand :Discover Thainess</i> '	H2	Indian tourists' perception based on the concept of ' <i>Amazing Thailand: Discover Thainess</i> ' are in positive perspective.	Descriptive statistics
3	To examine the factors effecting ' <i>destination satisfaction</i> ' from the perspective of Indian tourist in Thailand.	H _{3.1}	Lodging and restaurant facilities in Thailand have a direct significant effect on Indian tourist satisfaction from the tourist destination	Regression Analysis
		H _{3.2}	Shopping and tourist attractions in Thailand have a direct significant effect on Indian tourist satisfaction from the tourist destination	Regression Analysis
		H _{3.3}	Environment and safety in Thailand have a direct significant effect on Indian tourist satisfaction from the tourist destination	Regression Analysis
		H _{3.4}	Thai cuisine (food) has a direct effect on Indian tourist satisfaction from the tourist destination	Regression Analysis
		H _{3.5}	The transportation facilities and infrastructure in Thailand have a direct significant effect on Indian tourist satisfaction from the tourist destination	Regression Analysis
4	To examine the ' <i>destination satisfaction</i> ' in Thailand and Indian tourist positive word of mouth	H4	Destination satisfaction in Thailand has a direct significant impact on positive word of mouth	Regression Analysis
5	To examine ' <i>Indian tourist intention to revisited</i> ' Thailand country	P5	Indian tourist has a great travel experience in Thailand is likely to revisited Thailand country.	Descriptive statistics Semi-structure interview

5. Discussion and Conclusion

'*Destination Satisfaction*' is an important determinant of international tourist's post-holiday behaviors. There is no doubt that if the tourists are satisfied with their holiday experience in those particular countries then they will be likely continue to return to those countries destination (Oppermann, 1999; Kozak & Rimmington, 1998 cited in Arasli & Baradarani, 2014). Particularly, in global tourist

competitive environment, tourist satisfaction at the destination level such as tour quality, perceive value, costs, country image and country risks are the important determinant the outcome of tourist complaint behavior or tourist royalty (Dmitrovic, Cvelbar, Kolar, Brencic, Ograjensek and Zabkar, 2009). Tourist's perception about the destination lodging and restaurants, environment and safety and transportation are determined as the important

factors effecting on tourist destination satisfaction (Arasli & Baradarani, 2014). The level of overall tourist's satisfaction, level of prices, level of hospitality and customer care, available, available of night life and entertainment and the availability of services and facilities at the destination airport. These factors have found to be a strongly indicators for British tourists' intention to revisit same destinations in Turkey (Kozak, 2001).

Consequence, the expected outcome of '*destination satisfaction*' is the recommendation made by Indian tourists who has been experience (satisfied) in Thailand to the other people (positive word-of-mouth) that indicate the results of repeated purchase or revisited to Thailand destination and loyalty to Thailand as their favorable destination. Thus, the behavioral outcome gain from destination satisfaction is the recommendation made by tourists to other people that indicate the results in repeated purchase of tourist product, increase the number of Indian tourists and foreign exchange earning in Thailand.

Tourists from different nationalities differ on their travel motives. India is highest purchasing power expending in Thailand 5,505 Baht/day follow by China 5,097 Baht/day, Australia 5,401 Baht/day (refer to Table 3). Despite the number of Indian tourists arrival in Thailand was only 1,028,414 million people. In contract, the number of Chinese tourist's arrivals in Thailand was 4,609,717. As of this figure, the number of Indian tourist has less than Chinese almost five times differ. Even through, China and India both are in large scale economics and population but Indian tourist market has not much pay attention in Thailand tourism. In fact, based on the data provided in Table 3 (Average expenditure of International Tourist Arrivals by Expenditure Items), Indian tourist is the biggest spender in Thailand, particularly in shopping items worth 2,048 Baht/day, while Chinese tourist has spent only 1,347 Baht/day, USA 887 Baht/day and French 727 Baht/day, respectively. This will be a great opportunity if Thailand tourism enables to capture insight Indian tourist's behavior to motive them to spending more on shopping, accommodation, food and beverages etc.

As above points of discussion, to attract international tourists and overcome tourist behavior, destination country must seek to promote shopping festival as a country tourist product (Peter

& Anandkumer, 2014). Therefore, Thai government should emphasize on Indian tourist spenders by developing marketing promotion, creatively Thailand's shipping destination image via marking campaign '*Amazing Thailand: Discover Thainess 2015*'. Thailand shopping festivals should be promoted by various destinations as Thailand tourist products. For instant, 'Hat Yai Lantern Festival' in Songkhla Province, January 1, 2015 – September 30, 2015, Amazing Thailand Grand Sales, Siam area in Bangkok, 15 June to 15 August 2015. This marketing promotion campaign in different. In this way, Thailand destination will recall Indian tourist to revisited Thailand at different time and destination. The frequently Indian tourist revisiting Thailand the more foreign exchange earnings will gain via shopping as an indirect export of commodities. The outcome of this strategy will generate Indian tourist's confidence for choosing Thailand as first destination in the ASEAN region.

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Literacy : Perceptions and Perspectives

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Abstract

This discussion paper contributes findings on literacy perceptions and perspectives from 3 groups of Thai literate interviewees and common understanding of definitions of literacy which includes more than reading writing and arithmetic (3 R's). Many types of literacy were highlighted. Lessons learned how to foster those literacy types in digital era from literature reviews done by the 3 simple sampling of each mixed groups of study samples from the total study population of 90. The explanations and discussions among various professionals learning organizations discussing the findings from the case studies of the ways in which total of 30 samples, a group of 10 teachers at different stages of development, 10 Ph.D's candidates in business management with various background, and 10 undergraduate students in pre-service program, discuss their perceptions and understanding the multi-literacy concepts and the possible ways to foster 21st century multi-literacy. After discussion sessions by all groups, the case studies were conducted based on all types of literacy listed. A total of 30 short papers of all case studies were presented. Data collection methods included semi-structured interviews with each participant in each group about his/her own academic background, personal experiences, knowledge and understanding of multi-literacy operational definitions, the opinion of literacy fostering and the reasons behind his/her own literacy perspective. The findings were grouped into each type of literacy. Their views on the definitions were similar to the definitions set by research literature reviewed, the reasons behind their perceptions and their perspectives were collected. Their suggestions for further study on multi-literacy were recorded and presented to all groups.

Keywords: literacy, cultural literacy, digital literacy, numerical literacy, visual literacy.

Multi-Literacy: The Core of Education for All

“Global mindsets for Thailand 4.0, the minds and the practices”, a hot topic was discussed during a talk session on March 30th, 2017 at Faculty of Liberal Arts Thammasat University by Dr. Pasi Sahlberg, an author of Finnish Lessons 2.0 and Tiina Malste, Lead Expert in pedagogical resource (Pasi Sahlberg and Tiina Malste, 2017)[1]. Both confirmed that people learned with their own ways and earned their experiences, not that they were nominated or being made to learn and to be professional. Teaching is a profession, not just a job or tasks. Learning in classes and university settings would become less and less, more would learn from the learners' opportunity choices anywhere. Literacy plays major roles relating to learning and education improvement.

“Thais' reading rate, aged 15 yrs up, rising from 38 minutes per day up to 66 minutes per day”, a good news released by WCT (Wisdom Council Thailand)[2] research team on March 22nd, 2017 at Petai Room, Windsor Hotel, Sukumwit 20, Bangkok sparked the conference attendees' interests. It was a good news on current language literacy rate in digital era while language literacy is still a hot issue, the word literary includes various definitions and all types of literacy are as important as language literacy. Its boundaries encompass meanings in a broad sense.

From 1950 to 1965, the 3 R's (Reading, Writing, Arithmetic) curriculum had been employed in schooling systems, long before others types of literacy became interesting issues in Thailand.

In 2000, EFA (Education for All) Global Monitoring Report emphasized on literacy, one of

the most neglected of the six goals adopted by 164 countries at the World Education Forum in Dakar (Senegal).

Use of technology in English language learning and teaching reviews were listed in various contexts, nationally and internationally, Shyamlee, Solanki D (2012) [3].

World Bank (2013)[4] stated that after 1999, the education sector in Thailand as well as in developing countries in Asia seemed benefitted from the National Act which guarantees the right for free education for all. It also addressed linguistic and cultural diversity. However, UNESCO addressed differently due to the limited access to education (UNESCO Bangkok). Suwalai Premsirisuwalai (2012)[5] pointed out the importance of multi-languages and cultural literacy in order to promote peace and reconciliation with careful implementation plan of education. Quite a few workshops on Media and Information Literacy, Digital Storytelling Peace Workshop conducted by UNESCO Bangkok were operated, for examples, at Thammasat University on 8th November 2012. MIL (Media and Information Literacy) for teachers workshop conducted by Kasetsart University On 22-26 August 2011.

Obviously, a revolution of the world technology into digital era has been witnessed dramatic changes. So language teachers should aware of teaching strategies and use it in effective ways.

Multi-literacy encompasses broader sense of meanings

STEM literacy has been a hot issue in latest decades in Thailand. From Hans Meeder's statements, stated in NC3t.com 2014[6], defined literacy education as a thoughtful endeavor to develop students' fundamental concepts and knowledge the core disciplines of science, technology, engineering and mathematics and help them develop critical problem solving skills in STEM context.

Digital Literacy, executive tasks in digital environments, , in the form of many types, found in many resources, was defined as followed; computer literacy – ability to use a computer and software; media literacy- ability to think critically about different types of media; information literacy – ability to evaluate, locate, identify, and

effectively use information, technology literacy – ability to use technology effectively in several different ways; political literacy –knowledge and skills needed to actively participate in political matters; cultural literacy - the knowledge of one's own culture; multicultural literacy – the knowledge and appreciation of other cultures; visual literacy –ability to critically read images. By definitions of literary definitions, the meanings of literacy are understandable in general ways. Researchers from each professional career in particular has been making the definitions clear so they can communicate among themselves and others relating groups.

More definitions of literacy cited from paper presented by the Canadian Council of Learning in the fourth International Conference on Gross National Happiness held in Thimpu, Bhutan, from November November 24-26th, 2008 which attracted 90 participants from 25 countries. The hot issue was on the backdrop of the global of financial crisis. There, the term “financial literacy” was called by Canadian Council of Learning. It means having knowledge, skills and confidence to make responsible financial decision. While numeracy literacy refers to how we apply arithmetic operations to numbers contained in printed materials such as cheque books, bank accounts, order forms.

Critical thinking literacy, again, discussed by the study groups and were consensus on its meaning as the process of actively and skillfully applying, analyzing and evaluating information gathered from observing, reflecting, and /or experiencing something. And problem solving literacy has been mentioned in education areas relating the hot issue on how to foster it into the students in 21st century. This includes an understanding of problem situations and how to set goals to work through the problem solving process based on planning and solving problems at the same time. The meanings of prose and document literacy are similar, they are abilities to understand and use information from brochures, maps, job applications, medical forms and instructional materials.

The context/boundaries of literacy

World Bank predicted that during 2000 – 2050, the world urban population could reach 6.25 billion, 80% cluster in the cities of Africa and Asia. Although international agencies' interest in literacy

programs and activities used to decline from 1980s-1990s, United Nations General Assembly at the time envisioned the minimum requirements for fundamental education as including domestic skills, knowledge of other cultures and develop personal attributes such as initiatives and freedom. After that, the concepts of literacy shifted – from technical skills to human resource skills for economic growth, to capabilities for socio-cultural and political change- international organizations accepted broader sense of literacy and encompass broader senses of multi-literacy. The terms such as “Being conscientious”, literacy practices, lifelong learning, information technology literacy came into educators’ interests.

Colette M., Woliver, B., Bingman, M.B., Merrifield, J. (1996)[6], had organized a book titled ‘A Curriculum for People Moving into Employment’. This book was one of the best guidelines for adults who were in transition period and look for jobs. Careers literacy had been introduced throughout this one.

Ireland, one example of good adult literacy cases in Europe responsible for adult literacy operated by National Adult Literacy Agency in Dublin 1, Ireland, emphasized the 3-R’s, reading, writing, and arithmetic, including careers improvement.

The Study

To understand the operational multi-literacy definitions, the case studies examined the perceptions and the perspectives of different groups of samples, 10 out of 30 Ph.d. candidates who own businesses in various careers and majoring business and management from colleges in northern Thailand and from different parts of Thailand, south, northeast, north, and Bangkok, 10 teachers majoring languages arts out of 200 teachers who attend the ASEAN preparation plan training, and 10 out of 200 pre-service teachers in faculty of education from different colleges. Through network and simple sampling, everyone was contacted via phones and invited to participate as cases. Each was informed his/her own right about the study participation. All listed types of literacy were discussed critically. Their oral presentations were recorded, and transcribed in the text forms. Those were filed and printed out to be used in discussions sessions. The study participants’ short papers on their literacy operational definitions

and perspectives were presented individually in small groups categorized by their academic and experience background. Reports from oral discussions from oral sessions and discussions from short papers were summarized to be sent to each individual in all 3 groups to confirm their conclusions on literacy operational definitions. Sheila Filhan’s work on the comparison of literacy and nine domains of GNH was presented in discussion groups. The study participants’ short papers were presented were categorized into six selected types of literacy according to the study participants’ inputs; language and numerical literacy, career literacy, cultural literacy, digital literacy, STEM literacy, collectively called “multi-literacy” and discuss how those six types relate to nine domains of Gross National Happiness (GNH) including; Psychological Well Being, Time Use and Balance, Cultural Diversity, Community Vitality, Ecological Diversity and Resilience, Good Governance, Health, Education, and Living Standard.

Findings from Discussions

Research literature reviews, and the answers in short papers written by the study participants, multi literacy operational definitions beyond the 3-R’s has been acknowledged in various study areas aforementioned. Those are; adult literacy, computer literacy, cultural literacy, digital literacy, financial literacy, language literacy, management literacy, music literacy, numerical literacy, STEM literacy, technology literacy, visual literacy. However, all types of literacy based on the foundation literacy pillars; Reading, Writing, and Arithmetic. Further studies on specific skills in each type of literacy should be followed, and see how those skills could be trained appropriately applied for each type of literacy. The study participants saw the hierarchy of literacy. The foundation pillars of the 3 R’s are for training and fostering children from three to eight graders, other types of literacy such as cultural literacy, computer literacy, music literacy, STEM literacy, should be emphasized in lower and upper secondary graders, junior high and senior high graders. The advanced and more sophisticated skills in other types of literacy such as financial literacy, careers literacy, adult literacy, digital literacy, management literacy, and political literacy, should be focused in higher education setting. Since global issues now have

changed dramatically in digital era, self training on foundation literacy such as reading writing and arithmetic could be done via Internet, and other Open Education Resources (OER), e-learning on various disciplines has been operating on World Wide Web. Classroom settings have been changed to real world of work such as “Work Integrated Learning” (WIL) system. More innovative education such as “home schooling”, informal education, non-formal education, technology facilitating learning, even “No schooling” initiating in Finland, for example. The foundation pillars are expanding more and more. Young children may foster advanced skills and get exposed through digital daily life by themselves.

Moreover, the results indicated positive relationship between multi literacy and Gross National Happiness (GNH). The study, participants suggested that research projects seeking answers why how to adopt each type of literacy and each GNH domain in order to proceed towards the ultimate goals set in The National Development plan. The contexts or boundaries of literacy everywhere are different and could be pertinent with different domains of GNH index.

Analysis and Conclusions

Based on the groups discussions, suggestions after the conclusions stated no surprising of the positive relationship between multi-literacy and nine domains of GNH. Thus there should be the development of literacy rates of all types. The processes of how to foster literacy depend on many factors, not only teachers, parents, environments

The restriction of students’ thinking potential due to different background of study participants, .To solve this problems, major study objectives should be emphasized repeatedly

The ultimate goal of each country, from the Development Plan has been stated and well accepted mainly on the priority considered by the government, Bhutan on Happiness evaluated by GNH, Thailand on Economy, Sufficiency Economy, after the 70 years in the throne of the beloved King Rama the Ninth well-known research-based principles. Many lessons learned have been handed down to Thais, hopefully, under the Thai purposeful reform plan should facilitate and yield better smoothly and economically well-developed society. Although both countries,

Bhutan and Thailand are somewhat similar in-terms-of politic, democratic monarchy system, the same religion, only different population rates, they may have different emphasis of development goals or different national efficiency index. Bhutan has GNH, Gross National Happiness. Thailand may have uniqueness of Thailand Efficiency index as ultimate goals to proceed.

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Marketing Mix Strategies Affecting Decision-Making of Customer Using Fresh Coffee Shops in Bangkok

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ABSTRACT:

This research aimed to (1) study demographic factors, that is, gender, age, educational level, occupation and average monthly income of consumers in Bangkok affecting decision-making of Customer Using Fresh Coffee Shops in Bangkok, (2) examine marketing mix strategies affecting decision-making in using services of fresh coffee shops among consumers in Bangkok, and (3) study consumers' behaviors in using services of fresh coffee shops among consumers in Bangkok. The samples of this research were 400 people by random sampling. The questionnaire was used as a research instrument. Statistics for data analysis were frequency, percentage, mean, standard deviation, t-test and F-test for hypothesis testing, one-way ANOVA, and doing pair wise comparisons in case of detecting a statistical significant difference by Fisher's Least Significant Difference. The results showed that most of the respondents were male in the age group of 21-35, with a bachelor's degree, working as a private company employee and having monthly income between 15,001-25,000 baht. Decision-making of the samples on seven aspects of marketing mix strategies was at a high level. Considering by aspects, the consumers ranked the process as the first priority in term of decision-making on marketing mix strategies, followed by price, people, product, physical evidence, promotion, and place, respectively. In case of behaviors of purchasing fresh coffee, most of the respondents purchased fresh coffee at a gas station to relieve drowsiness, purchased fresh coffee in the morning on workdays, always made a purchase 3-4 times/week, and family members influencing the purchasing decision. Comparing marketing mix strategies of fresh coffee, gender, age, and income had no effects on decision-making on marketing mix strategies of fresh coffee in Bangkok, whereas educational level and occupation had effects on decision-making on marketing mix strategies of fresh coffee in Bangkok with a statistical significant difference of 0.05.

Keywords: Marketing mix strategies, decision-making, fresh coffee

1. Introduction

During the past several years, the growth rate tendency of fresh coffee has been increasing consistently. Number of premium coffee shops has been launched continually and more and more consumers have turned to drink roasted and ground coffee instead of instant coffee. Popularity of premium coffee shops has led to more aggressive competitions, especially for place, which mostly provide services in the area of modern trade, including department stores, hypermarkets, and discount stores, resulting in striving for good locations and increasing costs of opening a new branch. Entrepreneurs have changed strategies by

emphasizing varieties and created differences by opening new branches covering areas of the target group in an interesting location outside modern trade, i.e., gas station, movie theatres, BTS sky train stations, Bangkok MRT stations, exhibition centers, book stores, hospitals, fitness centers, and airports (Nattawan Siriphanphiriya, 2013)

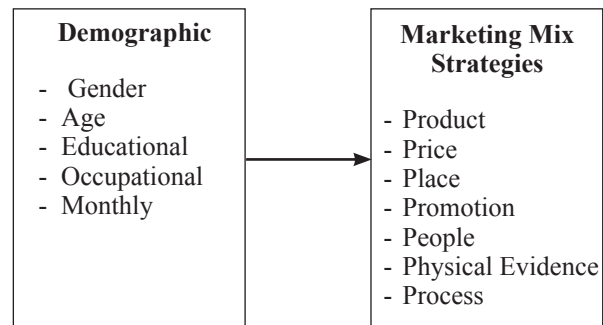
However, coffee shops in gas stations have been considered a business with very interesting growth and income because total market can continue expansion greatly, while costs and current expenditure are not quite high due to mainly using domestic raw materials. Apart from needs

to consume coffee, at present the coffee shops are considered a relaxation place for consumers in big cities because atmosphere inside the coffee shop enables consumers to acquire emotional values. They not only drink coffee to relieve drowsiness, but they also drink coffee to acquire some emotions or feelings occurring with the consumers. In the past, a coffee shop was a place full of the elderly and it was certain that almost 100% (Jadet Sangsoi, 2007) were male drinking coffee and reading newspaper. Nonetheless, at present customers using services are people in the new generation, and sometimes teenagers. The users sitting on the sofa or cushioned chair drink coffee. There is WIFI available for users instead of newspaper to connect the internet via all kinds of mobile devices in use today. Using services of coffee and bakery shops has been fashionable in the society with the concept that coffee is not just a drink but an item the consumer chooses to buy due to needs to have various experiences in drinking coffee, the lifestyle of people in the present era preferred to search new experiences to life (Naiyana Ritbua, 2016) . This concept was inspired by Starbucks, the leader of the premium coffee market, leading to new premium coffee entrepreneurs in the market all the time. At present, the market share of coffee shop business is not quite apparent because there are many groups of entrepreneurs in the market both Thais and foreigners. Furthermore, businesses have been operated in many different ways in accordance with product quality and price. Regarding the aggressive marketing competition and the above mentioned significance of fresh coffee business in Bangkok, the researchers were interested to study decision-making of customer using fresh coffee shops in Bangkok.

2. Research Objectives

- 2.1 To study demographic factors, i.e., gender, age, educational level, occupation and average monthly income of consumers in Bangkok affecting decision-making of customer using fresh coffee shops in Bangkok.
- 2.2 To examine marketing mix strategies affecting decision-making of customer using fresh coffee shops in Bangkok.
- 2.3 To study consumers' behaviors of customer using fresh coffee shops in Bangkok.

3. The conceptual framework



4. Research Hypotheses

- 4.1 The difference of gender factors of consumers in Bangkok had effects on decision-making on marketing mix strategies in using services of fresh coffee shops.
- 4.2 The difference of age factors of consumers in Bangkok had effects on decision-making on marketing mix strategies in using services of fresh coffee shops.
- 4.3 The difference of educational level factors of consumers in Bangkok had effects on decision-making on marketing mix strategies in using services of fresh coffee shops.
- 4.4 The difference of occupational factors of consumers in Bangkok had effects on decision-making on marketing mix strategies in using services of fresh coffee shops.
- 4.5 The difference of monthly income factors of consumers in Bangkok had effects on decision-making on marketing mix strategies in using services of fresh coffee shops.

5. Literature Review

5.1 Concept of Service Marketing Mix Strategies

The marketing mix service Strategies helps companies to review and define key issues that affect the marketing of its products and services and is often now referred to as the marketing mix service strategies framework for the business (Kotler Philip; & Gary Armstrong, 2001).

Theerakiti Navaratana Na Ayudhya stated that the concept of services marketing mix strategies consisted of characteristics as follows:

Product refers to a service which a company offers to a customer.

Price refers to a service price, including conditions related with the payments specified by a company.

Place refers to duties of sales and supports by distributing products and services to be available for selling.

Promotion refers to marketing communication created for services.

People refers to everyone taking parts in the process of service provision, including enterprise's employees, customers using services and other customers using services by specific characteristics of services called "Inseparability." Employees of the enterprise were an essential element in producing services and people providing services. Currently, in the situation of more aggressive business competition, employees are also an important factor to create differentiation to businesses by adding values to the product, resulting in competitive advantages. Apart from the employees, customers and other customers using services have influences on services perception of service purchasers.

Physical Evidence refers to environment related with service provision, places which customers and activities have interactions, and tangible components having duties of facilitation and services communication.

Process refers to procedure or process of providing services, regulations, and working methods relating to creating and offering services to customers, such as, decision-making in policies on customers and organizational people.

5.2 Related Literature

Naiyana Ritbua (2016) conducted the research on marketing mix affecting decision-making of fresh coffee consumption in Muang District, Petchaburi.

Nattawan Siriphanphiriya (2013). conducted the research on factors influencing decision-making in using services of coffee shops in Bangkok.

Panisa Singkhata (2012) conducted the research on customer satisfaction towards services marketing mix of Fang coffee shops in Chiang Mai Province.

Atjima Kruekhakhao (2012) conducted the research on business analysis of a fresh coffee shop in Chiang Mai Municipality.

Boontarika Ubonyaem (2010) conducted the research on behavior on using on campus fresh

coffee shop service of undergraduate students in Chiang Mai Province.

Jadet Sangsoi (2007) conducted the research on customers satisfaction towards service of Happy Hut coffee shop.

Montalee Surapanpichit (2007) conducted the research on consumer's purchasing behavior towards Doi Kham Coffee product in Mueang district, Chiang Mai province.

6. Research Methodology

6.1 Population and Samples

Population scope refers to population in Bangkok both male and female. Due to unknown definite number of population, a sample size of population was determined by calculation formula (Kanlaya Vanichbuncha, 1983) at confidence level of 95%, acquiring a sample size of 385. 15 respondents were reserved to prevent mistake; therefore, a sample size of this research was 400. The quota sampling was applied to select population of 50 districts and reduce to 5 districts being defined a quota of 80 respondents per district. Also, the convenience sampling was applied to determine a time frame of data collection between August, 2016 and March, 2017.

6.2 Research Instrument

The questionnaire applied from literature review and related literature was used as an instrument and divided into three parts, that is, Part 1: questions on demographic characteristics, i.e., gender, age, educational level, occupation and average monthly income using the nominal scale and the ordinal scale, Part 2: questions on marketing mix strategies affecting decision-making in using services of fresh coffee shops among consumers in Bangkok categorizing questions into seven aspects according to services marketing mix strategies, that is, product, price, place, promotion, people, physical evidence and process using Likert's five rating scale and five interval scale. Scoring criteria were as follows:

<u>Opinions</u>	<u>Score</u>
Highest level of decision-making	5
High level of decision-making	4
Moderate level of decision-making	3
Low level of decision-making	2
Lowest level of decision-making	1

Part 3: questions on consumers' behaviors in using services of fresh coffee shops in Bangkok.

The instrument quality was assessed by three experts and in case of the instrument certified by the experts, it would be applied with forty samples having similar characteristics with the research samples. Analysis on reliability of the questionnaires showed that all three parts of the questionnaire had alpha values more than 0.7.

6.3 Statistics Used in the Research

Percentage was used to compare basic information of the respondents. Mean and standard deviation were used to describe data characteristics and categorize levels of marketing mix strategies affecting decision-making in using services of fresh coffee shops among consumers in Bangkok. Criteria for interpreting mean values were categorized as follows:

<u>Mean Value</u>	<u>Level of Opinion</u>
4.50 - 5.00	Highest level of decision-making
3.50 - 4.59	High level of decision-making
2.50 - 3.49	Moderate level of decision-making
1.50 - 2.49	Low level of decision-making
1.00 - 1.49	Lowest level of decision-making

T-test and One Way Analysis of Variance were applied to test hypotheses with a statistical significance value of 0.05. If detecting statistically significant differences, Fisher's Least Significant Difference (LSD) would be used to test hypotheses by doing pairwise comparisons.

7. Results

7.1 Result of the Research on Demographic Factors

Population in Bangkok used as the samples were 400 respondents. Most of them were male (54 percent), were in the age group of 21-35 (39 percent), held a bachelor's degree (44 percent), worked as a private company employee (48 percent) and had monthly income between 15,001-25,000 (35 percent).

7.2 Analysis on Marketing Mix Strategies Affecting Decision Making in Using Services among Consumers in Bangkok

Table 1 Mean, standard deviation, level of marketing mix strategies affecting overall decision-making in using services of fresh coffee shops among consumers in Bangkok

Marketing Mix	Opinion		
	\bar{x}	S.D.	Interpretation
1. Product	4.02	0.810	High
2. Price	4.11	0.806	High
3. Place	3.71	0.917	High
4. Promotion	3.87	0.854	High
5. People	4.12	0.742	High
6. Physical Evidence	3.95	0.816	High
7. Process	4.18	0.752	High
Total	3.99	0.814	High

According to the research, level of marketing mix strategies affecting overall decision-making in using services of fresh coffee shops among consumers in Bangkok showed a mean of 3.99 and a standard deviation of 0.814. Process was rated highest at a high level (\bar{x} = 4.18, S.D.= 0.752), followed by people rated at a high level (\bar{x} = 4.12, S.D.=0.742), price rated at a high level (\bar{x} = 4.11, S.D.= 0.806), product rated at a high level (\bar{x} =4.02, S.D.= 0.810), physical evidence rated at a high level (\bar{x} = 3.95, S.D.= 0.816), promotion rated at a high level (\bar{x} = 3.87, S.D.= 0.854), and place rated at a high level (\bar{x} = 3.71, S.D.= 0.917), respectively.

7.3 Result of the Research on Consumers' Behaviors in Using Services of Fresh Coffee Shops among Consumers in Bangkok

Most of the respondents purchased fresh coffee at a gas station (32.50 percent) and purchased coffee to relieve drowsiness (45.60 percent). Most of them purchased fresh coffee in the morning on workdays (31.60 percent), always made a purchase 3-4 times/week (41.80 percent), and stated family members influencing their purchasing (35.00 percent).

7.4 Result of Hypothesis Testing

7.4.1 Gender factors of consumers in Bangkok had no effects on decision-making on marketing mix strategies in using services of fresh coffee shops.

7.4.2 Age factors of consumers in Bangkok had no effects on decision-making on marketing mix strategies in using services of fresh coffee shops.

7.4.3 Educational level factors of consumers in Bangkok had effects on decision-making on marketing mix strategies in using services of fresh coffee shops with a statistically significant difference of 0.014.

7.4.4 Occupational factors of consumers in Bangkok had effects on decision-making on marketing mix strategies in using services of fresh coffee shops with a statistically significant difference of 0.000.

7.4.5 Monthly income factors of consumers in Bangkok had no effects on decision-making on marketing mix strategies in using services of fresh coffee shops.

8. Conclusions and Discussions

8.1 Demographic Factors

Most of the respondents were male in the age group of 21-35, with a bachelor's degree, working as a private company employee and having monthly income between 15,001-25,000 baht. It was consistent with the research on marketing mix strategies affecting decision-Making of fresh coffee consumption in Muang District, Petchaburi by Naiyana Ritbua (2016) that most of the respondents were male in the age group of 21-35, with a bachelor's degree and having monthly income between 15,001-25,000 baht.

8.2 Marketing Mix Strategies Affecting Decision Making in Using Services of Fresh Coffee Shops among Consumers in Bangkok.

All seven aspects of marketing mix strategies affecting decision making in using services of fresh coffee shops among consumers in Bangkok were at a high level. Considering by aspects, process was rated highest, followed by price, people, product, physical evidence, promotion and place, respectively. The result agreed with the research on marketing mix strategies affecting decision-Making of fresh coffee consumption in Muang

District, Petchaburi by Naiyana Ritbua (2016) that all seven aspects of marketing mix strategies were at a high level. Considering by aspects, process was rated highest, followed by price, people, product, physical evidence, promotion and place, respectively. Moreover, the result conformed to the research on behavior on using on campus fresh coffee shop service of undergraduate students in Chiang Mai Province by Boontarika Ubonyaem (2010) that overall marketing mix strategies were at a high level, that is, product, price, place, people, physical evidence and process, while promotion was at a moderate level.

8.3 Consumers' Behaviors in Using Services of Fresh Coffee Shops among Consumers in Bangkok

Most of the respondents purchased fresh coffee at gas stations, followed by convenience stores, department stores, markets, communities and other places, respectively. Most of the respondents purchased fresh coffee to relieve drowsiness, followed by relaxation, using a coffee shop as a meeting point, coffee addiction, expressing consumption preference, and other reasons, respectively. Most of them purchased fresh coffee in the morning on workdays, followed by in the afternoon, in the morning after getting up or before going to work, at midday, in the evening or at night, and before going to bed, respectively. Most of them purchased fresh coffee 3-4 times/week, followed by 1-2 times/week, 5-6 times/week, and more than 6 times/week, respectively. The people influencing their purchasing most was family members, followed by coworkers, advertising media and others (such as, themselves), respectively. The result of this research was consistent with the research on customers satisfaction towards service of Happy Hut Coffee Shop by Jadet Sangsoi (2007) that the respondents used services at Happy Hut Coffee Shop between morning and late morning (9.00 a.m. – 12.00 p.m.). Furthermore, it was in accordance with the research on business analysis of a fresh coffee shop in Chiang Mai Municipality by Atjima Kruekhakhao (2012) that the reason of fresh coffee consumption was drowsiness relief. Consistently, Panisa Singkhata (2012) conducted the research on customer satisfaction towards services marketing mix of Fang coffee shops in Chiang Mai Province and found that most of consumers used services at a coffee shop 3-4 times/week.

8.4 Hypothesis Testing

Gender, age income had no effects on decision making in using services of fresh coffee shops among consumers in Bangkok, whereas educational level and occupation had effects on decision making in using services of fresh coffee shops with a statistically significant difference of 0.05. Similarly, the research on marketing mix affecting decision-making of fresh coffee consumption in Muang District, Petchaburi by Naiyana Ritbua (2016) found that gender, age and income had no effects on fresh coffee marketing mix in Muang District, Petchaburi, while educational level and occupation had effects on fresh coffee marketing mix in Muang District, Petchaburi. The research on consumer's purchasing behavior towards Doi Kham Coffee product in Mueang district, Chiang Mai province by Montalee Surapanpichit (2007) supported this research by stating that educational level and occupation had effects on opinions towards marketing mix.

9. Suggestions

9.1 Marketing Mix Strategies

Product should put emphasis on taste to be unchanged and constant. Coffee products sold in coffee shops should be always clean and fresh. The coffee shops should create new coffee formula regularly for customers using services.

In term of price, coffee shops should consider costs to set prices in line with quality of products and services. Price labels should be placed for the consumers to easily notice and Coffee shops should provide products in various prices according to product sizes to be options for customers and to better satisfy customers.

Place should always pay attention to cleanness of the shop, sufficient and comfortable seats for customers and employees to provide full service for customers with all their ability.

Promotion should give importance to discount coupons on seasonal festivals, public relations through media, such as, newspaper, radio, leaflet, internet, etc., shopping points collection for member's special rewards, and trying for free to promote a coffee shop to be well-known among the customers.

People should provide employee trainings to be skillful in working, to be in a good manner, and to be service-minded, which could draw customers' attentions because employees directly

communicate with customers. If the employee provides poor services to customers, it may result in the customers turning to use services of competitors.

Physical evidence should consider shop location with convenient transportation, familiar and natural atmosphere, and beautiful shop decoration, such as, photo corners, retro shop decoration or modern shop decoration to be unique satisfying popularity of today's customers who like to share photos on social networks. This would draw attentions and create competitive advantages.

Process should place emphasis on quickness in ordering products, fastness and accuracy of payment, same service standards, and simple process of service provision.

8.2 Suggestions for Future Research

To be guidelines for future research consideration on fresh coffee shops, the researchers would suggest research topics as follows:

1. Development of fresh coffee marketing strategies in Bangkok should be examined to analyze problems and obstacles, and to improve better service provision in the future.

2. According to this research, fresh coffee shops in other areas should be explored to be guidelines for developing service provision of coffee shops in the future.

10. Acknowledgements

This research was accomplished by courtesy and assistance from many parties, especially for North Bangkok University for providing funds. We would like to express our gratitude to all advisors of this research for correcting weaknesses, as well as all instructors in the major and other majors in the Faculty of Business Administration of North Bangkok University for assisting the research to be complete with better quality. Thank you the respondents for giving time to complete the questionnaires and expressing opinions greatly beneficial to the research. Moreover, family encouragement and positive reinforcement were essential supports from the beginning from the beginning to accomplishment. If there were mistakes in the research, the researchers would to apologize for our mistakes and accept the mistakes on our own.

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Factors Affecting Decision-Making in Using Accounting Software Packages of Small and Medium Enterprises in Bang Khen District, Bangkok

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ABSTRACT:

This research aimed to study 1) characteristics of accounting works supported by the software packages and 2) the factors affecting decision-making in using accounting software packages of small and medium enterprises in Bang Khen District, Bangkok. The survey research was applied in this study and focused on small and medium enterprises in Bang Khen District, Bangkok. The questionnaires were distributed to 750 respondents and two hundred fifty-four questionnaires were returned.

The research revealed that two hundred fifty-four respondents used the accounting software packages. In other words, most of the sample group (41.7 percent) used the Express Accounting Software, followed by the EASY-ACC Accounting System Software (25.8 percent). The factors affecting decision-making of the sample group in using accounting software packages were ranked in order of priority as follows: 1) quick and accurate processing, 2) being the standard software specified by the Revenue Department, 3) easily creating and editing reports through report writer tools, 4) easily expanding database size with low maintenance costs, and 5) serving multiple work stations. The findings of the research showed that the factors affecting decision-making in using accounting software packages were characteristics of businesses. Business type and operating period had effects on differences in using accounting software packages. Moreover, it also revealed that there were six important factors were important affecting using accounting software packages at a statistical significance level of 0.05.

Keywords: Accounting software packages, small and medium enterprises

1. Introduction

In the past, accounting was done manually; as a result, the data was often inaccurate and delayed. At present, with high levels of competitiveness, the accounting data has been significant for management's decision-making in order to enhance competitive efficiency. Doing business has been developed and changed by using information technology, that is, computer system and accounting software package have been applied to accounting works so that the data received by executives are accurate and reliable, as well as quick and up-to-date, and applied to efficient decision-making. However, an accounting software package considered a key element of the computerized accounting information system serves to process data entry, do financial reports, and do management reports for related users. Examples

of benefits of applying an accounting software package are the enterprise quickly and promptly informed of financial conditions and performance, operation on accounting with more convenience and accuracy, executives able to search data stored in the database for management all the time, etc. The enterprises could provide accounting software packages by in-house development or purchasing the accounting software packages, which were developed by software houses and distributed abundantly in the marketplace. Although applying the accounting software packages is very useful, there are not many business organizations earnestly bringing the accounting software package in the workplace. It is probable that those organizations do not realize benefits or needs of the accounting software package, or face the problems of using the accounting software package. Moreover, using inaccurate or inappropriate accounting software

package probably means waste of money and time, as well as mistakes of executives' management, resulting in management mistakes. Therefore, the researchers were interested in studying the factors affecting decision-making in using accounting software packages of small and medium enterprises in Bang Khen District, Bangkok.

2. Research Objectives

- 2.1 To examine accounting characteristics assisted by the accounting software packages, i.e., data collection, data processing, data analysis, conclusion and presentation.
- 2.2 To study the factors affecting decision-making in using accounting software packages of small and medium enterprises in Bang Khen District, Bangkok.

3. Research Hypotheses

Business type and operating period had effects on differences in priorities of the factors affecting decision-making in using accounting software packages of small and medium enterprises in Bang Khen District, Bangkok.

Operating period had effects on degree of the factors affecting decision-making in using accounting software packages of small and medium enterprises in Bang Khen District, Bangkok.

4. Literature Review

4.1 Factors to be considered in using accounting software packages

Characteristics of each business, such as, industrial business, service business, etc. have differences of business transactions and needs for data usage. The developed software packages are not able to serve users' needs in all kinds of businesses. Therefore, the enterprises should consider how much the software package is able to serve users' needs. There are six factors to be considered in using accounting software packages, as follows (Natee Hemman, 2007; Pornpan Wantanachai, 2010; Arunya Jinachan, et. al., 2016):

In case of reliability of manufacturers or distributors, the accounting software packages should be selected from reliable manufacturers or distributors with users training and good after-sales service. The accounting software integrates data between sub-systems. Each software will

differently transfer data. Some software consists of network version compatible with different network software. Furthermore, ability to transfer data to other programs is the characteristic in increasing flexibility to users for data analysis, design and doing reports. In case of system security, the system should use multi-level passwords with date and time specified on the reports, list of editing data and editors. Support and after-sales service include user manuals. Examples of procurement costs and expenses are software cost, total cost of procuring sub-systems to be workable, and hardware cost. Software capabilities depend on limitations of number of workstations, memory unit, storage space, number of data saving, and data size. Limitations of software and optional features are one factor to be considered, such as, data compatibility with various currencies, data analysis system for executives' decision-making to be accurate and in time so as to create competitive advantages.

4.2 Related Literature

Nantaporn Likitpiboonsil, et. al. (2002) conducted the research on factors to be considered in purchasing accounting software packages of small and medium industrial factories.

Napaporn Likitwongkajon (2008) conducted the research on factors affecting decisions in using accounting software by business entities in Khon Kaen.

Preeyanand Wanmetee (2012) conducted the research on factors affecting the purchase of accounting software packages by manufacturing industries in the Bangkok Metropolitan Area.

Manop Seeluang (2006) conducted the research on using accounting software packages and accountants' desirable characteristics by enterprises.

Uraivan Hongchai (2011) conducted the research on factors affecting the decision making on the acquisition of accounting software and enterprise resource planning (ERP) in the Amatanakorn Industrial Estate Chonburi.

5. Research Methodology

5.1 Population and Samples

The population of this research was small and medium enterprises registered with the Department of Business Development, Ministry of Commerce, and still operated up to now. The sample size of the research was 750 respondents

selected by convenience sampling in all kinds of businesses, i.e., wholesale and retail enterprises, service enterprises, and manufacturing enterprises throughout Bang Khen District, Bangkok. Two hundred fifty-four questionnaires were returned.

5.2 Research Instrument

The questionnaire was used as an instrument in data collection, created in accordance with research objectives and framework. The questionnaire consisted of three parts, that is, Part 1: basic information of respondents, Part 2: information on business types, and Part 3: information on the factors affecting decision-making in using accounting software packages of small and medium enterprises in Bang Khen District, Bangkok. Likert's five rating scale and five interval scale were applied in this research.

5.3 Statistics used in the research

Percentage was used to compare basic information of the respondents and businesses. Mean and standard deviation were used to analyze opinions on the factors affecting decision-making in using accounting software packages of small and medium enterprises in Bang Khen District, Bangkok. Criteria for interpreting mean values were categorized as follows:

Mean values	Level of importance
4.50 - 5.00	Most
3.50 - 4.59	Much
2.50 - 3.49	Moderate
1.50 - 2.49	Little
1.00 - 1.49	Least

T-test and One Way Analysis of Variance were applied to test hypotheses with a statistical significance value of 0.05. If detecting statistically significant differences, Fisher's Least Significant Difference (LSD) would be used to test hypotheses by doing pairwise comparisons.

6. Results

6.1 Analysis on Basic Information of Respondents

According to basic information of the respondents, most of them (244 respondents, accounting for 72.0 percent) were female, were in the age group of 36-50 (36.25 percent), held a bachelor's degree (54.0 percent), had working experiences less than 5 years (86.70 percent) and worked as an accountant (42.25 percent).

6.2 Analysis on Business Characteristics

Most of them were retail and wholesale businesses (48.5 percent) and has been operated more than 10 years (35.8 percent).

6.3 Analysis on the Factors Affecting Decision-making in Using Accounting Software Packages

The accounting software packages consisted of six aspects: 1) The samples had opinions on working characteristics of the accounting software packages with a mean of 3.74 and a standard deviation of 0.59. Considering by factors, the quick and accurate processing was rated highest with a mean of 4.03 and a standard deviation of 0.47, followed by easily creating and editing reports with a mean of 3.98 and a standard deviation of 0.49; 2) The samples had opinions on security system with a mean of 3.89 and a standard deviation of 0.50. Considering by factors, specifying user's right was rated highest with a mean of 3.92 and a standard deviation of 0.48, followed by tracking system of data entry with a mean of 3.91 and a standard deviation of 0.51; 3) The samples had opinions on expenses of procurement and maintenance with a mean of 3.35 and a standard deviation of 0.51. Considering by factors, price of the accounting software package was rated highest with a mean of 3.68 and a standard deviation of 0.42, followed by cost of maintenance with a mean of 3.49 and a standard deviation of 0.37; 4) The samples had opinions on reliability of software or manufacturers with a mean of 3.74 and a standard deviation of 0.59. Considering by factors, being the standard software specified by the Revenue Department was rated highest with a mean of 4.00 and a standard deviation of 0.40, followed by having agencies in Thailand with a mean of 3.58 and a standard deviation of 0.68; 5) The samples had opinions on management process and service provision with a mean of 3.67 and a standard deviation of 0.59. Considering by factors, consulting and installation service was rated highest with a mean of 3.90 and a standard deviation of 0.64, followed by quickly service providing and problem solving with a mean of 3.85 and a standard deviation of 0.67; 6) The samples had opinions on other features with a mean of 3.14 and a standard deviation of 0.70. Considering by factors, updating the transaction after retroactively editing was rated highest with a mean of 3.20 and a standard deviation of 0.89, followed by supporting usage of affiliated companies with a mean of 3.12 and a standard deviation of 0.69.

6.4 Results of Hypothesis Testing

In case of hypothesis testing analysis, the researchers established a main hypothesis that business type and operating period had effects on differences in priorities of the factors affecting decision-making in using accounting software packages of small and medium enterprises in Bang Khen District, Bangkok. In case of analysis on differences of variable mean by One Way ANOVA (F-test) with a statistical significance level of 0.05, Scheffe's pairwise comparisons would be used if a significance value was more than a statistical significance value of 0.05. Six aspects of factors, i.e., working characteristics of the accounting software packages, security system, expenses of procurement and maintenance, reliability of software or manufacturers, management process and service provision, and other features revealed that business type and operating period had no effects on differences in priorities of the factors affecting decision-making in using accounting software packages of small and medium enterprises in Bang Khen District, Bangkok.

7. Conclusions and Discussions

The study on characteristics of accounting works supported by the software packages could be concluded that small and medium enterprises in Bang Khen District, Bangkok most frequently used accounting software packages in collecting processing, analyzing, concluding and presenting data.

The results on the factors affecting decision-making in using accounting software packages of small and medium enterprises showed that overall the respondents had opinions on the factors affecting decision-making in using accounting software packages of small and medium enterprises at a high level. Considering by aspects, reliability of manufacturers, and support and service provision were rated most at a high level, whereas expenses of procurement and maintenance was rated least. The results were consistent with the research on important factors for accounting software in industrial of Muang District, Nakhonratchasima Province by Pattamawadee Duangdara (2015), which stated that security system was ranked highest, followed by reliability of accounting software and working characteristics of software, while expenses of procurement and maintenance was ranked lowest.

The results on the factors affecting decision-making in using accounting software packages of small and medium enterprises showed that categorizing by business type, overall result was not different. However, considering by aspects, ability of accounting software packages was significantly different at 0.05. Considering by operating period, overall result had a statistically significant difference at 0.01, which agreed with the research on factors affecting decision-making in using accounting software packages of limited companies in Bangkok by Raweevan Lurnprapai (2009) that the aspect given the highest priority by the companies was support and service provision, followed by security system. The security system gave highest importance to backup and recovery system.

Hypothesis Testing

Business type and operating period had no effects on differences in priorities of the factors affecting decision-making in using accounting software packages of small and medium enterprises in terms of six aspects. The six aspects of decision making in using accounting software packages consisted of working characteristics of the accounting software packages, security system, expenses of procurement and maintenance, reliability of software or manufacturers, management process and service provision, and other features. The samples did not have different opinions because most of them were small and medium entrepreneurs and used the Express Accounting Software and the EASY-ACC Accounting System Software. Both of them were simple accounting software, so there were no significant differences in decision making. It was consistent with the research by Manop Seeluang (2006) that size of enterprises had effects on decision-making in using accounting software packages, that is, software price and maintenance cost.

8. Suggestions

Research Suggestions

Manufacturers or distributors of accounting software packages should comprehend reasons and factors to be considered in using accounting software packages by natural person, limited partnership and company, such as, company with the basic organizational structure giving importance to factors of decision making in

using accounting software packages differently. Therefore, manufacturers or distributors of accounting software packages should design the software which served users' needs and conformed to the criteria specified by the Revenue Department.

Suggestions for Future Research

According to the results on the factors affecting decision-making in using accounting software packages of small and medium enterprises in Bang Khen District, Bangkok, the researchers proposed approaches for future research as follows:

1. The factors affecting decision-making in using accounting software packages of service and manufacturing businesses should be investigated to compare functional appropriateness of each business.

2. This research focused on small and medium enterprises; therefore, future research should examine large enterprises to compare differences and functional appropriateness in various sizes of enterprises.

9. Acknowledgements

This research was accomplished by courtesy and assistance from many parties, especially for North Bangkok University for providing funds. We would like to express our gratitude to all advisors of this research for correcting weaknesses, as well as all instructors in the major and other majors in the Faculty of Business Administration of North Bangkok University for assisting the research to be complete with better quality. Thank you the respondents for giving time to complete the questionnaires and expressing opinions greatly beneficial to the research. Moreover, family encouragement and positive reinforcement were essential supports from the beginning from the beginning to accomplishment. If there were mistakes in the research, the researchers would to apologize for our mistakes and accept the mistakes on our own.

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Strategies and Uses of English Conversation between Front Office Staffs and Foreign Guests at Five Star Hotels in Bangkok

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Abstract

The main aim of the qualitative research study was to examine the problems that arose between Thai hotel front office staffs, foreign guests and visitors used the services and facilities of ten major hotels in the Bangkok metropolitan area. The research focused was problems in cross cultural conversation, Regard both language and cultural dimension within the context of five stars hotels in Bangkok. Strategies that hotel front office staffs used to overcome such problems were also investigated.

The Sample in this study is included to 30 front office staffs in five star hotels Bangkok; 1.Hotel Sheraton Grande Sukhumvit, 2.JW Marriott Hotel Bangkok, 3.The Peninsula Bangkok, 4. Shangri-La Hotel Bangkok, 5. Mandarin Oriental Bangkok 6. Conrad Bangkok Hotel, 7.Grand Hyatt Erawan Bangkok, 8. Plaza Athenee Bangkok, A Royal Merdien Hotel, 9. The Sukhothai Bangkok Hotel, and 10. Centara Grand at Central Plaza Ladprao Bangkok . Only 3 front office staff from each five star hotels by the front office manager for an interview.

If was found that most problems were easily surmountable, although their resolution depended upon the individual level of confidence and experience of each employee as well as their personality. No severe conflicts between the two parties were found. Minor annoyances and misunderstandings were two consequences of the problems.

This findings showed that the English learning strategies of the personnel varied from tutorial courses, engaging in self-study by reading books or watching English-language movies with the original soundtrack, and attempting to avail themselves of opportunities to speak with friends who were native speakers of English.

Non-verbal behaviors, accents, and cultural stereotypes were found to be important factors that determined the success or failure of cross-cultural interactions. In addition, the strategies used by the front office staff to ease the difficulties included asking guests to repeat what they said, to speak slower, to write the words down, to use body language or to call their supervisor or manager to assist in solving the problem at hand.

Keywords : Strategies, English Conversation, Front Office Staffs, Foreign Guests, Five Star Hotels

1. Rationale and Significance of the Study

English as an international language is widely used to overcome the language barrier between people from diverse cultures using different languages. English is used internationally as a tool for overseas travel. There is no doubt that most tourists and personnel who work in the service sector use English to communicate with each other. In addition, communication between front office

staff and foreign tourists shows some difficulties because of differences in culture and ability to use English.(Condlin, D.,2013)

Thailand is one of the most fascinating and attractive destinations for foreign tourists. Among many other benefits, Thailand's national policies encourage an increasing number of foreign tourists to visit this country for economic reasons. The increasing number of foreign tourists has resulted in an expansion in tourist-related activities such as

the notion that traveling in Thailand is an exotic experience for foreign tourists; unfortunately, the latter often do not understand Thai culture and cannot communicate in Thai. Thus, insufficient knowledge of Thai culture and language become barriers that need to be minimized for tourists to fulfill their travel needs. (Arunee, N:2012).

Hotels in Thailand are scattered all over the country, especially at popular tourist attractions, to serve the demand on the part of both local and overseas tourists. Many of them aim to specifically serve foreign tourists who pay comparatively higher prices for their services. English is not the native language of Thais, nor is it used as a second language, as it is in other countries in the region, such as the Philippines and India. Therefore, a hotel in Thailand is a context in which foreign tourists and Thai hotel personnel come to interact using English as the means of communication. It is an intercultural context in which English is predominately used for the purpose of providing satisfactory service. In reality, many scholars who are interested in the nature of intercultural interactions agree that a cross-cultural conversation between the two parties reveals some degree of difficulty. Whereas cultural differences are the main cause of such difficulties, in a specific perspective, language is also a prime cause. However, culture and language cannot be separated because language is a form of communication that embedded cultural dimensions interface with language uses. Thus, it is obvious that the unique nature of Thai culture, as well as the use of English skills on the part of Thai hotel personnel, contributes to certain degrees of difficulty when they attempt to converse with foreign guests. (Lustig, W. M., & Koester, J, 2011)

Conversation is the predominant form of communication that is mainly used by hotel front office staff to provide services to foreign tourists. Therefore, their success in providing such services depends largely on their ability to conduct a conversation in English. In fact, Thai hotel front office staffs are required to have such an ability and training them is essential; however, learning a foreign language is dynamic and cannot be totally learned by a predetermined language training program. Similarly, in their working environment, the hotel front office staffs naturally hone their English conversation skills while they interact with foreign tourists. It is assumed that the difficulties the personnel encounter will decline as they gain direct experience. (Dodd,C.H,2013).

English conversation between Thai hotel front office staffs and their foreign guests constitutes an interesting intercultural interaction that is worth investigating in terms of the language-learning process of non-English native speakers. The unique service context of a hotel surrounded by Thai culture should possess some behavioral aspect, an investigation of which should provide a better understanding of the nature of culture and language.

To date, previous studies concerning difficulties in using English as a mean of communication between foreign tourists and hotel front office staffs are insufficient and far from systematic. Focusing on English conversation, although knowing or identifying the strategies that hotel front office staff use in their conversation with foreign guests is beneficial in terms of both theoretical and practical understanding, the way in which of hotel front office staff learn English should not be ignored. In the past, many existing empirical research studies have overlooked on-the-job learning.

This study, therefore, attempts to identify not only the behavioral strategies associated with hotel front office staff who use English naturally as a matter of course in their working contexts, but also to examine how the use of such strategies changes as they gain more experience in the process of learning English. The results and findings of this study should shed light on, and provide a better understanding of, the process of learning a foreign language in a natural manner.

2. Objectives of the Study

1. Examine the nature of difficulties in English conversation faced among the hotel front office staffs.
2. Investigate the strategies used by hotel front office staffs as they minimize the difficulties.
3. Justify the intervening cultural aspects that stand in the way of English conversation between the hotel front office staffs and the foreign guests.
4. Identify the learning process associated with the strategic patterns leading to the front office staffs' competencies in their English conversation skill.

3. Research Questions:

Although cross-cultural contacts take many forms and involve many actors and contexts, this study focuses on interactions in English between hotel front office staffs and foreign guests based on their conversation skills used while they engage in service activities.

4. Definitions of Terms

There are some conceptual and specific terms used in this study which need to be defined to ensure mutual comprehension:

4.1 Language learning behavior. Language learning behavior is a natural phenomenon that the hotel front office staffs use for learning English. They can learn from people and other elements, for instance their colleagues, bosses, themselves, various media, and documents.

4.2 Hotel front office staffs. This term refers to Thais who work in the service front office sectors at the five-star hotels selected for the purposes of the current study. They need to come into direct contact with guests.

4.3 Foreign guests. Foreign guests refer to foreigners who come from diverse countries to stay at a hotel, including foreigners who temporarily stay in the hotels for different purposes or only come to pay for the services at the hotel and need to communicate in English.

4.4 Accent. Accent means the pronunciation of the English language by various nationalities of guests.

4.5 Body language. Body language refers to all gestures that hotel front office staffs or guests use between their conversations to achieve a clear, mutual understanding.

5. Significance of the study

The results and findings of this study are indeed add more meaningful theoretical understanding relating to English learning process among Thai front office staffs who are non-native English speakers. Such a detailed and accurate understanding ought to give rise to an essential conceptualization of the learning difficulties and accomplishment that are also of practical use for training the personnel who use English in their various domains of work.

6. Statistics for Data Analysis

The statistics for data analysis of this research by using interdisciplinary triangulation to synthesis and proving data for credibility and validity. (Klein, 1996). The data obtained from the interview was transcribed verbatim, a procedure that was carried out right away at the end of each day on which the interview takes place. The researcher went through the data again and again, along with the interview scripts, in order to gain the kind of insightful understanding that allows the researcher to construct the reality of the phenomena. In addition, the coding process that will be undertaken at the same time that the researcher listens to the scripts includes open coding and axial coding. Open coding involves the recording of similarities of the target behaviors so that patterns of behaviors will be revealed. Then, axial coding will be used for linking the concepts that emerge from the patterns of behavior. Also, unique points that deviate from the patterns will be identified.

7. Research Instrument

The instruments used in this study interviews, the interview questions were included on the research questions and used as broad guidelines for the interview itself.

7.1 Population

At a hotel, the foreign guests are obliged to interact in a variety of situations with hotel front office staffs. The participants are direct employees who have a high chance of coming into direct contact with the guests. All of these situations require the use of English as a mean of conversation. For the hotel front office staffs, this constitutes a natural process of learning which in turn involves a number of factors, mainly pertaining to the host (Thai) culture, and employee's educational and professional backgrounds. However, the cultural dimensions will merely be viewed in a broad manner, whereas factors pertaining to the employees' background will focus on gender, educational level, previous English training, and length of working experience. For this purpose, therefore, personnel from different backgrounds will be chosen for participation in the current study.

It is possible to purposively select them in such a way that they are representative of the general characteristics of a first-class hotel. Thus, approximately 30 front office staffs from five first-class hotels will be randomly selected for the interview. Again, only

those front office staffs who are directly engaged in interactions in English during their work performance will be chosen.

7.2 Method of Acquiring Data

This study uses a qualitative approach in the form of interviews because they allow the researcher to read their minds of the participants, thereby leading to a more insightful understanding of the problem. In other words, the interview is a non-directive in nature; that is, the researcher performs the role interviewer who comes to the interview with broad questions in her mind and uses questions and interviewing strategies to encourage the informants to reveal their in-depth knowledge and experience.

7.3 Interview Questions

There are 15 questions used for an interview;

1. How old are you?
2. What is your current position?
3. What is your job description?
4. What is your educational level?
5. How long have you been working in this hotel?
6. In how many languages do you use in communicating with guests?
7. Did your former job require you to communicate in English?
8. Which English accents are easy to understand? Please name me 3 accents.
9. Which English accents are hard to understand? Name me 3 accents.
10. If you do not understand your guests when you converse with them, what strategy will you use to solve the problem?
11. Have you ever found that the different cultures of each country can cause misunderstanding in communication? How?
12. Do you think having guests of various nationalities can cause misunderstanding in terms of communication? How?
13. What constitutes an obstacle in your conversation with guests?
14. What can reduce that obstacle?
15. In your opinion, in what way do you want to improve or develop your communicative ability to communicate in English with your guests?

7.4 Data Recording

The instruments used in the interview are a voice recording, and a notepad for making notes. All of the interview sessions will be fully recorded. At certain points during the interviews, short notes will be made in order to aid the researcher to record important points for later reference as mentioned above.

7.5 Interviewing Process

The interviews will be undertaken at a time and place that are convenient for each individual sample. The researcher who conducts the interview explains the purpose of the interview and what and how the samples are able to help with appreciation. Then, the researcher explains their rights and a guarantee of confidentiality as participants of this study and requests to record the conversation and make short notes.

Each sample is requested to engage in the interview for two times due to the following four reasons. First, it is better for the interviewer to build rapport. Second, both the researcher and the samples may follow up or add more detailed information during the second session. Third, it is possible that the sample is exhausted from his/her work, so an overly long conversation is not useful. Lastly, one of the assumptions of qualitative research is that the data analysis is undertaken as soon as possible after the data collection process is complete. Therefore, one interview session is insufficient and leads to questions regarding the validity of the data.

The next appointment will be arranged at the end of the interviews. Each sample is asked the questions in a different order-the order having been adjusted so that it is appropriate to each interviewee; for example, personal background questions are asked throughout the interview. The researcher also takes a role in eliciting the sample's expression of their ideas and experience in detail. Taking short notes at certain points during the interview helps remind the researcher to ask for later clarification and to enhance understanding while listening to the voice recording. However, care must be taken to ensure that doing so does not interfere with the interview process. A complementary gift is offered at the end of the last interview session as well as a statement of appreciation of their devotion.

8. Summary of the Study

The study by answering the research questions and provide a conclusion to the main findings. Also, the limitations of conducting this study will be discussed, in addition to which some recommendations regarding future research will be provided

8.1 Answers to Research Questions

The first research question was as follows: "What are the difficulties in English conversation faced by the hotel front office staff in their process of

learning?” It was obvious from the findings that most of samples accepted that strange and unfamiliar accents constituted a serious and ongoing obstacle to cross-cultural communication in the workplace. English spoken by various nationalities in a variety of accents were a potential cause of misunderstanding. Some nationalities speak too fast, while some pronounce English in a variety of different accents that were barely or completely incomprehensible.

The second research question stated: “What are the strategies used by Thai hotel front office staff in minimizing difficulties in English conversation as they converse with foreign guests? Whenever Thai hotel front office staff communicating with foreign guests could not understand them, many of them asked guests to repeat what they had said or to speak slower. Most samples used body language or some type of visual medium in communication, such as a map, a brochure and so on. Some asked guests to write down the request as best they could. Finally, if they were still unable to resolve the issue, they would call their manager to deal with the guests handle the problem to the latter’s satisfaction.

The third research question stated: “What are the crucial cultural characteristics that constitute barriers in English conversation between Thai hotel front office staff and foreign guests? Differences in culture can result in confusion or misunderstanding. Many samples often become confused when Indians say “yes’ or ‘OK’ while shaking their heads. Conversely, the Japanese always nod when they reject or do not accept something. Some western guests do not use their fingers to point at something due to the fact that it is considered impolite in their culture. Most of them like to be punctual, but Thais do not attach so much importance to punctuality. This can make guests unhappy and cause them to complain to the sample. One female sample felt a bit angry when a Spaniard kissed her hand because she was unaware of this feature of Spanish culture, in which the kissing of hands means “thank you”. Some Asian guests seldom listen carefully. They love to speak loudly (which other Asians may interpret as rudeness), tend to be impatient, and do not like to wait for others to reply, frequently interrupting the interlocutor. They believe they are always right and they often talk while others are talking. As a result, the samples have to calm down, repeat themselves and explain things more than once.

The samples reported many cases resulting in loss of income for the hotel which arose from misunderstandings. In the lobby lounge, a guest ordered

“frozen lemon”, but the waitress made lemon with ice, which was wrong. In fact, the guest wanted smoothie lemon. The sample had to apologize profusely to the guest in question and make a new one for her. Another case involved a wake up call. Some guests needed a wake up call at 5.30 pm. but the sample called them at 11.30; the guests were extremely angry, so the front office manager had to apologize profusely because they wanted to stay for a few days but could not make the guests feel better. Lastly, the manager had to let them stay for free for one night because she hoped they would come again next time. If guests stay at the hotel more than one night, the hotel will save on the cost of certain items such as bed sheets towels.

One of the female sample noted misunderstanding on the part of “some nationalities do not speak English that made my staff misunderstood. Our guest wanted a condom but could not communicate properly; finally he got a plastic bag. We found out later that he had been staying with a woman; it was so funny. Another case involved a “wake up call”. The guests wanted the hotel staff to wake them at 5.30 pm. but they woke them at 11.30 am. They got very angry since they had just checked in at 8.00 in the morning. In this case, I had to let them stay free of charge for one night. I thought this was due to the confusion regarding Thai time and Western time. I think that the right understanding in communication is very important”.

Foreign guests sometimes feel unhappy when communicating with Thai hotel front office staff but not in any serious way since they realize that English is not our mother tongue. From the interviews, the researcher found that many factors can improve communication between Thai hotel front office staff and guests. Firstly, the process should be started at the college or university level in courses that are directly concerned with the hotel business. Those wishing to major in the hotel business should be qualified both in terms of personality and a service minded attitude and English language skills. Most of the samples agreed that English training courses are necessary for hotel front office staff, especially with regard to speaking and listening, as well as in acquiring the right pronunciation. Some sample wanted to learn more about guests’ culture, believing that it would make it easier to understand guests’ needs. Some samples felt they needed to improve their grammar, learn more languages and enhance their vocabulary. One method that some samples used to develop their communication skills was to watch movies with the original soundtrack and to practice in language labs. A few samples reported that they achieved better

understanding through face-to-face conversation than in conversations conducted by phone, adding that eye contact was an important factor in facilitating a smooth conversation. The samples who have worked in the hotel industry for many years confirmed that summoning the courage to speak is the best way to improve their communication skills. Everyday communication is a form of practice too. Those samples who have worked for a short period of time only agreed that they should learn more languages, such as Chinese, Japanese and Korean due to the fact that nowadays more and more foreigners Asian travelers are visiting Thailand.

The fourth research question stated “What are the vital strategies that lead to be a success in their work of front office staff in the process of learning English conversation skills? the immediate strategies used by the front office staff to solve the conversation problem is to ask the guests to repeat what they said, use body languages, and write down what they want to say, respectively.

The finding also showed that most problems were easily surmountable, although their resolution depended upon the individual level of confidence of each employee (which was in turn linked to the length of their working experience) as well as their personality. Personnel who had worked in the hotel industry were better able to deal with such cross-cultural problems. No severe conflicts between the two parties were found. Minor annoyances and misunderstandings were two consequences of the problems.

This study found that the English learning strategies of the front office staff are attending tutorial courses, engaging in self-study by reading books or watching English-language movies with the original soundtrack, and attempting to avail themselves of opportunities to speak with friends who were native speakers of English.

Non-verbal behaviors, accents, and cultural stereotypes were found to be important factors that determine the success or otherwise of cross-cultural interactions. In addition, the strategies used by the hotel front office staff to ease the difficulties included asking guests to repeat what they said, to speak slowly, to write the words down, to use body language or to call their supervisor or manager to assist in solving the problem at hand.

9. Recommendation

Based on the findings of this study, English cross-cultural conversation still has room for further research, particularly with regard to a multicultural working environment in Thailand. Specifically, it requires a systematic in-depth study that investigates the cognitive process, along with the behavioral and cultural patterns that give rise to problems in cross-cultural communication. Although this study found some unique insights into factors that contribute to misunderstanding, many of its findings have repeated or confirmed existing literature in terms of the behavioral patterns involved in cross-cultural interactions. Therefore, an investigation of the cognitive process of individuals who engage in cross-cultural conversation in English would yield promising and insightful findings with the potential for practical application.

The following are a few concrete recommendations regarding the potential for further research in this area :

9.1 English curriculum in schools and at the college level (including Vocational Educational Training courses: VET) should be linked to needs of the hotel and hospitality industry in the need for appropriate certification and credit arrangements to be in place; and for clearly articulated learning and employment pathways to be established and for on-the-job training as interns as part of the curriculum. Language learning should be made relevant to learners by focusing on incorporating cross-cultural understanding; employing a committed teacher that is not only skilled in the teaching of English for Specific Purpose (ESP), but also in teaching cross-cultural competency as well. Thought should be given to hiring a competent Indian teacher who could assist Thai learners in overcoming the kind of linguistic and cultural problems they encounter when dealing with guests from the sub-continent because Indian teacher speak not clearly in accent and difficult to understand.

9.2 Further study should also be conducted into the in-house English training programs offered by such hotels, in particular any cross-cultural component such courses may include. An attempt should also be made to determine the level of satisfaction of hotel personnel with such courses, together with their suggestions in which they could be improved.

9.3 Future researchers could also examine the other side of the coin, i.e. how foreign guests of different nationalities perceive the cross-cultural competence of Thai hotel front office staff, together with suggestions

regarding potential improvements in both their linguistic and cross-cultural skills.

9.4 The difficulties that researcher faced in interviewing the informants for example, making appointments with higher-ranking personnel often proved problematic. Therefore, future studies should take such problems into account and attempt to resolve them.

9.5 Although cross-cultural contacts take many forms and involve many actors and contexts, this study focuses on interactions in English between hotel front office staff and foreign tourists. This study is also limited to investigate the conversation skills of hotel front used while they engage in service activities.

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English Teaching in Cross-Cultural Adaptation of Under-Graduated Thai Students at A Public University in Pathumthani

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Abstract

This study analyses and observes between learners, under-graduated Thai students, and teachers, bilingual and native English teachers in cross-cultural adaptation in Thailand. Globalization and increasing interconnection among countries have made the English language to be one of the core languages of international communication. Cross-cultural adaptation theories and the difference between Thai and Western culture are reviewed.

Hence, this research focuses the possibilities and opportunities of multi-cultural education because of the global status of English. Exploring the challenges concerning the relevant factors in teaching English in a cross-cultural adaptation and the way to come out of the deficiency of the learners has been both obscure and controversial since long time ago. What is widely accepted in this regard is English, not being the native language of the learners, triggers some problems. Therefore, the paper highlights core consideration for analyzing the challenges faced by the teachers and learners, and finally, recommends some strategy to solve the challenges.

Keywords: English teaching, Cross-cultural adaptation, Native language, Challenges.

Introduction

In today's world, the importance of English cannot be denied and ignored since English is the most common language spoken everywhere. A language is a part of a culture and a culture is a part of language; the two are intricately interwoven so that one cannot separate the two without losing the significance of either language or culture. (Brown, cited in Jiang, 1994, p. 147) English as the foremost medium of international communication at the present time is called upon to mediate a whole range of cultural and cross-cultural concepts, to a greater degree than in the past. No-one involved in teaching English is likely to argue for cross-cultural misunderstanding. Inevitably human capital has taken a slant to fit in with the globalized world, and the notion of "English teaching in a Cross-cultural Context" is crucial. Robinson (1985) believes in the importance of developing cultural versatility to

help learners meet the demands of an increasingly multicultural world. Nevertheless, there are many challenges related to teaching English in a cross-cultural context and the issue of exploring the challenges and the way to come out of the deficiency of the learners has been a matter of immense concern since long. English is perceived as the key to the socio-cultural advancement. Policy makers, language planners, educators and teachers in Thailand are intensively addressing the need to increase student proficiency in English language skills.

Every teacher has his or her own style of teaching, there are different national and cultural academic traditions, and there are often cultural differences in pedagogy. But regardless of styles, traditions and cultures, all good teaching anywhere in the world consists of one thing making connections. For students and

teachers to succeed, a better understanding of this culture of phenomenon is both crucial and necessary. However, the issues related to cross-cultural experiences of an individual are complex and often multifaceted. The theoretical framework advanced in this study provides a basis with which to understand more fully the process of cultural adaptation from communication viewpoint. Specifically, this effort should increase the level of understanding of the cultural adaptation of Thai students and native and non-native English speaking teachers.

Research Objectives

In this paper, there will be three focused areas:

1. To study examining English teaching in a cross-cultural context.
2. To find on possibilities and opportunities of multi-cultural education.
3. To explore the challenges concerning the relevant factors.

1. English teaching in a cross-cultural context

Hall (1997) explains that culture is something that we do, something that coheres us as a society; language, on the other hand, is a way in which we practice culture. But culture itself is never frozen--we consume culture as we produce it and are defined in terms of our use of culture. Pedagogy, likewise, is embedded in and shaped by culture. It is hence important for teachers to be aware of this in their pedagogical practices. Jiang (1994, p. 27) proposes three different kinds of metaphorical pairs to show the intimate relation between language and culture--flesh/blood, swimming skill/water and vehicle/traffic light. "Culture is a set of beliefs and values about what is desirable in a community of people and a set of formal or informal practices to support the values" (Javidan & House: 292). Culture consists of well-established cognitive networks that frame and guide our thoughts, emotions and behaviors without us much noticing the process very much.

Culture is also dynamic, with some parts changing and other parts remaining the same depending on a host of variables. Cultures also have room for individual variation, with everyone in a culture not necessarily being the same. Cultures are not

written into codes, but culturally prescribed values and norms are always embedded in our social institutions and unwritten rules of discourse and interaction that we learn through the socialization and internalization processes. Furthermore, it has also been suggested that culture exists on a multitude of levels and dimensions in which nationality is only one. (Griffith, Hu, & Ryans, 2000: 303; Slater, Boone, Price, & Martinez, 2002:198). Furthermore, people are affected by regional, organizational, family, and work group cultures in addition to national culture, and there are not always clear boundaries where the influence of one culture ends and another begins. Any teaching and learning context in the world is always a very dynamic and complex environment with a host of variables and forces at work that influence social interaction patterns and resultant levels of performance and productivity. The cross-cultural context has an even higher level of dynamic complexity as there are culture-shaped institutional structures and norms interacting with people of different cultures. It can be exciting, dynamic, creative and productive, but it can also be stressful, confusing, frustrating and nonproductive if teachers, learners and what is being taught, are not integrated properly. Generally, cross-cultural context refers to including people who have different customs and beliefs. By teaching English in a cross-cultural context, I would like to refer to three dimensions, such as: bilingual teachers but students from different cultures, native English speaking teacher but students from another culture, teacher and students from the same culture but the cultural content of English lessons is from a different culture.

2. Possibilities and opportunities of multi-cultural education

Culture has become an increasingly important component of English language teaching in recent time. There are a number of reasons for this related to a view of language that incorporates a wider social and cultural perspective, and to the increasingly multicultural use of English (Will Baker, 2003). The goal of multicultural education is not only to teach learners about other groups or countries. It is also to help them become accustomed to the idea that there are many lifestyles, languages, cultures, and points of view. The purpose of multicultural education is to attach

positive feelings to multicultural experiences so that each learner will feel included and valued, and will feel friendly and respectful toward people from other ethnic and cultural groups. Nurturing diversity means making multicultural education a process of action, through which we as adults achieve clarity about our condition in this society and ways to change it (Phillips, 1988). In TEFL, TESOL, ESL, EFL classroom, students are learning English which is not from their own culture. In other words, they are having multi-cultural education. The prospects of multi-cultural education are: The global status of English language and the cultural and linguistic qualities of English literature are accepted, appreciated and admired worldwide. Through multicultural literature, learners discover that all cultural groups have made significant contributions to civilization. A well-balanced English course includes literature that depicts people with a variety of aspirations, from different sociometric levels, with different occupations, and with a range of human characteristics (Norton, 1985). Kienle and Loyd (2005: 580) claim globalization is becoming “more prominent in all aspects of civilization. “National differences and antagonism between people are daily more and more vanishing” was a statement in one of history’s most influential works written over 150 years ago (Marx & Engels, 2004/1848: 2). In the current millennium, multicultural and multinational barriers have crumbled down and bridges of communication have gone across lands and seas and English language is the primary medium of communication for world citizens.

In the existing myriad scenes of globalization, the English language classroom can provide the right platform for skills development, and learning opportunities for understanding, empathizing and evaluating the world around. Language teaching is not related to imparting knowledge but is an art as well as a science of developing the skills. According to Wilga M Rivers (1983) foreign language teaching unlike teaching geography or history, is not only a sharing of knowledge but is also a development of the four basic skills of language i.e. listening, speaking, reading and writing. It is an appreciation of a foreign people; it is a readjustment of one’s attitude towards the world and towards oneself. In fact, in the path of achieving four skills, a learner has to be exposed to multicultural content so extensively that he attains

better understanding; consequently, better attitude towards the world around.

English Language Education plays an especially important role in moulding global learners. We need Global Learners who possess the knowledge, skills and attitude needed to critically evaluate and understand the world around them. They need to appreciate cultural differences and rely on this knowledge when participating in this multicultural, interdependent world. Strong support comes from a survey by Timmis (2002), in which the majority of the learners and the teachers of English from a large range of countries expressed a desire to speak English according to the native speaker norms, however the survey also demonstrated a wish to retain the aspects of their own culture, such as accent, especially amongst Asian students (Timmis 2002, 242). Multicultural education encourages appreciation and understanding of other cultures as well as one’s own. Teaching with this perspective promotes the learner’s sense of the uniqueness of his own culture as a positive characteristic and enables him to accept the uniqueness of the cultures of others. Students can learn about their class as an example of a common culture. Teachers can emphasize how other classes can be similar and yet different.

3. The Challenges

English teaching in a cross cultural context raises a number of challenges concerning the relevant factors. Though we can successfully generalize and predict certain student thought, emotion and behavior patterns, there will always be exceptions to any rules we might formulate. The first and foremost problem faced in teaching English in a cross-cultural context is the ‘Language’ itself. Both teachers and learners face some limitations in different ways, dealing with language. The content of the language class can also be the issue of challenge. Last but not least, culture shock is a severe obstacle in gaining a desired goal. The most burning challenges are related to:

Language

Native English speaking teachers

Native speaker teachers’ speed, accent, tone, pronunciation, pitch, can be sometimes a challenge for learners. They cannot follow the instructor

sometimes or even they don't understand anything. Some of the native English Speaking teachers' expectations of students is culturally based and stereotyped. Some western teachers may get frustrated over the perceived lack of imagination and creativity of their students without realizing the differences in uncertainty avoidance between cultures may be at the heart of this reluctance to stand out from the crowd (Scott A. Hipsher, 2006). On the other hand, it is also found that students have stereotyped feeling for the instructor. In a study Luke Prodomou (1992) found that just over half of the students thought the native English speaking teacher should know the learners' mother tongue and know about local culture.

Non-native speaking teachers

Sometimes students think that non-native English speaking teachers do not know much. At a university in Thailand, one of my colleagues faced a question from a student, "Teacher, Do you follow pronunciation, or does pronounce follow you?" The student had little confidence on the non-native English teacher. On the other hand, Rampton (1990) asserts that linguistic 'expertise' is more important than notions of who is and who is not a 'native speaker'. In the long run, what seems to matter most to students is the teacher's ability to do the job; it is not 'who you are, but what you know' (Rampton, 1990:99) that students will pay for. Non-native-speaking teachers of English are not necessarily worse off than native –speaking colleagues: they can be, and often are, as 'experts' in English and ELT methodology as native speakers, and have the added advantage of being able to draw on the vast reservoir of the students' first language and culture (Atkinson, 1987).

The learners

They sometimes face language shock, that is, they experience doubt and possible confusion when using L2 (Schumann, 1978c). As English is not their mother tongue, they remain under pressure of accuracy, appropriacy and fluency. From my five years' teaching experience in a Thai university, I have often found students saying, "Sorry, teacher, I can not explain in English. I don't find the right word at the right moment." Moreover, sometimes the structures are wrong, and there are too many pauses.

Generally, Thais were modest and non-aggressive, and Thai students usually paid great respect to their teachers. As explained by Amita, "Thais are highly respectful to teachers. I treat my teachers with courteous manners and always honor them." According to Arusapob, "I was afraid of arguing with teachers in our classroom, I am not brave to argue immediately. If I don't agree with a teacher, I'd rather implicitly suggest something to them. I dare not hurt or make the teacher feel ashamed." In contrast with western cultural, Thai teachers don't accept the ways of western cultural being aggressive to teachers. Many Thai female students remained conservative to a certain extent. Whether single or married, these Thai females insisted that they could not accept the way western males touch their bodies intimately when greeting or interacting. This cultural caused them to feel uncomfortable and embarrassed, and thus also affected their relationships with western males."

Contents

Sometimes the content itself can be a problem for the learners. As they are being taught a different language, most often different cultures also come into play simultaneously. This may lead to some confusion, such as: Guest (2002) has argued that attempts to identify national characteristics for the purpose of comparing and contrasting cultures, leads to oversimplification and stereotypes of cultural characteristics. This may lead to contradictions among the learners sometimes.

Frustration, anxiety and stress also occur whenever people can't find all the things they are accustomed to doing in their everyday lives. For example, sometimes because of differences in activities, norms, rituals, traditions, etc. that are found in the content of the lessons being taught in the English classroom, students from different background cannot cope with that successfully; ultimately, frustration, anxiety and stress arise. While practicing listening from New Headway Pre-Intermediate Student's Book in the private university in Thailand, most of the students feel awkward when they hear Mrs. Snell (T 1.4) talking openly about 'boys and girls living together and not married' as this is entirely against our norms and rituals.

In addition, if a person from a village comes to a busy big city or a person from a large continental urban society moves to a small island society, may experience a sense of social and spatial claustrophobia, more so than someone who is from a rural or small town society. It is true for the learners, and it can also be true for the teachers. And lastly is the issue of values. A person can experience considerable stress and anxiety when they are living in a different culture with different values from their own. A person may find that some of their own cherished and deeply held values and assumptions about life may not be equally important to members of new culture. The areas of religion, moral behavior, justice and fair play, racial equality, work ethic and privacy are areas where there may be a great deal of cultural relativism, and people may find obscurity dealing with these differences. In Hollywood Kids [New Headway Pre-Intermediate Student's Book], 13 years old Trent has a credit card with students' great surprise.

Culture shock

Culture shock is the term used to denote the anxiety and stress reactions that some people experience when they live in a cultural and linguistic environment that is significantly different from their own (Schumann, 1978c). The anxiety, stress and resulting thoughts, emotions and behaviors are caused by cognitive dissonance and uncertainty due to disconfirmed expectancies and ego-identity diminishment. Cognitive dissonance (uneasiness) occurs when people's cognitions about themselves and the world around them are inconsistent with one another. The disconfirmed expectancies that we experience when living in a different culture contribute to this cognitive dissonance and to uncertainty, insecurity, anxiety and stress. In addition, individuals also experience anxiety and stress due to ego-identity diminishment. Our identities are rooted in our home culture and its particular physical and socio-cultural environment. When we leave that particular complex of socio-cultural and physical environmental factors we also leave the roots that support and nourish our personalities. Culture shock may arise in the following situations:

Ethnocentrism:

"My culture is the best."

Discrimination:

"I just cannot cope with the working class".

Stereotyping:

"She is an American. All Americans are libertines"

Cultural Blindness:

"If I am a sensitive person I need not worry about other's culture".

Cultural Imposition:

"We know what is best for you".

Linguistic support

Good teaching requires considerable linguistic supports. Teachers must utilize and build these supports into their courses, methods of classroom instruction and overall interaction with students whether they are native or non-native English speaking teachers.

For teachers to remember

We observed that students find difficulty in keeping with native speaking teachers. Therefore, linguistic supports should consist of an adjustment of the teacher's language which includes slowing down the pace at which the teacher explains material, simplifying his/ her English a little and keeping away from slang, jargon and idiomatic expressions, and in general controlling vocabulary and keeping to familiar words. In addition, for both native and non-native teachers, it is also helpful to either preview key vocabulary before a lecture or unit or else to stop and define words as one goes along. When the teacher is delivering or explaining lecture, it is a good practice to constantly repeat, to sum things up and then to repeat them again. And lastly it is important to ensure that the volume of the voice is loud enough for students to hear.

With respect to removing stereotypical language, the following strategies might be useful:

- Being aware of words, images and situations that suggest that all or most members of a racial group are the same Example: "Why can't Joe ever be on time?" "He's African American, isn't he?"
- Avoiding using qualifiers that reinforce racial and ethnic stereotypes, Example: "The articulate African American student" implies that African American students typically have low verbal skills.
- Avoiding racial identification except when it is essential to communication, Example: "Judy, an outgoing student" is preferable to "Judy, an outgoing African American female student."

- Being aware of possible negative implications of color symbolism and usage that could offend people or reinforce bias, Example: Terms such as “black magic” or “black market” can be offensive.
- Avoiding language that has questionable racial or ethnic connotations, Example: Phrases such as “culturally deprived,” “culturally disadvantaged” and “you people” have racist overtones.

Teachers have to ensure the followings for students

As we have noticed that the learners are under constant challenge in using English accurately, appropriately and fluently, we have to facilitate them with the following:

a) Maximum exposure of English language

Inside the classroom, maximum exposure of English language should be ensured. The medium of instruction will be English only. Using mother tongue should not be encouraged.

b) Equipment used in the classroom

Learning is greatly facilitated by using more audiovisual elements for teaching. Movies, multi-media slides, photographs, DVD and CD-ROMs are very effective.

c) Focus on all skills

Rather focusing on only writing, all the four skills along with grammar and vocabulary should be emphasized and evaluated. Then, students will feel importance of all skills.

d) Ensuring more and more practice

Inside the classroom, activities and tests, quizzes should be formulated and used in such a way that would initiate more and more practice of English language. Moreover, students can be motivated to use English outside the classroom also.

e) Multi-cultural approach in content

We can adopt multi-cultural approach in selecting content of the English course. A multi-cultural approach, particularly one which involves comparisons between students’ culture and other cultures, is an important area to develop. A text in English by a write of a similar cultural background to the group of students studying the text may be more culturally accessible than a text written by

an author from a culture far removed from the students’ own. On the other hand, a text from another culture which deals with themes relevant to the students’ own society may prove to be both accessible and absorbing. Through multicultural education, learners discover that all cultural groups have made significant contributions to civilization. A well balanced English course content can include literature that depicts people with a variety of aspirations, from different sociometric levels, with different occupations, and with a range of human characteristics (Norton, 1985). For overcoming cultural problems in content teachers can follow the following strategies (Gillian Lazar, 19930):

Personalising

We can cue students in to the theme or topic of the text by making it relevant to their own experience.

- **Proving explanations/glosses**

We can provide a brief cultural information in a note or gloss.

- **Asking students to infer cultural information**

Students can be encouraged to infer cultural information from a text by making the information explicit.

- **Making cultural comparisons**

We can get the students to brainstorm ideas about their own society and then compare them with those in the text.

- **Making associations**

We can enhance students’ free associating around a word or phrase that might have particular connotations or even figurative meanings for a native speaker of the language.

- **Eliminating culture shock**

We have already come to know that in cross cultural context differences exist in the communication styles of students and teachers. Perhaps the most important reason for educators to understand cross cultural communication is to improve their relations with the diverse groups of students. One way to improve relationships across cultural lines, particularly in the upper grades, is to develop a unit on “Communicating with One Another.” The purpose of such a unit would be to teach students how to communicate more effectively

across cultural lines and how to address and negotiate differences. It is also useful for teachers to brainstorm with one another on how to remove communication barriers. It can also be useful for teachers to identify sources of miscommunication and socially offensive behavior or language that can be shocking for students. Individuals are often keenly aware of how culture affects the behavior of those of another culture while not being aware of how their own behavior is also culturally oriented (Javidan & House, 2001; Hofstede, 1983; McBurney and White; 2004).

- The attitudes which have been discussed earlier in challenge part that can cause culture shock should be avoided.
- Teachers should focus on students'

Cultural Awareness

Given the wide range of uses English is put to in Thailand and the increasingly intercultural contexts of language use, cultural awareness is an important skill for Thai learners to develop as an aid to effective intercultural communication. Adamson's (2003, 2005) suggestions for teacher development, which involve looking outside the classroom to wider sociocultural, political, and historical influences, offer an approach for not only teachers, but also learners, to explore their own culture and the ways in which it may influence their behaviour, beliefs, and communicative practices. This can provide a foundation for further exploration of other cultures and the manner in which similar influences may affect other communicative systems. By engaging learners in such practices they may become more aware of the role culture plays in communication and the relative nature of different cultural norms. This should, in turn, lead to better management of intercultural communication. Turning to specifics of what this may mean in the Thai ELT classroom, there are a range of opportunities to develop cultural awareness. These can be roughly divided into the five areas presented below and discussed in the proceeding section:

- Exploring Thai & Western culture
- Exploring language learning materials (text books and audios);
- Exploring the traditional media and arts—film, TV, radio, newspapers, novels, and magazines;

- Exploring IT/electronic media—the internet, e-mail, chatrooms;
- Contact with people from other cultures.

Cognition

Cognitive supports consist of providing the students with adequate cognitive frameworks upon which the new information and skills can be attached in their minds. This includes the use of advance organizers such as outlines, models, concept maps and other graphic organizers whether they are in the form of handouts, overhead transparencies or just writing and drawing on the board. It also includes making things more concrete in the beginning and then moving toward the abstract and this is greatly facilitated by using more audiovisual elements for teaching. Movies, slides, textbook illustrations and photographs and CD-ROMs are very effective. In general, it is important to be sensitive to student cognitive processes. We must know our students' fields of experience locate their experiences relevant to what we're teaching and then make the necessary connections through our teaching. From a strictly verbal perspective, there is nothing more important for effective teaching than a good example or good story that illustrates what it is we are trying to get our students to understand or serves as a heuristic that furthers their understanding. A picture is worth a thousand words and a good story can paint a picture in the minds of students. Some stories are quite universal and can be understood by students worldwide no matter what culture they are from, but other stories may need more cultural background for them to be effective.

Motivation

Motivational supports are also important, and we must build student success and self-esteem into our course structures and classroom methods. We need to be interesting and instill excitement about what we're teaching. We need to be relevant and connect to the reality of student lives and experiences. We need to demonstrate a purpose to learn besides just passing the course because it is a requirement. Gardner and Lambert (1972) define 'motivation' in terms of the L2 learner's overall goal or orientation. The motivated individual is goal-oriented, persistent, attentive and aroused. In fact, motivation plays a role in various ways in the process of learning a second language.

Attitude

Gardner and Lambert (1972) define 'attitude' as the persistence shown by the learner in striving for a goal. They have investigated a number of different attitudes which they consider relevant to L2 learning. Stern (1983:376-7) classifies these attitudes into three types: (1) attitudes towards the community and people who speak the L2, (2) attitudes towards learning the language concerned: and (3) attitudes towards languages and language learning in general. If the students have positive attitude towards the language, learning will be accelerated, so the teachers should also come forward to help the students having positive attitude.

Age

Rate and success of SLA appear to be strongly influenced by the age of the learner. Where rate is concerned, there is evidence to suggest that older learners are better. Snow and Hoefnagel-Hohle (1978) have shown, the learners who progress most rapidly may be adolescents. Where success of SLA is concerned, the general finding is the longer the exposure to the L2, the more native-like L2 proficiency becomes. Therefore, the teachers should focus on maximum exposure of English language.

Behaviour

And then there are behavioral supports. We must structure our courses and classroom methods to provide maximum shaping and patterning of the requisite behaviors such as reading, writing, note-taking, studying, test-taking, asking questions, discussion and debate, and getting to class on time or getting to class at all. With regard to behavior modification, positive reinforcements (rewards) and negative reinforcements (removal of unpleasant stimuli) work better than punishments (giving unpleasantness).

Teaching Method

There are many methods, like, CLT, content based, task-based, teacher-oriented, student-centered, GT, etc. But the pathways to success in teaching English to the learners are rather challenging as there are no specific language teaching formula that always work with learners in all contexts. It is then the mission of an individual teacher to create and apply a multitude of teaching approaches, which will best suit their students.

Results

According to Hall (1997) explains that culture is something that we do, something that coheres us as a society; language, on the other hand, is a way in which we practice culture. Cultural preparation is critical. Understanding western values, norms, customs, social manners, and expressions can help Thai students decrease stresses and lessen conflicts when interacting with foreigners.

The challenges are concerning the relevant factors. First, culture shock is the term used to denote the anxiety and stress reactions that some people experience when they live in a cultural and linguistic environment that is significantly different from their own (Schumann, 1978c). Secondly, Gardner and Lambert (1972) define 'motivation' in terms of the L2 learner's overall goal or orientation. The motivated individual is goal-oriented, persistent, attentive and aroused. In fact, motivation plays a role in various ways in the process of learning a second language. Therefore, enhancing Thai students to learn western mass media, such as, movies, magazines and T.V. programs can enhance language fluency and understanding of western culture. The perceptions of western contexts can also help Thai students to better catch up with course contents in social science programs.

Conclusion

It is also possible that the cross-cultural nature of the relationship itself allows for teachers and students to be more willing to make an effort to connect, because of a desire to learn or because of a lack of judgment or assumptions that sometimes accompany inter-cultural relationships. This rapidly developing ability to better understand cross-cultural communication is common among all teachers, as early within the experience this is often highly challenging, but later may often come with much more ease (Kratzke & Bertolo, 2013).

Cross-cultural matters in language teaching is a symptom of wider social, political and technological developments, and there is no question that the successful integration of culture and language teaching can contribute significantly to general humanistic knowledge, that language ability and cultural sensitivity can play a vital role in the security, defense, and economic well-being of any

country, and that global understanding ought to be a mandatory component of basic education.

English is essential what is spoken and used in Britain and America, and emphasized on English teaching in multilingual and multicultural situations. At present, there is also growing realization of the importance of culture within English teaching in Thailand through the world, and the need for teachers and learners to be aware of the complexity of culture. This was highlighted at the 2003 Thailand TESOL Conference entitled ELT 2003: Culture, Content, Competency in which a number of speakers (Damnet 2003, Wongbiasaj, 2003) discussed the importance of raising cultural awareness among Thai learners. In this article we demonstrated some promising challenges, but if we emerge towards the right direction, English teaching in a cross-cultural context can truly broaden the horizon of the learners.

In short, we should not push students to learn, instead try to pull them into and support them within their learning zone of proximal development. Students will rise to our expectations if we provide them with a ladder to climb on. That ladder, or scaffold, consists of all the things we say and do in order to help students learn.

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An Analysis of Characteristics of Language Use of Tourism Advertisements in English Newspaper: Bangkok Post

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Abstract

The purposes of this study were to analyze how tourism advertisements were created to transform information and persuade reader by exploring the trend of writing advertisements in The Bangkok Post. The aspect of standard advertising elements and characteristics of language used in advertisement were investigated. The data were collected from the Bangkok Post newspaper from November 2016 to January 2017, consisting of 30 tourism advertisements. They were divided into two parts: large and small advertisements. The theories used in this study were based on Callen's (2008) "Advertising Element" as the basis to interpret the standard advertising elements of two groups of advertisements for the language use in tourism advertisement - airlines, hotels, restaurants and services. In addition, three linguistic approaches: syntactic, rhetorical and lexical approaches were employed. The finding showed that the elements in large and small advertisements were different. Large advertisements contained six standard advertising elements, but small advertisements contain three standard advertising elements. Besides, syntactic and rhetorical approaches were often employed both large and small advertisements. Advertisers employ varieties of language use based on the amount of space to transform information to readers.

Keywords : tourism advertisement, characteristics of language use, syntactic approach, rhetorical approach, lexical approach

1. Introduction

Nowadays English is used to communicate with people from other countries, either in education or business. English is the most powerful tool to express ideas and information. Moreover, many books and information are written in English including English Newspaper.

Reading English newspapers cannot only improve reading skills but help us to know what happened in our country and the whole world. Newspapers carry information on various topics about a country's economic situation, sports, games, entertainment, trade and tourism. Advertisements are also a very prominent feature of newspaper, which have a plenty of advertisements that will keep you updated about what is going on in the world of business and industry.

Definitely, as a tool of marketing communication, advertising is the structured and

composed, non-personal communication of information. The function of advertising is to represent the identities of product including persuade customer to purchase the products and services. Advertising can help raise awareness of a product and create an appealing product image. There are several media types used in advertising. For print media, there are magazines and newspapers. For electronic media, there are televisions and radios. For digital interactive media, there are internet and social network. However, currently, competition in tourism advertisement at the international level is extremely intense. The tourism authorities of several countries are attempting to apply the concept of destination branding to presentation and promotion their country through newspaper. Once customers are motivated to satisfy their needs and wants, the purchase process begins. The more advertisements presented in the media, the more profit the media owner will receive. In this

research, the focus of my study has been directed at tourism advertisements - hotels, restaurants and services.

The newspaper is the channel which messages are transformed. Information is disseminated and characteristics of product are represented. Nevertheless, there is limitation in advertising space because of budget. Moreover, advertisement size is depend on advertiser payment. If the advertisers pay a lot, they will get more advertising space. It is very important to use every space in the advertisement effectively. The advertisers achieve their goals by employing particular language styles to create their messages effectively.

Consequently, the characteristics of language use of tourism advertisement are very important. It is interesting to know how advertisers manage the space by employing linguistic approaches and which advertising elements they use to create advertisements. They have more potential to succeed in the advertising communication. They seem convincing to readers in such a way that it quickly makes readers realize the benefits of a certain product or service. This study is useful for students or readers to form a trend of writing tourism advertisements easily and understand how to use the words, sentences and styles in tourism advertisement appropriately.

2. Purposes of Study

1) To analyze the standard advertising elements and characteristics of language use in large and small size tourism advertisements.

2) To compare the differences of advertising elements and characteristics of language use in small and large size tourism advertisements.

3. Research Questions

1) What are the standard advertising elements and characteristics of language use in large and small size tourism advertisements?

2) What are the differences of advertising elements and characteristics of language use in small and large size tourism advertisements?

4. Literature Review

Literature review of this research will focus on two areas of study: advertisement, linguistic approaches: syntactic approach, lexical approach, and rhetorical approach

Advertisement

Advertisement is an important method of marketing communication. It may appear in several media types used in advertising including magazines, newspapers, televisions, radios, internet and social networks. Advertising can help raise awareness of a product and create an appealing product image.

Definition of Terms

Several scholars define the term of advertising in various ways. The definitions of translation are given by these scholars are as follows:

- Advertising is the structured and composed nonpersonal communication of information, usually paid for and usually persuasive in nature, about products, goods, services, and ideas by identified sponsors through various media. (Arens, 2008)

- Advertising is any paid form of nonpersonal presentation and promotion of ideas, goods, or services by an identified sponsor. (Kotler, 2003)

- Advertising is defined as a paid method from a non-individual and identifiable source employed in presenting products, service, and idea to the reader and persuading and convincing the readers to use that product or service for a specific purpose. (American Marketing Association (AMA) as cited in Vilanilam & Varghese, 2004)

- Advertising consists of four components: (1) payment – the space of advertisement is valuable and the advertiser must pay for it; (2) non-individual source – even though there are advertisements from individual in the market, advertisements refer to messages which are supported by an organization, group or business; (3) identifiable source – the advertisement must be completed in the full form of non-individuals' name address or telephone number to avoid a lack of source credibility if they are not well-known; (4) idea, products and services; some advertisement both sell products and sell ideas or services such as the advertisement motivating the public to save energy. (Vilanilam & Varghese, 2004)

1. Advertising language

Newsom & Carrell (2001) points out that writers should create the message in the advertisement by following the guideline concept called “AIDCA”:

- (1) A stands for attention – to write the message to get attention;
- (2) I stands for interest – to arouse the interest of the readers;
- (3) D stands for desire – to generate the reader’s desire;
- (4) C stands for credibility – to convince the readers by creating a specific, concrete and direct message;
- (5) A stands for action – to require the reader to take an action about the advertiser product, idea, or services.

In addition, Stovall (2009) mentions that there are ways in writing advertisement by employing the AIDCA concept as follow:

- (1) Use clear simple English;
- (2) Pay attention to the verb. A good advertiser frequently used verbs more than adjectives because adjective reflects lacking of interest and emotion. In contrast, the adverts will be lively and interesting with an action verb;
- (3) Be specific but don’t overload the advertisement with details;
- (4) Use personal pronoun when appropriate;
- (5) Use the language precisely. The advertiser should select the word that relate directly to the advertiser’s purpose;
- (6) Provide readers all information.

2. Advertisement in newspaper

The advertisement in the newspaper are commercial information. So space in a newspaper is valuable. The number of messages in advertisements are limited. The amount of words or messages contained in the advertisement depends on the advertiser’s budget. If the advertiser can pay a high price, they will obtain larger space for their advertisements.

Wells (2006) mentions that there are three kinds of advertisement in the newspapers: display, classified and supplements. Display refers to advertisement in any size and anywhere in the newspaper, except in the editorial section. Moreover, if the advertisers would like to receive special permission in choosing the location where their advertisements are located in the newspaper, they can do by paying more. Classified means that the advertisement is limited to a number of words. Supplements deal with advertisement in which the publisher sell their publication to several or different newspaper. They form and create their publications by themselves and distribute them to the newspaper.

Tourism advertising

The advertisement in the newspaper plays an important role in communicating and persuading the reader to act on something from advertising. Advertising can help raise awareness of a product and create an appealing product image. Advertising covers any communication that is paid for, from cinema commercials, radio and Internet adverts through to print media, television and billboards. It can reach a large audience at once and the same message can be repeated many times. Currently, tourism industry is one of the world’s largest industries. That is to say, Thailand’s tourism industry is a viable business generating billions of baht in income each year because the country has much to offer in terms of a variety of tourism resources be beauty of nature or a rich cultural, historical heritage and tourism activities as well as other tourist attractions.

3. Tourism

Several scholars define the term of tourism in various ways as follow:

- Tourism means the temporary short-term movement of people to destinations outside the places where they normally live and work, as well as their activities during their stay at these destinations. (Beaver, 2005)

- Tourism refers to the provision of transportation, accommodation, recreation, food and related services for domestic and overseas travelers. It involves travel all purposes , including recreation and business. (Ansett Airlines, 1977)

- Tourism can be defined as the science, art and business of attracting and transporting visitors, accommodating them and graciously catering to their needs and wants. (McIntosh,1977)

- Tourism is the study of man away from his usual habitat, of the industry which responds to his need, and of the impact that both he and the industry have on the host’s socio-cultural, economic and physical environments. (Jafari, 1977)

- Tourism comprises the activities of persons traveling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes. (UNWTO, 2007)

Advertising in the tourism industry is different from other industries. A holiday is an intangible product that the consumer can’t see or touch before they buy. The customer will pay for the product before experiencing it. Thai is to say, advertising priorities should consider about

product most appealing, potential customers' needs and desires, creative methods to generate interest in a particular product and the best way to reach customers.

Advertising is the means by which the necessary information is given on tourist and tourist areas, used to convince them to travel. In fact, advertising includes taking advantage of the written media to send the message to different consumers in travel and tourism, with the aim of getting an immediate response from the consumer market.

Callen (2008) mentioned that there are eight parts of copy structure in advertisement in newspaper. (1) "Main visual" is photographs or illustrations shown in the advertisement. (2) "Headline" is a brief sentence or paragraph written in short form. (3) "Subhead" is to clarify part of the main headline – an optional section. (4) "First paragraph" is the beginning of the body copy – explaining the headline. (5) "Body copy" is the specific details or information about products and service. (6) "Call to action" is the final paragraph to close the sale and pressure the reader to take an action. (7) "Logo or name" is placed in the lower right of the advertisement. (8) "Slogan" is the phrase summarizing the advertiser's communication concept – placing below the logo or at the bottom of advertisement.

Linguistic approaches:

Syntactic, rhetorical and lexical approaches were employed.

Syntactic approaches

Feigenbaum (1985) points out that the functions of sentences are divided into four types: declarative sentence or statement, interrogative or question sentence, imperative sentence, and exclamation sentence. Declarative sentence or statement refers to affirmative or negative sentence. Interrogative or question sentence relates to a question mark – ending punctuation. Imperative sentence refers to commanding, requesting, and suggestion. Exclamation sentence refers to speaker expressing feeling about the situation.

Rhetorical approaches

Advertising can help raise awareness of a product and create an appealing product image. The language use in advertisement should be unique and different styles of writing. Rhetorical approaches are employed to create and produce

variety in a piece of writing to influence the reader. Mcquarrie & Mick (1996) proposed that there are three perspectives of rhetorical approaches: (1) Rhetorical approach used in advertisement can be expected to have important consequences for how the advertisement is processed. (2) These consequences can originate from the formal properties of rhetorical features themselves. (3) These properties are systematically interrelated.

Moreover, Smith (2002) points that these properties refer to: (1) Anaphora is the repetition of the same word or group of word at the beginning of the successive clauses. (2) Alliteration is the repetition of initial or medial consonant sound. (3) Assonance is the repetition of the vowel sound. (4) Euphemism is the substitution of one word to present a neutral or positive attitude. (5) Hyperbole is the language use for exaggeration or overstatement. (6) Internal rhyme is the rhymes of word in the same clause. (7) Metaphor is a word or phrase describing something or somebody in a way that is different from its normal use. (8) Pun is the use of more than two words that have similarity in sound but different in meaning.

Lexical approaches

Stovall (2009) mentions that good advertiser often employed verbs to represent lively and interesting emotion. "Action verbs" are verbs that show the performance of action and they are dynamic verbs.

Due to limited space in advertisement, writing message should short, clear and concise. According to Oxford dictionary (2010), abbreviation is a short form of word used to abbreviate something. Besides, Katamba (2004) states that "clipping word" composed of more than one syllable which is reduced to a shorter form.

Yule (2006) states that conversion is a change in the function of a word – when a noun is used as a verb. Furthermore, "emotive adjective" are employed to engage strong emotion or arouse the feeling of the reader.

As there a competition in the market, the language use for the advertisement is one of the most basic decision to buy the product. The words usually express something better or the best. Hence, Lanham & Simmer (1968) states that "comparative words" is a word employed to express a higher or lower by adding –er. Also, "superlative word" is a word employed to indicate the highest or the lowest degree by adding –est.

5. Methodology

The tourism advertisements were analyzed based on Callen's (2008) "Advertising Element" and linguistic approaches: syntactic, rhetorical and lexical approaches were employed. In this study, some examples of each tourism advertisements are analyzed, compared and identify the characteristics of language use in tourism advertisements. The material used in this study has been collected from The Bangkok Post newspaper which is well-known and popular English Language newspaper. Moreover, it is one of media channels for readers and tourists. Tourism advertisements deal with airlines, hotels, restaurants and services. The more there are a variety of products, the more knowledge we will get. Since the method of writing advertisements are different, the space of newspaper is limited by advertiser's budget. It means that size of space reflects styles of writing advertisements. In this study, large advertisements were from Life section and Supplement sections – Brunch, and Guru. Similarly, small advertisements were from Life section and supplement sections – Brunch, and Guru. In order to create an appealing product image, the advertiser carefully employed the advertising structure and language use to persuade reader to be interested in products and services.

6. Data Collection

The data were collected from The Bangkok Post newspaper from November 2016 to January 2017. Thirty advertisements were selected and then divided into two groups: large and small. Each group consist of fifteen advertisements. Tourism advertisements were from Life section and supplement sections – Brunch, and Guru.

7. Data Analysis

The analysis was based on the work of Callen's (2008) - Advertising Element. The observation approach used to accumulate data from The Bangkok Post newspaper. Thirty large and small advertisements were from Life section and supplement sections – Brunch, and Guru. In this study, three parts are employed. First, the researcher analyzes the structure of writing in each advertisement by using the advertising approach

of Callen (2008). In addition, the researcher interpreted and described the advertising structure in great detail. Second, the researcher analyzes the characteristic of language use in tourism advertisement. Three approaches – syntactic, lexical and rhetorical- are employed. Finally, large and small advertisements were compared to find similarities or differences in advertising structures and language use.

8. Discussion

The finding revealed that the differences of advertising space in newspaper caused the style of advertising writing to be varied in two perspectives.

Large advertisements had a lot of space for their message. The objective of the writer about large advertisement was both to inform the reader about accurate details of products and to persuade and request the readers to act or response to the advertisement. In order to persuade readers, the advertisers employed syntactic and rhetorical approaches in creating large advertisements. Declarative sentences were tools used to announce the product information whereas imperative sentences were employed to request the reader to act on the advertisements. Rhetorical approaches were frequently found tools in persuading the reader to focus on the advertisements and they also aroused emotional expresses among readers. Small advertisements had limited space for creating the message, the advertisers try to used the limited space wisely. Therefore, they used lexical approaches as the main method for transmitting their messages in a limited space. This method functioned in informing and transforming accurate details to the readers in the form of short and clear words. In other words, the objective of small advertisement were simply to inform the reader about accurate details of the product. Nevertheless, rhetorical approaches in small advertisements were essential factor which make reader remember word more easily.

A new element called "creation of credibility" was often found in large advertisements. Many airlines and hotels are competitive nowadays increasing credibility is an important point to decide which airline they should choose for tourists or which hotel they should stay.

That is to say, the differences of large and small sizes advertising type may occur because of the amount of advertising space. For this reason,

advertiser may have different purposes of writing advertisements. Consequently, advertisers selected different approaches in forming and tailoring their messages effectively to accommodate the provided space.

9. Conclusion

This study focuses on the characteristics of tourism advertisements created as appeared in Bangkok Post newspaper including the difference of writing elements between large and small advertisements. The data were collected from The Bangkok Post newspaper from November 2016 to January 2017. Thirty tourism advertisements were selected and then divided into two groups: large and small. Each group consists of fifteen advertisements from Life section and supplement sections – Brunch, and Guru. The data were analyzed into two perspectives including standard advertising elements and characteristics of language used in the advertisements. The researcher analyzed the standard advertising elements by employing “Advertising Element” of Callen (2008). In addition, linguistic approach: syntactic, rhetorical, and lexical approaches were used in analyzing language used. The result of this study have been presented in three perspectives:

First, standard advertising elements contained in large advertisements were investigated. The characteristic of language use in creating the message of large advertisements were analyzed. The results have been described in two perspectives – standard advertising elements and characteristic of language use. According to the collected data, there were six standard advertising elements are headlines, body copy, calls to action and name of the project, slogan and creation of credibility. Subhead and first paragraph are found to be optional elements. Besides, it was found that headlines of large advertisements are frequently created through four writing proposes – setting a tone and establishing an emotion, identifying the brand, giving news about the brand and stimulating the reader’s curiosity. Furthermore, a new advertising element called “creation of credibility” was discovered in large advertisements. These elements represent the owner and the project detail. The researchers assumed that the advertiser would like to place an emphasis on their credentials in order to make the reader believe in efficiency and stability in business.

Regarding on the results of linguistic characteristics of large advertisements are described according to three approaches: syntactic, rhetorical, and lexical approaches. The advertisers choose syntactic and rhetorical approaches most frequently in large advertisements.

In the area of syntactic approach, it was found that declarative sentences, imperative sentences, and exclamations were often employed, respectively. Declarative sentences were found most when informing about the product and providing important information to the reader. Consequently, body copy and first paragraph elements are where declarative sentences are usually found. Imperative sentences are created to persuade and request the readers to be interested in the products. It was often found in the “call to action” element. Exclamations are employed in creating and transforming emotion and tone to the readers. Exclamation sentences can increase the reader’s interest.

In the area of rhetorical approaches, alliteration were frequently employed in large advertisements. However, several other variety of writing anaphora, assonance, euphemism, hyperbole, metaphor, parison and pun were also employed to elicit emotion and tone in large advertisements. In the area of alliteration, the advertisers select a series of words which created the rhythm to the text such as “fully-flat bed”, “Daily, direct to Mumbai from Bangkok”, and “The perfect place to rest and play!” These phrases are from Jet airways and Cebu Pacific air. In light of employing anaphora, the advertiser attempts to create a spiritual sentiment. For example, “Admire the Mughal’s love of architecture”, “Admire a Mughal’s love for his wife”, “A perfect place to read a novel” and “A perfect place to write a novel” These sentences are the advertisements for India Tourism Singapore to arouse interest in persuading reader to travel with us. In light of hyperbole, the advertisers select the words which are extreme exaggeration used to make clearing views. For example, “A bed of clouds”, “France is in the air”, “Experience many worlds in one place”. These sentences are the advertisements of airways so the advertisers select the hyperbole word to arouse the superb feeling of readers.

Although lexical approaches were rarely found, action verbs and emotive adjectives were still frequently employed. Action verbs were frequently found such as “go, drink, visit, start, open, call and

gather.” Moreover, emotive adjectives are often appeared such as “stylish, free, ready, new, unique, luxury, fantastic, irresistible and special.”

Second, standard advertising elements contained in small advertisements were investigated. The characteristic of language use in creating the message of small advertisements were analyzed. The result of small advertisement contained many of the same perspective as large advertisements. There are three standard and one optional advertising element in small advertisements. Headlines, body copy, calls to action were standard advertising elements, and subhead function as an optional element. Headlines were often formed according to three writing purposes - identifying the brand, giving news about the brand and stimulating the reader’s curiosity.

In terms of linguistic approaches, lexical approaches were employed most frequently in writing small advertisements such as abbreviation, emotive adjective, action verbs, respectively. As the space of small advertisement was limited, saving space is important. For this reason, the advertisers intends to inform and transform short, clear and concise message to the reader for writing small advertisements. For abbreviation, the advertisers selected the language use such as “hrs”, “THB”, “T”, “Tel”, “Ext”, “E”, and “F” instead of “hours, Thai baht, Telephone, Extension, Email, and facebook” to save space. These words frequently are found in the advertisement of hotels, restaurants and services. For emotive adjectives in small advertisements, advertisers selects these words such as “delicious, indulgent, lavish, sumptuous, fresh, premium, splendid, perfect, wonderful and exclusive to make reader feel hungry or feel the taste of food.

In other words, few syntactic approaches were found due to limited space but imperative sentences are still found in small advertisements.

Apart from that, rhetorical approaches such as assonance, anaphora, alliteration and hyperbole were found in small advertisements to make readers create the good image towards the products. In the area of assonance, the advertisers select the repetition of the vowel sound to make the products lively. For example, “Experience the iconic Red Square and a cosmopolitan capital that will trill you every moment...” and “Best fare, best customer care”. The repetition of the same vowels were “will and trill” including “fare and care.” These sentences and phrases are from advertisement of

Thai Airways and Srilankan Airlines to persuade readers to fly with us. In addition, for anaphora, advertisers attempt to select the words which get to the mind of readers. For instance, “Whether you are young or young at heart”, “Never just stay. Stay inspired” and “Think of food. Think of foodland” These advertisements are from Conrad hotel and restaurant including supermarket to make the customer interested in services. In the area of alliteration in small advertisement, advertisers still select the creative sentences. For example, “Savor this special season with family and friends”, “The Living Room – It Simply Swings” and “Sweet and savoury delights are served...” That is to say, these are the language use in the advertisements in Shangri-La and JW Marriott hotels. Furthermore, in light of hyperbole, advertises select a few words to create profound images. For instance, “CRU where angels play” It is clear that just only a few words of advertiser of CRU Champagne Bar in Centara Grand at Central World which can arouse the feeling of readers to come and taste it.

Third, the differences of advertising elements and language use between large and small advertisement were investigated. It was found that large advertisements consist of six standard advertising elements whereas small advertisements consist of three standard advertising elements. Name of the project, slogan and credibility are elements which were not found in small advertisements. Lexical approaches were frequently employed in small advertisements while syntactic and rhetorical approaches were often found in large advertisements. However, rhetorical approaches are also found in small advertisement to attract reader to buy products and services.

In conclusion, the standard advertising elements and styles of writing including the use of three linguistic approaches were varied because of the different size of space in large and small advertisements. Large advertisements may contain more space so the advertiser can introduce their project overview. The use of this large space illustrates the product presented which may stimulate the reader’s interest. Furthermore, large advertisements are employed rhetorical approaches which enable the reader to remember their product easily. On the other hand, small advertisements have limited space. The advertiser should only include important details. Advertiser often focuses on lexical approaches such as abbreviations to make their point in a limited space. It is said that

lexical approaches can help in creating small advertisements by using few characters while presenting the important meaning to the reader.

Nevertheless, the findings were limited just only a view of the trend of advertisements writing and the characteristics of language use of specific Bangkok Post newspaper. To obtain a clearer view of the trend of advertisement writing and the characteristics of language use, Asian and Western newspapers should be compared to determine the differences of advertising between cultures.

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The Nature of Critical Thinking

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Abstract

This is probably a scenario that many people who have gone through graduate school would recognize. It highlights how “being critical” is generally defined in an academic setting. The academic community considers the capacity of being constructively critical or critical thinking to be one of the key skills which need to be developed. This is not to say that no differentiation is made between “criticizing” and “thinking critically.” To explore this difference, there will be become aware of how the capacity to think critically helps you succeed. Critical thinking is a more successful practitioner and leader in any field.

Keywords critical thinking, practitioner and leader

1. Introduction

Being critical allows us recognize the logical process in the analysis of the problem. It is the use of information and analysis of solutions help making decisions reasonably about what to do or to believe (Cottrell, 2005). As a leader, the skill of being critical help them can define what an important goal for his organization is clearly. Furthermore, being critical allows the leader know the factors of success in overcoming obstacles to achieve goals. For instance, leader with vision and think critically can know “what they should do?” and “what should be avoided?” more accurately and understand deeply the reason (Cottrell, 2005). Therefore, the challenges of “being critical” are significant leadership and management skills that might be:

Vision & Goal setting, to determine vision is beneficial for the organization and team. Critical thinking in leadership roles can also be used as a tool to determine the direction and scope of vision apparently.

Strategic thinking & Planning, leader should analyze and plan strategic appropriately. Brookfield (1987) stated that critical thinking can make us see what is appropriate or not from the analysis of the different aspects to find a good choice in reasonable ways for the best way. To think critically practice leader have the skill of strategic thinking and planning. They are able to look into the future and look at things from multiple

perspectives. For instance, leader might think from the perspective of the environment, the current situation, the project and measurement in order to understand the relationships and interdependencies of the various factors that affect the organization. To make a hypothesis of what they want know and test various hypotheses. To simulate and test various scenarios which have not happened and is happening. These enable us to prepare to deal with what might happen in the future.

Systematic thinking & Problem solving, Cottrell (2005) noted that critical thinking skills are useful in professional life, it allows us can think systematically and be able to problem solving wisely and know the cause and the reason and can correlate of step correctly. For instance, if we know the exact cause of the problem, we will solve them properly, analysis correctly, we can use resources to ensure the efficiency, not just effectiveness. Thayer & Barbara (2000) conclude that most of theories have a tendency to explain critical thinking is universal activity. Brookfield (1987) also concluded that the evidences of the development of critical thinking are said in the way of economical and political activity. In conclusion of critical thinking, Brookfield (1987) once quoted “Critical thinking is a lived activity” (p.14). Critical thinking can be developed in any period of life, such as, to learn at school, to read or listen from several media in daily life and to use this skill in work.

From my point of view, critical thinking is a universal activity that is bound with culture. All cultures of the various tribes already would have analysis, finding cause and results, finding the source, looking at future. As the well-being, housing and cultural differences, thinking occurred it is a concept that started from the culture of each group. However, when the other group took the concept which had influence and power exceedingly, it made the primitive concept of the group changed. Whenever any culture has spread so much, critical thinking will tend to follow that culture.

Critical thinking also need to use in everyday life

Critical personality is not only important for the leader but also in daily life. This skill will help in the use of information and solutions in order to make decisions rationally about what to do or to believe. Moreover, we can learn the way of thinking in the decision and solving problems. Cottrell (2005) also has expressed a similar view; skills that were improved by critical thinking will bring benefits such as;

- Redefine the problems
- Adopt a critical perspective
- Use analogies
- Think divergently
- Use heuristics
- Experiment with various solutions

We need to use thinking skills in activities of everyday life in order to help making decision on the accuracy of the information and choose from various choices which have myriad. People with skills in critical thinking will can do activities succeed.

As teaching, we need to consider and think critically, what the level of content to teach student? which teaching methods are suitable for the children that they have the different abilities of in order to achieve good results?

There are many researches that find the good result about critical thinking in learning environment. La Point-O'Brien & Tammy (2013) studied the development of critical thinking skills of ninth grade students and they found that to ask appropriate questions and deduce information it allows student for a deeper understanding and a richer experience. The students would have the opportunity to provide insight and reasoning into their comprehension, while cultivating their critical thinking skills.

Firstly, to start about the development of critical thinking in learning at school. When we were children, we think easily to understand. Teachers gave a simple example to think. For instance, ants eating sugar is a topic that the teacher encourages children generate ideas. The children would start to observe in real life that the ants eat sugar, is it true or not? It shows that the start of finding the actual evidence in order to support the idea.

When we study in the higher level of education, it might have a topic or analysis a case study. It encourages us do a research to find evidence for supporting. For instance, when I studied engineering, there is one subject that we studied the feasibility of the project. Students would analyze project by finding information and evidence to support, such as, reference to a theory, to explore an area, qualitative survey. Then bring information and evidence of result approach to a conclusion in order to make decision whether to proceed with the project or not.

To work, analysis of the problem would rely on experience with the practice. Critical thinking plays a big role in the practice to have a strong experience. Therefore, experience would support the reason for the decision. It will not only use the information or theory in textbook for giving reasons.

In daily life, Media tried to present information. We would practice critical thinking by finding the true which media want to present or hidden concepts with the media. According to Cottrell (2005) said critical thinking helps you to identify the obvious and the hidden messages more accurately, and to understand the process by which an argument is constructed (p.2). For instance, to present a policy or work by a political party that seems to be beneficial to the public, however, fact may be presented to benefit himself or a partisan. It may appease the public to keep themselves and their party to still be the government.

Critical thinking goes beyond 'being critical' and the challenges of "being critical" are significant leadership

Critical thinking goes beyond 'being critical', it involves the process of communicating clearly and applying the test of reasoning (Cottrell, 2005). This involves gathering and assessing relevant information to justify one's conclusion. Reasoning asks questions of purpose, evidence and possible consequences (Paul & Elder, 2008). Reasoning says one should infer only what the evidence

implies and should be fair minded, investigating all points of view.

As a leader, one is charged with managing the affairs of an organization and this involves team work toward common goals. Critical thinking is vital to a leader as this facilitates valued judgments and reflection in a way that allows growth for all partners. The group dynamics of working with different people of varying personalities and beliefs or value systems can affect the process of being critical. The emotional component of 'being critical' can evoke reactions that might cause feelings of discomfort or inadequacy. 'Being critical' can also lead to varying amounts of communication challenges for a leader depending on the leader's personality and astute sense of judgment and level of people skills. The process of being critical has the potential to be challenging for a leader in that the leader must convince the followers that the critical process is necessary for growth and the benefits can only be achieved if there is mutual agreement to submit to the critical process.

Leadership roles will vary in organizations, but many of those roles in an organization or institution have to do with motivating, encouraging and effectively managing people. In doing so, leaders have to think critically in order to make decisions to build maintain or sustain an organization. According to Cottrell (2005), critical thinking is a cognitive activity, associated with using the mind; therefore leaders should ensure that subordinates or employees are armed with the necessary information that will also help them be critical thinkers. This is particularly important in business settings where employees must know and learn about various industry specific issues and political and economic issues in order to gain invaluable insights to aid in their competition advantage in an industry.

In any situation in where there are both leaders and supporters, leaders can have leadership challenges as it relates to making critical decisions. Some of those critical decisions maybe; hiring new workers, firing people and expanding or contracting a department or a company and implementing policies in providing a better education system. Therefore, it can be quite challenging to be productive and positive Brookfield (1987) while pleasing everyone as both supporters and other managers may not think or feel the same way about the same issues. Leaders are often responsible for helping build unity between staff members while working

in achieving the goals of the organization. For example, being in charge of projects as a Project Manager, I had to ensure that my team was on task at all times. This meant that I had to figure out the best way in meeting these deadlines. In addition, I had to provide weekly reports statuses to my boss and in return my directions on the projects were questioned and we both explored different ideas from what was the norm. This was quite challenging because we both had our different visions in attaining the same things in a different way. To deal with those challenges we had to find a way to bridge that gap by respecting each other's opinions and perspectives.

2. Conclusion and Implications

Critical thinking should be the balance between action and reflection. "Reflection on action" (Brokbank & McGill, 2007, p. 91) are closely related or as part of the process of critical learning due to critical thinking is to think and decide to believe or act on the basis of reflection rationally (Brokbank & McGill, 2007). Thus, critical thinking is a process that led to the practice of reflection and the development of intellectual potential to result in an action and effective solutions from critical thinking to critically reflective practice, as Brookfield (1998) point at four complementary lenses to discover, and research the assumption. Each time thinking carefully and rationally then doing, the result is likely to be as we thought. We, thus, can define an action from the thinking, predict the consequences from the actions and see the reflection from the ideas and results.

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The problem considering the appeal by the Revenue Code.

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Abstract

This research aims to study (1) to study the problems and difficulties of the process to consider the appeal, tax revenue (2) to study the process, appellate tax revenue compared with foreign tax appeal process. (3) to study the administrative action. Consideration of the administrative and command processes a command administrative appeal Act b.e. 2539 bureaucratic administrative practices.

The results of this research, found that the tax dispute appeals compliance with both mandatory and optional system is to appeal disputes arising from taxation assessments are forced to appeal in accordance with article 30 of the revenue code. Part of the appeal, disputes that assessment quoted in de taxation has no article, forced to appeal, according to the. It needs to bring the provisions in the matter of Appeal Act b.e. 2539 government administrative practice applicable in the field of the composition of the Appeal Committee that assigned the officers of the Revenue Department, which is monitoring and assessing taxation. A Committee of appeal may affect the image of the Director. The Appeals Committee has several faculty in every province. Assembly with no provision jurisdiction of the Appeals Committee are listed in Revenue Code clearly. It is difficult to make a direct appeal to the Committee to consider the appeal, as well as the standards are the same, and it is not set, according to the duration of the consideration of the Appeal Board is doing, sometimes it causes time delays and international stakeholders could not be appealed to the tax base, Which suggestion in this study is supposed to update the system of Appeal appeal of data compliance system and to the same standard. Yoda assigned compliance disputes of every kind, whether or not arising from the taxation assessment appeal have to comply by revenue. And improve the system of appeal before a court to prosecute their stage 2 is the step 1 is reviewed by the tax authorities, and step 2 is to appeal to the Board of appeal and see should keep updating period to consider the appeal within 60 days from the date of receipt of the appeal by. This is to facilitate efficiency, justice, arise and appropriate social conditions nowadays.

Keywords: The tax appeal. , consider a tax appeal.

General details

According to the tax appeal process is one of the aims of Justice, fairness and a tax dispute that arose between taxpayers and tax assessed tax duties for which it is intended to allow the dispute to occur can be ended quickly. As a result, will reduce the number of civil courts to take to the taxation puts the taxpayer. You don't want to waste the time and cost of lawsuits and Government can create the correct understanding to the taxpayer, as well as forced to adhere to the purpose of the law effectively. However, the tax dispute resolution

process by the Committee and to consider appeals by revenue also said. There are also several practical problems. As follows:

1. The composition of the Board of appeal according to the assigned Appellate Committee consists. The Director-General of the Revenue Department or representative, a representative from the Office of Attorney General and representatives of the Immigration Department ruling for the case officer to assess the assessors who have offices in Bangkok and consists of the Governor, or. Internal revenue service sector or provincial representatives and the Attorney or representative. The case for

staff assessment to evaluate, with offices in other provinces will see the Director-General of the Revenue Department and the Revenue Department or sector. As an officer of the Agency, and to monitor and assess the tax from the taxpayer itself. The coming Act protection of the rights of the taxpayer in the process of considering another appeal. It is a work in a manner that may have interests conflicting.

2. The issue of jurisdiction, the Appeal Board could not, according to the powers and duties of the Board of Appeal considered, clearly intended to prove. Cause problems in practice, that the Appeals Committee has authority much like can have a diagnosis, who appealed to the rise in taxation matters, officials estimate, and I have not evaluated before or not, etc.

3. Issues not considered in the appeal period set out in the revenue code. Allow an appeal must wait for the results of considering whether to use long time. If you don't have a diagnosis, the appeal of the appeal, the Appeal Committee who just can't bring the tax dispute into court. The deprivation of rights of appeal that will be considered fairly and quickly, and the problem is not the officer worker who belongs to a Committee of appeal directly. Therefore, the Revenue Department officials need to consider the preliminary appeal idioms. Officials consider the rhetoric to appeal to examine the book. Testimony of other witnesses who questioned the appeal and considering the comparative weight of evidence, the Appeal Division and Department officials estimate, and then make a report to consider the appeal summarized the facts and opinions on all issues of fact and law, and then offer. The Appeal Committee, as and when the judges award the authorities consider expressions such appeal. In the Revenue Department as well as the officers, which might tend to agree with estimates of staff assessments allow an appeal cannot be considered authentic.

Furthermore, there is no qualification requirements, officials consider the rhetoric appeals to the Appeals Committee presented a special. Separately, officials from the workers in the other agencies of the Department of revenue, however; In practice, officials consider the expressions of such appeal, then, is a servant who has just received the official for the first time, and never have the knowledge and experience about monitoring and assessing taxes comes first. All that considered, the appeal is the process that makes for the taxpayer

through monitoring and evaluation officers assessed tax came, One stage, officials consider the expressions of internal cavity should be someone who has the knowledge and first-hand experience in monitoring and evaluating the tax before coming for a long time, enough to be able to review the work of staff assessment effectively. Similar to the judge at the Court of appeal in the works which will have extensive knowledge and first-hand experience in litigation in the District Court before coming to class. Before you can review the comments in the jurisdiction of the Court effectively.

The purpose of the research.

1. To study the problem of tax appeals procedure according to the code.
2. To study the process of tax appeals as revenue compared with the process of Foreign Tax Appeals
3. To study the principle of administrative action. Considering the administrative orders and the appeal process, administrative orders according to the law. Administrative procedure B.E.2539

The meaning of taxation

The words "taxation" is a combination of the words "tax" and the word "duty" of the two words have different meanings for the word "taxes", defined several different definitions of both the definition and the definition of Economics positive legal definition, which may be that the tax money the State uses force powers. Call collect from individuals and legal entities private or as public law permanently and there is no return, directly, by taking into consideration your ability to cover the tax burden of the public expenditure, or to any other intervention of the State while the word "duty" is defined many different guidelines as well, which may conclude that the duty is defined by the amount that the State uses regulatory enforcement who benefit directly from services provided by the public benefits it has no relationship to the cost of public services, and as the money for the benefit of State mandatory. Local element or organization independent of this duty may be higher or lower than the cost of the public service

Tax revenue estimates

Tax revenue mainly taxation category assessment self-assessment (Self-Assessment) with its duties and responsibilities, estimate or calculate the way and filed and taxes the eyes within the time required by law. If not, perform a self-evaluation or evaluation is incorrect or incomplete. If the assessment officer detected later that taxation is not yet valid. Officials estimate there are powers, duties and assessments or interest. In some cases, the mother is not yet scheduled taxes. Officials estimate it could proceed with the assessment, the taxpayer prior to the deadline. In addition, in many cases, the law also requires those who pay tax withholding from amounts paid to and bring it forward in time, staff schedule, called the tax withholding tax that has been deducted, this is often considered to be the taxpayer's credit, which can be deducted from the amount of tax that the waste may be scheduled or be refunded if it is withheld exceeds the amount of the waste. Estimate taxes and administrative commands. Tax assessment, the use of the legal power of the authorities to issue orders for the storage of taxation. Considering that the tax assessment administrative commands or not. Important officials who issued orders and per taxpayer, because if the tax assessment administrative commands. The officer must make such orders correctly according to the criteria and methods of law and to the taxpayer, it may reference the criteria required by law, the objection was that a tax assessment and illegal acts or in accordance with the process of law. Considering that the estimate duties and taxes the administrative commands or not. To study the Act B.E. 2539 government administrative practices which, as the law has defined the administrative and bureaucratic practices, criteria, use the legal power of the authorities of the State, in many cases, such as the administrative commands. Administrative considerations Appellate jurisdiction Rights and arranged the couple's case officer to participate in the consideration of administrative, etc.

The main administrative action required

Associate Professor, somyos Chaichor (1987: 60-61). Explains what is meant by action 1) action of the State, a category. Expressed through individuals who are representative of their. Called the "Government officials", the intent by the action

of the individual, the officer of the State, legal binding but are not binding on the individual intent or acts as a State Organization, however; Therefore, the The actions of the individuals who served as officers of the State. It is the Act of a State by State officials must use their powers to protect public benefits or public benefits, therefore, are regarded as acts of the State, but if the Government acts to use power for personal reputations, not as acts of the State. 2.), the State's actions are considered to be administrative action then. Must be action by the Organization of the State Legislative Assembly, dwelling, management organization (Parliament) and the judicial branch (courts), in which a dwelling, a governmental organization, Government Department, management and organization, include government organizations, Government Department or Cabinet Ministers include which are As the policy or the existence of the State as a whole, which, as events in politics, which traditionally is done by virtue of the draft Constitution, such as the proposed law. Government organizations include officer ruled that acts by virtue of powers Act, and under the control of a government organization. Professor Dr. Nanthawat Borommanan (2009: 59) Explain that administrative action meant that the Organization of the State or of State authorities. Using legal power to perform administrative activities. That action meant that the Organization of the Government or Government officials, corporate management. Using the legal powers to carry out construction changes. Transfer of reserves or suspend the rights and duties of citizens, which, like the Revenue Department has ordered disapproved as a request to appeal the tax, it will result in a tax assessment appeal cannot be used for tax, etc.

According to the tax appeal process of Thailand

Tax appeal process is one of the most important in providing fairness and a tax dispute that arose between the taxpayer and the tax authorities assessed that the responsible authorities. That is, the taxpayer is obliged to submit a listing and of taxation within the period prescribed by law, Officials estimate it will be a speech made to determine whether the taxpayer has filed registration statements and tax ID correctly, or not. If it appears to the staff estimate that the taxpayer not already filed a registration statement or a listed is not correct. Officials estimate it will continue to

monitor and assess taxes correctly according to law. If the taxpayer sees whether the staff assessment estimate of the correct tax payment, according to an estimate, but if the taxpayer sees whether the assessment of staff assessment is incorrect, fairness, should have the right to evaluate the objection must appeal to the Board to consider. Appeal within 30 days from the date of notice of assessment is received so that the Appeal Committee cancelled. Revoke or modify the estimate, or command, and then when the tax appeal Committee has. The Word then appealed to the diagnosis. If the taxpayer has not seen with another likely appeal challenged the appeal court finding the next taxation.

The appeal of foreign taxation process.

The Tax Appeal of England. The IRS (Inland Revenue) Britain's imposition of direct (Direct taxes) alone, the indirect tax (Indirect taxes) levied by the Customs Department and later Appropriations 2005 has been included. zero tax collection agency is the Department of Customs and Revenue Appropriations (Customs & Excise and Inland Revenue) is the only agency that Her Majesty Revenue and Customs (HMRC) system to appeal to all types of tax is the same system. And because the legal system of the English Common Law is the share of the tax collection agency said. It still holds a master filling practices. Britain has set the terms of bringing the case to the Tax Court is specifically mentioned. The taxpayer will take the case to the court. The process must be carried out according to the tax law, the first in order to remedy the damage that occurs in the introduction to the taxpayer. Because the tax dispute could end up in the top of the ruling party. The taxpayer does not have to waste time on the prosecution to the court. It also makes the tax ruling process is fast and reduces the number of cases going to court, too. In dispute resolution, tax the taxpayer and the tax authorities will have to comply with the rules and procedures defined in the law, the subject of the appeal in the taxation right of appeal have the right to bring a lawsuit to court. Period of time or a law. Costs in the appeal and prosecute tax. Organization or person who acts in the consideration process, as well as tax disputes, tax considerations, etc. Which steps are vital to the operation. The process leading up to the trial court is appellate duties and taxes. Tax appeal procedures that the British tax laws are defined as conditions leading up to the litigation

before the Court, which is the first thing that the taxpayer will need to consider before applying permissions to appeal tax assessments is a conflict occurred between the taxpayer and the person who acts as a tax assessment data in the tax dispute, or that the laws allow the appeal or not, because if not, the tax dispute, then the taxpayer can no longer use the rights of appeal.

The country's taxation appeals process, France Tax collected in the country of France, it has a direct tax and indirect tax, which is the main legal provisions there is a law of general taxation (Code General des Impost) by direct taxes include income tax, personal income tax person flawlessly. The results from certain types of transactions, such as tax, local tax, professional tax, land tax, business, and housing section, indirect tax VAT tax reliefs include by these taxes are both tax self-assessment and evaluation officer. The tax dispute appeals of France has provided for in civil law procedures, divided into 2 phases: the "tax dispute appeals in administrative and internal cavity in the tax dispute in court," the taxpayer who wants to dispute the accuracy and to determine the amount of tax that must be paid or didn't need to appeal the State authorities have a responsibility before. So it will bring such a dispute ask for fairness to the Court that there are boundaries. By a tax dispute, defined in the law of taxation in France then the trial method. Refers to any dispute that arises between the taxpayer and the Government officials who authorities about the legality of the tax collected on an individual basis on the part of the assessment and tax: the tax calculation standards and in most cases, if the taxpayer found tax that is determined to be invalid. It is requested to resolve errors that occur from the tax of the tax assessment authorities then. By having the case where the taxpayer can appeal.

Research result

This research study is a research document by collecting information from documents, books, articles, reviews of jurisprudence. Decree Provisions in various laws Including interviews with staff of the IRS related to tax appeals. The data obtained were analyzed issues concerning the appeal process under the Tax Code. By comparison with the appeal process under the law on administrative procedures and appeals process tax abroad. Data were analyzed using descriptive and comparative analysis of the

various issues in order to draw conclusions and propose ways to resolve as follows:

1. Barriers The grounds of appeal and the appeal system. In the present appeal, the dispute according to the Tax Code, the system is separated into two cases, appeals, taxation disputes arising from this assessment. Is forced to appeal under section 30 of the Code. If the gut and tax disputes. That is not due to an assessment appeal under section 44 of the Administrative Procedure Act B.E. 2539, causing uncertainty in practice on the side of the taxpayer and the magistrate. Problems with the Board of Appeals (1) the composition of the Appeals Committee. Code Board of Appeals determined that a quorum of three, consisting of Commissioner of Internal Revenue or his delegate, delegate. Office of the Attorney General and the Department of Correctional evaluate the assessment office in Bangkok. Raises issues of fairness to the appellant. The impartiality of the Appeals Committee. And measures the performance of the Board of Appeals. The staff of the Department of Management, the agency that monitors and assessment. To act to protect the rights of the taxpayer in the process of Appeals Besides, the Code did not define the knowledge and expertise of Tax Appeals Committee retained. Makes directors from other agencies may not have sufficient expertise to make tax fairness to the gut with the Appeals Committee has a number of elements distributed in Thailand. It is difficult to work with the same standards. Moreover, the Director of the Department of Revenue has commented on the decision by the directors of the different departments were 2 other action, the IRS had no way to argue the opposing opinion of the Appeals Committee. The officials of the Revenue Department, served as a Director on the Board of Appeals. If the IRS argued against or prosecuted Appeals Committee. It will make officials of the Revenue Department, which served as a Director on the Board of Appeals. Must be filed with The conditions will enable the IRS lacks the opportunity to bring the dispute occurred to justice in a court of law (2) The scope of the authority of the Board of Appeals. Code has no provisions on the powers and duties of the Board of Appeals. Causing uncertainty in the performance of the Board of Appeals. That is able to judge the appeal to the tax increase on the issues that the assessment officer was assessed before and that is why there is an appeal or not. Causing uncertainty in the performance of the Board of Appeals. That is able to judge the appeal

to the tax increase on the issues that the assessment officer was assessed before and that is why there is an appeal or not. Causing uncertainty in the performance of the Board of Appeals. That is able to judge the appeal to the tax increase on the issues that the assessment officer was assessed before and that is why there is an appeal or not.

2. According to the Tax Code, the appeal process.

The tax appeal process is part of that tax. The right to the protection of freedom and fairness to the person who is liable to tax legal. If the person being assessed and the assessment officer disagreed with that assessment. He has a right to appeal the assessment. The Code requires the permission of the assessment can be argued against the official rate of assessment to the Board of Appeals. The staff consists of three departments, namely the Department's tax authorities, including the IRS. Government officials including the Department. And state laws, including the staff of the Office of the Attorney General. The assessment wishing to exercise its right of appeal to the Board of Appeals to file an appeal within 30 days from the date of receipt of the assessment. Using an appeal For general appeal Or to appeal against the assessment of duty for an appeal against the tax assessment increase assessment officer of the Customs Department. If you can not file an appeal within the stipulated time. A petition to the Commissioner of Internal Revenue may extend the deadline to file an appeal in writing. Details Rationale: It is imperative that can not be appealed within the deadline and attach documents for consideration. Appeals Committee will consider the objections and diagnostic samples evaluated based on appeal, when completed, will make the decision a letter sent to the appellant. Appellant does not agree with the decision of the Appeals Committee has the right to appeal to court. The duty of the court within 30 days of receiving notification of the decision from the bowels of the Appeals Committee. If the tax debt is owed to other provinces. A petition to the court case.

The process, appellate administrative commands.

Government practices Act B.E. 2539. the Administrative Appeals Act guidelines the administrative commands, set out in section 5 of the appeal the administrative command administrative commands 2 category, which is a

legal appeal, apply to the general tax law dispute, is, according to. Neither the appeal criteria hold disputes. Appeal administrative command is divided into 2 phases: the first step is to appeal to the administrative command is done first, which is why the appeal by the appeal must be filed within 15 days from the date of receipt of notification of the order, and the second step is to appeal to people. Competent to consider the appeal if the officials who do the administrative commands, first, which is why the Appeal considered with those of the appeal in whole or in part. It will make changes to the administrative command in that section, but in the section where the user does not agree with the appeal must be presented to the authorities to consider the appeal for consideration the following internal cavity. When the officials who do the administrative command first received an internal cavity, and then. To be considered complete and notify the appeal informed without delay, but must not exceed 30 days from the date of receipt of the appeal by case officers agree with the appeal in whole or in part, then proceed to change the administrative command, within 30 days from the date of Receive an appeal but, if the officer does not agree with the appeal in whole or in part. Officials will have to report their opinions with reasons to the authority to consider the appeal, which is above the level bosses within 30 days after receiving the appeal authority must consider the appeal, considering that the blessings within 30 days from the date of their Some, but if necessary, it may not be considered to be completed, it must be informed prior to appeal book is due 30 days in which to consider the authority of appeal can consider the extension of the term of appeal goes out for no longer than 30 days from the date of the first period of 30 days due.

3. The appeal of foreign taxation process.

England. The appeal process in the current taxation of England. From April 1, 1914 given that the taxpayer is entitled to appeal to the taxation assessment notice is received or a diagnostic stating that there are rights of appeal from HMRC (by the taxpayer has chosen to ask HMRC officials revising the estimate, or to appeal to Tax Tribunal. The country's taxation appeals process, France Forcing the taxpayer to bring any dispute to appeal tax authorities that are responsible for before. So it will take the dispute it is porn. People have rights

of appeal include the taxpayer estimated tax or tax administrative commands or agents appointed by law or a lawyer or a person, the law requires representative, such as a spouse, partner, Manager, partnership, legal entity. The Managing Director of the company.

Conclusion and Recommendations

Study on the process of tax revenue Find that there are several obstacles, problems, and one was resolved. By improving the provisions according to which the appeal relates to taxation. The following.

The system update

1. appeal and reason of the appeal by the appeal system and the improvement of the appeal, organized according to the tax law dispute in every category. Whether due to assess duties and taxes or not, the taxpayer must appeal to criteria defined in the revenue code so it will prosecute to court. Without the driver, bringing the criteria for Appeals Act B.E. 2539 government administrative practices used with the tax law dispute.

2 the appeal consideration organization Update method), the appeal before the Court and prosecute those charged with considering the appeal, the appeal should be established considering the organization saw a latter-day independent agency that existed in the supervision of the Ministry of finance. There are administrative and agency officials, practitioners as your own. Operating as an independent, separate from the tax authority, which will make the case that the tax authorities have a different opinion from the Committee's appeal to the authorities can also take a tax dispute that happened into consideration in court and should. The update method of the appeal before the Court from the lawsuits that originally had only a single step is to appeal to the Board of appeal to consider the update to the 2 step is step 1 review (Internal Review), an agency established by the tax authorities, which assign officers to senior who specializes in tax law matters and want to assess duties and taxes as well as well as there is no conflict of interest with their consideration and not associated with the command, the first reviewer. Completed within 60 days from the date of receipt of the taxpayer. If the taxpayer does not agree with the results of the review, the Board of appeal to consider the appeal in step 2, to consider the appeal of those consider the appeal, the Appeal

Committee is the Board number 5 people consisting of. Permanent Secretary, Ministry of finance, or be Chairman. Experts from the Department of revenue that are in your organization, consider the appeal and not on the Department's supervisor. As a Director. The Office of the High Representative Committee of the symptoms. And Experts from government agencies or the private sector, the number of Directors 2. The Appeals Committee may have multiple Board. Considered to comply with the principle of considering the administrative commands, and Government practices Act. B.E, 2539 Administrative Committee's words appeal to cease in the facts, and let. Permissions that users participate in the appeal.

3. update and how to determine the scope of authority of the appeal made by the designated officer's jurisdiction who consider the appeal or the Appeals Committee clearly. Comparable to the role the provisions of the Act, the administrative government practices, B.E. 2539 assigned officials to reconsider the administrative command, whether it is a fact issue. Legality or appropriateness of the administrative and command, the command may have to revoke the administrative command, or command them to change in any way this is a burden or burden or judgments about the appropriate replacement of command or administrative requirements are to be met, however. Also, how to consider the appeal, which should be used, how to interrogate people consider the appeal, or the Appeal Committee to access play an important role in the pursuit of the necessary facts about the appeal. The couple who can appeal a case or rebuttal evidence to show compliance with the administrative law Procedure Act and B.E 2539 main administrative command administrative considerations, as well as other core neutrality or not stakeholders. Principles of listening to the facts and the main reasoning is certainly unexpected clarity. The main protection of taxpayer rights, etc.

4. duties and qualifications of the improvements, officials consider the stylistic appeal by officers assigned to the officer consider the stylistic appeal is owned by an organization to consider a direct appeal. Acting as the initial appeal decision to propose to the Committee of appeal, as the judges final say and to attend a presentation of their opinions towards the Appeal Committee meetings with the. Additionally, the need to determine the qualifications of those officers considered rhetoric to appeal to a senior officer with

expertise in both tax laws. Accounting business, including experience in the assessment and taxation must not be related to his/her consideration.

The update schedule

5. consider the appeal and select permissions assigned by the Court to prosecute the appeal consideration must be completed within 6 months from the date of receipt of the appeal, or the date of receipt of evidence to consider the appeal, but the day will be the day after if the Appeal Committee action is not completed within that time, those appeals have select permissions to bring the dispute to the Court or prosecute may ask the Committee to consider the appeal proceed to complete within the time specified, not exceeding 6 months from the date the first time 6 months. If the action is not completed yet another user entitled to appeal disputes to prosecute to court immediately.

6. the appeals deadline updates) or the PMO By the extended deadline to appeal to the Court from the lawsuits or the original 30 days to 60 days for those appeals has time to study documentation, evidence, enough to tax dispute appeals, which usually have a tricky problem accounts and figures.

7. compromise or mediation in disputes about tax dispute resolution mechanism for tax Court, which most scholars in the country, Thailand, seeing that even makes the dispute ended, saving resources and help reduce the conflict, but the tax credit legislation that must be stored for legal purposes only. The case must therefore be studied and defined the criteria carefully before they are implemented in the country, Thailand.

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English for Souvenir shop Operators, food and beverage in Ayutthaya Province.

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Abstract

This research aims to develop innovative English communication for tourism entrepreneurs for souvenir shops. There are 5 steps in food and beverage outlets in Ayutthaya: 1) study the appropriate content and innovation needs to practice English for entrepreneurs. 2) The design and innovation of English communication. 3) Try it out. 4) Evaluate and improve. 5) Satisfaction study. The target group used in the experiment was 20 people. 1) questionnaire 2) English listening and speaking assessment form 3) Expert Evaluation Form 4) Innovative English Communication 5) Satisfaction evaluation form Statistics used for data analysis were frequency, percentage, mean and Standard deviation

The research found that the overall content that operator demand is a specific conversation and vocabulary in the trade with Thailand and Chinese translation in the form of a booklet and a CD cover topics about greeting and welcome inquiries and needs of customers, etc.. Before and after using innovative communication, English found a higher score in all components of both listening and speaking English. The results of the evaluation of the satisfaction of the operators showed that the overall level was good. The development of innovative English communication can be used effectively.

Keywords: Innovative English Communication, Entrepreneurial Development

Preface

In the post era of globalization, English language had many roles in communication.

In Thailand, English has been used in every industry such as tourism industries, hotels and English is needed to communicate with foreigners. It is found that in tourism industries, listening and speaking skills are needed to be developed when compare with other skills. Local shops owners need English language in communicating with foreigners in many fields such as English in everyday life, greeting and express gratitude. From the survey of self-development of hotels and homestay in Amphawa, found that the needs for development of using English in listening and speaking are rank among the top skills (Journal of hospitality and tourism Thailand)

Furthermore, since the liberalization of ASEAN in year 2015, the importance of English has been higher due to the declared the ASEAN

Charter, rule number 34 stated that English will be working language for people in ASEAN. In year 2012, Thailand has total tourists from ASEAN countries of 6.3 million people, which were considered to be 28 percent of total number of tourists in Thailand. (อิทธิ พิศาลวานิช : 2556)

Ayutthaya province has rapidly gained more popular tourist both from Thais and foreigners every year. This makes Ayutthaya province see the importance of tourism and Ayutthaya province was included in the province's tourism development plan to restore its traditions

As well as promoting the craft of pottery of Mon tribe in Ayuthaya province to attract more tourists and become unique in terms of location, accessible only by boats, and there are Raman temple-style buildings from Ayutthaya period and unique food and dessert which will be the selling-point that different from other tourist attraction which each target group in each place need different styles of English, namely the same requirement in the same situation such as trades,

description for products designed for target group in the community. However, from previous research studies it was found that the language barrier is a key factor in the communication of the stalls and shops in Ayutthaya province. (ธีรวิทย์ นุตชกุล: 2554) In addition, among tourism business still lack English-language training and hence can't use in real life situation. Which is conducive to meet the challenges of communicating in English and responding to the rapid growth in the last 10 Year of tourism in Ayutthaya.

Researchers anticipate such problems would develop innovative communication in English, entrepreneurs in Ayutthaya province to communicate with foreign tourists effectively and to prepare for the tour to support the growth of the tourism sector when opening the ASEAN as the revenue to the community and building strong community and keeping people in the community as well.

Purposes

- 1) To study the need of English usage for souvenir shops, food and beverage in Ayutthaya province.
- 2) To develop innovation communication with tourist in English for shop owners, souvenir shops, food and beverage shops at Ayutthaya province.
- 3) To investigate the satisfaction of the entrepreneur, souvenir shops, and food and beverage. On the innovation of English for tourism.

Expected benefits

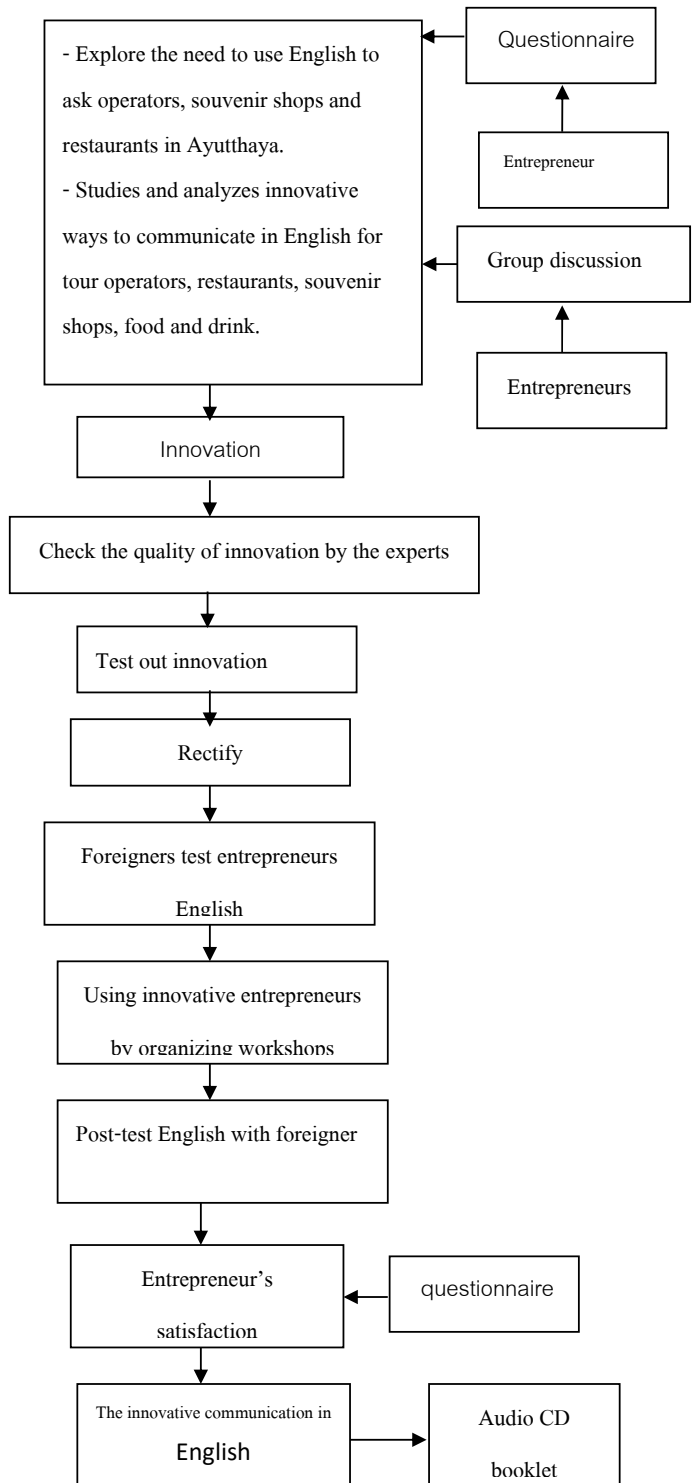
1. To indicate exposure to the news media. (Via internet) of people in Bangkok.
2. To find the difference of behaviors to open the newsletter the way online media (media, Internet) of the people in Bangkok.

The scope or research Population and Sample

Group of respondents the most innovative English language communication trainer contains operators, souvenir shop. Food and beverage outlets at the Phra Nakhon SI Ayutthaya. The number of 160. Among the trial (Try out) 30 people and target group-the number of 30, which is a group that has

been evaluating competency in English. Used to select a specific

Conceptual Framework



Research methods

A tool that is used to store data include:
1) questionnaire. 2.) assessment of listening and speaking. 3) evaluating innovation experts. 4) innovative communication in English for tourism 5) assess satisfaction.

The data collection.

Process of data collection are as follow:

1 The questionnaire used to target group to study the basic content and the media suitable.

2 The data obtained from the questionnaire as a guideline to create innovative media communication in English.

3 Offer expert monitoring and evaluating innovations in communication in the English language and improve media innovation and deliver innovative communications, English, assessment specialist.

4 Deliver innovative communications in English for entrepreneurship, and related quality measures.

5 Update content in innovative communication in English, according to the full evaluation and recommendation.

Data collection

Bring a questionnaire to ask respondents living in Bangkok's beating 160 questionnaires were collected from respondents. To analyze the data further.

Data analysis

This research study was divided into two areas which are:

1. Quantitative data analysis data content requirements in English communication innovation for entrepreneurs of the souvenir shop. Food and beverage outlets at the Phra Nakhon SI Ayutthaya. And find out the percentage of average demand requirements (X) and the standard deviation. (S.D) The results were analyzed for guidelines on creating innovative communication in English for souvenir shop. Food and beverage outlets at the Phra Nakhon SI Ayutthaya, quantifiable data. The quality analysis and the suitability of innovative communication in English by studying the

satisfaction level of the entrepreneurial content and media, including an expert in assessing listening and speaking in English by the average value and standard deviation of X, (S.D).

2. Qualitative data is a Content Analysis which is a descriptive summary of the issues oriented content.

Statistics used for data analysis.

5.1 Statistics used in the study of the needs of the operators by using the how to find the percent value. Average value and standard deviation (Standard Deviation)

5.2 Statistics used in the analysis of the satisfaction of the operators, souvenir shop. Food and beverage outlets at the Phra Nakhon SI Ayutthaya. To use the average compared to the evaluation criteria as follows:

The average equivalent to 4.51 – 5.00 means that most satisfied. An average of 3:51 to 4:50 means very satisfied. An average of 2:51 to 3:50 moderate means satisfied. An average of 1:51 to 2:50 means less satisfied and an average of 1:00 to 1:50, meaning that the least satisfied.

The findings.

1. Entrepreneurs have requirements about the content to most English-language skills and vocabulary and conversation only for trade. (x =4.55) and Thai words assembly. (x=4.59) Innovation and learning English are suitable for operators of the sort is ascending. small book The average value 4.60 CD audio tape with an average of 4.25 leaflets have an average value of 4.06. Other forms of innovation Has an average value of 3.75 and a video cassette with the lowest average is 3.48.

2. The result of the innovative development of English communication

Have the structure, content, and improvements have been made by the expert monitoring results, it appears that the consistency of the content of each stage has a consistency index value, the text is between .067-1.00 By the suggestion, the tightening up in that part of the greetings and more vocabulary. Punctuation correction Contents cover topics such as greetings and welcome To refuse politely, review products

introduction about the goods. Inquiry to the needs of customers. Looking for products and pricing. To tell the price and exchange rate influence to buy goods, tell the characteristics of goods, visit customers. How to use the bargains. And toll charges Requesting and providing assistance to ask customers to repeat Asking and giving directions to describe the process of making the product. The food and drink to say thank you, etc. Each topic contains a dialogue. Take the audio language translation Thailand terms and expressions. In addition, there is a CD in order to practice English, this innovation is developed through research, contributing to the learning of students and benefits, both in terms of generating revenue and maintaining values the uniqueness of the lifestyle community in Ayutthaya province.

3. The results innovative use of English.

Researchers have introduced innovative communications English for souvenir shop operators at Phra Nakhon SI Ayutthaya By experimenting with the audience number of 30 people including the duration of the use of innovative communication in English number of 4 week has tested before use, innovation, communication, English, and after using the innovation in English y foreigners. From the evaluation of listening and speaking English found. Achievement in listening of entrepreneurs and souvenir shops. Food and drink are different in the first use of innovation and the innovation in every aspect. The average in moderate to very much. It was found that the average maximum are both verbal and nonverbal communication ($x=3.95$) The second is to capture the point ($x=3.65$) Knowledge and understanding ($x=3.70$) and reply ($x=3.40$) And to consider the differences are obvious entrepreneurs have developed most of the catch. The second is communication, both verbal and nonverbal. Understanding the nature and essence, and retaliation also found that the relative Turnpike in speaking of entrepreneurs, shop for souvenirs. Food and drinks are different in the period before and after the use of innovation, innovation in every element. The average in moderate to high level in order to mean from high to low, as follows: Vocabularies ($X=3.58$) Pronunciation and tone ($x=3.48$) Fluency of the composer. ($X=3.30$) and grammar ($X=3.23$) and the gestures in conversation ($X=3.15$) And considering the difference between the averages increased after the trial, innovation,

communication is more similar to the difference in body - assembly. As a gesture of dialogue is the difference between the lowest average at 1.45.

4. Effect evaluation for enterprise irreversible satisfied English communication innovations

4.1 The overall level of the operator satisfaction, innovation in most levels of content and media, this content can be applied ($x=4.64$) the content is up to date ($x=4.68$) and the sequence of content from the easy to the difficult easy to understand is not complicated ($x=4.56$) And the operators are satisfied with the level of coverage. For the entirety of racism The beautiful book worth reading ($x=4.55$) The portable, lightweight and compact and media has an elegant design ($x=4.40$) Sound quality and ease of portability and clear dialogue ($x=4.35$)

Discussion and conclusion

Exploring the needs of operators, souvenir shop. Food and beverage outlets at the Phra Nakhon SI Ayutthaya province, to bring effects to create innovative communications in English, which covers the topic and include a satisfaction survey of entrepreneurs, Phra Nakhon SI Ayutthaya. The findings are discussed as follows:

1. The respondents' needs in the development of English listening and speaking skills most in accordance with ANCHALEE ATI doctor who said that the need to develop communication skills of English services of THA. Amphawa, Samut songkhram province is listening and speaking skills, and nearby HA pour m? Ibop Rahim Sharm (2557) found that speaking and listening skills in English are essential in most tasks of the tourist police and followed by the reading and writing. The Research Department's civil Nawamintr (2555) found that verbal skills and listening, it is necessary to work for the personnel working in the tourism Tour 5 of Chiang Mai, Bangkok, Phuket, Samui and Pattaya, followed by the skills of reading and writing. Respondents found the media that are suitable to learn it myself, is a small book portable, compact, which corresponds to Sunantha keawpan. the Range of innovation needs of local media or devices to promote the use of English language is small. Booklet or book type portable (Pocket book) is a compact Pocket Edition. Portability is the most tourism personnel.

2. Such innovation is defined by the needs of the students by learning English for specific purposes. So can meet the needs of those who use it because its innovative content and format determined by the requirement that students focus on the context of the sale. The career of students who need to communicate with customers in a variety of scenarios, such as the rejection of. To request the product instructions. To query the customer's needs. To ask for the item and price inquiry the price of the goods and the exchange rate, and to convince the purchase item, say hello to query the customer's needs. Politely refuse it said. To say thank you and goodbye to the price of the goods and the exchange rate to convince buyers and other, which is consistent with the concept of learning English for specific purposes of the hut Shin-San. It is said that learning English for specific purposes, from the general classes. The students are mostly adults. And is scheduled for a certain period. Moreover, the content is appropriate to the level of the students, in line with Hutchinson said that the process of learning English to object - at the start of the learning needs of the learners and Noonan. The analysis covered the needs of the students is the first step in the process of designing courses that focus on the learners.

3. Evaluation of the satisfaction of book content. Media effect and satisfaction evaluation of advanced process and innovation to want entrepreneurs because English communication step in innovation by sunantha Glass is a species during the analysis of data from a study of sample. Content inspection by experts in innovation has been revised to bring to trial, as well as evaluation and nearby Stuart. Glorious Ocean and rounded complete rights, Marrakech, Simeon, an overview of the steps in the development of learning materials that comprise the creation of trial and evaluation. That results in learning symbolize the operator's wap RA province Nakhon SI Ayutthaya higher is because students are interested and can learn at any time, and you want to change themselves, which corresponds to Hatsachai sitthilaxsa (Online: 2013) which says that learning resulting from incentives inside and students must have committed, therefore, to develop better learning.

Recommendation

Deems appropriate, education, and/or Government related to community or local governance in each province to policy development, training, communication skills in the English language, with tourism personnel career which requires all stakeholders to find the revenue from foreign tourists.

Suggestion for practice

1. Related Agencies Innovation should be the language to develop in areas that are similar in terms of population and location.
2. The media should be taken to develop innovations, short courses, such as management training, entrepreneur. Shop depending on suitability.

Suggestions for further research.

This research should be extended by any other research, such as the personal side, and other factors, age, educational level, affecting different embedded innovative communication in English.

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Adaptation Strategy for Furniture Business: A Case Study of Furniture Manufacturers of SMEs in Bangkok, Thailand

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Abstract

Now the furniture manufacturing is one of highest market value in Thailand which changed from domestic to export industry that generate high revenue and be the export products that are vital to the economy of Thailand. There were 1,298 manufacturers, about 150,000 employees and involved 494 entrepreneurs in Bangkok in 2016, from such a reason, business needs to be improved in various aspects, especially issue related to the strategy of creating new products to meet the market demand.

From the above reasons, the researcher has interested and aware of the importance about the strategy to create new products in the furniture industry in Bangkok area to give the result for Management person to improve product quality and adaptation of the organization in the ongoing business. Firms have to fulfil the needs of current and potential customers effectively to enhance the overall business performance.

Keywords: Organizational Flexibility, Firms Performance Organizational

Introduction

Due to the current economic situation changes constantly and quickly as the result of borderless world which is communicating with advance technology and high speed connect, in particular, the economy has greatly expanded. Free trade and increase of competition both domestic and international, the important and needs to be considered is customer requirement, the survival of the business, the quality of the goods, fast delivery, reduce the cost of production and therefore the manufacturing business have to develop and modify the work processes in the organization continuously to help businesses survive and success based on consumer demand.

So, research in manufacturing business and management is necessary to study to gain capability of business competition and maintain the continuous development of the business.

A company that use the valuable resources, tangible or intangible which scholars such as (Penrose, 1959), (Werner felt, 1984), (Rumelt, 1984), (Barney, 1991) said, a company will survive in the short term. Resource-Based View and Core Competencies Theory shows the starting point of a resource that can give the advantage to the

company and has high yields is 1) "Value" mean the resources that are required to use the strategy to create value by one way or another which is better than competitor or reduce its own weaknesses. 2) "Rare" mean the resources will need to be rare by meaningful strategic factors in the competitive market for the resources. (Hamel and Prahalad, 1994) had written the book name "Competing for The Future" which offer an important concept as the Core Competencies of business which is considered in the business, it must have a primary content such as knowledge base, skills, ability of work and level, therefore it works with maximum performance meets the requirements of organization which the core competencies of the organization is the important part that will make a difference when compared to the competitor because the organization can do the better work than any other organization. It also includes the adaptation strategy by using existing core capabilities to create an advantage in the competition.

So, it might say that the Organization's core capabilities are at the heart of the competition. There are 2 things of business which is basic concepts about organization's core competence and core competencies of the organization adapt,

it can be seen that the “core competencies” as one important thing that can help us make a difference and compete with competitors.

The purpose of the research

1. To study the exchange of knowledge that will keep business survive
2. To study the excellence service (hard to copy) that will keep business survive
3. To study the creation of new service (meet the customer’s expectation) that will keep business survive

Assumptions in the research

1. The exchange of knowledge has positive relationships with the survival of the business.
 2. The excellence service has positive relationships with the survival of the business.
 3. The creation of new service has positive relationships with the survival of the business.
- These 3 hypotheses based on the adaptation strategy.

Research Methodology

1. Type of research
Quantitative research with data collection by survey
2. Step and method in research
To define the target of the research
The target research is the entrepreneur of the furniture business in Bangkok area

Conceptual framework

Independent Variables

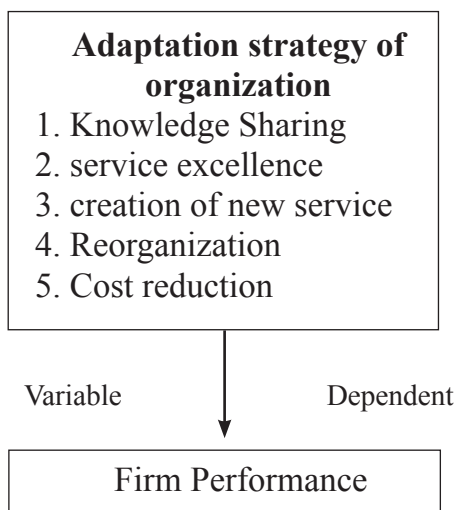


Table Analysis Result

Independent Variables	Dependent Variable
	FP
KS	0.04 (0.08)
SE	0.25** (0.07)
CNS	0.10 (0.07)
R	0.33** (0.14)
Adjusted R²	0.39

**P < 0.01, *P < 0.05

The result of this research

Result of study on the relationship between knowledge sharing and the survival of organization found that there was a positive relationship which is based on the assumption and the relationship is going in the same direction, that is to say if an organization has a knowledge sharing within the organization’s employees will make effective work and keep organization survive because it reduces duplication, reduce the time to find new knowledge. A good organization, employees must be able to access and search the knowledge with no problem, it will be able to put this knowledge to use for quickly solving the problem and the resulting efficiency works.

Result of the study on the relationship between service excellence and the survival of the organization found that have a positive relationship which is based on the assumptions set and the relationship goes in the same direction. Based on the questionnaire, if the organization can build service excellence and difficult to counterfeit, this will cause the organization’s survival because it beyond customer expectation, make customer satisfy, trust in the organization’s services and make the acceptance from customer. This will cause the organization’s survival

Result of the study on the relationship between the creation of new services and the organization’s survival found that bring a positive relationship which is based on the assumption that set and the relationship goes in the same direction. Based on the questionnaire, the creation of new service will cause a response form customer requirement even more, make an impression on customers and this will cause the organization’s

survival because employee will use creativity, producing something new, have a problem-solving method, Make business effectively growth.

Discussion and feedback

The research about the strategy of development new product and results of operations of the organization a case study of furniture manufacturers in Thailand, the objective is creating new products continuously, focus on the exchange of knowledge that affects the advantages of the product and affect the operation of the organization, study the excellence service (hard to copy) that will keep business survive.

The study found that if the organization focus on new product development strategy, improve workflow continuously and focus on exchanging knowledge. It will cause the organization has the advantage of competitor products because the products of the enterprise are unique, quality, valuable, rare and hard to replace. When the business has the advantage, it will give better performance to organization.

Suggestion

Theoretical suggestion

For this research, conceptual framework in research make a theoretical integration as resource base which is the knowledge, ability and the competitive advantage of resources and the ability of the organization together. The core competencies of the complex organization achieving competitive advantage which contains the value of the resource, rareness, unable to counterfeit or the cost of copying is very high and unreplaceable. A virtual enterprise strategy ability at the organization has designated or created to develop appropriate adaptation to an environment that is always changing, an important part in creating a sustainable competitive advantage and business survival in the long term to gives the organization the clear advantage and make the sustain result of the organization which makes a business in better position, it should give priority to the strategy of new products development and bring the customer requirement to develop products, diverse that will result in advantages of the product, cause a better operation affect.

Suggestion for management

The furniture company executives in Thailand wants the performance of the company increases, manager should focus to creating products that make competitive advantage is

performance, unique, value, rare and different from competitor. However, to get the advantages of the product, the manager will need to design products that are esteem, rare and hard to copy. To acquire a valuable product design rare and hard to copy, manager should give priority to improving the work continually and focus on knowledge exchange.

Suggestion for the next research

To make the tools has more accurate, it should lead to further study with a sample of other nearby businesses such as electrical appliance manufacturing business that has come to be expanded in further research because nowadays some of furniture has electric equipment bundle inside.

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A Survey of Social Capital in Highland Community : A Case Study of Ban Na Sa Ung, Wangban Sub-District, Lomkao District, Petchabun Province

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Abstract

This research aimed to study the social capital available in the community and study the facilitating factors and obstacles of the social capital of Ban Na Sa Ung, Wangban Sub-District, Lomkao District, Petchabun Province. This research was a qualitative. Semi-structured interviews were used as a tool to collect data from three target groups, based on the criteria of social capital available in community with four parts of study: (1) Natural Resources Capital (2) Human Capital (3) intellectual and cultural capital, and (4) institutional capital. The results found that Ban Na Sa Ung community was a new community that has the direction of community development that had tried to be right and wrong. There were no community development plans to respond to community problems. People did not give priority or take advantage of the social capital available in the community. Effecting to the overall of these communities was not strong enough to be self-reliant. Social capital in the community effected toward a stronger community. The factors that made the community strong were as follows:

(1) The community had a strong, knowledgeable leadership. People in the community trusted and jointed the cooperation in community activities. (2) The people in the community had a kinship relationship. There was a respect for each other without conflict or disagreement. (3) People in the community engaged with the community both co-planning and participate in all community processes. And (4) the community had a network to assist. These factors were important to social capital for the community and could be strengthened in the community.

Keywords: Social Capital. Ban Na Sa-Ung Community

1. Introduction

Thailand has been developing the country according to the National Economic and Social Development Plan since 1961, focusing on the development of production and infrastructure tackled poverty and reduced the disparity of income distribution and developed by using people-centered development. Until now it is the National Economic and Social Development Plan No. 12 (2060-2021), focused on building international networks and strengthen and develop the potential of human capital and reduced the disparity of social. [1] However, due to the central government's policy supports development in

various areas. But the difference of cultural system and regional beliefs cannot be applied to cover all sectors. Therefore, the development of integrated local development raise awareness of the people's participation in creating solutions and help develop countries together starting from the community and local administration setting by location ,supporting by the department. This leads to the strengthening and domestic stability. [2]

Strengthening local through human resource development and the involvement of people in the community and having the right natural resources these have been used as a guideline for Thai country development. Until the introduction of the word "Social capital" is used after the economic

crisis by the World Bank, the Organization for Economic Co-operation and Development. Both are aware of the social value that is critical to economic growth and sustainable development leading to the well-being of the people. Especially the Organization for Economic Co-operation and Development considers that economic growth is derived from four types of capital: physical capital, financial capital, human capital and social capital. Based on the assessment of the performance of these four factors, sustainable economic growth is attributable to four components of human capital and social capital, whereas happening with only two components are physical capital and financial capital. [3]

In the context of Thai society, Social capital has been an important capital that enhances the good life of people in society and have promoted economic development, society and government for a long time. Especially strengthening performance have been involved in the development of services and production processes in the economic sector. And solving the problem in times of economic and social crisis, which is a situation where capital, natural resources and economic capital are constrained. To solve the problem and restore the Thai people and Thai society back to the status need social capital to support. For example, the economic crisis in 1997 having many thinkers and experts assess that Thai society still exists because there are many social capital networks supporting the link firmly, based on the identity of the Thai, which has many strengths, such as the Crown Institute is the center of Thai people. There is a system of kinship and a strong community with generous and kind. So if Thailand can bring the existing Thai social capital into conservation, rehabilitation, development and proper utilization, it will develop people in the country getting a happiness and the nation is balanced and sustainable. [4] In addition to bringing social capital into Thai society to solve the national development problem. It has also introduced the concept of social capital to develop and expand the benefit using at the community level.

Ban Na Sa Ung Community is a mountainous community. It is only 10 km. away from Phetchabun National Park along the hillside. This is a nature area in the mountains. By the villagers are Laos who is an immigrant from Nan province, come to occupy the shelter in the area of The Hill Tribe Development and Aid Center in Phetchabun since 1995, which is under the rule

of 13 Ban Thap Dam, and has been declared an official village of Wang Ban as a village sequence 17th in 2016. The area inside the Ban Na Sa Ung is a pan figure between mountains. There are abundant forest and community forests. There is a common activity that has strong relationships in the community. For this reason, the researcher was interested in studying the community on the issue of social capital available in Ban Na Sa Ung to know about the condition of social capital that concerned how does it play a role in empowering the community and to study the factors that are supportive and obstructive the social capital in the community and continue to develop sustainably.

2. Objectives

To study the social capital available in the community and study the facilitating factors and obstacles of the social capital of Ban Na Sa Ung, Wangban Sub-District, Lomkao District, Petchabun Province.

3. Expected Benefits

This research will benefit to the government agencies. And local government organizations are planning to develop social capital in various areas to strengthen the community sustainably.

4. Scope of the research project

4.1 Location Scope

The study area is 17 Moo Ban Na Sa Ung, Tambon Wang Bang, Lomkao District, Phetchaboon

4.2 Scope of Content

This study was a study of social capital case study of Ban Na Sa Ung, Wangban Sub-district, Lomkao District, Phetchaboon. It covered the general condition of Ban Na Sa Ung community, including the history of the community, physical condition, social status, economic condition, community lifestyle and also studied on four issues of social capital: human capital, institution capital, wisdom and cultural capital, natural resource capital.

4.3 Scope of Time

A study of social capital management approached for ecotourism management. Primary data was collected during the period from November 2016 to March 2017 and field data was collected by interview in December 2016.

4.4 Scope of demographic

The main informants in this study were divided into 3 groups as follows:

1. The official community leaders were: Village Headman Moo 17, Tambon Wangban Sub-district, Lomkao District, Phetchaboon.
2. Village Committee Moo 17, Tambon Wangban Sub-district, Lomkao District, Phetchaboon.
3. Villagers in Ban Na Sa Ung community, Moo 17, Tambon Wangban Sub-district, Lomkao District, Phetchaboon.

5. Research Methods

The research method consisted of the following steps:

1. Area selection criteria

This study has selected the area of Ban Na Sa Ung Moo 17, Wang Bang Sub-district, Lomkao District, Phetchaboon, Because Ban Na Sa Ung community is a simple lifestyle, lives with sustainable economic, has the kinship system, has a cultural tradition that is the successor of migrants. Moreover, local wisdom had been transferred knowledge for living. There is a natural resource that is a significant cost as a tourist attraction. Phu Thap Boek is famous for its ecotourism. Ecotourism Managed by villagers are involved. Therefore, the researcher was interested in selecting this area as the study area.

2. Primary Data Provider Group

The villagers living in the area of Ban Na Sa Ung, Moo 17, Wangban Sub-district, Lomkao District, Phetchabun Province were the main informants in this study, regardless of gender, age and education, to obtain information as the objectives divided into 3 groups of 15 people as follows:

1. The official community leader was a headman of Ban Na Sa Ung, Moo 17, Wangban Sub-district, Lomkao District, Phetchabun Province who was a leader of the community and knowledgeable about the issues that researcher wants to study.
2. The 4 village committees of Ban Na Sa Ung, Moo 17, Wangban Sub-district, Lomkao District, Phetchabun Province, as a community worker and had a role in the management.
3. The 10 local villagers settled in the area of Ban Na Sa Ung, Moo 17, Wangban Sub-district, Lomkao District, Phetchabun Province, as the founder living in the community.

3. Research Tools

- 3.1 Books, research papers related to social capital, ecotourism management and participate.
- 3.2 Field notebook to take note of the observation data.
- 3.3 Camera for recording activities
- 3.4 Voice recorder to record the voice of the primary informant.
- 3.5 Interview questions included general conditions of community, community leader, activity group leader, local philosopher, organizations, participation of villagers, ecotourism management. This was a pre-determined issue of education.

4. Data collection

4.1 Secondary Data Collection

To study social capital and ecotourism management the researcher had studied the history, basic information of the community, way of life, occupation, community living, preparing for a visit to the main contributors and studied theories related to social capital, ecotourism, involvement from books, textbooks, relevant research papers to use as a guide and study.

4.2 Primary data collection

The researcher collected field data as followings:

1. Observation

1.1 Participant Observation. The researcher had participated in community activities such as the meeting of villagers, meeting of various group leaders, participating in various activities concerned ecotourism management, etc., to observe and collect information.

1.2 Non-Participatory Observation was the survey of Ban Na Sa Ung Community lifestyle, participatory Behavior of Villagers, role playing of community leaders.

2. Interviews were conducted by meeting the main informant using the structured interviews. The interviews consisted of a questionnaire covering the social capital of the community, the role of social capital in ecotourism management by community involvement.

5. Verification of data reliability.

Research on Social Capital and Ecotourism Management Case Study of Ban Na Sa Ung, Moo 17, Wangban Sub-district, Lomkao District, Phetchabun Province was a qualitative study, so check the data after the data had been collected with multidimensional data validation or Methodological Triangulation, divided by data collection from the

village headman, village committee, and villagers in Ban Na Sa Ung community with interview, observations along with studying more information from the source. After the conclusion of the study to be sure that the conclusion was also true or not then corrected as a complete report.

6. Data Analysis

Qualitative data from in-depth interviews and observations would be checked for completeness and accuracy of the information, categorized information according to educational purpose, summarized and presented descriptive research results on each issue according to the educational purpose.

6. Research Results

1. The context of Ban Na Sa Ung community

The history of Ban Na Sa Ung had been told by the elders in the community. Native people were Lao tribes of Lao descent. The migrants moved from Laos to live in Nan province. They migrated to Phetchabun Province and lived in the Hill Tribe Development and Relief Center of Phetchabun Province in 1995 and allocated land for livelihood. The area of Ban Na Ung which was under the administration of Ban Thap Boek, Moo 10. The official village was established in 1966 as the 17th village of Wang Ban Sub-district, Lomkao District, Phetchabun. The first village headman was Mr. Boonmee Jai-am with 72 residents.

Geography was a highland community with an area adjacent to Phu Thap Boek National Park. The surrounding area had plenty of forest area. People had the area for living around the hill. And there was a flat shelter, and divided the habitat into 3 sections along the ridge. There are two community forest areas, three watersheds, which can be used to conserve two thirds of the land area.

Social status was an all Christian community. There were churches for the ordained 3 churches, both Roman Catholic and Protestant. And there prayed every Sunday. In the field of education, there was a child development center with a building and a cooking building. For the kindergarten, there was a teacher for the kindergarten. Whereas upper kindergarten students had to commute to study Ban Thap Boek downhill. And there was also Ban Na Sa Ung Community Health Center where there was a volunteer physician.

Economic condition of Ban Na Sue Community, most of the people work in agriculture.

The main occupation was the cultivation of rice, plantation of corn, cassava, and other plants such as pumpkin, banana, ketchup, etc., and they loaned from the village fund and Bank for Agriculture and Agricultural Cooperatives. Most of the land was for a household of about 20 - 30 acres.

2. Social Capital of Ban Na Sa Ung

The social capital of Ban Na Sa Ung based on the conceptual framework studied by Anek Nakabuttra(2002) as a basis for the study containing the followings:

2.1 human capital

Human capital was important social capital for community development. It was related to the network of relationships that enable community development to be successful and having a diversity of thinking. For Ban Na Sa Ung community, leadership had been strong since immigrants in Phetchabun. The leader who coordinated with the downhill of Ban Thap Boek was Mr. Kittipun Yod-Un, who brought villagers as kinsmen and the same blood type to live together as one. And he coordinated with the state agencies for various assistance, including from outside agencies and volunteerism. Because at that time Ban Na Sa Ung didn't have electricity and water supply system. When the official village was established in 2016, the new leader was elected, Boonmee Jai-Am, who represented the new hope of the Na Sa Ung people. He was also a Christian as a pastor. The villagers respected and trusted him a lot. In addition, community committees also included new generations with ideas and visions and many field trips have been studied. It had been working in collaboration with many government agencies, especially in cooperation with the Faculty of Business Administration, North Bangkok University, drove economic and social development in the community, and included academic services to community leaders. To provide the knowledge was used in further development. There was also Uncle Prasert Suknuan, who was the oldest and also was a philosopher of the community for counseling and was a guidance of community operations as well.

2.2 Organization capital

Native people were tribes who inherited the culture of the beautiful costumes and unique. So they joined in a group of villagers producing the tribal dress wearing on important occasions. And they also joined in a group of housewives to sew a tribal dress for selling in the market to those who

interested. There were more and more people who interested in making dresses and ordered dresses many more. This made more money for people in the community. In addition, North Bangkok University had also participated in the initiative to set up a group of homestay service providers promoting eco-tourism for tourists who were interested in nature by providing a homestay model for the community.

2.3 Wisdom and Culture Capital

Ban Na Sa Ung community had the folk wisdom of the villagers that was hidden from the way of life of the tribes and was in everyday life by tradition. The obvious tradition was seen clearly: come and join together for rice planting and harvest by rotating in the land of each person. And part of the rice field of the collective, they would work together and brought the product together sharing it for consumption. And after villagers sleeping at the end of the farm for harvest completed. They would bring the output of each household to cook for paying respect to ancestors, dancing at the central courtyard of the village, they so-called “Khuang”. At this time when the villagers and their young came to party together as a tradition “Long Khuang”.

In addition, the villagers of Ban NaSa Unghad a culture of costumes from the locals dresses in Lao culture with black fabric, woven with pink or red cotton and decorated with silverware giving a warm feeling. And they dressed for a formal activities together and also was sold to interested parties as well. Including the way of life of bamboo basketry that made a variety of appliances such as basket, round bamboo basket, which had a lot of bamboo as a raw material for basketry.

2.4 Natural Resources

Ban Na Sa Ung Community was a community with abundant natural resources. In addition, the location of the community was near Phu Thap Boek National Park. There were plenty of forests, wooded community forests and beautiful. It was also the source of three water resources with water spilling out continuously throughout the year. The community had accessed to water throughout the year if water was well managed. The lowland habitat area could also be used as a vegetable garden for good yields for living and could be planted for sale to interested people.

In addition, the area around the community was also a place where tourists could visit a beautiful sunrise and sunset. The villagers called

this viewpoint “ the Pha Chom Tawan” which could see the landscape below the Thap Boek and Wangban.

3. *Facilitating factors and barriers to Social Capital in Ban Na Sa Ung Community*

The results of a study of factors contributing to sustainable community development were as follows.

1. Community leaders had an understanding of the way people live and had the capacity to spread the doctrine of Christianity as a pastor. The Ban Na Sa Ung villagers had confidence and faith in the leader. Also, the village councils had been selected by those who were the important person for village development from the past. And they were new generation who had the various idea of developing a village and had committed seeking knowledge for use in village development.

2. The people in the community had relatives since the migration from 1995. Until the present, migration had come to build a family and became a strong relationship with a large community helping each other generously.

3. Participation of people in the community. Each time the village would be organized activities. There would be a meetings and brainstorming sessions and took place together seriously, such as sharing the opinions of the villagers with the problems that needed to be resolved together. The one of the problem was water management appropriate. When North Bangkok University led the team to build a dam and water management system for high area. The community leaders, villagers and related agencies, Wangban Administrative Organization, Public health staffs, they cooperated very seriously. Together they planned and execute the plan, putting in place the manpower, money, and equipment used to build the dam. The result was in satisfactory with water retention and water strength in the water season.

4. The network had come to help in many ways. After North Bangkok University had been jointly developed in the area of Ban Na Sa Ung. They had built a multi-purpose building, NaSa Ung Ruam Jai Building, and a dam. They promoted events in various forms through postcard media, photography contest in the area, Bangkok News Society’s newsletter dedicating and supporting the budget and manpower, and public relations through social media. There were people who got information of villages without electricity and water and anything else. So there were a lot of networks

of private agencies and volunteer networks that visited the Ban Na Sa Ung all the time.

The study results of obstructive factors for sustainable community development were as follows.

1. Without necessary utilities due to the lack of electricity, water, and mobile signal, therefore, the lifestyle would not be as convenient as it should be. And the coordination had not been convenient. They needed to travel outside the area to use the phone. To make official contact and business contact would not be as convenient as it should.

2. Getting to the village was not easy. Because the way out of the village could travel two ways: one was from Phetchabun National Park and another way was from Ban Makkheang in Lei Province. Both were the mountain with rough roads and very steep. Especially on the side of the Ban Makkheang some points had slopes up to 45 degrees.

3. Being a new village where members had little experience in community management. And there was also a pattern in community management that problem was not still solved completely.

7. Discuss the results.

Based on research “Social Capital Investigation of Highland Communities: A Case Study of Ban Na Sa Ung Community, Wangban Sub-district, Lomkao District, Phetchaboon” the results of the study were interesting, which suggested that social capital was critical to the strengthening of the community. Social capital was already presented in every community. But in which community would see the value of social capital and used to develop their own communities to be strong and self-reliant on a sustainable basis.

From the condition of social capital found that Ban Na Sa Ung community was still a new community that had the direction of community development trying to mistake. There were no community development plans to respond to community problems. People did not give priority to social capital or take advantage from the social capital available in the community. As a result, the overall of these communities was not strong enough to be self-reliant. Social capital in the community effected on a stronger community. Summarized as follows

Human capital was another kind of capital that existed in a strong community. It had potential people who was capable of helping and managing the community. It was the core of community development leading to the strength and stability of the community. This was concerned with the study of Jutithepyasamuth. [5] It was found that both formal and natural leaders who all the villagers paid respect. When many leaders join in the activity, they would be the core of the activities that benefit for villagers and the community. *Institutional Capital* was a social capital that created social relationships, integrated organization, and community network to solve community problems. This would make the community stronger. This corresponded to the study of Anand Kanjanapun. [6] The concept of social capital has been proposed that the grouping of people who had a faith-based, confidence and consciousness, committed to the same thing developing a strong social community being as a social group and a social institution. It was a powerful network to drive community development. Grouping had the potential and power to help each other or to contribute to the community. *Wisdom and culture capital* was the capital that contributes to the community, helping each other in the community. It helped people in the community to feel responsible for each other and strengthen the community. This was concerned with the study of Suthep Wongsupha. [7] It was found that the succession of the village culture both in religion and rituals were combination to inherit and help each other. It was a collective effort by everyone involved in the activities of the village to help each other. And everyone who had a responsibility could strengthen the village sustainably and firmly. *Natural Resources Capital*, Communities where people in the community got benefit or relied on these capital, would create a love and cherish in the community's natural resources. It would create conservation and jointed care for the community to be continued. This was concerned with the study by Ampa Chantrakag [8]. It was found that the community could utilize natural resources and environment within the community to manage for the people in the community. It would empower people in the community to recognize, cherish and care for the vital natural resources of the community.

In terms of the factors contributing to the social capital in the community, the researcher found that Ban Na Sa Ung community had strong

community leaders. People in the community had a kinship relationship. People in the community engaged with the community. And having a support network was an important factor contributing to social capital and effecting to Ban Na Sa Ung community was stronger than other community in the same sub-district. This was concerned with the concept of Teerapong Kaewhawong [9], meaning the strength of the community that community empowerment had been based on participatory processes. In which each community developed to the strength of the community in various dimensions, such as economic dimension, natural resources dimensions, social dimensions and cultural dimensions. And it also corresponded to the concept of Prawest Wasi [10], meaning social capital that was a social clustering with good education, the culture, honest, responsibility to the public, work efficiency, having good politics and bureaucracy, was a good economic base. Social capital was synonymous with strong society. Social capital was very important helping to keep it strong because it would be a good base for the economy, good politics, and good moral. When society was strong, social capital was also the basis of other development.

8. Suggestions

1. Government agencies should provide mentors for mentoring, making a community strategic planning covering to solve problems in both short-term and long-term issues.

2. The community should have a solidarity group to bring a strength out to the society, to be seen and used in the development of economic values through Ecotourism

3. The private sector should provide satellite dish for communication in case of necessity and for people's education in the community.

9. Acknowledgments

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This time, the researchers would like to offer

the worship of gratitude for the grace of parents, teachers, and benefactors. If there were errors in this report. The researchers were very sorry for the mistake. And let's take it alone.

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Thai Women's Attitude Towards Thai Single Men Aged 40 or More

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Abstract

The study on "Thai Women's Attitude towards Thai Single Men Aged 40 or More" is aimed to disclose Thai women's attitude towards the single status of Thai men. The aspects about being single which are focused on are: men's appearance, lifestyle, personality and men's attitude from women's points of view. This study focuses on the opinions of most single and married women in Bangkok and also wish to find out whether Thai females feel that males who are not married at the age of 40 up are normal as well as they are homosexual or have any problem with their mind.

To collect the data, questionnaires were randomly distributed to 200 Thai female respondents at Thonburi - Sriwattana University of various ages, occupation and marital status.

The results of this study were that most women were generally uncertain about all aspects of men's single status. Initially for men's lifestyle, most respondents in this research showed 36% of women feel uncertain about single men happier than married ones. 60% agreed that single men has more freedom in life. 38% were unsure about their dedication in work and 45% felt they were not sure about happy family in men's life. 55% felt unsure about their homosexuality. For personality, 38.5% felt uncertain about their lady's men while 35% disagreed about men's lack of responsibility. 39.5% were not certain men who stayed single were fussy. For single men's appearance, 45% of female respondents disagreed that they were less manly than married men. 62% disagreed about their poor appearance. 40% felt uncertain about their cleanliness and health whereas 38.5% were unsure whether single men prefer to use male cosmetics and perfume. 35% disagreed about single men always dressed well. Lastly, for women attitude towards single men's attitude. 45% were uncertain if single men's parents disliked a woman whom men selected by themselves and 44% were agreed about their failure of marriage life that made them feel afraid of having a new wife. 46.5% believed men considered marriage was not important in their life. 36% agreed high working position in men prevented them from marriage. 43.5% disagreed education background in single men made them stayed single. 45% agreed that financial problem caused men to stay single but 40.5% were not sure whether poor health or physical problem caused them to be single. 37% disagreed women's appearance had an important role in men's decision of getting married.

Finally, recommendations for further study were made to find out more data which will useful to foster a better understanding among women and men in Thai society.

Keywords : Men's appearance, men's lifestyle, men's personality and men's attitude and Thai women's attitude

Role of Co-operation and Its Effect on SME Cluster Competitiveness : A study on Ceramic Industry in Lampang, Thailand.

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Abstract

Small and medium enterprises (SME's) face many hardships under the dynamic and competitive challenges posed by globalization amid the changing economic scenario worldwide. In order for the SME's to survive, they need to reform and one of the way is to linking together and form a cluster. But, clustering has its own limitation which is based on collaboration and cooperation between firms.

The study research attempts to analyze the problems of the ceramic cluster in Lampang, and find solutions to those problems. This research paper investigates cooperation between different players and how it effects the competitiveness in a region dominated by SME's. This study employed mixed method strategy, by combining qualitative and quantitative methods. Data were obtained by two mediums: (a) Quantitative data collection through questionnaire survey from 104 respondents, (b) qualitative data by conducting face-to-face interview with principals in twelve manufacturing firms, and eight representatives of supporting institution.

Conceptual framework was drawn by the Porter's diamond model using correlation analysis which is commonly used for Cluster initiatives. The study shows that the ceramic cluster is not competitive which can be attributed to the lack of cooperation between different actors of the cluster. The main recommendation of this study is changing attitudes of entrepreneurs towards the understandings of the importance of clusters and encouraging positive cooperation between them.

Keywords: SME, cluster, cooperation, competitiveness

1. Introduction

"SME's constitute the largest economic and business entities and assume a major role in employment generation. As such, many member countries place great importance on the development of the competitiveness of SMEs so that they can serve as the engine of growth for national economies", APO 2007 (5). We can see from the above excerpt that SME's play an important role in the economy not only generating income but also by providing jobs. SMEs are important to economic growth and significantly essential to generate employment (Harvie and Lee, 2005; World Bank, 2009).

Global competition is increasing at a steady pace. In a liberalizing and globalizing world

economy, firms and indeed whole economies operate increasingly in markets which demand innovation and flexibility to meet the challenges of constantly changing market conditions. Globalization has brought about growth in the knowledge intensity of production across all economic activities.

SMEs and mostly SME's in developing nations seem to be at a disadvantage in the globalization factor, many experts predicted the demise of SME competitiveness as globalization increased.

One of the most important answers is Cluster that fosters competitive firms through cooperation to achieve competitiveness. To strengthen SME's they need to cooperate and form a cluster so as they can compete against internal and external factors. Hence, clusters and competitiveness have come to

the forefront of strategy to make better policy. For the past twenty years, the local or regional cluster has become a model for economic development in developed, undeveloped and developing economy having become important for local development planning, practice and research efforts (Mills, Reynolds, & Reamer, 2008). Collaboration and cooperation between firms as well as stakeholders is an important element for a dynamic cluster (Orjan Solvell, 2008). Regional clusters entail public and private organisations embracing various competitive and cooperative activities thus creating entrepreneurial, and sometimes-unexpected local developments (Waxell & Malmberg, 2007). Many localized clusters have been identified, and the concordance of their features with those of an idealized industrial district has been mooted.

Statement of Problem

Almost all the firms in the Lampang Ceramic cluster are SME's and they play a very important role in the region economy. Fabio Russo (UNIDO, A tool to increase SME exports 2005) "Small and medium enterprises (SMEs) usually have difficulty exporting to foreign markets: they may lack the necessary knowledge and financing, may not meet foreign regulatory requirements, or may produce products in quantities or quality that are not adequate for foreign buyers, among many other potential problems. However, these problems can often be overcome through cooperation among SMEs. By combining their knowledge, financial resources and contacts within an export consortium, SMEs can significantly improve their export potential and reduce the costs and risks involved in penetrating foreign markets".

The researcher is curious in understanding the ceramic cluster in Lampang, cooperation between firms in the clusters and the effects to the overall competitiveness of the cluster. The researchers also would like to understand trust and co-operation between firms in an industrial cluster. Cooperation problems are familiar to us from the literature on mass production vs lean production (Womack, Jones, and Roos 1990). Cooperation is also important for having a common objective, strategy to achieve competitiveness in the ever changing market scenario.

Research questions of this study are as follows:

1. Level of trust, faith and cooperation between firms in the Lampang ceramic cluster?
2. What is the impact of the formation of the Lampang ceramic cluster on the operational methods of the firms?
3. What are the factors which hinders the competitiveness of the Lampang Ceramic Cluster?
4. What solutions are supposed to facilitate the barriers of competitiveness of the Lampang Ceramic cluster?

Objectives of the study

SME's play a crucial role in the advancement of the region and the economy as a whole. SME's face many hardships and constraints due to the ever changing scenario of the world economy and other external as well as internal factors.

Cooperation between SME's play a crucial role in their overall development. Thailand has to come to a common understanding about SME cluster and strategy and how to they enhance competitiveness of a region and attain prosperity for its people. Some of the objectives of the study are below:

1. To understand the cluster culture in Lampang Ceramic Industry.
2. To exploit current problems in the cluster and find the possible way to solve the problem.
3. To conclude on the trust, faith and cooperation between ceramic firms in the cluster and its effect on the competitiveness.

Scope of the study

This research has limited its scope to only study the Ceramic Cluster in the Lampang region in the North Thailand. This cluster is formed by the numerous SME's which specialize in Ceramic products. The study is focused on the Table ware industry, one of the main collaborators of the ceramic cluster.

The study can be done deeply, understanding the whole relevant environment from a common man, to white collar and blue collar employees, and also the policy makers as the researcher stay in Lampang and have been teaching

in a college in Lampang. There are many areas of concern on which light can be thrown, highlight important issues, so that necessary changes can be made in functioning of the cluster and ceramic firms to improve their overall performance and be more competitive.

Conceptual framework and Hypotheses

Research variables are based on the literature review on the Porter's diamond model on competitiveness. Six variables were identified and used for research analysis. Innovation and Skilled Labor are taken from the factor conditions in the Diamond Model. From the literature review it was found that productivity is the base for achieving competitiveness, firms want to be more productive through better use of resource. Hence, productivity was included as an intervening variable.

One of the main factors found during literature review was cluster cooperation, whereby the firms collaborate with the stake holders which is very important for a dynamic cluster. Orjan Solvell (2008), "Another important value was the collaborations between firms and the stakeholders, which is an important element in a dynamic cluster". Hence, cluster cooperation was added as on the main variable as this paper explores cooperation in a cluster.

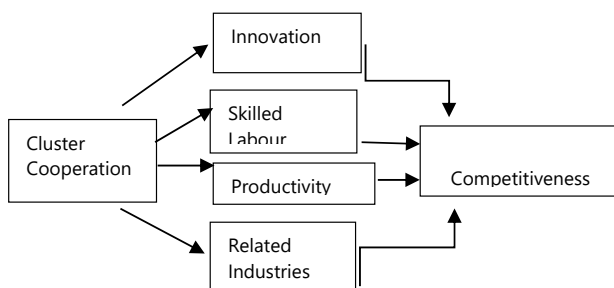


Fig 1.1: Conceptual Framework

Research hypothesis is based on independent and dependent variables derived from the Porter's diamond model along with other variable derived from literature reviews. Hypothesis illustrates that all the independent variables has effect on the dependent variables to certain degree which can differ depending upon the type of industry.

Hypothesis 1: Cluster cooperation enhances the productivity on the firms in the cluster.

Hypothesis 2: Cluster cooperation enhances the availability of skilled labour in the cluster.

Hypothesis 3: Cluster cooperation enhances the role of related industries on the firms in the cluster.

Hypothesis 4: Cluster cooperation encourages innovation in the cluster

Hypothesis 5: Innovation increases competitiveness in the cluster.

Hypothesis 6: Availability of skilled labour has positive effect on competitiveness of a cluster.

Hypothesis 7: Rise in productivity enhances the competitiveness of the cluster.

Hypothesis 8: Related industries influences the extend of competitiveness of SME cluster.

2. Literature Review

The increasing customer demands for quality, flexibility, cost and design, created the opportunity for the emergence of collaborative partnerships between leading firms in the supply chain and producers located in developing regions (Zeitlin, 2007). Economic activity tends to cluster in particular locations is driven by efficiency advantages (lowered costs, including transaction costs), flexibility advantages (high mobility of labor and other resources) and innovation advantages (knowledge spillovers and cooperation) (Solvell, 2008). The role of clusters in explaining regional economic performance has been confirmed in several studies (Porter, 2003).

In advanced economies we see cluster, we don't see random distribution of Industries in the economy of a region. Clusters are striking feature of virtually every national, regional, state and even metropolitan economy, especially those of more economically advanced nations (Porter, 2008). In the last two decades SMEs clustering and networking have been increasingly attracting the attention of academicians, policy makers, trade practitioners and international organizations. Small and Medium Enterprises (SMEs) have long played a crucial role in the economic development of many countries (Beck et al., 2005).

However, in the last decade, changes in rivalries in the global market and knowledge-based economy drove SMEs to adapt themselves to the new management paradigm. Companies that are capable of utilizing knowledge and shift their businesses into a new market will survive (Glenn, 2009). Young and Molina (2003) study has shown that one way for SMEs to survive in

today's unsteady business environment is to form strategic alliances or merge with other similar or complementary business companies.

Clusters matter asin developing countries SMEs constitutes the numerically dominant economic actor and contribute one third to one half of gross national product. In developing country like Thailand, an industrial cluster consists of small and medium-sized enterprises (SMEs). The keys for success of industrial cluster in developing countries are the cooperation among large firms and SMEs, the collective responsibility of local association, the relationship between the parties along the value chain and financial incentives by support industries (Fischer and Reuber, 2003).

Today clusters are seen as a tool to stimulate a thriving private sector and a way to foster economic growth. From the policy point of view, assistance to SMEs has been traditionally considered by national governments and international donors as a way to target aid to the poorest and to create new job opportunities for the most disadvantaged sectors of the population.

Actors of the Cluster

“A cluster is a geographically proximate group of interconnected companies and associated institutions in a specific field based on commonalities and complementarities,” Porter. There are many different companies as well as associated institution in the cluster as defined by Porter (2008). Orjan Solvell (2008) states that, “Many types of firms and organizations constitute the set of actors on the cluster stage. Here we have identified six main types: firms, financial actors, public actors, universities, organizations for collaboration and media.” Six actors identified by Orjan Solvell (2008) are detailed below:

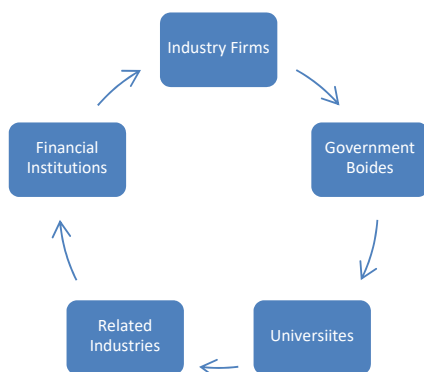


Fig 1.2: Actors of Cluster (Source: The Red Book, Orjan Solvell-2009)

We can clearly understand from the above that Clusters is not limited to some players but rather the whole environment in which the firms operate. This is to encourage cooperation to gain competitiveness and sustain their businesses.

Cluster life cycle

Every business they start small and then they grow, and cluster follows the same trend. Cluster life cycle is similar to the development of the industry life cycle in many aspects. As a rule, the stage is described by the age and the growth of the cluster in analogy to the industry life cycle (Enright 2003, Dalum et al. 2005, Maggioni 2002). Audretsch and Feldman (1996) and Pouder and St. John (1996) pointed out that the development of clustered and non-clustered firms differ during differentstages of industry development.

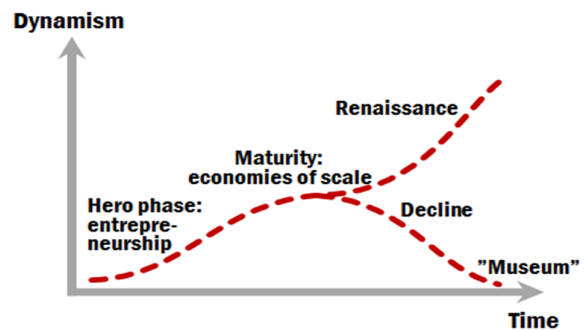


Figure 1.3: Cluster Life Cycle (Source: The Green Book, Solvell-2003)

Green book Solvell, Lindvist, Ketel (2003, 52), Cluster failure is strongly related to lack of consensus, and absence of formulative visions and quantitative target for the clusters. Kerstin and Press (2006) has stated that the euphoria about successful clusters however neglects that historically, many thriving clusters did deteriorate into old industrial areas.

Porter's Diamond Model

Porter did a four-year research on competitiveness in focusing on 10 nations during early 90's, the studies had shown many remarkable examples of the niche industries with the right valuable proposition to specific target market demands from the aggregation of a large number

of firms where by their own individual, they would not be able to stand up for the competition. The condition explained by Porter's Diamond model in which represents a relationship and the interaction of the strategy at the national level and the firm level into four driving factors as the "cluster".

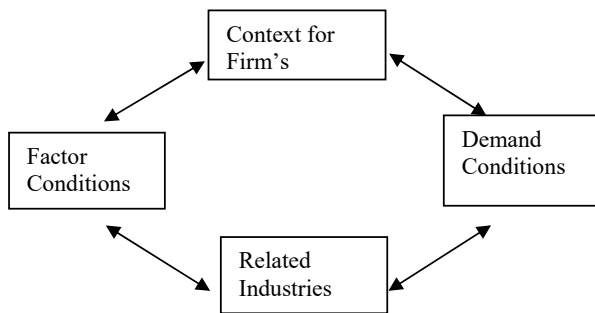


Fig 1.4: Diamond Model (Source: Clusters and Competition, Porter-2008)

Porter's diamond model suggests that there are inherent reasons why some nations, and industries within nations, are more competitive than others on a global scale. The argument is that the national home base of an organization provides organizations with specific factors, which will potentially create competitive advantages on a global scale. By using Porter's diamond, business leaders may analyze which competitive factors may reside in their company's home country, and which of these factors may be exploited to gain global competitive advantages. Business leaders can also use the Porter's diamond model during a phase of internationalization, in which leaders may use the model to analyze whether or not the home market factors support the process of internationalization, and whether or not the conditions found in the home country are able to create competitive advantages on a global scale.

Finally, business leaders may use this model to assess in which countries to invest and to assess which countries are most likely to be able to sustain growth and development.

Pillars of Competitiveness

According to World Economic Forum (2009-2010) In line with the well-known economic theory of stages of development, the GCI assumes that, in the first stage, the economy is *factor-driven* and countries compete based on their factor endowments: primarily unskilled labor and natural

resources.²⁰ Companies compete on the basis of price and sell basic products or commodities, with their low productivity reflected in low wages.

As a country becomes more competitive, productivity will increase and wages will rise with advancing development. Countries will then move into the *efficiency-driven* stage of development, when they must begin to develop more efficient production processes and increase product quality because wages have risen and they cannot increase prices. At this point, competitiveness is increasingly driven by higher education and training.

Finally, as countries move into the *innovation-driven* stage, wages will have risen by so much that they are able to sustain those higher wages and the associated standard of living only if their businesses are able to compete with new and unique products.

3. Research Methodology

Research Type

This research study employs quantitative and qualitative approaches for the research. The quantitative method consists of the systematic empirical studies which involves quantifying through the assistance of mathematics and statistics. Whereas qualitative method is studying things in their natural settings, attempting to make sense of, or to interpret, phenomena in terms of the meanings people bring to them. Qualitative researchers are interested in understanding what those interpretations are at a particular point in time and in particular context (Sharan: 2002).

Researcher uses the mix method approach to shed lights on the cooperation between firms and its effects of the on the competitiveness of the cluster. Another important value was cooperation and collaboration between companies and stakeholder, as it is an essential element in a cluster. Two types of data have been used in the assessment:

1. Interviews with players selected from all sectors of the cluster. (Companies, Education, Government as well as NGO's)
2. Questionnaire distributed to the member companies in the cluster.

Data collection has been done on the basis of factors which effects competitiveness based

on Porter’s diamond model, with an emphasis on cooperation.

Population and study sample

There are around 240 Ceramic firms in the Ceramic Industry in Lampang, being comprised of Medium, small and very small enterprises. Tableware firms are the most in number around 104 of them, and are immensely engaged in export industry (Source: Lampang Ceramic Association, 2013). Researcher concentrates on the tableware firms in the ceramic industry, so as the data collection will be easier and viable.

Lampang ceramic industry is comprised of numerous SME’s, hence quantitative or qualitative analysis alone will not give a clear view and proper understanding of the data and come to a proper conclusion. In order to understand the cluster cooperation and its effects to competitiveness of a region, this research employed a combined method, which includes both quantitative and qualitative, which is also known as mix method approach. The sample size for the above paper was the 104 tableware firms.

Method of Data collection

Quantitative data were collected through questionnaires with Likert rating scale, based on 5 scales of (1) strongly disagree, (2) disagree, neutral, agree and strongly agree. Questionnaires were distributed through email to 104 table ware firms. There was lack of communication as most of the firms spoke Thai Language and hence, the researcher took assistance of the local Thai teacher, teaching English as second Language in a vocational college

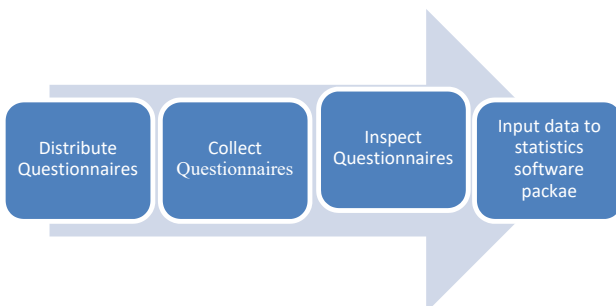


Fig 1.4: Quantitative analysis Process design

Sample size for the qualitative research interviews were chosen by snowball technique in total 20 interviews were conducted to find variable framework with different groups of interviewees ranging from firms, related industries and government bodies. Sample size for the quantitative analysis were all the 104 table ware firms given by the Lampang Ceramic Association and confirmed with Department of Industrial Promotion, Thailand.

Table 1.1 Summary of respondents in interviews

Groups	Occupation/ Industry	Number
(A) Related Industries	High ranking officials	4
(B) Cluster firms	Entrepreneur and senior officials	12
(C) Education Institutes	Presidents and Deans	4

Researcher uses the triangulation method to shed lights on the cooperation between firms and its effects of the on the competitiveness of the cluster. Another important value was cooperation and collaboration between companies and stakeholder, as it is an essential element in a cluster. Two types of data have been used in the assessment:

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- Questionnaire distributed to the member companies in the cluster.

Data collection has been done on the basis of factors which effects competitiveness based on Porter’s diamond model, with an emphasis on cooperation.

Research Tool

All the received data were input into statistical analysis software, along with the variables.

Followings are the statistical tools utilized in analyzing and interpreting the data collected:

a. Percentage

Percentage is the ratio of a part of the whole multiplied by a hundred. The respondents’ answers were analyzed and interpreted using percentage. It gives a clear view as how much percentage of respondents agreed or disagreed on a questionnaire.

b. Frequency Distribution

Frequency shows the amount of respondents' who agreed or disagreed to a given variables, it shows the quantity part which gives a view about the respondents behavior.

c. Correlation

The correlation procedure is used to find the relationships between the variables used to determine the competitiveness of Ceramic Industry. For each combination of variables, the Pearson Product-Moment Coefficient of Correlation is computed. This correlation coefficient, commonly called r , measures the linear correlation between two variables. Thus $r = 0$ implies no linear correlation between two variables.

4. Result

Data Findings using Research tools

Relationship between Productivity, firms cooperation, labour and innovation in Lamphang Ceramic cluster.

	Cooperation	Labour	Innovation	Productivity
Cooperation	1	.050	.164	.303**
Labour	.342	1	.148	.169
Innovation	.050	.110	1	.238*
Productivity	.342	.169	.238*	1

** . Correlation is significant at the 0.01 level (1-tailed).

Fig 1.5: Statistical data of Research Variables.

Correlation Analysis

Relationship between Productivity, firms, cooperation, labour and innovation in Lamphang Ceramic cluster:

- Cooperation is significantly related to Productivity with a relation of 0.303 at the level of significance of 0.01. Cooperation is related to Productivity as the firms have low trust, cooperation between each other and hence they cannot tap the benefit of clustering such as economies of scale, which has lowered their productivity.
- Labour related to cooperation with a weak positive relation of .169 at the level of

significance of 0.01.

The cluster firms see low cost labour as a competitive advantage and take less interest in providing adequate training or facilities. Moreover, lack of institutions and training school does not help either. Hence, the labour is less productive.

- Innovation related to cooperation with a positive relation of .238 at the level of significance of 0.01.

Cluster firms being SME's lack adequate finance and hence they don't invest in innovation of process, product and design. Barring a few major player Ceramic firms highly depend on government assistance for development of product.

	Govt.	Related industry	Productivity	Competitiveness
Innovation	1	-.093	.092	.027
Related industry	.221	1	.121	.117
Productivity	.092	.121	1	.281**
Competitiveness	.225	.158	.092	1

** . Correlation is significant at the 0.01 level (1-tailed).

Fig 4.2: Statistical data of Research Variables.

- Innovation related to cooperation with a positive relation of .027 at the level of significance of 0.01.

The cooperation between ceramic producing firms and other related firms is quite low in the cluster as most of the ceramic firms are more or less family business and they use traditional ways to conduct their business.

- Related Industries is significantly related to Competitiveness with a weak relation of .117 at the level of significance of 0.01

The relationship between Related Industries and Competitiveness is weak as there are less numbers of quality suppliers and related business providers in the cluster. Moreover, the ties with research institution is not so good.

- c. Productivity is significantly related to Competitiveness with a weak relation of 0.281 at the level of significance of 0.01. The relationship between Productivity and Competitiveness is positive because the firms have been more productive after the formation of the cluster, but still it is weak due to use of old technology in production.
- d. Labour related to cooperation with a weak positive relation of .109 at the level of significance of 0.01. Quality of labour is not upto the industry standard which hampers the competitiveness of the clusters. Lack of training and low cooperation between actors of the clusters are the major reason for the low productivity of labour.

Qualitative Analysis

1. Trust, faith and cooperation between firms in the Lampang Ceramic Cluster:

Most of the respondent agreed that there is lack of trust and faith between the firms in the cluster, although most of them are part of the Ceramic Cluster Association. As one of the respondent who owns a large manufacturing firm, "We do not co-operate with firms in the cluster, because we have no time to look after other parties. We do not share information on orders with other producers. If we share information there is much chance of losing our orders to our competitors" During the research it was found that one of the main reason for the lack of cooperation, trust and faith is that most of the firms are owned by family members and they had rivalry between each other for many decades, they prefer to keep their business dealings secret in fear of losing clients to their competitors. "Ceramic firms work in closed group and share very little knowledge, sometimes it is not easy to get information from them as they fear to lose data on sales, production and labour to their competitors", confirmed by one of the government officials in the Lampang region".

During the research it was found that there were some small grouping between some firms and one of the main reason was to have competitive advantage over their competitor. One of the respondent informed, "I share some information with my close friends in the industry, three of four people. But I generally do not share secrets and it just shared with in our family members".

Respondent with academic background informed that, "Half of the problems of the ceramic cluster is due to the lack of trust and faith between the firms, although they have cluster and also formed ceramic association. Every manufacturer is same, they want to find solution to their problem by themselves, not try to cooperate. This needs to be changed or the cluster will be dead soon".

2. What is ailing the Ceramic Industry in Lampang?

All of the respondent agreed that the economic slowdown has had a big impact on the ceramic firms in the cluster and they have been hit hard. Lack of long term strategy and capital is one of the main reason for the problem as informed by the respondents.

"We are going through a tough time, economic slowdown along with weak government has hit us hard, and we have low orders from Japan and European countries. Some of my friends had to close their business as they could not bear overhead costs", respondent who owns a famous ceramic firm. There were respondents who felt that economic slowdown along with growing cost has signaled that the Ceramic industry is in a path of slowdown and will see extinction similar on the path of Japanese ceramic industry.

"Every business has cycle, and I think our industry is going on the path to extinct in a period of 10 or 20 years, Lampang will no longer be known for the ceramic industries. It is just a matter how long we can survive, as we cannot compete and we do not have capability to similar to China and our cost are going up comparably", respondent answered.

Some of the respondent other than belonging to the manufacturing firms believed that the ceramic firms need long term strategy to survive economic slowdowns and other external economic factors which affects, they viewed the firms have to be more positive. Most of the respondent informed that labour output is less as most of the labour are unskilled with less education. They informed that the ceramic industries attracts mostly casual workers who work on daily wage basis and have little motivation to work or acquire traits of the job. Most of the highly qualified labour prefer in other industry as ceramic firms did not enjoy the goodwill of the population.

3. What can assist the cluster to be competitive?

Most of the respondents informed that innovation, and assistance from the government can assist the cluster to be competitive. Innovation in design is seen as a key factor which can ensure the ceramic industry can survive. Most of the respondent viewed that the cost of production was high as due to usage of old technology and the firms lack capital to be invested in acquiring new technology.

“Ceramic firms use outdated technology which is not only harmful for the employees creating bad work environment, but it also ensures that the productivity remains less. Innovation should not only be limited to design or product but also to the process which would create a better working environment and hence attract skilled labour”, as viewed by the dean of Business Faculty in a college in Lampang.

Respondent informed that government can play a key role in assisting the firms to be more productive by right kind of policies encouraging the firms gain competitiveness.

“Government need to have some good policy for us. Government has implemented 300 Baht wage/ day. It will surely kill us, you can see around most of the firms are closing. We are dependent on low cost labour, if the labour is expensive how can we survive? Government has to provide us with financial assistance to assist us to employ technologies to increase our production”.

5. Conclusion

Quantitative Analysis

Competitiveness of SME firm in cluster is positively affected by numerous factors in the business environment. Competitiveness is based on productivity, and productivity is based on the ability of firms to use their available resources. SME's lack capital and expertise to use the available resources and could benefit from clustering if they have proper cooperation between each and share knowledge and enhance their productivity through innovation and transforming their labours from unskilled to skilled. Government act as a catalyst with favourable policies to support the clusters and the SME's.

Hence, through our quantitative analysis we found that all our hypothesis were accepted and the variables had weak or moderate positive relationship when statistically tested on Descriptive and Correlation statistics.

Qualitative Analysis: Respondents viewpoint

Most of the respondent informed that researcher that the ceramic cluster and the firms in the cluster are going through a hard phase due to many factors, which has lack of competitiveness and it is effecting the region, whereby people losing their jobs.

Below are the research questions which were analyzed along with their qualitative finding:

1. From the view point of the respondent on the firms' cooperation in the cluster we can conclude that there was very little or no cooperation between firms. Moreover, most of the firms lack trust and faith, they don't have positive vibes. SME's firms in Lampang in Ceramic cluster are owned by family members and they look at each other as competitor. Many of the ceramic firms are the members of the Ceramic association but they don't share problems they try to solve on their own. They are more like bitter rivals rather than partners.

This causes weakness in the competitiveness of the cluster as the SME's lack expertise and knowledge, but still do not cooperate for their problems in the Lampang Ceramic Cluster.

2. Firms do not invest in new technologies and invest in new process, design. Hence, these firms attract low cost labour who are unskilled and less productive. Newly graduated students from college and institutes do not chose to work in the ceramic firms as due to the work environment and less pay.

From the respondent point of view design flaw was a major problem and many orders go cancelled, which can be attributed to the usage of old technology.

3. Most of the respondent agreed that government has to work as a catalyst and form better policies to support the ceramic cluster. This is to support the Ceramic cluster to move on the path of innovation on process, product as well as design.
4. From the respondent point of view ceramic firms have to know the importance of educational institutions and have better cooperation with them, to hire skilled staff passing out as well as make specialized courses in ceramic industry.

- Ceramic cluster have to generate goodwill in the society was well talked by the respondent and they felt that ceramic firms have lost the touch with the local population.

Recommendations of this study

Recommendation that came to light after the research are followings:

1. Create shared value: Porter (2011), Solution lies in the principle of shared value, which involves creating economic value in a way that also created value for society by addressing its needs and challenges. Ceramic firms and cluster should focus on creating a shared value by encouraging cooperation, trust and faith between each other along with the community. This will build up good will in the community.
2. Encourage Cooperation between firms (Large and Small): There should be meetings between the firms in the ceramic cluster and the meetings should be on discussing on strategy, objective and goals of the cluster. Emphasis should be laid on trust, faith and cooperation between the firms in the cluster. If the Ceramic firms lack cooperation, trust and faith, cluster initiative of the firms make no sense.
3. Educational institutes and research institutes: Ceramic cluster should encourage students to take up some projects in the ceramic industry. Ceramic cluster should provide some scholarship programs and encourage institution to have some vocational courses focused on the ceramic industry similar to the automotive industry.
4. Knowledge Management: Emphasis should be laid on Knowledge Management and use of technology, to transfer knowledge between the firms should not be limited to firms in the ceramic cluster. Technical experts on knowledge management from educational institutions as well as industry should be invited or hired for the project.
5. Customer management cell: Ceramic cluster should have customer management cell with employees who can provide good customer support and also proficient in many language of the countries which attracts most business. As this will reduce the margin of error while taking order or

discussing design or simply giving customer services.

6. Involvement of stake holders: There is more involvement between the actors of the cluster which should not be limited to the ceramic firms. Other institutions or bodies which plays a role in the competitiveness of the cluster like financial institution, educational institutions, government organization and other related industries can help the cluster to become more competitive.

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Feasibility Study on Integrated Solar Water Heater Case study of Hotel Business Building

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Abstract

The use of solar energy for hot water production of hotel buildings. There is a cost problem with expensive equipment. As a result, payback is slower than other types of technology. So, if the solar water heater is combined with waste heat, it will be used to produce hot water in combination with solar energy. It will make the system stable to produce hot water with more economic returns. However, the selection of integrated solar water heater for hotel buildings is important to study the size of the system. Both technical and economic returns. In order for the system design to support the production of adequate hot water for the guests staying. It also provides a good return on the economy. By studying the feasibility of this research, we have studied the design of Integrated Solar Water Heater with the combination of sample hotels in the special administrative region of Pattaya in Chonburi province which has a heavy industry service business. According to studies, it has been found that the solar water heater system with the appropriate blend of sample hotels is a 50% system design by installing a 100m² together with 18 kW Heat Pump, one unit produces 13,790 liters of hot water per day, 6,892 liters / day of hot water and 6,898 liters of hot water per day. Using initial investment of 2,000,000 baht, annual cost of 17,867 baht/year is maintenance and maintenance fee. With a financial return of 10.0% and a payback period of 4.99 years, the benefits throughout the 15-year life of the project are valued at 5,831,329 baht, including solar energy benefits of 2,823,114 baht, waste heat benefits of 2,936,215 baht, and benefits from Reduce CO₂ emissions of 72,000 baht

Keywords : Integrated Solar Water Heater, Economic return

1. Introduction

Hotel industry needs energy to produce high volume of hot water for washing or cooking purposes. Hot water used in hotels can generally be produced by burning fossil fuels as a heat source or by direct electric heating. But with the ongoing cost of energy costs rising steadily and most of the environmental problems that arise from the process of production and use of energy. It is the driving force behind the idea of using renewable energy to produce heat, including solar energy. This is a free, clean and used energy that never goes away. Although the use of solar-powered technology also requires a high investment. But with the zero solar cost. There is no variation in fuel costs. Because

even with more use, the price of solar is not going up. Unlike costing fossil fuels or biomass and making it an advantage of solar power.

Solar energy can produce hot water using Solar collectors, whose active sun collectors currently have a thermal efficiency of between 40-60 %.

Which depends on the operating temperature. However, due to the use of solar energy, there is a barrier to technological capital. And expensive equipment. And have a shorter working hours than other types of energy. As a result, payback is slower than other types of technology.

So one approach that can help overcome this problem is finding another source of energy to

help produce hot water. Because there are a lot of waste in the hotel business. This may come from the cooling system of the air conditioning system and the freezer, as well as the heat from the cooling system, Flue exhaust gas for boiler.

Therefore, if these energy sources can be used to produce hot water combined with solar energy. It will make the system more stable to produce more hot water. In the absence of sunlight, the hot water system is also able to work with the waste heat. The system also contributes to the air conditioning system, freezer or boiler. More effective in the economics of investment, hybrid water production systems will have shorter payback periods and are more suitable for investment. In addition, the use of solar hot water combined with waste heat also enhances the hotel image in terms of promoting clean energy use, reducing pollution, and supporting policies and plans to promote alternative energy use in the sector.

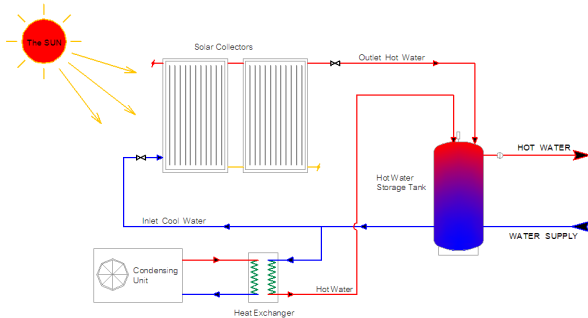


Figure 1 Integrated Solar Water Heater

So this research it focuses on the feasibility study on the design of solar water heater with integrated system for hotel building. Selected hotels in the Special Administrative Region is Pattaya which has a heavy industry service business. By this feasibility study, we will consider adopting solar collector technology to produce hot water, along with the use of waste heat. The technology used to heat the waste from the Heat Pump because most hotels that use Heat Pump has the potential to bring waste heat from the system to use it.

2. Purpose

Feasibility Study of Solar Water Heater Design with Integrated System for Energy Saving in Hotel Industry.

3. Research Methodology

A hotel in Pattaya A 221-room hotel with a high building style. Average year-round occupancy in 2019 is approximately 45.18%

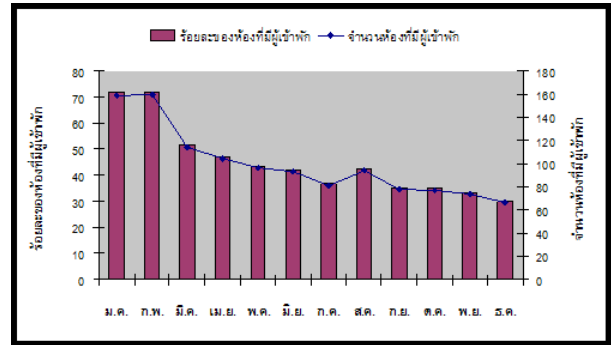


Figure 2 Hotel information

Currently, hot water is used to serve customers who stay in a 500 liter Hot Water Boiler. 3 LPG is used as fuel for hot water in guest rooms and laundry. The hot water temperature is around 60 °C and the system has been in use for many years and the hotel has a policy to improve the hot water production. To reduce the cost of producing hot water. Therefore, there are guidelines for the implementation of solar water heater with integrated system. It will use the sun together with the use of 18 kW Heat Pump is expected to be installed in the production of hot water. In the heat from the heat pump, the hotel will be used to blow the elevator. Reduce cooling from chiller to save energy.

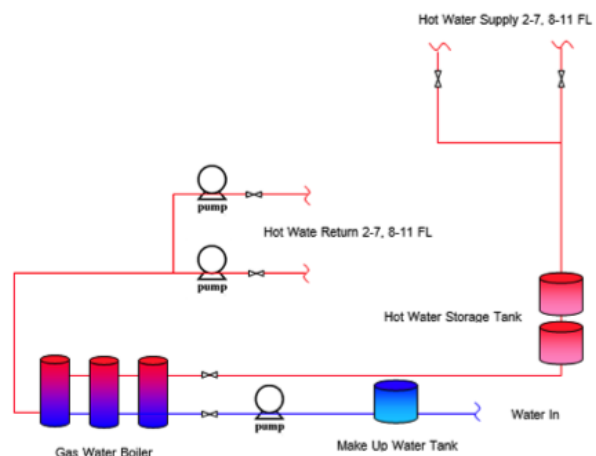


Figure 3 Schematic Diagram of hot water system for hotel building

To study the feasibility of designing solar water heater with integrated system. We will study

feasibility of the system. By studying the factors used to determine the system suited to the hot water demand of the hotel. In designing the size of the system. And the cost of investment and maintenance costs of the system, this will determine the system size. To cover the total hot water demand of the hotel each day. Think of system size at 100% and do more study. By simulating the size of the system. The smaller sizes are from 90%, 75%, 60%, 50%, 40%, 30% and 25%, respectively. The appropriate consideration of economic yields of each system. To find the value and suitability of the system. To use as a guideline for future real-time installation. For the feasibility study of solar water heater design with integrated system. The steps in the study are shown in Figure 4.

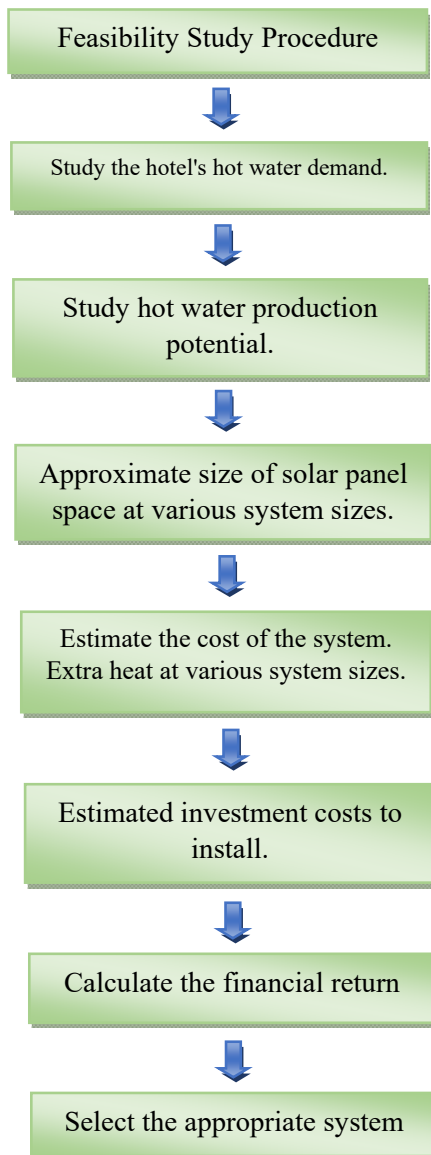


Figure 4 Feasibility Study Procedure

Equation used in the design of solar water heater with integrated system. The following design equations apply.

$$\eta_c = \frac{\dot{m} C_p \Delta T}{I_T A_c} \quad (1)$$

by

- η_c is The efficiency of the solar panel (%)
- \dot{m} is The flow rate of hot water (kg/s)
- C_p is The heat capacity (kJ/kg.°C)
- ΔT is The temperature (°C)
- I_T is Solar radiation (W/m²)
- A_c is The area of the solar panel (W/m²)

For calculation of financial return. The economic equilibrium can be derived from the following equation.

$$OTC_0 = \sum_{t=0}^n \frac{(NFS_t - FI_t)}{(1+FIRR)^t} \quad (2)$$

by

- N is the lifetime of the system (year)
- OTC_0 is the one-time cost when starting the project (Baht).
- NFS_t is the economical energy cost deduction with increasing costs in year t (Baht)
- FI_t is the investment cost at year t (Baht)
- $FIRR$ is the internal rate of return of Investment (%)

The assumptions used to calculate the financial return are as follows.

- LPG price = 18.65 baht/kg
- Discount Rate = 7.75%
- 15 year Operation Time
- The amount of CO₂ emission from the combustion of the LPG = 0.00143 ton/liter
- CO₂ sales price = 10 US\$/ton
- exchange rate 1 US\$ = 30 baht
- Boiler efficiency = 70%
- solar panel efficiency = 50%
- The cost per square meter of the solar panel.
= 12,000 baht/m²

4. Results and discussion

Based on the data in Table 1, the data on the hot water demand of the hotel by calculating the number of rooms relative to the hot water requirement of guest rooms each day. Also

evaluated with the highest occupancy of guests during the study period. By setting the temperature of the hot water produced at 60 °C, calculated that daily hot water demand is 27,509 liters/day

Table 1 Hotel hot water demand

Table 1 estimates the amount of hot water demand for hotels.		
Number of rooms	221	Room
Total hot water per room	150	Liter/roomDay
Feed water temperature	25	C
Hot water temperature	60	C
Total amount of hot water per day	33,150	Liter/roomDay
waste with the circulate system accounted for 15%	4,973	Liter/Day
Total hot water consumption (100%)	38,123	Liter/Day
%Occupancy average	72.16	%
Total hot water consumption (100%)	27,509	Liter/Day

The information in Table 2 is a study of the hot water produced by the Heat Pump. The project will be installed with one Heat Pump 18 kW_{th}, which produces hot water at 60 °C can produce hot water 6,898 liters/day.

Table 2 Production of Hot Water from Heat Pump

Table 2 Hot Water for Heat Pump		
Heat Pump	18,000	W
Number	1	
Hourly production of hot water per day LF ~60-65%	16	
The amount of heat used to produce hot water.	1,010,880,000	J
The amount of heat used to produce hot water.	1,010,880	kJ
hot water.	6,898	/

Table 3 provides information on the production of solar hot water. It is divided into 100% system size and further study by reducing the size of the system. Descending by design, the system at 100% is equal to the total hot water demand of the hotel. However, the design assumes that the hot water produced by the heat pump is constant, and that the solar panel size is changed to allow the amount of hot water produced to fluctuate according to the size of the hot water demand of the system.

Table 3 Production of solar hot water

Table 3 Solar Water Heater Kit At different hot water consumption							
Percentage of hot water requirement	100%	90%	75%	60%	50%	40%	25%
Hot water consumption	27,509	24,758	20,632	16,505	13,755	11,004	8,253
The amount of hot water produced from Heat Pump			6,898				
The amount of hot water required from Collector	20,611	17,860	13,734	9,607	6,856	4,106	1,355
Heat energy produced from Collector	3,020,426	2,617,296	2,012,620	1,407,904	1,004,773	601,643	198,512
Efficiency of Solar Collector			50				
Average amount of sun radiation throughout the year			20.12				
The size of the solar radiation receiver area.	301	261	201	140	100	60	20
							0 m ²

From the system design. Produces hot water with various combinations, it also found that there is hot water some time is not enough to meet the needs. Until more heat is needed. Therefore, the hot water production data from the supplementary heating system was studied as shown in Table 4 and Figure 5

Table 4 The cost of producing hot water from auxiliary heating system.

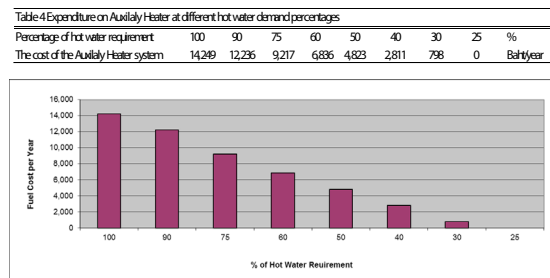


Figure 5 The cost of producing hot water from auxiliary heating system.

Table 5 shows the cost of solar water heating system investment. It details the initial costs of the hot water system, both in the solar system and in the heat pump system, as well as the annual cost over the lifetime of the service. Both energy costs and maintenance costs, it also shows the details of the response, rather than the use of solar water heater systems.

Table 5 Investment Costs for Integrated Solar Water Heater

Table 5 Investment Costs for Installing Integrated Water Heaters at Different Percentage of Hot Water Requirements										
Percentage of hot water requirement	100	90	75	60	50	40	30	25	%	
The area of the collector to be installed	301	261	201	140	100	60	20	0		m ²
1) Investment										
1.1) Solar System										
Collector System	3,612,000	3,152,000	2,412,000	1,680,000	1,200,000	720,000	240,000	-		Baht
Hot Water Tank	900,000	800,000	600,000	700,000	500,000	500,000	300,000	300,000		Baht
Investment for Solar Water Heater	4,512,000	3,952,000	3,012,000	2,380,000	1,700,000	1,220,000	540,000	300,000		Baht
1.2) Waste Heat System										
Heat Pump	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000		Baht
Investment for Waste Heat System	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000		Baht
SUM	4,812,000	4,252,000	3,312,000	2,680,000	2,000,000	1,520,000	840,000	600,000		Baht
2) Annual cost (Lifetime)										
Energy cost for auxiliary heating system lifetime	213,737	181,945	138,257	102,548	72,351	42,159	11,966	-		Baht
Maintenance costs throughout the service life	689,800	602,800	464,800	370,000	269,000	156,000	94,000	58,000		Baht
SUM	5,715,537	5,016,346	3,915,057	3,152,548	2,340,351	1,728,159	945,966	658,000		Baht
3) Benefit										
Collector Benefit	565,124	490,723	377,022	263,609	188,208	112,807	37,405	0		Baht/Year
Waste Heat Benefit	195,748	195,748	195,748	195,748	195,748	195,748	195,748	195,748		Baht/Year
CO ₂ Benefit	9,300	8,400	6,900	5,700	4,800	3,600	2,700	2,400		Baht/Year
SUM	771,172	694,871	580,220	465,056	388,755	312,154	258,853	198,148		Baht/Year

Figure 6 is a summary of the economic returns in the form of FIRR values of solar hot water production system with the system integration in the size of the system. In the case of the sample hotel, the FIRR values will vary with size of a larger system.

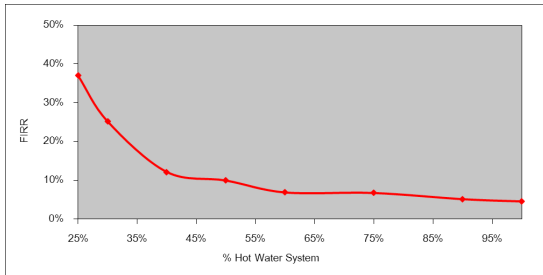


Figure 6 FIRR values of various types of hot water systems

Based on analysis to determine the suitability of hot water volume used. In conjunction with the consideration of the payback period and the economic return, it was found that Design of solar hot water production system with 25% system size has the highest FIRR of 37%, which in terms of return only I find its very interesting. However it is also important to consider the need for hot water versus the percentage of customers that consist of Consequently, the study design system suited to the hot water demand of the sample hotel. It is used where the percentage of hot water demand is close to the average of the percentage of customer occupancy is 50% is the most appropriate consideration.

The results of the study found that, the combined hot water production system suitable for the sample hotel is designed to be 50% of the system size. It is equipped with a solar collector of 100 square meters and a heat pump of 18 kW, which produces 13,790 liters of hot water per day. Day was 6,892 liters / day of hot water produced from 6,898 liters of solar water and 6,898 liters of hot water produced per day.

Using initial investment of 2,000,000 baht, annual cost of 17,867 baht/year is maintenance and maintenance fee. With a financial return of 10.0% and a payback period of 4.99 years, the benefits throughout the 15-year life of the project are valued at 5,831,329 baht, including solar energy benefits of 2,823,114 baht, waste heat benefits of 2,936,215 baht, and benefits from Reduce CO₂ emissions of 72,000 baht

5. Conclusions

To consider adopting integrated solar water heating system for hotel building can be used to waste heat from various systems. In addition to the use of Heat Pump, such as heat from the steam or

air conditioning system to produce almost all hot water, in addition to reducing the cost of producing hot water. It also makes the economic return or FIRR of the system higher because there is no energy cost to recycle the waste heat, just like using a Heat Pump.

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Vortex Configuration in Mesoscopic Superconductors with sector defect

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Abstract

We present direct observations of vortex configurations in $\text{Mo}_{80}\text{Ge}_{20}$ plates using a scanning SQUID microscope. We figured out how vortices form symmetric configuration with increasing the magnetic field. We consider that a sector defect acts as an entrance for accommodating a vortex into a certain point of the sample. Moreover, vortices tend to form a symmetric configuration by sharing a mirror line with the sector defect

Keywords : Vortex states; Amorphous MoGe film; SQUID microscope

1. Introduction

Vortex distribution in mesoscopic superconductors of size comparable to coherence length ξ and/or penetration depth λ is considerable different from the bulk superconductor. It is expected to discover novel vortex states caused by interaction between vortices and boundary condition. The shield currents near the sample edge confine vortices in a small sample, and yield a geometry-induced configuration of vortices. Since the behaviour of such structures is strongly influenced by the boundary conditions, we expect that different sample geometries lead to different arrangements of vortices and will make certain vortex configurations more stable than other configurations of vortices. The vortex states appeared in a symmetric disk have been investigated both theoretically [1-3] and experimentally by Bitter decoration technique [4-5] and by scanning SQUID microscopy [6-8]. It is known that the vortex arrangement is primarily specified by the influence of the symmetric boundary condition. Most of studies have focused on vortex states of perfectly symmetrical disk to date. It might be

more interesting to introduce a sort of asymmetry or a defect in the small plate. Vortex configuration should be strongly modified by the presence of a deficit.

We try to explain the vortex phenomena upon applying the magnetic field after zero-field cooling. By conducting systematic measurements, we figured out how vortices form symmetric configuration when the measurements are conducted at the various different magnetic fields. This is the reason why we consider that the presence of sector defect would affect the vortex profile remarkably. In this work, we present our experimental studies of by means of the scanning SQUID microscope.

2. Experimental

The circular $\text{Mo}_{80}\text{Ge}_{20}$ plates with a sector defect was fabricated by a standard lithographic method. Patterned-resist film on silicon substrate was prepared by an electron beam lithography (ELS-7500EX, Elionix) and a $\text{Mo}_{80}\text{Ge}_{20}$ thin film with thickness of 67 nm was deposited on the top by a DC sputtering apparatus. By immersing the sample in organic solvent, we obtained many $\text{Mo}_{80}\text{Ge}_{20}$

plates separated by a distance between neighboring patterns about 120 μm in order to avoid mutual interactions among neighboring vortices. Finally, a 100 nm SiO thin film was coated on top of the sample as a protective layer during SSM scanning. The material parameters are presented in recent studies [6] [7] [8], and the effective penetration depth $\Lambda_{\text{eff}}(0)$ is estimated as 10 μm . By normalizing the sample size, we found that radius of our sample $R \sim 3\text{-}4.5 \Lambda_{\text{eff}}(0)$, indicating that our samples can be classified as *de fact* mesoscopic plates. In our studies, we present direct observations of vortex configurations in $\text{Mo}_{80}\text{Ge}_{20}$ plates using a scanning SQUID microscope. We figured out how vortices form symmetric configuration with increasing the magnetic field.

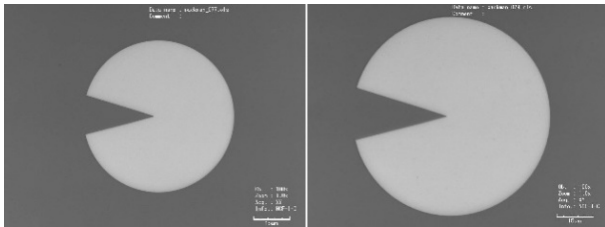


Figure 1. Photograph of a Pacman plate prepared by an EB lithography and a lift-off technique. (a) The diameter of 65- μm and the thickness of 67 nm. (a) The diameter of 85- μm and the thickness of 67 nm

3. Results and discussion

We employ the explanation on the basis of weak pinning in our samples. In other words, we assume that the equilibrium configuration in the $\text{Mo}_{80}\text{Ge}_{20}$ Pacman plate is independent of trajectory of temperature and magnetic field. Figure 2 shows vortex images of circular $\text{Mo}_{80}\text{Ge}_{20}$ plate of 65- μm diameter observed by the scanning SQUID microscope in various different magnetic fields. Vortex configuration evolves upon increasing the magnetic field as follows: After the Meissner state ($L=0$), a single vortex penetrates into the sample and stays on a bisector line of a sector deficit ($L=1$, Fig.1.a), we propose the idea that a vortex enters a superconducting disk through the defect due to a lowered energy barrier at the deficit boundary [10]; Upon geometric confinement, vortices tend to adapt their positions to have a single symmetric axis of the sample. In Fig. 2(a), for example, two vortices are symmetrically located by sharing a half space of the disk ($L=2$). For vorticity of $L=3$ (Fig.

2(c)), one vortex stays on the line of symmetry while two vortices are separated with each other by the symmetric line. With increasing the magnetic field, four vortices ($L=4$, Fig. 2(d)) do not form a square pattern in a different manner compared to a perfect circular disk [6], but they still have mirror reflection symmetry with respect to the bisector axis. Consequently, we found that one vortex is lied on the bisector line while others are separated by the line of symmetry in the case of vorticity of $L=5$ (Fig. 2(e)). Two-shell structure is not clearly observed for vorticity of $L=6$ (Fig. 2(f)) due to the limitation of the plate size and to the frustration.

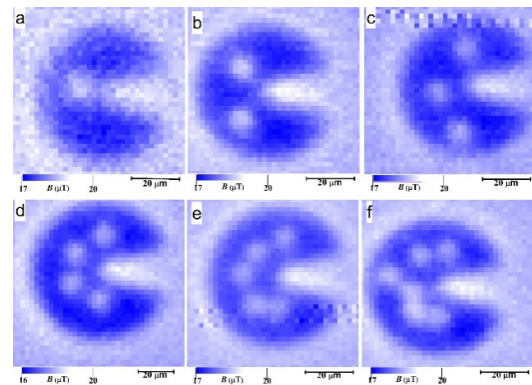


Figure 2. Vortex states of 65- μm $\text{Mo}_{80}\text{Ge}_{20}$ Pacman plate observed by SSM at 4 K in the several different magnetic fields: (a) 40 mG, (b) 65 mG, (c) 75 mG, (d) 95 mG, (e) 115 mG, and (f) 125 mG.

The larger sample of diameter 85 μm as prepared (Fig. 1(b)) for investigating the profiles of shell configurations further. For lower vorticity L from 1 to 5, the vortex configuration shares common features in both small-sized and large-sized samples (see Fig. 1). Therefore, vortex distribution in the 85- μm sample with low vorticity is not presented in this paper. Figure 3 shows the several vortex states of $\text{Mo}_{80}\text{Ge}_{20}$ plate of 85- μm diameter with the vorticity $L=6\text{-}8$. There is the competition of single shell and two-shell structures in vortex states for the vorticity of $L=6$ (Fig. 3(a)). We consider that shell configuration is strongly modified by the presence of a sector defect. When the number of vortices is odd in the outer shell, the symmetric configuration is not formed perfectly. We found the mirror symmetry in vortex states ($L=7$, Fig. 3(b)), where one vortex is aligned on the central axis while others are symmetrically located in each half

area of the sample. When one vortex is added in the outer shell to form configuration ($L=(1,7)$, Fig. 3(c)), this state seems to be not stable. Actually, we obtained a different pattern by repeating the independent scanning (see Fig. 3(d)), i.e., there are two vortices in the inner shell as $L=(2,6)$, in marked contrast to the known filling rule in the case of the perfect circular disk [6]. We explain, by taking into account the formation of symmetric configuration, that four vortices are separated each other with respect to a mirror symmetry axis of the sample (Fig. 4(d)).

4. Conclusion

In conclusion, the vortex distribution in superconducting $\text{Mo}_{80}\text{Ge}_{20}$ disks with deficit has been systematically investigated by using the scanning SQUID microscope. Upon the increase of the magnetic field, the vortex penetration into the sample tends to adapt their position regarding to a mirror symmetry line of the disk. We conclude that the vortex configuration is strongly modified from that of the perfect circle by introducing the sector deficit. Our preliminary results suggest the existence of generalized rule in filling vortices in the circle with a sector defect. It would be very interesting to compare the results with the studies reported on perfect circular disks [6,7].

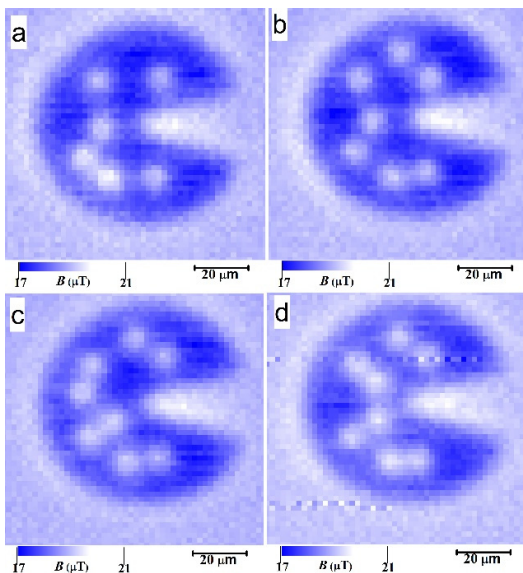


Figure 4. Vortex states of 85- μm $\text{Mo}_{80}\text{Ge}_{20}$ Pacman plate observed by SSM at 4 K in the several different magnetic fields: (a) 60 mG, (b) 65 mG, (c) 70 mG, (d) 70 mG.

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Derivatives and Products of Forman's Combinatorial Differential Forms of Degrees 0 and 1

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Abstract

In combinatorial topology, a theory of combinatorial differential forms was constructed by Robin Forman in 2002. In this article we study the combinatorial differential 0-forms and 1-forms in this theory. Namely, we study derivatives, closedness, exactness, and products of 0-forms and 1-forms, by using notions in combinatorial topology, in analogy to differential topology. We obtain that a zero form on a connected simplicial complex is closed if and only if it is constant. We give an example of a closed but not exact 1-form on a non-simply connected domain. On the other hand we have that any closed 1-form on a simplex is exact. There is an example showing that the product of forms proposed by Forman is not anti-commutative.

Keywords : combinatorial differential form, exactness, exterior product, anti-commutativity

1. Introduction

In differential topology, there is a developed theory of smooth differential forms on smooth manifolds ([5, 6]). This theory serves a rigorous and systematic way to operate on differentials and to do integration on general domains. A major result is that the de Rham cohomology constructed in this theory is isomorphic to the singular cohomology, relating differential forms to the topology of the domain.

Robin Forman in the paper [2] published in 2002 introduced a theory of combinatorial differential forms on cell complexes. This is a combinatorial analogy of the smooth theory mentioned above. Forman gave a de Rham theorem analogous to the smooth case. This theory is part of a more extensive study by Forman and later by other authors on combinatorial differential topology, which has achieved results which mirror deep results in smooth topology and has found applications ([1, 3]). However Forman gave only a brief treatment of this theory of combinatorial differential forms and, to our knowledge, it has not been studied further.

In this article we present and discuss several properties on derivatives and products of Forman's combinatorial differential forms, mainly for 0-forms and 1-forms. We study closedness and exactness by using representations of these forms by real functions in Section 2, before taking a general description of forms using chain complexes to study product in Section 3.

Proposition 3 gives an example of a closed but not exact 1-form on a non-simply connected domain, analogous to the angular form in the smooth case. Theorem 2 gives a sufficient condition for closed 1-forms to be exact. Proposition 6 shows that the product of forms given by Forman does not satisfy anti-commutativity, in contrast to the smooth case.

2. Combinatorial forms of degrees 0 and 1

Forman gives part of his theory for regular cell complexes but in this article we will work only with finite simplicial complex, for simplicity as well as in order to stay in the combinatorial category. In particular we try to keep this section elementary and self-contained. For relevant notions the reader can further consult for example [4].

For an integer $n \geq 0$, an n -dimensional *simplex* is a subspace of a Euclidean space \mathbb{R}^m , $m \geq n$, which is the set of all convex linear combinations of $(n + 1)$ points in \mathbb{R}^m that do not belong to any n -dimensional hyperplane. The points are called the *vertices* of the simplex. For example, a 0-dimensional simplex is just a point. A 1-dimensional simplex is a straight segment, while a 2-dimensional simplex is a triangle.

We use the notation $v_0v_1\dots v_n$ for an unoriented simplex with the set of vertices $\{v_0, v_1, \dots, v_n\}$.

The convex linear combination of any subset of the set of vertices of a simplex is called a *face* of the simplex. We write $\beta < \alpha$ to say that β is a face of a simplex $\alpha \in X$ not equal to α . For a 2-dimensional simplex (a triangle) its faces are the vertices, the edges, and the triangle itself.

An n -dimensional *simplicial complex* in \mathbb{R}^m is a finite collection X of simplexes in \mathbb{R}^m of dimensions at most n and at least one simplex is of dimension n and such that any face of an element of X is an element of X , and the intersection of any two elements of X is a common face.

The union of all elements of X is called its *underlying space*, denoted by $|X|$, a subspace of \mathbb{R}^m .

Let X be a finite simplicial complex. We denote $T^k(X) = \{(\alpha, \beta) \in X \times X \mid \beta < \alpha, \dim \beta = \dim \alpha - k\}$. In particular $T^0(X)$ can be identified with X .

In this section for simplicity we use the following ad-hoc definition for forms of degrees 0 and 1, following Forman [2]. Later in Section 3 we will give a general definition.

Definition 1. Let X be a finite simplicial complex.

1. A form of degree 0 on X is a map from $T^0(X)$ to \mathbb{R} .
2. A form of degree 1 on X is a map from $T^1(X)$ to \mathbb{R} .

The set of k -forms on X is denoted by $\Omega^k(X)$.

2.1 Derivatives of 0-forms

The following definition was given by Forman:

Definition 2. Let X be a finite simplicial complex. If $f \in \Omega^0(X)$, then we define its derivative as an element $df \in \Omega^1(X)$ defined as:

$$df: T^1(X) \rightarrow \mathbb{R} \quad (\alpha, \beta) \in f(\alpha) - f(\beta).$$

Here is a motivation for this definition. The derivative of a smooth 0-form is a measure of the rate of change of the function, therefore on simplicial complex the derivative of a function f should tell how the function changes.

As in the case of smooth forms, we say that a form is *closed* if its derivative is the form 0, and a form is *exact* if it is the derivative of a form.

Lemma 1. Let X be a connected finite simplicial complex. If $\alpha, \beta \in X$ then there is a finite sequence X_0, X_2, \dots, X_m of elements of X such that $X_0 = \alpha$, $X_m = \beta$, and $X_i \cap X_{i+1} \neq \emptyset$ for all i , $0 \leq i \leq m - 1$.

With this lemma we can prove the following result, which was stated without proof by Forman [2]. It is an analogy of a result for smooth forms:

Theorem 1. A zero form on a connected simplicial complex is closed if and only if it is constant.

2.2 Derivatives of 1-forms

On a simplex of dimension greater than 0, consider the relation on the collection of ordered sets of vertices of this simplex whereas two order sets of vertices are related if they differ by an even permutation. This is an equivalence relation. Each of the two equivalence classes is called an orientation of the simplex. If we choose an orientation, then the simplex is said to be oriented. We use the notation $[v_0, v_1, \dots, v_n]$ for an oriented simplex with the set of vertices $\{v_0, v_1, \dots, v_n\}$.

For example, a 1-dimensional simplex is a straight segment connecting two points. Choosing one point as the first point and the other point as

the second gives an orientation to this simplex. Intuitively, this means to give a direction to the straight segment. If the two vertices are labeled A and B , then an ordered pair $[A, B]$ gives an orientation for the simplex AB , while an ordered pair $[B, A]$ gives an oriented simplex with the opposite orientation.

Consider a 2-dimensional simplex as in **Figure 1**. Let A, B, C be the vertices. The oriented simplexes $[A, B, C]$, $[B, C, A]$, $[C, A, B]$ have the same orientations, opposite to the orientations of the oriented simplexes $[B, A, C]$, $[C, B, A]$, $[A, C, B]$.

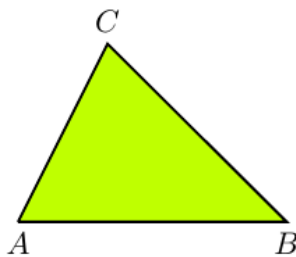


Figure 1

For oriented simplexes $\beta < \alpha$ and $\dim \beta = \dim \alpha - 1$, the $\text{sign}(\alpha, \beta)$ is defined based on whether the orientation of β is compatible with the orientation of α or not. Precisely if α is oriented as $[x_0, x_1, \dots, x_n]$ then a compatible orientation of a face of α is given by the orientation of $(-1)^i [x_0, \dots, \hat{x}_i, \dots, x_n]$, where a $-$ sign means opposite orientation, and the hat symbol over an item indicates that the item is omitted.

If $\gamma < \beta < \alpha$ with $\dim \gamma = \dim \beta - 1 = \dim \alpha - 2$ we define $\text{sign}(\alpha, \gamma, \beta) = \text{sign}(\alpha, \gamma)\text{sign}(\gamma, \beta)$.

Lemma 2. If $(\alpha, \beta) \in T^2(X)$ then there exist exactly two simplexes $\gamma_1, \gamma_2 \in X$ such that $\beta < \gamma_1, \gamma_2 < \alpha$, $\dim \gamma_1 = \dim \gamma_2 = \dim \beta + 1$. Furthermore $\text{sign}(\alpha, \gamma_1, \beta) = -\text{sign}(\alpha, \gamma_2, \beta)$.

Definition 3. If $\omega \in \Omega^1(X)$ then the derivative of ω is defined as a map $d\omega: T^2(X) \rightarrow \mathbb{R}$ such that for $(\alpha, \beta) \in T^2(X)$, $d\omega(\alpha, \beta) = \text{sign}(\alpha, \gamma_1, \beta)(\omega(\alpha, \gamma_1) + \omega(\gamma_1, \beta)) + \text{sign}(\alpha, \gamma_2, \beta)(\omega(\alpha, \gamma_2) + \omega(\gamma_2, \beta))$, where $\alpha > \gamma_1, \gamma_2 > \beta$.

Immediately we have:

Proposition 1. A 1-form ω is closed if and only if

$$\omega(\alpha, \gamma_1) + \omega(\gamma_1, \beta) = \omega(\alpha, \gamma_2) + \omega(\gamma_2, \beta)$$

for all $\beta < \gamma_1, \gamma_2 < \alpha$.

As a corollary we immediately obtain:

Proposition 2. For 1-forms, being exact implies being closed.

This is an analogy of a basic property of smooth forms.

2.3 A closed but not exact 1-form.

For smooth forms, there is a well-known angular form defined on the plane minus a point. This is a closed, but not exact 1-form. Its existence is due to the fact that its domain is not simply connected. For combinatorial forms we would like to see a similar example.

Let X be the simplicial complex consisting of the triangles $A_1A_2A_3$, $A_2A_4A_5$, $A_3A_5A_6$ in **Figure 2**. Clearly the underlying space is not simply-connected.

To give a closed 1-form ω on X , on the triangle $A_1A_2A_3$ we assign arbitrary values for $\omega(A_1A_2A_3, A_1A_2)$, $\omega(A_1A_2A_3, A_2A_3)$, $\omega(A_1A_2A_3, A_3A_1)$, $\omega(A_1A_2, A_1)$, $\omega(A_2A_3, A_2)$, $\omega(A_3A_1, A_3)$. By the condition for closed forms: $\omega(A_1A_2A_3, A_1A_2) + \omega(A_1A_2, A_1) = \omega(A_1A_2A_3, A_3A_1) + \omega(A_3A_1, A_1)$, thus $\omega(A_3A_1, A_1)$ is accordingly determined from initial data. Similarly $\omega(A_1A_2, A_2)$ and $\omega(A_2A_3, A_3)$ are accordingly determined. Assignments on the triangles $A_2A_4A_5$ and $A_3A_5A_6$ can be done similarly and are independent from the assignment on the triangle $A_1A_2A_3$. This may lead to a conflict at common vertices of the three triangles. Indeed we have:

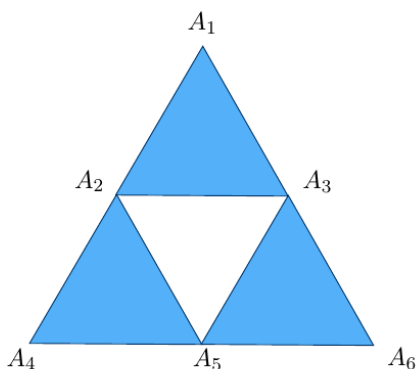


Figure 2

Proposition 3. There exists a 1-form on this simplicial complex which is closed but is not exact.

2.4 Closed 1-forms which are exact

In this subsection we state positive results on cases where a closed 1-form is exact.

In a simpler case as on a triangle, we can give a straight forward proof and construct the anti-derivative function, by “integrating”, as Forman put it, in a similar fashion to the smooth case.

Proposition 4. Any closed 1-form on a 2-dimensional simplex is exact.

More generally we can prove:

Theorem 2. Any closed 1-form on a simplex is exact.

3. Product of forms

Let X be a simplicial complex. For each integer n let $C_n(X)$ be the vector space over real numbers generated by all n -dimensional oriented simplexes in X modulo the relation that if σ and σ' are oriented simplexes with opposite orientations then $\sigma = -\sigma'$. Each element of $C_n(X)$, called an n -dimensional chain, is a finite sum of real multiples of n -dimensional oriented simplexes, i.e. of the form $\sum_{i=1}^m n_i \sigma_i$ where σ_i is an n -dimensional oriented simplex of X and $n_i \in \mathbb{R}$.

The vector space $C_n(X)$ is isomorphic to the vector space generated by the set of all n -simplexes of X , and does not depend on the orientations of simplexes.

For example consider the simplicial complex whose underlying space is the triangle in Figure 1, we have $X = \{[A, B, C], [A, B], [B, C], [C, A], A, B, C\}$, and $C_0(X) = \{n_0 A + n_1 B + n_2 C \mid n_0, n_1, n_2 \in \mathbb{R}\}$; $C_1(X) = \{n_0 [A, B] + n_1 [B, C] + n_2 [C, A] \mid n_0, n_1, n_2 \in \mathbb{R}\}$, where in the $C_1(X)$ there are relations $[B, A] = -[A, B]$, $[C, B] = -[B, C]$, $[A, C] = -[C, A]$; $C_2(X) = \{n_0 [A, B, C] \mid n_0 \in \mathbb{R}\}$, where in $C_2(X)$ there are relations such as $[A, B, C] = -[C, B, A] = [B, C, A]$.

Let $\sigma = [v_0, v_1, \dots, v_n]$ be an n -dimensional oriented simplex. Define the boundary of σ to be the following $(n-1)$ -dimensional chain, the alternating sum of the $(n-1)$ -dimensional faces of σ :

$$\partial_n \sigma = \sum_{i=0}^n (-1)^i [v_0, \dots, v_{i-1}, v_{i+1}, \dots, v_n].$$

This map is extended linearly to become a linear map from $C_n(X)$ to $C_{n-1}(X)$.

Continuing the example with Figure 1, we have $\partial_1([A, B]) = B - A$, $\partial_1([B, C]) = C - B$, $\partial_1([C, A]) = A - C$.

The following is the general definition of forms given by Forman:

Definition 4. A d -form is a linear map $\omega: C^*(X) \rightarrow C^*(X)$ such that for each i -dimensional oriented simplex c , $\omega(c)$ is a linear combination of $(i-d)$ -dimensional oriented simplexes which are faces of c .

Let us give $C^*(X)$ an inner product such that X is an orthonormal basis.

There is a bijection between 0-forms on X and maps from $T^0(X)$ to \mathbb{R} . Given a map $f: T^0(X) \rightarrow \mathbb{R}$ let

$$\omega: C^*(X) \rightarrow C^*(X) \quad \alpha \rightarrow f(\alpha)\alpha.$$

Notice that f does not depend on orientations of cells of X , so $\omega(-\alpha) = -\omega(\alpha)$, so ω is well-defined. In the reverse direction, $f(\alpha) = \langle \omega(\alpha), \alpha \rangle$.

For 1-forms, given a map $f: T^1(X) \rightarrow \mathbb{R}$ let

$$\omega: C^*(X) \rightarrow C^*(X) \quad \alpha \rightarrow \sum \beta, (\alpha, \beta) \in T^1(X) f(\alpha, \beta) \text{sign}(\alpha, \beta) \beta.$$

Notice that we can write $\text{sign}(\alpha, \beta) = \langle \partial\alpha, \beta \rangle$. The inverse map is given by $f(\alpha, \beta) = \langle \omega(\alpha), \beta \rangle \text{sign}(\alpha, \beta) = \langle \omega(\alpha), \beta \rangle \langle \partial\alpha, \beta \rangle$, which does not depend on orientations of cells of α, β .

Similarly, returning to Definition 3 where the derivative $d\omega$ of a 1-form ω is defined, we now recognize that $d\omega$ corresponds to a 2-form.

Forman gave the following definition:

Definition 5. Multiplication of forms is by composition of maps: If $\omega_1 \in \Omega^d(X)$ and $\omega_2 \in \Omega^d(X)$ then $\omega_1 \circ \omega_2 := \omega_1 \circ \omega_2 \in \Omega^{d_1+d_2}(X)$. In other words, for $\alpha \in C^*(X)$ we have $(\omega_1 \circ \omega_2)(\alpha) = \omega_1(\omega_2(\alpha))$.

In this definition the product has certain properties analogous to the smooth counterpart, such as associativity, from the associativity of compositions of maps.

Proposition 5. For any forms $\omega_1, \omega_2, \omega_3$ we have $\omega_1 \wedge (\omega_2 \wedge \omega_3) = (\omega_1 \wedge \omega_2) \wedge \omega_3$.

The product of smooth differential forms is anti-commutative, that is, if ω_1 is a d_1 -form and ω_2 is a d_2 -form then $\omega_1 \wedge \omega_2 = (-1)^{d_1 d_2} \omega_2 \wedge \omega_1$.

Since product for combinatorial form is composition of linear maps, in other words, product of matrices, it is not likely that commutativity, or anti-commutativity hold.

Indeed, on a triangle in **Figure 1** consider the oriented simplicial complex $X = \{[A, B, C], [A, B], [B, C], [C, A], A, B, C\}$:

Proposition 6. There exist 1-forms ω_1 and ω_2 on X such that $(\omega_1 \wedge \omega_2)([A, B, C]) \neq (\omega_2 \wedge \omega_1)([A, B, C])$ and $(\omega_1 \wedge \omega_2)([A, B, C]) \neq -(\omega_2 \wedge \omega_1)([A, B, C])$.

Thus product of 1-forms is neither commutative nor anti-commutative.

4. Conclusion

The results presented here suggest that the derivative of combinatorial forms is analogous to the smooth counterpart, while the product differs significantly to the smooth counterpart. Further studies could be carry out to understand suitability of this product.

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Efficient Biodiesel Production as an Alternative Green Fuel from Waste Cooking Oils by Using an Ultrasonic Reactor

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Abstract

Transesterification reaction of waste cooking oils (WCO) with methanol in the presence of base catalyst was accelerated by an ultrasonic reactor which consists of a horn type transducer of low frequency 20 kHz with input capacity of 1kW, and was carried out by 2 steps process. The objective of our research was to produce biodiesel satisfying the biodiesel-fuel standards with low energy consumption and material savings. The influences of various parameters such as the amount of catalyst, molar ratio of methanol to oil and reaction time were investigated. For the first step, the molar ratio of methanol to oil of 3:1 and amount of KOH 0.70 % wt (KOH to oil) were used, and the yield of fatty acid methyl esters (FAME) was about 90%. For the second step the yield of FAME can be obtained more than 99% with molar ratio of methanol to initial oil of 1:1 and amount of KOH 0.30 % wt. It is surprising that the FAME yield was extremely high even short retention time of reaction mixture in the reactor (less than 80 sc. for both steps) at room temperature. After the transesterification completed the crude FAME was purified by washing with tap water, and drying under reduced pressure. The quality of final product cleared the standard JIS K 2390 for biodiesel fuel.

Keywords : Biodiesel, waste cooking oils, transesterification, ultrasonic reactor.

1. Introduction

Biodiesel, a liquid fuel consisting of mono-alkyl esters of long-chain fatty acids derived from vegetable oils or animal fats, can be used as a substitute for diesel fuel ^[1,2]. Some of the advantages of using biodiesel fuel are its renewability, easy biodegradability, non-toxicity and safer handling due to its higher flash point compared to those of fossil fuels ^[3].

Biodiesel is synthesized by the transesterification of triglycerides (TG), the main components of vegetable oils and animal fats, with mono-alcohol in the presence of a catalyst, into fatty acid alkyl esters. The TG is converted stepwise to diglycerides (DG), monoglyceride (MG) intermediates and finally to glycerin (GL).

In the conventional methods, using mechanical stirring, the optimal condition reactions are: ratio of methanol to oil of 6: 1, based catalyst concentration of 1%, reaction time of 2 hours, a reaction temperature of 65 °C, and the yield of fatty acid methyl ester can obtain more than 96 % ^[4].

The transesterification can be carried out in batch or continuous reactors. The batch transesterification process requires large reactors and longer reaction and separation times because the reaction and the separation stages are usually carried out in the same tank. In contrast, the reactor for the continuous process can be smaller than that of the batch process for the same production capacity. Several types of continuous reactors have been studied and applied for biodiesel production ^[5,6]. On the laboratory scale, continuous

reactor systems assisted by microwave have been demonstrated. Other continuous-flow processes using a rotating packed bed, supercritical methanol or gas-liquid reactor have been found to be more effective for the transesterification [7,8].

Over the past two decades, applications of the ultrasonic technique have been widely developed in many areas of chemical technologies. Ultrasound energy is well known as a useful tool to make fine emulsions from immiscible liquids. Owing to this aspect, the transesterification reaction of vegetable oil and alcohol can reach equilibrium in a short reaction time with a high yield of alkyl esters even at low temperatures [9,10].

In this study, the transesterification of WCO with methanol in the presence of KOH catalyst was carried out in the continuous ultrasonic reactor by a two-step process. The effects of the residence time of reactants in the reactor, molar ratio of methanol to WCO were investigated. The objective of this work is to produce biodiesel of high quality

meeting the specifications of the standard for B100 (pure 100% biodiesel) fuel with minimal costs of materials and energy.

In this publication, we show that WCO can be used as green fuel by using an ultrasonic reactor.

2. Materials and Methods

2.1. Materials

The waste cooking oils used were those after domestic use, collected by municipal activities, and then filtered and settled in a drum to remove particles remaining in the oils. The physical and chemical properties of WCO are shown in Table 1. KOH (grade 95.5%) and methanol (grade 99%) were purchased from Wako Pure Chemical Industries, Osaka, Japan. Chemical standards such as methyl oleate, methyl liolate, methyl linolenate, methyl palmitate, methyl stearate, monoolein, diolein, and triolein, were obtained from Sigma Aldrich.

Table 1. Chemical and physical properties of WCO used in this study.

Properties	Unit	Average \pm SD ^b
Density	g cm ⁻³	0.918 \pm 0.002
Acid value	mg KOH/ g oil	1.07 \pm 0.10
Iodine value	g I ₂ / 100 g oil	112.5 \pm 0.5
Water content	mg g ⁻¹	0.15 \pm 0.03
Oleic acid (C18:1) ^a	wt. %	47.02 \pm 0.51
Linoleic acid (C18:2) ^a	wt. %	31.42 \pm 0.48
Linolenic acid (C18:3) ^a	wt. %	10.21 \pm 0.18
Palmitic acid (C16:0) ^a	wt. %	7.42 \pm 0.44
Stearic acid (C18:0) ^a	wt. %	2.77 \pm 0.21
Other fatty acids	wt. %	1.15 \pm 0.16
Mean molecular weight of WCO	g mol ⁻¹	876.60 \pm 15.76

Notes:

^a Carbon atoms number: Double bond number

^b SD: Standard deviation

2.2. Apparatus

The major units of the pilot plant include the liquid pumps, flow meters, ultrasonic reactors with a working volume of 0.8 L, and separation and purification tanks. An ultrasound source was a horn type transducer generating low-frequency ultrasounds of 20 kHz with an input capacity of 1 kW.

2.3. Procedures

KOH was pre-mixed with a known amount of methanol adapted to each experiment and kept at ambient temperature (20-25°C). In the first step of the transesterification, 120L of WCO was fed with methanol, in the desired molar ratios 2.5:1, 3:1, 3.5:1 or 4:1, to the reactor. The feeding of WCO and methanol was carried out by piston and peristaltic pumps, respectively, and both were connected to flow meters to control the mixing ratio of the reactants accurately. The flow rate of the reaction mixture was set in the range of 0.5-2.5 L min⁻¹. After passing through the reactor, the reaction mixture was transferred to the separation tank, where the transesterification and phase separation of glycerin from the reaction mixture proceeded simultaneously. It took 4 h to complete the phase separation. The lower layer, containing glycerin, catalyst and excess methanol, was drained from the separation tank. On the other hand, the upper layer, mainly FAME, TG and small amounts of DG and MG, was used for the second-step transesterification.

The second-step transesterification was performed in the same manner as the first step, except that the molar ratios of methanol to initial WCO that is 1:1, 1.5:1 or 2:1 for the second step. After the transesterification and the phase separation were completed, the crude FAME was transferred to the purification tank. Here, the KOH catalyst, excess methanol and glycerin remaining in the crude FAME were removed by washing three times with tap water of the ratio of 20% by weight to crude FAME for each washing. After washing, the water content in the FAME was effectively eliminated by heating the FAME to 70°C under reduced pressure around 500 torr while flushing with a small amount of dried air for 3 h. All experiments were performed at ambient temperature of 20-25°C.

2.4 Analysis

A 200 mL sample of the reaction mixture was withdrawn from the pipe connecting the ultrasonic reactor and the separation tank, and the sample was stored in a 250 mL beaker. 5 mL samples were taken from the beaker in prescribed time intervals and were immediately neutralized by the addition of 1 mL of 5% phosphoric acid aqueous solution to stop the reaction. The samples were left to settle for 3 h for phase separation before analysis of the samples. The concentrations of the reactants such as TG, DG, MG and FAME, were quantified by a high performance liquid chromatograph connected to a refractive index detector. The analytical method employed in this study is described in more detail in the previous paper [11].

The FAME yields of each transesterification step were calculated from the weight of FAME in the FAME phase and the theoretical material balance of the transesterification reaction, as shown in Equation (1):

$$FAME\ yield\ (\%) = \frac{w_{FAME} / M_{FAME}}{3w_{WCO} / M_{WCO}} \times 100, \quad (1)$$

where w_{FAME} and w_{WCO} are the weight of FAME in the FAME phase and the weight of WCO used, respectively, M_{FAME} and M_{WCO} are the average molecular weights of the FAME and the WCO, respectively, and the factor 3 indicates that one mole of triglyceride yields three moles of FAME.

In this study, each experiment used 120 L of WCO; thus, a limited number of experiments were performed in triplicate, and the results are shown as average values with one standard deviation.

3. Results and Discussion

3.1. Choice of type and amount of catalyst

The choice of a catalyst for the transesterification depends on the quality of raw materials. If the oils have high free fatty acid (FFA) content and water, the acid-catalyst transesterification process is preferable. However, this process requires higher temperatures and longer reaction times, in addition to causing undesired corrosion of the equipment. Therefore, to reduce the reaction time, the process with an

acid-catalyst is adapted as a pretreatment step only when necessary to convert FFA to esters, and is followed by an alkaline-catalyst addition for the transesterification step to transform triglycerides to esters [12]. In contrast, when the FFA content in the oils is less than 1 wt.%, many researchers have recommended that only an alkaline-catalyst assisted process should be applied because this process requires fewer and simpler equipment than that mentioned above [13,14].

The optimal FAME yield was observed at a KOH concentration of 0.7 wt.% [11]. In another previous study, the transesterification of WCO containing 1.7 wt.% of FFA was conducted with the same system mentioned above. The best yield of FAME was attained when the amount of KOH catalyst was 1.0 wt.% [15].

Generally, as noted above, KOH is an effective catalyst for the transesterification, and as such, it was chosen for this study. As shown in Table 1, the acid value of the WCO was 1.07, corresponding to FFA 0.54 wt.%. Based on the previous work, the total KOH concentration of 1.0 wt.%, *i.e.* 0.7 and 0.3 wt.% for the first and the second steps, respectively, was conservatively used for all of the transesterification experiments on the WCO.

3.2. Effect of flow rate

In the continuous reactor, the flow rate is one of the most important parameters affecting the reaction yield. Lower flow rates lead to longer residence times of the reaction mixture in the reactor. One could expect a low flow rate to enhance the emulsification efficiency of the reactants, resulting in increased FAME yield. In the present study, with the reactor volume of 0.8 L, the flow rates were varied from 0.5 to 2.5 L min⁻¹, corresponding to residence times of the reactants in the reactor from 1.60 min to 0.32 min. In the first step, the molar ratio of methanol to WCO and the catalyst amount were 2.5: 1 and 0.7 wt.%, respectively. When the first step was completed and phase separation accomplished, the FAME phase was used for the second step. In the second step, the molar ratio of methanol to initial WCO and the catalyst amount were 1:1 and 0.3 wt.%, respectively, added to the FAME phase.

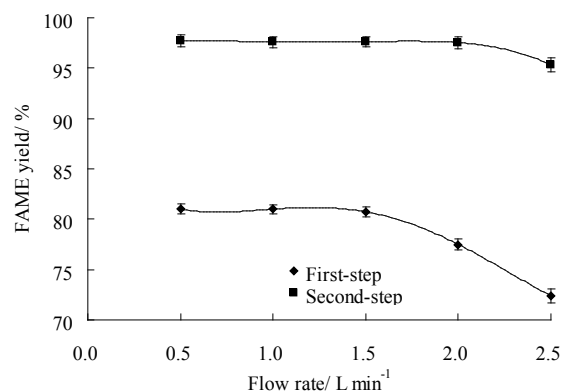


Fig. 1. Effect of flow rate on the FAME yields for methanolysis of WCO in the continuous ultrasonic reactor. The molar ratio of methanol to WCO and the amount of KOH catalyst were (2.5:1 and 0.7 wt.%), and (1:1 and 0.3 wt.%) for the first and second steps, respectively.

As shown in Fig. 1, the FAME yield value increased, from 72.3 to 81.0 % and from 95.3 to 97.5 % for the first and second steps, respectively, as the flow rate decreased from 2.5 to 0.5 L min⁻¹. The maximum FAME yields were 81.0 and 97.5%, which were obtained at the flow rates less than 1.5 and 2.0 L min⁻¹ for the first and second steps, respectively. Even with a short residence time of 0.93 min and a small molar ratio of methanol to WCO of 3.5:1, for the sum of the two steps, the FAME yield was 97.5%.

3.3. Effect of the molar ratio of methanol to WCO

The molar ratio of methanol to oil is also other the important factor affecting the yield of FAME. Although the molar ratio of methanol to oil necessary to complete the transesterification is 3:1, an excess amount of methanol is helpful to shift the reaction toward the FAME formation. Thus in practice, the molar ratio of methanol to oil used is usually more than 6:1.

Because methanol and oil are immiscible liquids, the transesterification reaction occurs on the interface between the oil and the methanol. As a result, only methanol on the surface of droplets is effective for the transesterification reaction if there is droplet formation in the reaction mixture, whether the reaction takes place using the conventional stirring method or the ultrasound-assisted method such as the present study. As mentioned above, using the ultrasonic reactor reactants form a fine

emulsion, which increases the interface area between methanol and oil. Therefore, in this case, the rate of the transesterification can be enhanced, and it can reduce the amount of excess methanol required. Overall, to enhance the effectiveness of methanol, the transesterification was carried out by a two-step process.

3.3.1. The first transesterification step:

The first step of transesterification was conducted with molar ratios of methanol to WCO in the range from 2.5:1, 3.0:1, 3.5:1 or 4:1 in the presence of KOH 0.7 wt.% of WCO. The flow rate of the reactants was fixed at 1.5 L min⁻¹, corresponding to a residence time of 0.53 min. After passing through the reactor, the reaction mixture became a fine emulsion, and thus the reaction proceeded efficiently. After 10 min of reaction time, the yield of FAME reached about 80% for all cases, and thus the reaction mixture had become homogeneous. To determine the amount of time required to reach equilibrium and the yield of FAME during the experiments, the reaction mixture was analyzed for FAME content at every sampling interval.

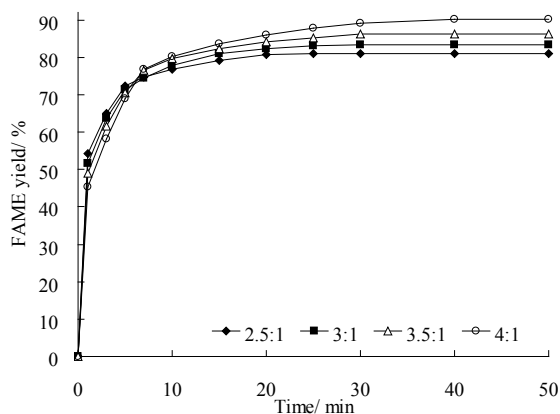


Fig. 2. Effect of molar ratio of methanol to WCO on the FAME yield in the presence of KOH catalyst 0.7 wt.% for the first step of the transesterification.

As shown in Fig. 2, at the initial 5 min of the reaction time, the conversion rate of FAME was found to be faster at the lower molar ratios of methanol to WCO. This can be explained by the fact that the concentration of catalyst was lower in the cases with larger amounts of methanol because the same amount of catalyst was used based on the amount of WCO. As reported by Vicente et al., (2004) [16], the transesterification is initiated by

attacks of methoxide ions (CH_3O^-) on the carbonyl carbon atoms of TG, DG and MG molecules. Because the KOH catalyst is a strong base, its dissociation constant is very large. Therefore, higher concentrations of methoxide ions on the surface of the methanol droplets were obtained when lower molar ratios were used. As a result, the lower molar ratios of methanol to WCO increased the reaction rate during initial stage of the reaction. This result agrees with the previous work, where the same reactor was used in the circulation process [11]. However, after 5 min of the reaction, higher conversion of FAME was achieved when higher molar ratios were employed. The equilibrium state of the reaction was reached at 25, 30, and 40 min with the molar ratios of 2.5:1, 3:1, and 4:1, respectively.

As shown in Fig. 2, when the molar ratio of methanol to WCO increased from 2.5:1 to 4:1, the yield of FAME increased from 81.0 to 90.1%. Although the addition of methanol was increased significantly by 60%, the yield of FAME increased only by 10%. This result can be explained as follows: methanol and glycerin are structurally similar molecules, containing hydroxyl groups, which can easily stimulate the intermolecular H-bonding between glycerin and methanol, and thus dissolve each other well. Therefore, even though excess methanol is added to the reaction mixture, larger proportions of the excess methanol could be removed from the reaction zone by dissolution into the glycerin phase once the glycerin phase has formed during the transesterification reaction. In other words, a very limited portion of the methanol added could act as the reactant for the transesterification. This phenomenon may be the reason why the mechanical stirring method applied for the transesterification needs a higher molar ratio *i.e.*, at least 6:1, a higher temperature, and a longer reaction time to enhance the effect of methanol.

3.3.2. The second transesterification step:

The molar ratio of methanol to initial WCO was in the range from 1:1; 1.5:1 or 2:1, and the amount of KOH catalyst was 0.3 wt.% of initial WCO. The flow rate of reactants was fixed at 2 L min⁻¹, corresponding to the residence time of 0.4 min in the reactor. After 3 min of reaction time, the reaction mixture attained homogeneity by emulsification.

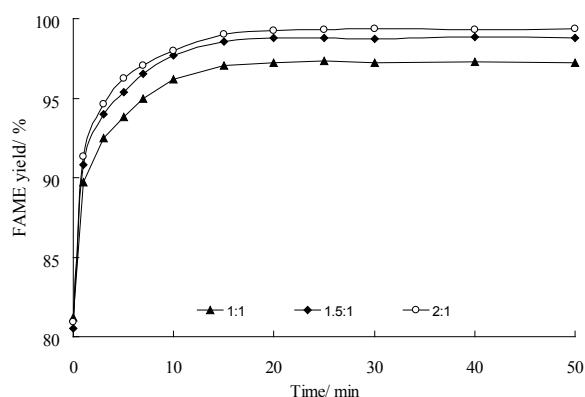


Fig. 3. Effect of molar ratio of methanol to initial WCO on the FAME yield in the presence of KOH catalyst 0.3 wt.% for the second step of the transesterification.

As shown in Fig. 3, when the molar ratio was increased from 1:1 to 2:1, the yield of FAME was increased from 97.2 to 99.3%. It should be noted that the conversion of FAME became extremely high, and the equilibrium was almost reached after around 20 min of reaction in all cases. Because the average concentration of TG in the crude FAME was 7.6 wt.%, the molar ratios of methanol to initial WCO of 1:1, 1.5:1 and 2:1, corresponded to the ratios of methanol to TG in the crude FAME phase of 12.7:1, 19.1:1 and 25.5:1, respectively. These ratios are much higher than the theoretical molar ratio of methanol to TG, i.e., 3:1. Furthermore, the starting material containing 81 wt.% of FAME has low viscosity. Therefore, methanol can easily diffuse in the FAME phase to facilitate the reaction between the methanol and the

TG as well as the DG and MG remaining in the FAME phase. These effects may be the main cause of the outstandingly high yield of FAME.

3.5. Biodiesel quality

To confirm the quality of the final product obtained under the optimal conditions, biodiesel samples were analyzed by an authority certified to analyze the characteristics of commercial biodiesel fuels (Nippon Kaiji Kentei Kyokai, Osaka Laboratory). The physical properties and chemical compositions of the product are given in Tab. 2. The testing results show that the FAME product in the present study fulfills the standards JIS K2390 and EN 14214.

4. Conclusion

The continuous ultrasonic reactor with a two-step process is a beneficial technique for the production of biodiesel from WCO. The use of WCO reduces the product cost of the raw material. The optimal conditions for the transesterification are the total molar ratio 4:1, KOH 1.0 wt.%, and the residence time in the reactor of 0.93 min for the entire process. Under these conditions, the recovery of biodiesel from WCO is 93.8 wt.%. The properties of the product satisfy the Japanese Industrial Standard (JIS K2390) and European Committee Standard (EN14214). This process significantly reduces the use of methanol compared to conventional methods (the mechanical stirring and supercritical methanol methods).

Table 2. Properties of biodiesel produced from WCO under the optimal conditions (2.5: 1 and 1:1 of molar ratio of methanol to initial WCO for the first and second steps, respectively; KOH catalyst 1.0 wt.%)

Test parameter	Unit	Result	JIS K2390		Test method
			Min.	Max.	
Total ester	mass%	98.2	96.5	–	EN 14103
Density (15°C)	g cm ⁻¹	0.8845	0.860	0.900	JIS K2249
Viscosity (40°C)	mm ² s ⁻¹	4.452	3.50	5.00	JIS K2283
Flash point	°C	180	120	–	JIS K2265
Sulfur	mg kg ⁻¹	2	–	10	JIS K2541
10% carbon residue	mass%	0.03	–	0.3	JIS K2270
Cetane number	–	57.2	51.0	–	JIS K2280
Sulfated ash	mass%	<0.01	–	0.02	JIS K2272
Water content	mg kg ⁻¹	470	–	500	JIS K2275
Particulate	mg kg ⁻¹	12	–	24	EN 12662
Copper corrosion (3h,	–	1	–	1	JIS K2513
Oxidation stability	hours	3.0	–	–	EN 14112
Acid value	mgKOH g ⁻¹	0.23	–	0.5	JIS K2501
Iodine value	I ₂ g/ 100 g	111	–	120	JIS K0070
Methyl linolenate	mass%	9.7	–	12.0	EN 14103
Methanol	mass%	<0.01	–	0.20	EN 14110
Total glycerin	mass%	0.1	–	0.25	EN 14105
Free glycerin	mass%	<0.01	–	0.02	EN 14105
Monoglyceride	mass%	0.27	–	0.80	EN 14105
Diglyceride	mass%	0.11	–	0.20	EN 14105
Triglyceride	mass%	0.07	–	0.20	EN 14105
Total Na + K	mg kg ⁻¹	<1	–	5.0	EN 14538
Total	mg kg ⁻¹	1.6	–	5.0	EN 14538
Phosphorus	mg kg ⁻¹	<2	–	10.0	EN 14107
Pour point	°C	-5.0	–	–	JIS K2261
CFPP	°C	-5.0	–	–	JIS K2288

Notes:

This table gives the certified quality of our biodiesel product as analyzed by an authorized analysis organization.

CFPP: Cold filter plugging point

JIS: Japanese Industrial Standard for biodiesel (B100) and testing method

EN: European Standard for testing method

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A Pulse Generator Ultra-Wideband for Inner/Inter-chip Wireless Interconnection using LC differential oscillators topology

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Abstract

This paper presents a detailed analysis, design and simulation of pulse generator for Ultra-Wideband (UWB) based on LC differential oscillators topology. The differential oscillators with a cross-coupled NMOS pair and a tail current source used to achieve more positive gain and generate negative resistance to the LC-tank. Besides, this oscillators is suitable for UWB high frequency and low power applications. The UWB pulse generator is composed of a simple on-off keying (OOK) modulated and LC-tank differential oscillators. The circuit of UWB pulse generator designed and simulated in 0.13 μm CMOS technology. The UWB pulse generator generates a pulse for the 6 – 10 GHz UWB transmitter. Simulation results show a pulse width of 586 ps and a peak to peak amplitude pulse of 88.6 mV from the 1.2V power supply. The average power consumption is approximately 0.6 mW and an energy consumption of 1.1 pJ/pulse at 500 MHz pulse repetition rate (PRR) is observed. The generated UWB signal meets the FCC regulation.

Keywords: Ultra-Wideband (UWB), UWB Transmitter, impulse generator, LC-tank differential oscillators

1. Introduction

Ultra-wideband(UWB) communications usually utilizes as simple pulse direct radiating into the air. This wire-less communications technique makes it attractive compared to the conventional narrow band communication systems. The UWB communications does not require expensive and complex components for modulation and demodulation and IF stages, and thus reducing cost, size, weight, and power consumption of the system [1-3]. In 2002, the Federal Communications Commission (FCC) released a non-licensed frequency range of 7.5GHz, from 3.1GHz to 10.6GHz, for the commercial short-range wireless communication applications [4]. The transmitted UWB pulse must be limited to a maximum power of -41.3 dBm/MHz and must not interfere with other existing spectrum services. In recent years, a number of research works focused on the IR-UWB pulse generators such as the

pulse of the Gaussian monocycles [5] and the high order derivative Gaussian pulse generators [6-7]. However, the pulse of the Gaussian monocycles and even the pulse of the Gaussian doublet do not completely satisfy the FCC spectral regulation due to their high power density at DC and having lower frequency components. Usually, these pulses require extra filtering to meet the regulation and thus increase the transmitter complexity and power consumption.

This paper proposes an approach using a LC differential oscillators topology to generate a UWB pulse. The LC oscillator is a better choice since it can generate a signal at GHz range with low phase noise and much better jitter performance. The circuit generates a pulse which has a power spectral density satisfying the defined energy spectrum. The pulse generator for Ultra-Wideband is implemented using 0.13 μm CMOS technology.

2. UWB Pulse Generation Principle And Analysis

The proposed UWB pulse generator employs the LC differential oscillators topology in the UWB transmitter. Figure 1 shows the block diagram of the UWB transmitter.

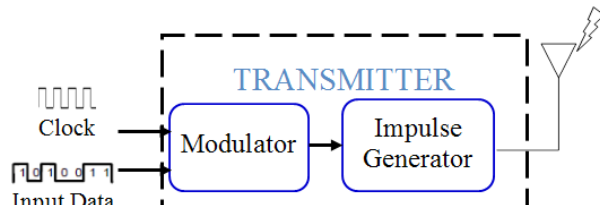


Figure 1 Block diagram of the UWB transmitter

UWB transmitter consists of two blocks:

- Modulator: On-off keying (OOK)
- Pulse Generator: LC differential oscillators

There has been much recent research carried out to implement integrated LC oscillator using various techniques [8-10]. However, most of the integrated LC oscillators are originated from a few types of LC oscillator topology, as shown in Figure 2. Figure 2(a) adopts NMOS cross-coupled transistors to provide loop gain, with a current source at the source nodes of the NMOS pair. Figure 2 (b) adopts PMOS cross-coupled transistors as well, with a current source at the common-mode ground on the top of the configuration. The drain nodes of the transistor pairs are connected to the LC core. This PMOS configuration is more often applied in low frequency applications.

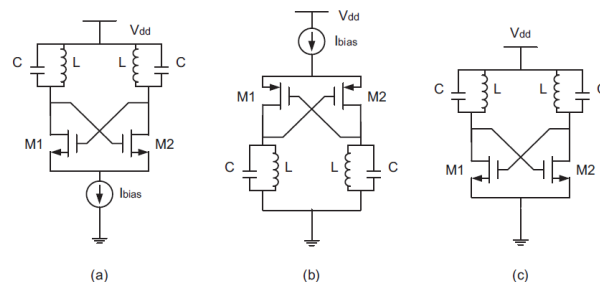


Figure 2 Different LC oscillators

Due to the slower mobility of the PMOS transistor compared to the NMOS transistor, the NMOS LC oscillator configurations are more preferable to use in RF frequency applications.

The oscillator in Figure 2 (c) is similar to the configuration in Figure 2 (a), but with the exclusion of the tail current source. In Figure 2 (c), the source node of M1 and M2 are directly connected to ground. The gate-drain voltage V_{gd} of M1 and M2 are equal to the amplitude of the oscillating voltage across the LC load.

3. Design Method And Circuit Implementation

The UWB pulse generator was designed using NMOS cross-coupled oscillator with current source at bottom and implemented in Global Foundries 0.13 μ m CMOS technology with 1.2V supply voltage. The function of the tail current source in this oscillator is to provide controlled current to the cross-coupled NMOS pair and reduce loss. The LC core in this oscillator can be redrawn as Figure 3.

The resistor R_p is the equivalent parallel resistance of the inductor and capacitor on each LC. R_{p1} represents the equivalent parallel resistor of the parasitic resistance in L_{p1} and R_{p2} represents the equivalent parallel resistor for L_{p2} . R_{in} represents the equivalent resistance seen by the LC circuit.

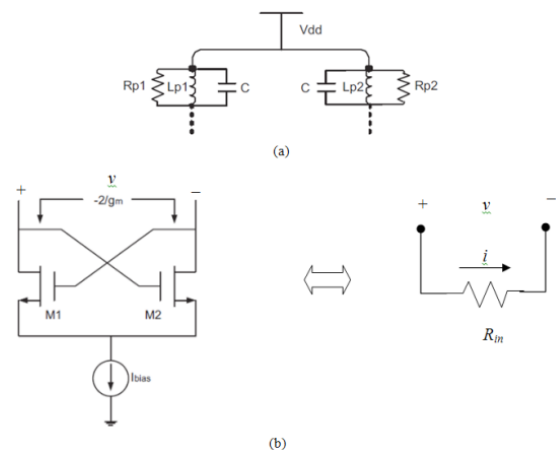


Figure 3 Equivalent of different LC oscillator circuit

(a) equivalent LC load circuit (b) equivalent resistance seen by the LC circuit

$$R_{p1,2} = R_s Q_L^2 = \frac{\omega_0^2 L_p^2}{R_s} \quad (1)$$

where Q_L is the quality factor of the inductor and R_s is the inductor parasitic series resistor. Large R_p are desirable for a stable oscillation. The quality factor of the load of the cross coupled pair M1 and

M2, Q_{load} is

$$\frac{1}{Q_{load}} = \frac{1}{Q_L} + \frac{1}{Q_C} \quad (2)$$

where Q_C is the quality factor of on-chip capacitor and Q_C is much larger than Q_L . Thus $Q_{load} \approx Q_L$. The gain of each common-source configured transistor is expressed as

$$A_{1,2} = g_{m1,2} (R_{p1,2} // r_{o1,2}) \quad (3)$$

where r_{o1} and r_{o2} are the transistor drain-source resistors.

The overall closed loop gain is now expressed as

$$H(w) = A_1 \cdot A_2 = g_{m1} g_{m2} (R_{p1} // r_{o1}) (R_{p2} // r_{o2}) \quad (4)$$

From **Figure 3 (b)**, $R_{in} = v/i$ as the voltage v applied to the drains of M1 and M2, where $v = v_{ds1} - v_{ds2}$, therefore $R = (v_{ds1} - v_{ds2})/i$, where $i = -g_m \cdot v_{ds1}$ and $v = v_{ds1} - (-v_{ds1}) = 2v_{ds1}$ because M1 and M2 have the same v_{ds} since they are matched, then $R_{in} = -2v_{ds1}/g_m \cdot v_{ds1}$ or $R_{in} = -2/g_m$

Note that g_m depends on the I_{bias} , adjust I_{bias} will change R . The values of L1, C1, L2, C2 and I_{bias} are all related to start and sustain oscillation.

To ensure an oscillation, the condition $R_p > -2/g_m$ for the oscillation to start (must satisfy Barkhausen criteria for oscillation), where g_m is the transconductance of the single transistor.

A completed circuit of the UWB transmitter is shown in **Figure 4**. This circuit includes two stages.

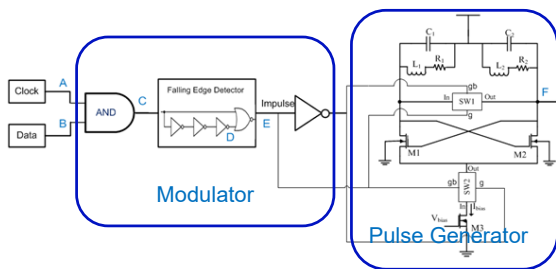


Figure 4 Schematic diagram of the UWB transmitter

The first stage is a OOK modulator using falling edge detector combined with inverter gate to generate a short pulse. The second stage is a LC differential oscillators that is used to generate the UWB pulse. The frequency selective LC consists of two inductors in parallel with capacitor C_1, C_2 . Resistor R represents the inductor series resistance. The crossed-couple pair of nMOS $M_{1,2}$ is biased with the current $I/2$, implemented with nMOS M_3 in the saturation region. The crossed-couple pair generates a negative resistance of $-2/g_{m1,2}$, where $g_{m1,2}$ are the transconductances of the transistors $M_{1,2}$. There are two complementary short pulses generated by the first stage. When SW1 is open (i.e., SW2 is closed), the LC starts oscillate (due to noise). The amplitude of the oscillating signal increases gradually within a certain period. When SW1 is closed (i.e., SW2 is open), the energy inside the LC is released through SW₁, and the oscillation signal gradually disappear.

4. Simulation Results

The UWB pulse generator was designed using a LC oscillator, and implemented in Global Foundries 0.13 μ m CMOS technology with the Cadence software. The simulation results in time domains of the designed UWB transmitter is shown in **Figure 5**. **Figure 6** and **Figure 7** shows the schematic simulation results in time domain and normalized PSD (power spectral density) of the UWB pulse with 50 Ohm load for antenna matching purpose.

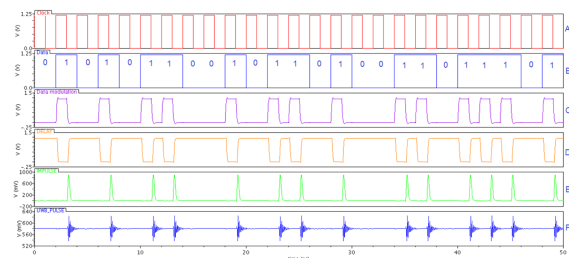


Figure 5 Simulation results of the UWB pulse

- A : clock (500MHz)
- B : input data
- C : data modulated
- D : chain of inverters that used to delay the input signal
- E : short pulse
- F : UWB p pulse

The peak-to-peak swing is more than 88 mV. For wireless communications at short distances, this pulse is high enough to deliver the pulse to antenna without the need for a wideband amplifier. The pulse duration is 586 ps resulting to the high spectral allocation in the 6 - 10 GHz range. The requirements for the designed UWB transmitter are its PSD must be below -41.3dBm/MHz. **Figure 8** shows the layout view of the UWB transmitter. The area of the generator is about 0.22 mm². The on-chip inductors occupy a large portion of the die area.

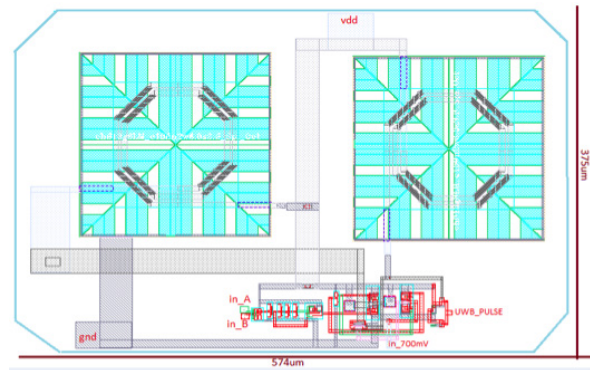


Figure 8 The layout view of the UWB transmitter

The average power consumption is approximately 0.7 mW from the 1.2V power supply and an energy consumption of 1.4 pJ/pulse at 500MHz pulse repetition rate (PRR) is observed.

Figure 9 and **Figure 10** shows the post-layout simulation results in time domain and normalized PSD of the UWB pulse.

Table I shows the schematic and post-layout simulation results of the UWB pulse generators.

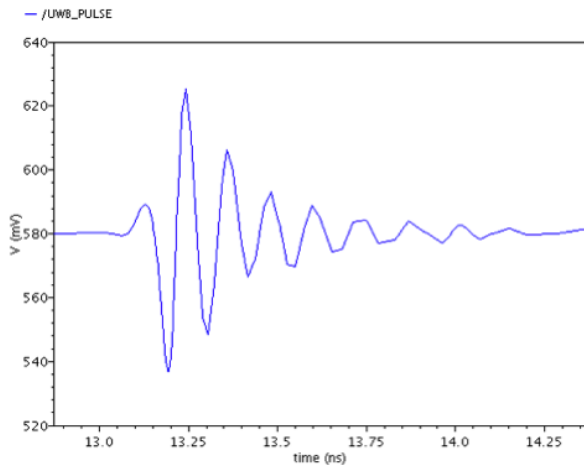


Figure 6 UWB pulse in time domain (schematic simulation)

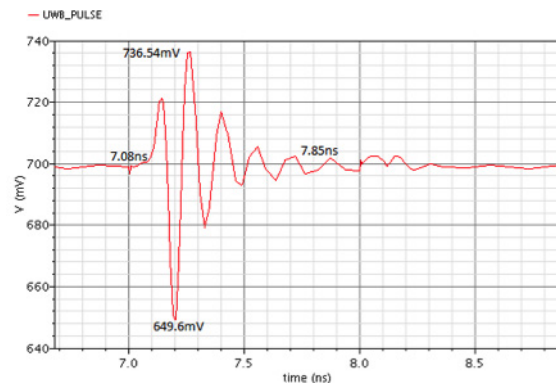


Figure 9. UWB pulse in time domain (post-layout simulation)

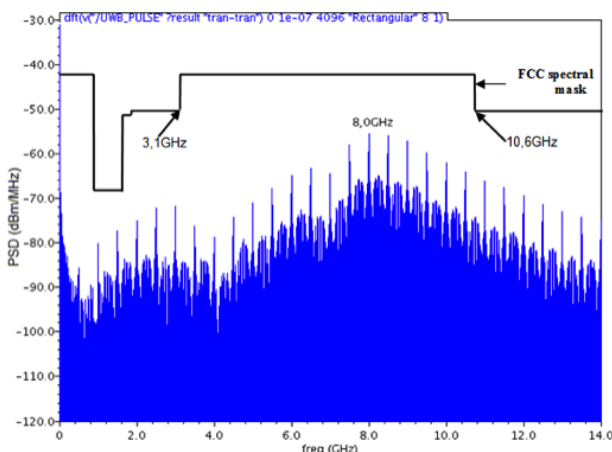


Figure 7 UWB pulse in normalized PSD (schematic simulation)

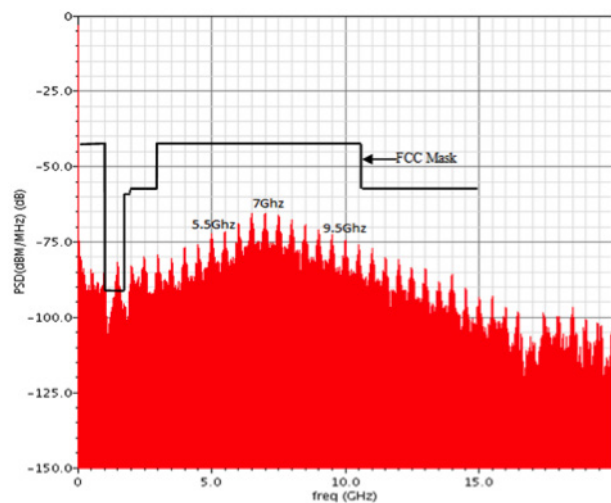


Figure 10 UWB pulse in normalized PSD (post-layout simulation)

Table 1 Comparison between the schematic and post-layout simulation results

Specification	Schematic Simulation	Post-Layout Simulation
Technology (μm)	Global Foundries 0.13 μm CMOS	
Bandwidth (GHz)	6 - 10	5.5 – 9.5
Peak-to-peak swing	88.6	87
V_{pp} (mV)		
Pulse Width (ps)	586	700
Energy (pJ/pulse)	1.1	1.4
Power _{DC} (mW)	0.55	0.62
Chip area (mm ²)	-	0.22

5. Conclusion

In this work, a pulse generator Ultra-Wideband using LC differential oscillators topology proposed. This pulse generator circuit was analyzed, designed and simulated (schematic and post-layout) in the Global Foundries 0.13 μm CMOS technology for high frequency applications (6 – 10 GHz). Simulation results show an output UWB pulse magnitude (peak-to-peak swing) of 88.6 mV (87 mV - post-layout simulation), a short pulse width of 586 ps (700 ps - post-layout simulation), an energy consumption of 1.1 pJ/pulse (1.4 pJ/pulse - post-layout simulation) at 500MHz PRR. The core chip size is 0.22 mm². The chip consumes 0.6 mW of power at 1.2V supply voltage.

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Development of FPGA-based readout electronics for cosmic rays detector and environmental radiation real-time monitoring system

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Abstract

Field-programmable gate array (FPGA) technology has been widely used in setting up triggering systems and DAQ systems for radiation detectors, because it has the advantages such as fast digital processing, compact, programmable and high stability. Since 2010, with the scientific collaboration with Professor Masaharu Nomachi group, Osaka University of Japan, Department of Nuclear Physics, University of Science-VNUHCM has been developed FPGA-based trigger systems and FPGA-based DAQ systems used for radiation detectors. Namely, we developed triggering systems for cosmic ray measurements, readout electronic for an environmental radiation real-time monitoring system in air; we also developed nuclear electronic equipment such as spectrum analyzer MCA (Flash-ADC/FPGA based), the pulse generator, counters, etc. Furthermore, we cooperated with KEK, Japan in the development of readout electronic for multiple radiation sensors. In this work, we would like to present our results achieved, namely, the detection response of cosmic-rays in the high-pure Germanium (HPGe) gamma-spectrometers in the energy region from 0.2 MeV to 50 MeV; and the environmental radiation real-time monitoring system in air.

Keywords : Cosmic ray, background radiation, HPGe, Geant4 and FPGA.

1. General details

Natural background radiation always exists in any places on the surface of the earth. It comes from the cosmic rays, terrestrial radiation and internal bodies. For cosmic-rays component, the outer space sends a constant stream of very high-energy primary cosmic rays to the earth. With atmospheric conditions, at the surface of the earth, there is the finite amount of secondary cosmic rays. For terrestrial radiation component, the earth itself is the main source, including uranium, thorium and radium existing in the soil and rock. All people have internal radiation, mainly from radioactive K-40 and C-14 inside the body.

By far, the public also receive radiation from industry development, so called, man-made

radiation. The most significant source exposure to the public is from medical procedures, such as diagnostic X-rays, nuclear medicine, and radiation therapy. Some of the major isotopes used for medical would be I-131, Tc-99m, Co-60, Ir-192, Cs-137, and others. In addition, the public are exposed to radiation from consumer products, such as tobacco (thorium), building materials, combustible fuels (gas, coal, etc.), ophthalmic glass, televisions, luminous watches and dials (tritium), airport X-ray systems, smoke detectors (americium), road construction materials, electron tubes, fluorescent lamp starters, lantern mantles (thorium), etc. Of lesser magnitude, the public are exposed to radiation from the nuclear fuel cycle, which includes the entire sequence from mining and milling of uranium to the actual production of

power at a nuclear plant. This would be uranium and its daughter products. The final sources of exposure to the public would be shipment of radioactive materials and residual fallout from nuclear weapons testing and accidents, such as Chernobyl [1].

In the field of radioactive isotope analysis for environmental and food samples, the HPGe gamma-spectrometer is used commonly due to high efficiency. For the spectrometer, ambient radiation and cosmic rays may exist in the gamma spectrum as a background. In this work, we study the cosmic-rays component from the total background in the HPGe gamma-spectrometer by experiment and Geant4 Monte-Carlo simulation. Also in this work, we study the environmental radiation in the air. We develop the system for monitoring the environmental radiation in real time. The readout electronic is developed from embedded FPGA technology.

Embedded FPGA technology has been increasingly used in the development of trigger systems, DAQ signal processing systems for nuclear radiation detectors. Embedded FPGA technology has advantages such as fast processing speed, programmable, low power consumption, compactness and high stability. Since 2010, in collaboration with Professor Masaharu Nomachi, Osaka University, Japan, we have been developing trigger systems, DAQ uses embedded FPGA technology for nuclear radiation detectors [2], [3], [4].

2. Detail set up and analysis

2.1. Cosmic ray studies in the HPGe gamma-spectrometer

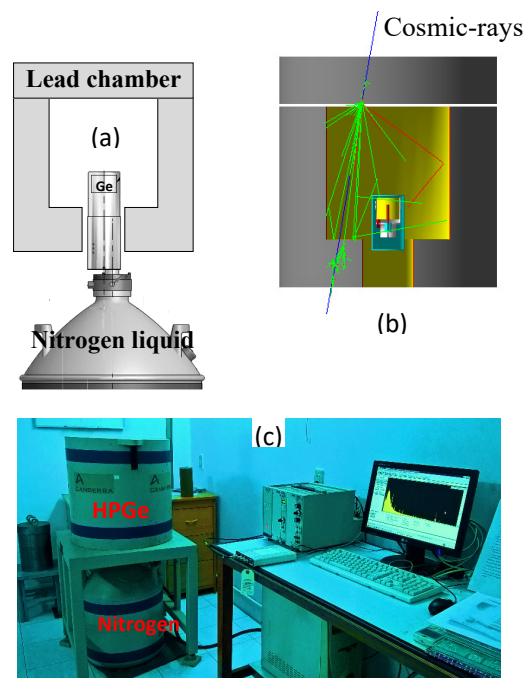


Fig.1. Experiment and Geant4 Monte-Carlo simulation to study detection response of cosmic-rays for the HPGe gamma-spectrometer.

a. Schematic view of the HPGe gamma-spectrometer.

b. Geant4 Monte-Carlo simulation of the HPGe gamma-spectrometer.

c. Photo of HPGe gamma-spectrometer.

For cosmic ray studies in the HPGe gamma-spectrometer, we carried out the experiment and Geant4 Monte-Carlo simulation. Fig.1a shows the scheme of HPGe gamma spectrometer. HPGe detector, model of GC2018, manufactured by Canberra Inc. [5], is installed in the low-activity lead chamber, model of 747, manufactured by Canberra Inc. [6], which is purposed to reduce ambient radiation. Fig.1b is the detection construction model in the Geant4 toolkit [7]. Fig.2a shows experimental data of radiation background spectrum (red curve) which is carried out in the energy region up to 50 MeV. With Geant4 simulation, black curve in Fig.2a is cosmic rays component in the total radiation background. The results show that the deposited energy of cosmic rays in the HPGe gamma spectrometer describes a continuous spectrum from very low energy (~keV) up to 100MeV. In the energy of higher 3MeV, cosmic rays are completely dominated in the energy spectrum.

Fig.2b shows the detection response of muon and neutron component in the total cosmic rays. The result shows that cosmic muon (red curve) is the main contribution in the total with 86% of events. Neutron count contributes of 8.6% in the total, mostly in the very low energy region of several ten keV. Because neutrons can penetrate deep inside lead shield happen nuclear reaction with materials of the spectrometer, and generate secondary gamma and charged particle.

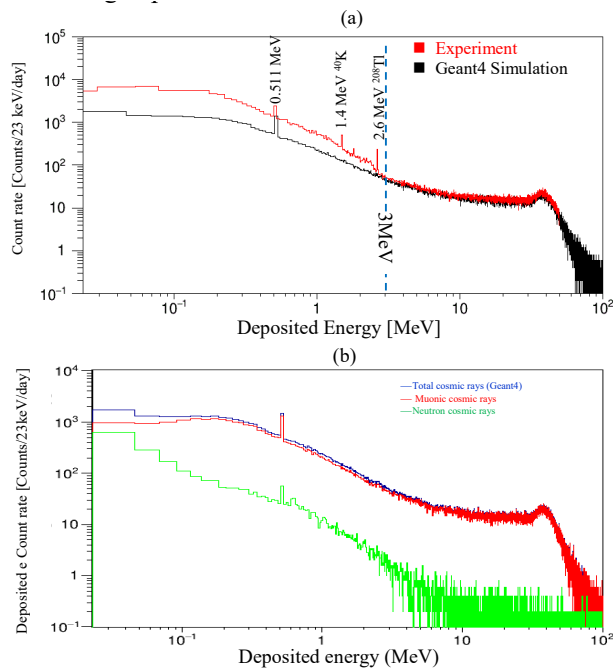
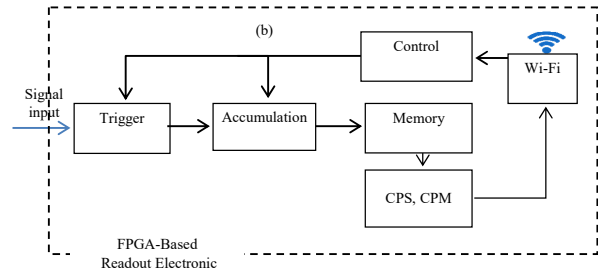


Fig.2. Detection response of cosmic rays in the HPGe gamma spectrometer

- a. Experiment and Geant4 Monte-Carlo simulation. Black curve is background radiation measured by HPGe detector. Green curve is the cosmic-ray component simulated by Geant4 tool kit.
- b. Geant4 simulation of components of cosmic rays for muon and neutron.

2.2. Monitoring the environmental radiation in real time



(c)

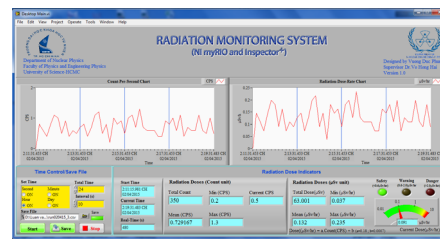


Fig.3 Development of environmental radiation real-time monitoring system

- a. Schematic view of the system
- b. Readout electronic using FPGA technology.
- c. LabVIEW-based computer interface.

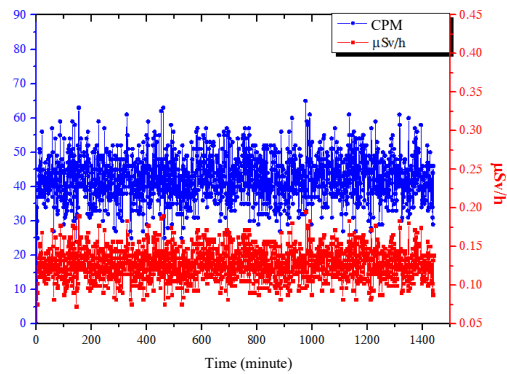


Fig. 4. Environmental radiation monitor in a room air with one day measurement. Left and right horizontal scale show count rate (count per minute) and dose rate ($\mu\text{Sv/h}$), respectively.

For environmental radiation real-time monitor, as shown in Fig.3a, we developed FPGA-based readout electronic (Fig.3b) to read the radiation sensor and data (CPM) will then transfer to computer via Wi-Fi connection with LabVIEW-based computer interface (Fig.3c). Fig.4 is the measurement of environmental radiation in a room air. Data is up-to-date via real-time.

3. Conclusions

We develop radiation detectors for investigating environmental background radiation, such as cosmic ray and dose rate studies. Readout electronic system is developed from embedded FPGA technology. For cosmic ray study, we investigate cosmic ray component in the total background spectrum of the gamma HPGe spectrometer in the energy region up to 50 MeV. Along with Geant4 Monte-Carlo simulation, we evaluate cosmic rays component in the natural background radiation spectrum. In the energy region of larger 3MeV cosmic rays are completely presented. We analyze of muonic and neutron cosmic rays, it shows that muonic component are mostly dominate while in very low energy of several ten keV, neutron are presented. For environmental radiation study, we develop the system which can be used to monitor dose rate in the real-time scale.

Acknowledgement

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Geo-information technology management and development

Somchaivang Dethoudom

Abstract

Geo-information technology or 3s technology includes Geographic Information System (GIS), Remote Sensing (RS), and Global Positioning System (GPS) are involved in the implementation, management and development in various fields due to the development of computer technology and electronic equipment. Geo-information technology is fast-paced and easy to use, making it easy to manipulate and show the data. The results from geo-information technology will show in the form of maps and details clearly. It could be simulated and transformed in the computer until the best model to be used in the management and development.

Keywords : Geo-information technology, Geoinformatics, management, development

1. Introduction

Nowadays, Geo-information technology is to ingrate knowledge and technology that consist of Geographic Information System (GIS), Remote Sensing (RS), and Global Positioning System (GPS). We have known in the name of 3s technology (Geo-Informatics and Space Technology Development Agency, 2009). 3s technology seem view widely because each technology is complementary as shown figure 1.

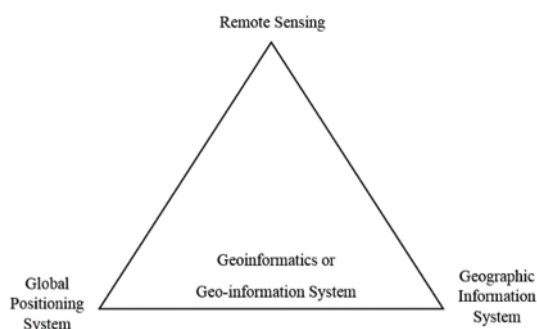


Figure 1 Element of 3S Technology

Geo-information technology

Geo-information technology provide information in the pattern of detail and figure at the same time. This information can be supported for various field, engineering, tourism, meteorology, agriculture, military, for example. Geo-information

Technology is a technology that born from the development of technology used in the military as the first, as well as other technologies. It is often used to scramble for superior military and divisive development.

Geo-information technology has evolved steadily following the development of computer technology that developed by the rapidly evolving electronic technology

Geo-information technology is rapidly evolving, including multimedia cartography, bringing together various forms of science in order to be used on all electronic media or instruments (Department of Geography, Faculty of Social Sciences CMU, 2014).

Geo-information technology is also used in management and development, also known as developed management by using Geo-information technology and a hexagonal concept, following:

1. Human
2. Society and Culture
3. Economics
4. Environment
5. Technology
6. Politics

From the hexagonal model for sustainable development will be found that there is a component of technology. Geo-information technology is a technology that collects data and uses two types of processing information: (Jintana, 2009)

1. Spatial data
2. Attribute data

Spatial data is represented in three patterns :

1. point
2. Line
3. Area

Attribute data is the information that describes the nature of the spatial data, stored in the form of a table, such as building categories, the number of population, etc.

Lesom (2010) pointed that the basic architecture elements consist of:

1. Natural elements consisted of natural environment, climate, and natural geography.
2. Physical components that include human behavior, space, awareness, and physical environment.
3. Social and cultural elements
4. Technology elements
5. Beauty elements

Supet (2012) stated that geo-information technology to apply in the following areas:

1. Economics
2. Transportation
3. Infrastructure
4. Public health
5. Community service
6. Law Enforcement and Crime Prevention
7. Land use planning
8. Environment
9. Taxation
10. Forest resource tracking
11. Emergency and Disaster Management

Elements of Geographic Information System are hardware, software, people, data, and methodology which is component in 3S technology as shown in figure 2.

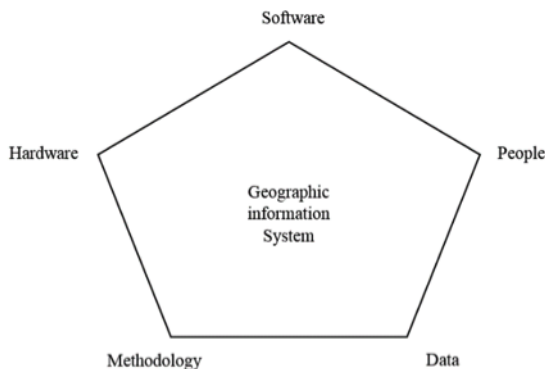


Figure 2 Elements of Geographic Information System

Geo-information system is the use of a computer system to perform operations related to geographic information, with the following steps:

1. Import
2. Management
3. Analyze
4. Outputs.

2. Discussion

Nowadays Geo-information technology is widely used in agriculture “Precision agriculture”, forestry which can quickly detect deforestation, and meteorology, satellite weather monitoring, and tracking the change at any time.

3s technology can be managed and developed precisely, even in large amounts of data and constantly changing that it allowed geo-information technology is used extensively.

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Matlab Simulation on the KARAOKE Scoring by using MIDI matching Algorithm

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Abstract

This paper describes the simulation of karaoke scoring the digital musical notes. The analysis methods are based on the Music Information Retrieval (MIR) Toolbox, which is transformed both of analog sung voice and original sung voice into joint frame mode. These steps are including the value of the Mel-Frequency Cepstral Coefficients (MFCC), Onset detection, pitch detection, and changing the value of pitch value into the melody. Afterwards, this melody of both analog sung voice and original karaoke sung voice files are converted into MIDI files by using MIDI toolbox. Finally, both of the MIDI files will be compared and scored on the basis of error rate calculation of the sound files. The results of this simulation shows that the scoring system for Karaoke sung voice can be done efficiently with the highest accuracy 100% in the case of using the karaoke sung voice the same as the referenced files. However, in the case of comparing sung sound is obtained lower score at 73% when compared to the first case, this is due to the fact that the sung voice of the amateur singer is not similar to the original sound file. Although the score of the second case is quite low, the scoring system for Karaoke Singing is acceptable and reliable.

Keywords :Music information retrieval; Karaoke scoring system; MIDI Matching.

1. Introduction

Music is considered as a scientific tool for emotion therapies because of Music expressing emotions are strongly coupled, making clearly distinguishable when a singer performs sad, happy, tender, or aggressive.

Currently, many researchers have been working in the scientific in the field of performance analysis of the singing voice including: Music Transcription system, Music emotion classification, Music Genre Classification, Melody Extraction. The automatic scoring has become quite popular in the past few years in games like *Singstar*, *Ultrastar*, *Karaoke Revolution*, *Lips* and *Rock Band*. However, the algorithms applied in these videogame applications are rude and far too distant from current voice analysis research in the scientific community.

Previously, there is an algorithms that proposed the method for extract the features from the Music for example: Vocal Extraction, Vocal Pitch Tracking and detection is proposed by MasatakaGoto [1] this research use an algorithm named PreFEst, the idea is to extract the Melody and Bass in the real-world audio signal by using Predominant-F0 estimation from the BPF filter to limit frequency regions, this algorithm is useful and increase the accuracy of the karaoke sung voice analysis system.

In consequence, there are number of researcher also proposed the scoring algorithm for the sung voice karaoke such as: Development of Scoring Algorithm for Karaoke computer game [2] is introduced by Dong Ping Qui, the idea is to rate the performance of a singer, the segmentation process using an algorithm based on untrained HMMs with probabilistic models built out of a set

of heuristic rules that determine regions and their probability of being expressive features.

This paper presents a method for the automatic analysis and score of a singing voice performance with precise MIDI note segmentation and detection by using MIR [3] and MIDI toolbox [4] on MATLAB.

2. Methodology

In our system, the analysis of singing voice and scoring consists of 2 major steps: first step is preprocessing and Music features Analysis, the second step is scoring by matching the obtained features.

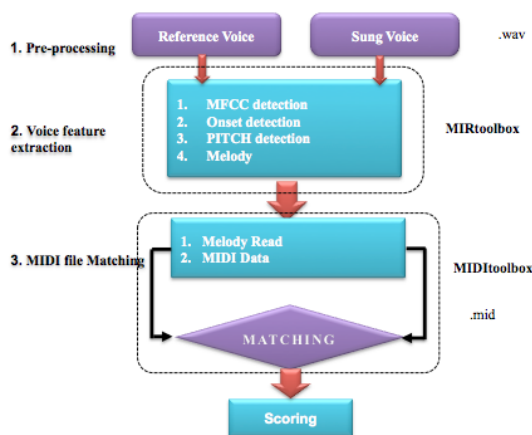


Figure 1: Overview of the proposed system

A. Proposed System

In figure 1 we can see an overview of the Music analysis and scoring of the singing voice that is being performed by our system. The first step is the preprocessing music analysis; at this step the Music is extract the pitch and base line by the MFCC, then onset detection and pitch detection is defined the disjoint frame of the sung voice, which further uses to determine musical notes of the music or called melody. This melody will be used for the next step. The second step the evaluation or scoring approaches has been performed by using MIDI toolbox which executed under MATLAB software, at this step all disjointed frames is transform to MIDI file, then the MIDI file is ready to matching. At the other hand, the reference MIDI of each song has downloaded from open source website, the reference MIDI file was converted to musical notes in order to further evaluate with sung voice melody. Finally, the evaluation of both melodies has also performed with the purpose of

obtaining the performed scores. The evaluation is based on error rate between both analog sung voice and original karaoke sung voice.

3. Experimental and Results

The Audio file between 2 original voice and sung voices is records. In this paper, a 12 sec Audio file is recorded from the Microphone and read in to MATLAB program as shown in Figure 2.

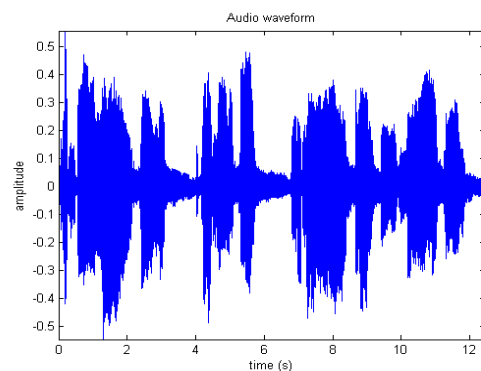


Figure 2: Reading Analog sung voice

A. Sung voice pre-processing

Aims of the pre-processing is defined the audio components between Low and High frequency by using MFCC algorithm. In this paper adopted the singing voice is analyzed method of Dong Ping Qui [9]. All descriptors in time domain are extracted including zero crossing, amplitude and energy and its derivative. Then a frequency domain analysis is performed and some spectral descriptors are computed like LF energy, HF energy, filter bank, Mel Cepstrum, spectral flatness, and delta timbre calculated from the average of the derivatives of the Mel Cepstrum coefficients, the results of the experiment is shown in Figure 3. Mel cepstrum derivative is very relevant to detect the spectrum changes in the singing performance in singing voice, note onsets changes in phonetics.

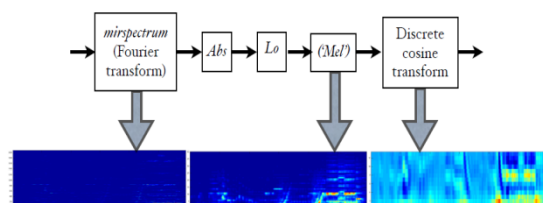


Figure 3: the Mel Cepstrum coefficients

B. Note segmentation

A method of onset and pitch detection is performing note segmentation, the reference Audio has been disjointed or segmentation into frames. The accuracy of onset and pitch detection is major cause of evaluation or scoring and the result of segmentation is shown in Figure 4.

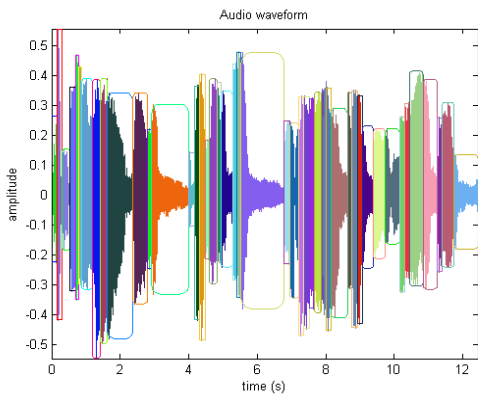


Figure 4: Audio is segmented into frames

C. Mapping musical notes to MIDI file

The musical notes was converted to the MIDI files by using MIDI toolbox. The idea is mapping the value of frequency coefficients into MIDI file using the piaoano role. From E2 - C6 in the frequency range 82 Hz - 1047 Hz, the frequency range is shown in the Figure 5.



Figure 5: Musical notes from E2 - C6 is assign within the frequency range 82 Hz - 1047 Hz

The results of mapping the musical notes in to the different level of frequency are shown in Figure 6 and Figure 7.

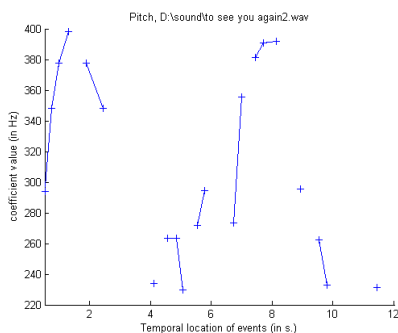


Figure 6: Mapping musical notes coefficient to the MIDI.

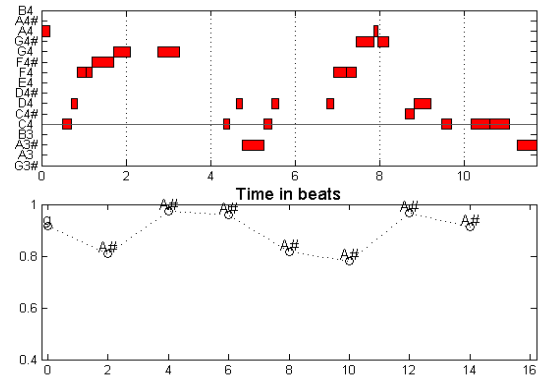


Figure 7: The obtain MIDI file by using Piano Role.

D Matching

Finally, the evaluation of melodies has also performed with the purpose of obtaining the performance score; the evaluation is based on error rate between both information.

E Performance Scoring

After doing the analysis of the user performance, results of the performance analysis are given as a score from 0 to 100. The scoring is calculated with the equation (1).

$$\epsilon_s(i) = \frac{\eta_m(i)}{\eta_n(i)} \times 100\% \quad (1)$$

where ϵ_s - is the error rate (%).
 $\eta_m(i)$ - Number of Accuracy Match.
 $\eta_n(i)$ - Number of Total Notes.

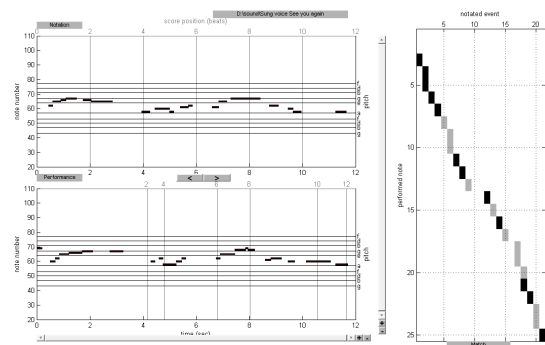


Figure 8: The confusion matrix of Match Melody

The fundamental performance ratings are calculated comparing the pitch, volume and timing between the reference voice and sung voice. As the result of the experiment is shown in the Table I.

Table I: Performance evaluation and Scoring

Experimental	Performance		
	<i>Number of Total Notes</i>	<i>Number of Accuracy Match</i>	<i>Score</i>
Self Comparison of original voice	18	13.1	73%
Comparison of original Voice and Sung voice	18	18	100%

4. Discussions and Conclusion

This paper proposed the method of analysis of karaoke sung voice is based on the method of Music Information Retrieval (MIR) Toolbox and MIDI toolbox. The evaluation is presented in this report, showing that systems are roughly effective. The scores are evaluating from 12-second audio. The results are showing that: in case of self-comparison of the original Voice is 100% while the sung voice is compared with the original voice is 73%. The reason of scores 73% was slightly low might cause by the singer is not to associated with original notes.

References

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