

# ONLINE AND MOBILE LEARNING APPS FOR FINANCIAL LITERACY IN MATHEMATICS

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## Abstract

The purposes of this study were to explore the components and model of learning instructions of online and mobile learning apps for financial literacy in mathematics, and to explore the attitude toward the use of online and mobile learning apps for financial literacy in mathematics. Singapore was chosen as a case study because Singapore had been used online and mobile learning apps for financial literacy in mathematics for at least 15 years. The research findings show that Singapore had comprehensive effort to teach children and adults how to sharpen their financial literacy skills and achieve greater financial health and independence. The components and model of learning instructions of online and mobile learning apps for financial literacy in mathematics in Singapore consisted of four (4) topics. There are 1) Singapore Government Policy in teaching and learning of online and mobile learning apps for financial literacy in mathematics are concrete and realistic; 2) Singapore's Ministry of Education promotes financial literacy among students through infusing key concepts in the curriculum for all levels from primary until university levels; 3) There are institutions and Financial Literacy Hub for teachers that responsible for conducting financial literacy workshops and creating online and mobile learning apps for financial literacy in mathematics; and 4) Ministries, organizations and Banks in Singapore had positive attitude toward financial literacy. The examples of smartphone Singapore financial literacy apps are WhyMoolah and Mighty Savers.

**Keywords:** Online, Mobile, Learning Apps, Financial Literacy, Mathematics

## Introduction

Thai Government is taking steps to move the country toward new economic model "Thailand 4.0". From the past until present, Thailand has passed through three economic development models. In the first model "Thailand 1.0", emphasis was on the agricultural sector. The second model "Thailand 2.0" focused on light industries, which helped upgrade the country's economy from the low-income to middle-income status. In the third model, "Thailand 3.0", the country is currently emphasizing heavy industries for continued economic growth. And now Thailand 4.0 focuses on a value-based economy. Deputy Commerce Minister Suvit Maesincee explained that Thailand 4.0 economic model will change the country's traditional farming to smart farming, traditional SMEs to smart enterprises, and traditional services to high-value services (2018). Thailand 4.0 focuses on a value-based economy, as the country needs to deal effectively with disparities and the imbalance between the environment and society. One of the Thailand 4.0 elements include a knowledge-based economy with emphasis on research and development, science and technology, creative thinking and innovation.

## OECD, PISA and Financial Literacy

OECD or The Organization for Economic Cooperation and Development established an inter-government project since 2003 with the purposes of providing ways to improve financial education and literacy standards through the development of common financial literacy principles. According to OECD (2018), financial literacy is about the knowledge and understanding of financial concepts and the skills, motivation and confidence to apply such knowledge and understanding in order to make effective decisions across a range of financial context, to improve the financial well-being of individual and society, and to enable participation in economic life. Financial literacy is the possession of set of skills and knowledge that allows an individual to make informed and effective decisions with all of their financial resources (OECD, 2018).

PISA (Programme for International Student Assessment) is a world wide study by OECD in member or non-member countries to evaluate educational systems by measuring 15-year-old school students performance on mathematics, science and reading. The assessments were repeated every three years. In year 2012, PISA had assesses another subject of the level of knowledge of students on financial literacy. Finances are part of the daily life of teenagers who already consume simple financial products and services such as bank accounts, money and transaction, financial planning and management, or risk and profit. According to PISA students who do well in financial literacy are likely to perform well in other areas too, and students who have poor financial literacy skills are likely to do poorly in other subjects. PISA test results reflect the strengths and weakness of each educational system and serve as a guide for future improvement in the country. (OECD, 2018).

OECD released the results of the PISA 2015 financial literacy skills in May 2017. The data determine the students results that they were able to solve basic financial problems, make informed decisions about day to day expenses or use a credit card. Based on the results of Students' Financial Literacy: Results from PISA 2015, Andreas Schleicher explained that more than 50 countries are developing a financial education strategy that:

- recognizes the importance of financial education;
- involves the co-operation of different stakeholders as well as the identification of a coordinating body;
- establishes a roadmap to achieve specific and predetermined objectives within a set period of time;
- provides guidance for individual programmes in order to efficiently and appropriately contribute to the national strategy.

Thailand is a non-member of OECD, however Thailand participated in this project as a Partner Countries. Thailand have to learn from OECD-PISA on the Students Financial Literacy Survey 2015 results and findings. This is because PISA examines not just what students know in science, reading and mathematics, but what they can do with what they know. Results from PISA show educators and policy makers the quality and equity of learning outcomes achieved elsewhere, and allow them to learn from the policies and practices applied in other countries. This survey explores students' experience with and knowledge about money and provides an overall picture of 15-year-olds' ability to apply their accumulated knowledge and skills to real-life situations involving financial issues and decisions (OECD, 2018).

Results from PISA Students' Financial Literacy 2015 reveal that developed and emerging countries economics have become increasingly concerned about the level of financial literacy of their citizens particularly among young people. Many young people face financial decisions and are consumers of financial services. Financial literacy is now globally recognized as an essential life skills. Financial literacy is an essential element in the education of critical and responsible citizens (PISA, 2018).

### **Online and Mobile Learning Apps, Financial Literacy and Mathematics**

Now a day mobile technology such as smart phones, tablets and laptops or online application and tools became an integral part of the lives of most teachers and students in all over the world. Khairiree (2014) reported that students were able to study the prototypes of instructional media for mathematics and animation through tablet and smart phone, Facebook and Line. The students' satisfactions toward these prototypes of instructional media were better than tradition teaching method chalk and talk. The term mobile learning is meant the delivery of teaching and learning to students through the use of wireless internet and mobile devices. Fox and Bartholomae (2008) define financial literacy as an individual's understanding and knowledge of financial concepts and services, which are critical to effective financial decision making. There are many apps designed for practicing on numerical, mathematics skills and problem solving. Mathematics for financial literacy are developed for students to learn how to apply basic mathematics concepts to the task they will use in the real world such as interest calculation, managing a bank account, using credit cards, and creating a budget. The financial literacy apps can help students and adults to quickly understand how to use money and the consequences of their financial decisions.

## Research Process

This research is a case study aims to explore the components and model of learning instructions of online and mobile learning apps for financial literacy in mathematics and to explore the attitude toward the use of online and mobile learning apps for financial literacy in mathematics.

Singapore was chosen as a case study because Singapore had been used online and mobile learning apps for financial literacy in mathematics for at least 15 years. In addition, Singapore is Rank No.1 for mathematics, science and reading in PISA 2015. This research study was conducted in May 2018. The subjects were Singaporean, teachers and students in Singapore. The questionnaire and focus group interview with Singaporean teachers and students were conducted in Singapore. The relevant documents and evident of financial literacy such as report, news, financial textbooks for students, the PISA results were collected and analyzed.

## Research Questions

1. What are the components and model of learning instructions of online and mobile learning apps for financial literacy in mathematics in Singapore?
2. What are the attitude toward the use of online and mobile learning apps for financial literacy in mathematics?

## Research Findings

Research Question 1: What are the components and model of learning instructions of online and mobile learning apps for financial literacy in mathematics in Singapore?

Based on the research findings, Singapore had comprehensive effort to teach children and adults how to sharpen their financial literacy skills and achieve greater financial health and independence. The components and model of learning instructions of online and mobile learning apps for financial literacy in mathematics consisted of four (4) topics. The four components are as follows:

- Government Policy
- Financial Literacy Curriculum
- Financial Institutions and Hub, and
- Funding

The research findings are as follows:

1) **Government Policy:** Singapore Government Policy in teaching and learning of online and mobile learning apps for financial literacy in mathematics are concrete and realistic. The policy of Singapore's financial consist of three tiers of financial literacy and core financial capabilities. The tiers of financial literacy are basic money management, financial planning and investment know-how. The core financial capabilities consist of understanding money, understanding yourself, your rights and responsibilities, managing everyday money, planning ahead, and selecting suitable financial products.

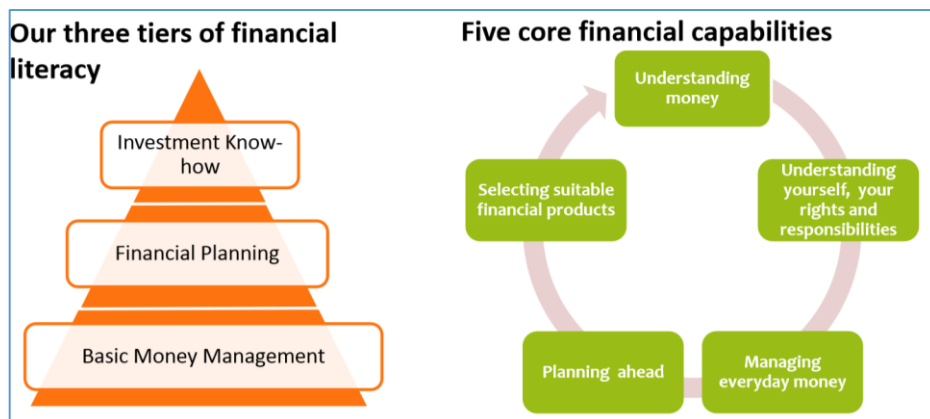


Figure 1: Singapore Government Policy of Financial literacy and Core Financial Capabilities of Singaporean

Source: Delivering Financial education in Singapore (2018)

2) **Financial Literacy Curriculum:** Singapore's Ministry of Education promotes financial literacy among students through infusing key concepts in the curriculum for all levels from primary until university levels.

3) **Financial Institutions and Hub:** There are institutions and Financial Literacy Hub for teachers that responsible for conducting financial literacy workshops and creating online and mobile learning apps for financial literacy in mathematics. The examples of institutions and Financial Literacy Hub are:

(1) *The MoneySENSE National Financial Education Program.* The MoneySENSE Industry Working Group (MIWG) consists of Association of Banks in Singapore, the Association of Financial Advisers Singapore, the Financial Planning Association of Singapore, the General Insurance Association of Singapore, the Insurance and Financial Practitioners Association of Singapore, the Investment Management Association of Singapore, the Life Insurance Association of Singapore, and Singapore Exchange Ltd. MoneySENSE.

(2) *MoneySENSE-Singapore Polytechnic Institute for Financial Literacy.* The MoneySENSE-Singapore Polytechnic Institute for Financial Literacy consist of MoneySENSE, National Financial Education Programme in Singapore and Singapore Polytechnic. MoneySENSE is the national financial education programme in Singapore. The MoneySENSE programme are designed for Singaporean students form primary, secondary and university level. The Institute offers free talks and workshops to help consumers develop capabilities to make financial decisions that directly affect them and their families (MoneySENSE, 2018). The MoneySENSE's website provides content on basic money management, financial planning, and personal investing. The MoneySENSE initiatives aim to equip Singaporean with the basic knowledge and capabilities to perform keys activities as following:

- Manage their cash flow and live within their means;
- Be financially prepared should unforeseen events like accidents and illnesses occur;
- Buy a home that they can afford; and
- Plan ahead and take steps to have sufficient income for life (including during retirement).

(3) *The Citi-NIE Financial Literacy Hub for Teachers.* National Institute of Education (NIE) Singapore and Citi Bank established the inaugural Financial Literacy Hub for Teachers to empower school teachers to infuse financial literacy into core curriculum subjects to embed pedagogical activities to engage students in learning (Koh, 2017). This institute conducts series of workshops on financial literacy. From July 2012 to May 2017, Citi-NIE Financial Literacy Hub offered workshops and talk on financial literacy, more than 110,000 people in Singapore participated in these events. Some of the topics covered in these workshops and talks included:

- Making sense of your money;
- Financial planning begins now;
- Measuring your financial fitness;



- Understanding loans and credit;
- Buying a home within your means;
- Understanding life insurance;
- Building your nest egg;
- Assessing your retirement income needs;
- Enrich your golden years.

The Citi-NIE Financial Literacy Hub for Teachers is committed to spearheading high quality education programmes with research embedded for continual improvement. The Hub involved more than 6,000 students and 1,000 teachers in their programmes. The common delivery methods used in financial education programs include in-person groups, the Internet, mobile applications, educational materials and mass media (Koh, 2011).

#### 4) Funding

The learning instructions of online and mobile learning apps for financial literacy in mathematics in Singapore received the funding and scholarships from Ministries, Banks and many organizations to develop the online and mobile learning apps. For example, the Central Provident Fund Board, Monetary Authority of Singapore, Ministry of Communications and Information, Ministry of National Development, Ministry of Social and Family Development.

The example of mobile learning apps for financial literacy in mathematics are as follows:

(1) **WhyMoolah** WhyMoolah is an application of financial literacy on line and on smartphone in Singapore. WhyMoolah is develop from PlayMoolah, PlayMoolah app. can be used around the world on iOS and Android (<http://playmoolah.com>). WhyMoolah is a simulation game that will take a player through life in Singapore. WhyMoolah app is a life-simulator which help young adults Singaporean plan their lives until the age of 35 year old. The game allows user to create an avatar and take them through the different stages of life, from planning a graduation trip, to paying back university loan, getting married, buying the first home and other expenses. Players learn about other hidden costs, budget and managing finances along the way. WhyMoolah apps can help the players make better decisions in their real life.

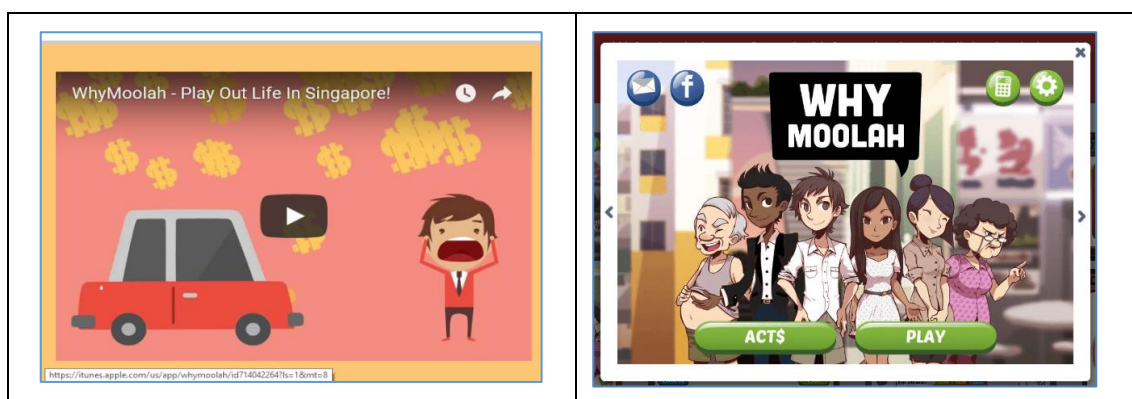


Figure 2: WhyMoolah Apps - Singapore Real Life Simulation

(2) **Mighty Savers Programme** OCBC Bank, Singapore launched a financial literacy app that was created by OCBC Bank mobile developers, one designer and four primary students from Yu Neng Primary School. The Mighty savers App will teach wise spending and investments, differentiating needs and wants, sound investment, saving with compounded interest and giving to others. This game engage OCBC young savers to use a fun app to be early adopters of good money management habits.

(3) **1 Million Dollar Journey** The students of Singapore Management University (SMU), Institute of Technical Education (ITE) and Citi Bank developed the apps “1 Million Dollar Journey” on smartphone. The app is a fun and financial learning game, the game emphasis on budget and saving. During the game players will have to make financial decision which effect their wealth and well-being, their job performance. The apps can be play on iOS and Android.

(4) **MoneyACE** MoneyACE is a financial game made for Singapore students of Junyuan secondary school. This learning game is about principle of accounting based on Singapore syllabus at Secondary 3 and

Secondary 4 levels. The MoneyACE can be played as a single person or up to 4 players. The players can play and compete against each other. There is a training mode which allows players to learn principles of accounting at their own pace.

*Research Question 2:* What are the attitude toward the use of online and mobile learning apps for financial literacy in mathematics?

Based on the research findings, the researcher found that:

- 1) Ministries, organizations and Banks in Singapore had positive attitude toward financial literacy. They provided annual funding for developing and hosting the competition of financial literacy apps.
- 2) There are institutions and Financial Literacy Hub for teachers that responsible for conducting financial literacy workshops and creating online and mobile learning apps for financial literacy in mathematics. Teachers, parent and their children are willing to participate in the workshops and talks on financial literacy.
- 3) OCBC Bank supported the children and encourage them to learn financial literacy in a fun and exciting ways. OCBC partnered with PlayMoolah's online on both web and mobile. Children who opened an account got access to **Moolahverse** game online. In addition, children will receive saving \$50 every month, this will be an exciting integration of an offline-online experiences and encourage the children to have a saving behavior through online game (<http://www.marketing-interactive.com/ocbc-launched-financial-literacy-app-kids/>)

### Conclusion

The research findings show that Singapore had comprehensive effort to teach children and adults how to sharpen their financial literacy skills and achieve greater financial health and independence. The components and model of learning instructions of online and mobile learning apps for financial literacy in mathematics in Singapore consisted of four (4) topics. There are 1) Singapore Government Policy in teaching and learning of online and mobile learning apps for financial literacy in mathematics are concrete and realistic; 2) Singapore's Ministry of Education promotes financial literacy among students through infusing key concepts in the curriculum for all levels from primary until university levels; 3) There are institutions and Financial Literacy Hub for teachers that responsible for conducting financial literacy workshops and creating online and mobile learning apps for financial literacy in mathematics; and 4) Ministries, organizations and Banks in Singapore had positive attitude toward financial literacy.

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<http://playmoolah.com>

# SIMPLE COMPUTER CONTROLLED SPECTROMETER

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## ABSTRACT

A spectrometer is constructed using Light Emitting Diodes of different colors as sources for this spectrometer. In order to calibrate the light sources, different types of LEDs are connected to the circuit of constant voltage to give lights of different colors. The colors of these LEDs are Violet, Blue, Green, Yellow, Orange and red. The I-V characteristics curves of all types of LEDs were studied. The starting voltages, V, of all LEDs were measured. From energy relation equation,  $e.V = h.c/\lambda$ , the calculated threshold wavelengths of LEDs are 410 nm (Violet), 442 nm (Blue), 462nm (Green), 676nm (Yellow), 683nm (Orange) and 727nm (Red). The emission spectra of all LEDs were measured using a commercial standard DIGIKRÖM DK240 1/4m Monochromator, to give the peak wavelengths of each LED, 410nm (Violet), 470nm (Blue), 530nm (Green), 600nm (Yellow), 610nm (Orange), 630nm (Red) respectively. These peak wavelengths are used as reference light sources for this spectrometer.

Light sources of each reference wavelengths with intensity  $I_0$  pass through liquid sample container. Two light sensors detected reference intensity  $I_0$  and absorbed intensity  $I$  using microcontroller. The transmittance,  $T$ , is defined as the ratio of the amount of light transmitted to the amount of light that initially fell to the substance,  $T = I / I_0$ . Absorbance of substance is defined as the negative logarithm of the transmittance. Absorbance,  $A = -\log T = -\log I/I_0$ .

Absorption spectrum of the sample can be obtained by a plot of a sample's absorbance of light at various wavelengths. Reference absorption spectra of some samples are compared with this simple spectrometer, showing similar results.

**Key words:** Spectrum of light, Diffraction Grating, Prism, Light Emitting Diode, Arduino microcontroller, Absorption Spectrum, Absorbance

## INTRODUCTION

Spectroscope is commonly used to study the wavelength emitted by a light source, such as a sodium vapor lamp. The light passes through a narrow slit then a grating and is dispersed into a spectrum as shown on Fig. 1. The spectra to the right of the slit show the colors in the order of their wavelengths the extreme red and violet have wavelengths of about 760 nanometers and 390 nanometers respectively

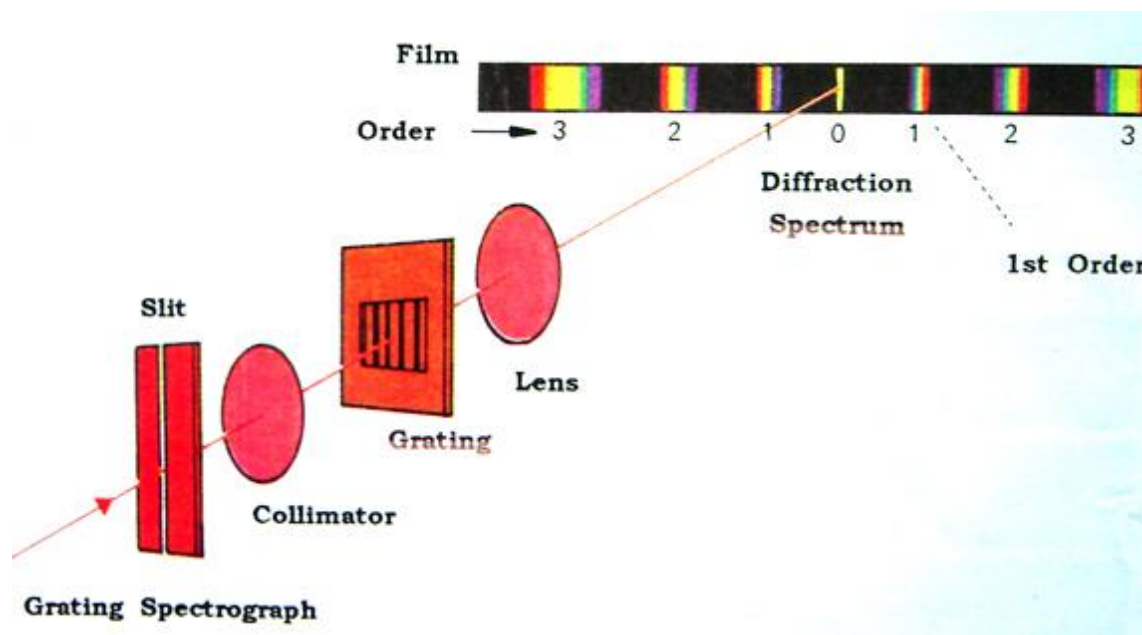


Fig. 1 Principle of Diffraction Grating Spectroscope

Normally in the standard spectrometer, we use white light passing through a slit and diffraction grating in order to get the spectrum of visible light for analysis of an absorption of substances. Standard commercial spectrometers are expensive. It would be good if we can use alternative way to construct a simple and low cost spectrometer using in the classroom.

An alternative way to do that is to use light emitting diodes of various colours covering whole range of visible spectrum or even ultraviolet as light sources for the analysis. In this case, we do not need prism or diffraction grating system to separate white light to visible spectrum of light. This can reduce the cost of the spectrum. And the prices super bright diodes are not expensive.

The light emitting diodes of various colours must be calibrated with the standard spectrometer in order to get the peak wavelength of that colour as reference wavelengths. Estimate wavelength of the LED can be calculated from a formula by using an energy relation  $e.V = h.c/\lambda$ , where  $V$  is a threshold voltage of each LED,  $h$  = a Planc constant,  $c$  = speed of light and  $\lambda$  = wavelength.

After detecting the light of various colours with and without sample and these two light intensities, reference intensity  $I_0$  and absorbed intensity  $I$ , the Transmittance  $T$  can be calculated. The transmittance,  $T$ , is defined as the ratio of the amount of light transmitted to the amount of light that initially fell to the substance,  $T = I / I_0$ . Absorbance of substance is defined as the negative logarithm of the transmittance. Absorbance,  $A = -\log T = -\log I/I_0$ . A graph of Absorbance  $A$  and corresponding wavelengths is an absorption spectrum of that substance.

## 1. Construction

### Light Source

We used Light Emitting Diode as a source for Calibration of a Spectrum Scale. Different types of LEDs are connected to the circuit to give lights of different colors. The I-V curve of the LED is shown on the left of Fig. 2. LEDs of different colors will need different minimum voltage different,  $V_d$ , to give the light. The higher  $V_d$  will give the higher energy of light depending on wavelength of emitted light.

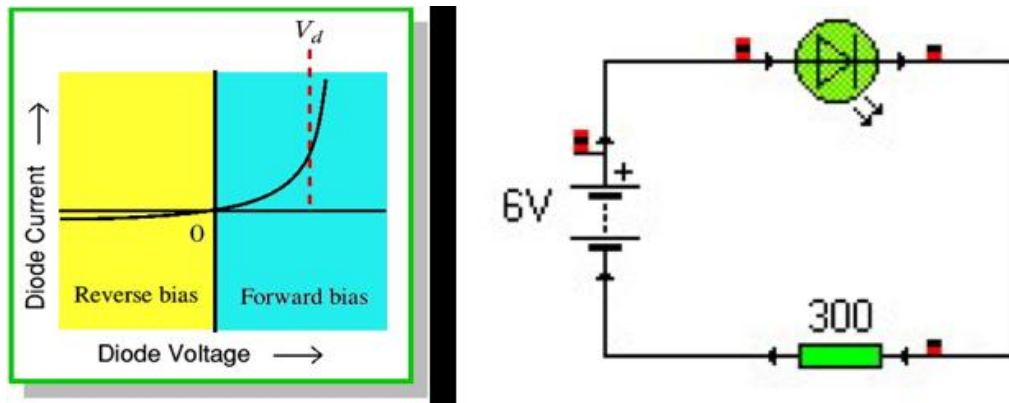


Fig. 2 The I-V curve of the LED and the circuit for the LED.

### Detector

Each pair of LEDs gives 2 light beams. The upper beam will pass through the air and will be detected by an upper light detector for measurement of  $I_0$ . The lower beam will pass through an absorbing liquid and will be detected by a lower light detector for the measurement of  $I$ . The values of the intensities  $I_0$  and  $I$  will be sent to the microcontroller for processing. Calculation of the absorption of light at different wavelengths can be calculated.

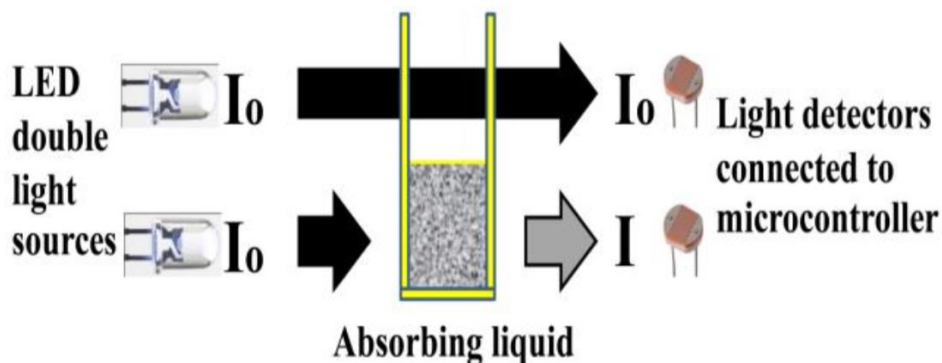


Fig. 3 Diagram showing Detection system of 2 light beams using Light Dependence Resistors as detector  
**Computer controlled System**



Fig. 4 Showing a microcontroller and LED light sources.

A microcontroller system was used to control the motor to move the detectors to measure each pair of the light sources. The information of intensities from the detectors will be analyzed as absorbance. The absorption spectrum is obtained.

## 2. Experiments

From I-V curve experiments in Fig. 2, the I-V characteristic curve of each LED light source is obtained as shown in Fig. 5.

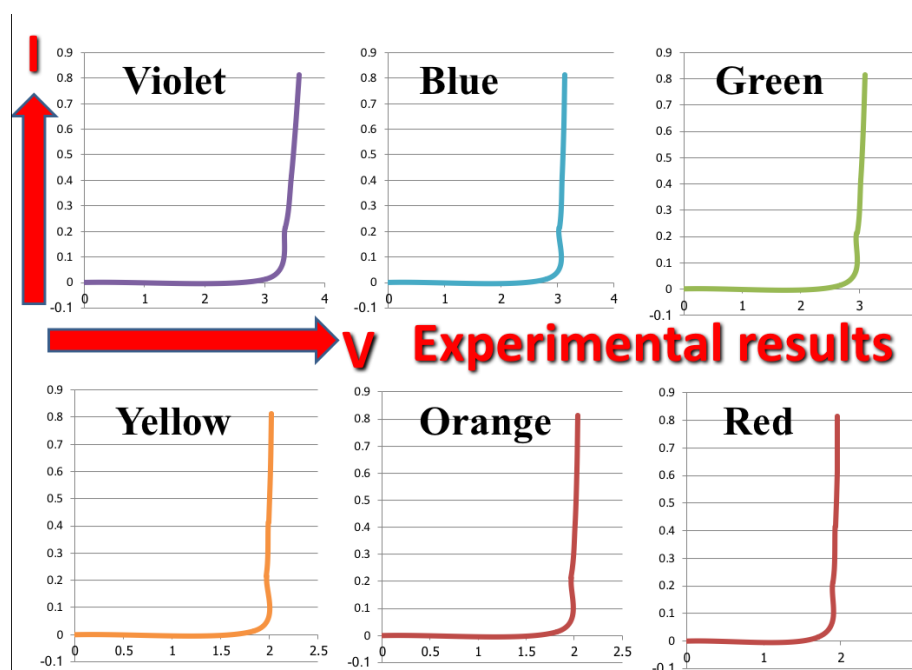


Fig. 5 The I-V Characteristic curves of different LED light sources

From energy relation equation,  $e.V = h.c/\lambda$ , the calculated threshold wavelengths of LEDs are 410 nm (Violet), 442 nm (Blue), 462nm (Green), 676nm (Yellow), 683nm (Orange) and 727nm (Red). The emission spectra of all LEDs were measured using a commercial standard DIGIKRÖM DK240 1/4m Monochromator, to give the peak wavelengths of each LED, 410nm (Violet), 470nm (Blue), 530nm (Green), 600nm (Yellow), 610nm (Orange), 630nm (Red) respectively. These peak wavelengths are used as reference light sources for this spectrometer.

LED color	P.D. needed (V)	Energy (J)	Wavelength (nm)
Violet	3.03	$4.85 \times 10^{-19}$	410.3
Blue	2.81	$4.49 \times 10^{-19}$	442.4
Green	2.69	$4.31 \times 10^{-19}$	462.1
Yellow	1.84	$2.94 \times 10^{-19}$	675.6
Orange	1.82	$2.91 \times 10^{-19}$	683.0
Red	1.71	$2.74 \times 10^{-19}$	726.9



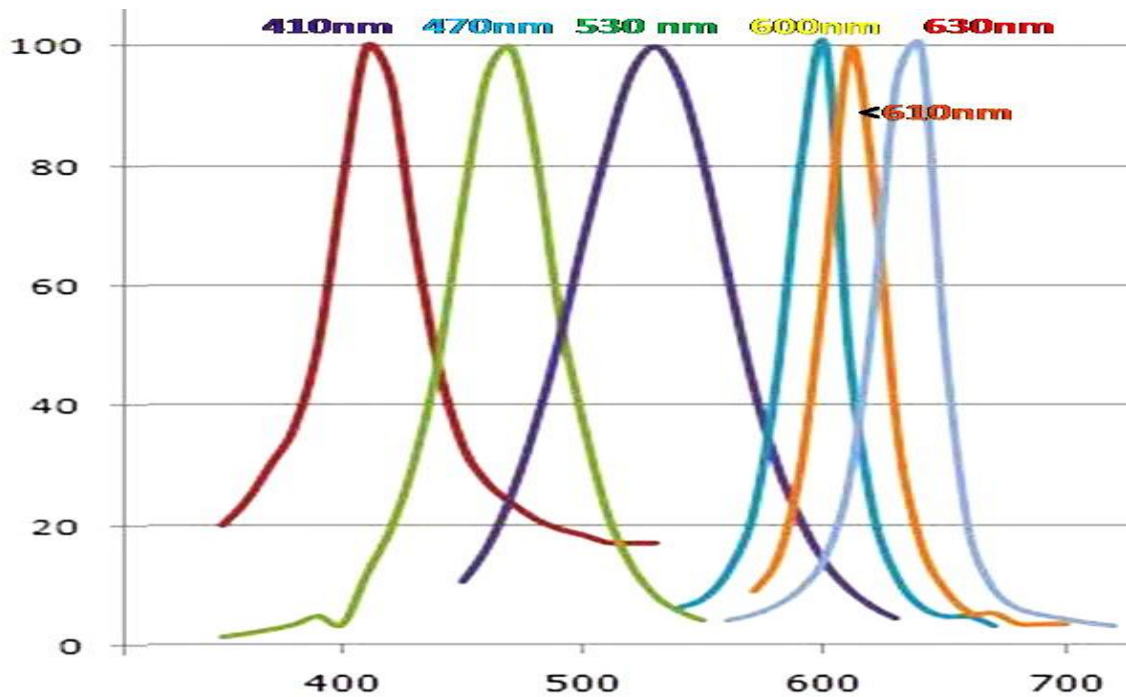


Fig. 6 The emission spectrum of different LEDs measured by using a commercial standard spectrometer DIGIKRÖM DK240 1/4m Monochromator showing the peak wavelengths. These LEDs will be used as light sources of the spectrometer.

### RESULTS

In order to check the function of spectrometer we made comparing to the commercial one, some liquids with known absorption spectrum are used as references. Fig. 7 shows the absorption spectrum of Chlorophyll solution comparing to the reference one.

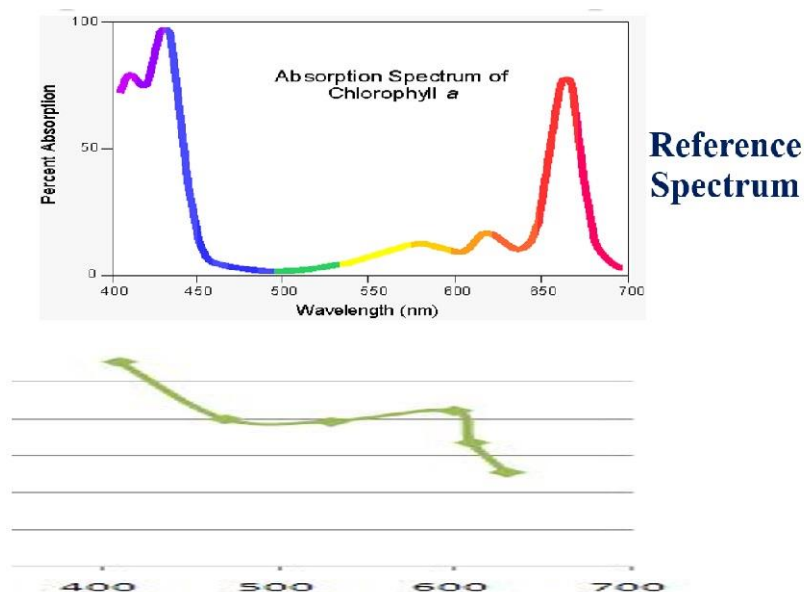


Fig. 7 shows the absorption spectrum of Chlorophyll solution comparing to the reference one.



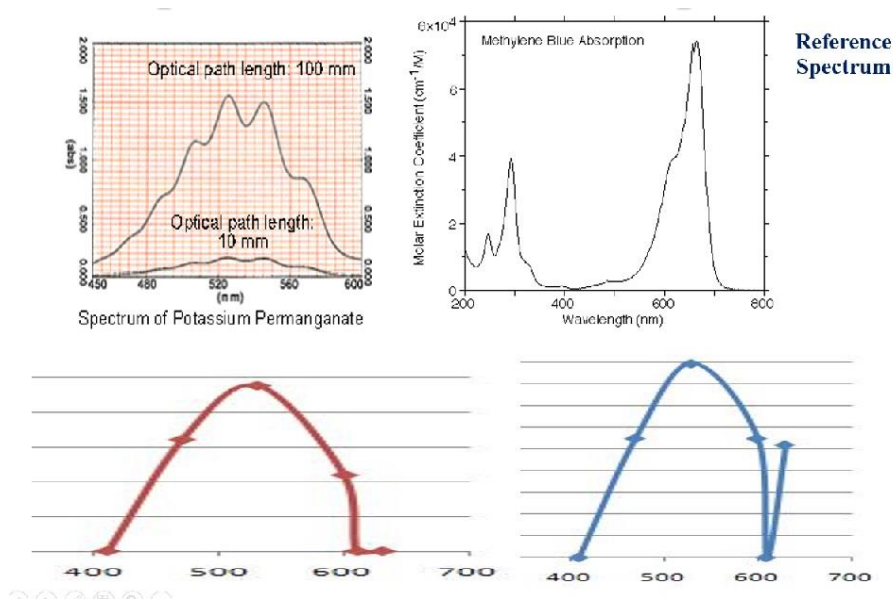


Fig. 8 shows the absorption spectrum of Potassium Permanganate solution comparing to a known reference absorption spectrum.

Another sample case is the absorption spectrum of Potassium permanganate  $\text{KMnO}_4$  as shown in Fig. 8. Any well known absorption spectrum transparent solutions can be used to check with this spectrometer how accurate it works.

## CONCLUSION

From the results of the experiments above, the absorption spectra of these solutions are similar to the one from well known spectra of references. Although the accuracy of the spectrum is not so high because of the number of wavelengths of LED light sources is small, but this spectrometer can also be used in the school for studying of the spectrum of some solutions in the classroom. Comparing the price of the spectrometer, this one is much cheaper than the commercial standard ones.

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# HEALTH COMMUNITY BASED TOURISM "SEA SALT ROUTE" IN PETCHABURI PROVINCE

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## ABSTRACT

The purpose of this paper is to describe the tourists' behavior, the motivation of travelling and the satisfaction of the components of the tourist places at Ban Lam, Phetchaburi Province. Based on the summaries of research finding, the tourists who prefer the health community based tourism sea salt route received the information from internet and social media. They liked to study the community culture, historical places and sea food. In addition, the tourists had leisure and relaxation by using salt spa treatment and massage. The Government have to be a coordinator between Government sectors and health community to set up the strategies and standardize in promoting the health tourism including facilities and safety for the tourists. The entrepreneurs should design program to involve tourists participate in the activities.

**Key words:** community based tourism, health tourism, travel motivation and satisfaction

## INTRODUCTION

Tourism is one of the influential economic industries in many countries of the world. So each country has to try and bring out its existing potential uniqueness and to create added values for their tourism products. Development of tourism industry with an abundance of fine attractions, natural destinations, architectural wonders, heritage sites and established arts and cultures as a result more tourists

Thailand is the country in Southeast Asia, which has preserved and nurtured its culture, history, architecture, and traditional way of living. The Tourism Authority of Thailand (2018) expects to expand Thailand's tourism industry, in 2019, including health and medical tourism, with at least 10% growth in revenue from 2018, reaching ฿ 3.4 trillion in revenue. The international income should generate income of ฿2.28 trillion, while the domestic market should contribute ฿ 1.12 trillion. According to report by the Global Wellness Institute, in 2015, Thailand was one of the Top Ten Wellness Tourism Markets in the Asia-Pacific region and one of Top Twenty Wellness Tourism Markets Worldwide. The behavior of tourists is more likely to be natural learning environment tourism. It will be a journey to enhance the experience of local life and culture, especially, special interest and health tourism. Therefore, the business of health promotion services, beautiful and personality services had increased. At the community level, health tourism is a trip to visit a beautiful natural and cultural attractions, to promote health and healing. This will focus on care to rejuvenate body and mind such as Thai traditional massage, mineral bath, sea salt spa, aromatherapy, hydrotherapy, body treatment with the reclining hermit to relieve the pain, meditation to calm the mind, eating and drinking herbs to balance the body, etc. From the state policy, to make tourism in the secondary provinces, The community-based tourism is implemented by the community, will be the basis of the resources of the area. There are activities with people in the community to raise awareness and enhance the experience of tourist and the benefits of tourism can improve the quality of life of people in the community. For that reason Thailand has set a Tourism Strategy plan in 2015-2017, aim to become a leader in health tourism in the region. Phetchaburi Province, the Province in the Royal Coast Area of the Gulf of Thailand, aim to develop into the world's leading health tourism destination through the promotion of health tourism to families and elderly tourist groups and raise to a cosmopolitan wellness city and develop salt production as a tourist destination on the Gulf of Thailand (Sea Salt Development Plan of Royal Coast Area, 2017-2021). The mangrove forest and sea salt farms along the sandy muddy coastline of Ban

Laem District, Phetchaburi Province is the origin of the project to develop and transfer sea salt making and salt product knowledge in Na Klua school and salt spa by the sea salt occupational group.

Based on the information of the potential of sea salt route and the strategy and policy of the state to promote and increase the potential to become a health tourism city of international standards. Behavior, motivation and satisfaction of tourists as a component in the promotion and development of health tourism in Ban Laem District, Phetchaburi Province to be more effective.

## **LITERATURE REVIEW**

### **Community-Based Tourism**

The social changes that brought on by globalization and the influence of Mass-Consumerism are supported by sustainable development in The United Nations, international institutions and academics and conservationists. Tourism is one way to bring local people of different backgrounds together. Ideally, tourism seems to offer hosts and visitors a unique opportunity to share their different cultures and point-of-view. Members of different societies are due to share first-hand experiences together and to develop personal relationships which can grow into powerful alliance contributing towards the sustainable development of society. Community-Based Tourism (CBT) is tourism in which local residents invite tourists to visit their community with the provision of overnight accommodation. CBT enables the tourist to discover local habitats and wildlife, and celebrates and respects traditional cultures, rituals and wisdom. It is managed and owned by the community, for the community, with the purpose of enabling visitors to increase their awareness and learn about the community and local ways of life. The community will be aware of the commercial and social value placed on their natural and cultural heritage through tourism, and this will foster community based conservation of this resources. (Responsible Travel, 2006)

Potjana (2003) states that “the worldwide emergence of the tourism industry communities have received few, if any, benefits from tourism. Instead, they have suffered a spectrum of negative impacts that have damaged their natural resources and changed their society and culture in multiple ways. In truth, communities have benefited very little from tourism”. The facilitating organization should done by 10 steps of building community capacity to manage tourism as follows: 1) Choose destination 2) Complete a feasibility study in cooperation with the community 3) Set vision and objectives with the community 4) Develop a plan to prepare the community to manage tourism 5) Set direction for organizational management 6) Design tour programs 7) Train interpretive guides 8) Develop marketing plan 9) Launch a pilot tour program 10) Monitor and evaluate the process.

### **Health Tourism**

Health tourism may be defined as the deliberate attempt on the part of a tourist facility or destination to attract tourists by promoting healthcare services and facilities in addition to regular tourist amenities (Goodrich, 1993). Loveseed (1998) states that health tourism encompasses those products and services are designed to promote and enable their customers to improve and maintain their health through a combination of leisure, recreational and educational activities in location removed from the distraction of work and home.

The World Tourism Organization has defines health tourism as a niche has emerged and has rapidly grown to become an industry where people travel long distances to other countries to obtain medical, dental and surgical care while simultaneously having a holiday. (Cornell, 2006). Rane (2017) states that health tourism may be divided into two categories: 1) Health healing tourism: travelling to receive medical treatment in specialized institutes jointly with tourism programs to leisure, recreational and 2) Health promotion tourism: travelling to promote and enable their customers to improve and maintain their health through a combination of leisure, recreational and educational activities in location.

### **Travel motivation and satisfaction**

Motivation refer to the combination of physical needs, the mind, and the culture of person' life continuously. It can stimulated target values, consumption behavior, travel services and destination of tourist (Chalongsri, 2007). Assessing tourist motivation allows us to understand a traveler's choice, preferences and needs (Bansal & Eiselt, 2004). Tourist motivation has been viewed as an important issue in tourist behavior in terms of selecting tourist destination choice (Jennifer Tom, 2007). And travel motivation is an essential aspect

of tourism and has been studied to understand why people travel and what factors influence their behavioral intention of choosing a travel destination is beneficial to tourism planning and marketing (Dharmesh, 2008).

Kotler and Keller (2006) has defined satisfaction as “person’s feeling of pleasure or disappointment which resulted from comparing a product’s perceived performance or outcome against his/her expectations. Oliver(1980) After having used the product, a comparison would be made between the actual value realized and the prior expectation. Realized value exceeding expectation will create in the consumers a positive disconfirmation , meaning that they are very satisfied and they will repurchase in the future.

## **METHODOLOGY**

### **Instrument**

The tool used to collect data was a questionnaire with three parts. The first part contains questions about the demography of Thai tourists such as gender, age, education and career. The second part contained questions about their traveling behaviors and needs. The third part contained questions about the motivation and satisfaction of health tourism in Ban Laem District, Phetchaburi Province.

### **Data Collection Procedure**

The target population was Thai tourists visiting Sea Salt Route. The 120 samples size were collected data during March until May, 2018 at Ban Laem District, Phetchaburi Province. Simple random sampling was used to collect data on weekends

### **Data Analysis**

Descriptive statistics was used initially including mean, standard deviation and description of sample group demographics. The Exploratory Factor Analysis was used to extract the motivation and satisfaction factors concerning the performance of the health tourism in sea salt route. The variation in this motivation and satisfaction among gender of Thai tourists was tested by using the T-test Independent and age, education and career of Thai tourists was tested by using the Analysis of Variance (ANOVA).

## **RESULTS**

A total of 120 questionnaires were handed out and findings of data analysis, as follows:

### **Thai Tourists’ Profile**

Descriptive statistics analysis found the sample group of Thai tourists to include more female(66.7%) and mostly the age of under 25 years(33.3%) . The majority of respondents had a bachelor’s degree (80.0%) and was the student (46.7%) and the second largest group is a private business (20.0%). The most tourists was being in Bangkok (53.3%)

### **Travel Behavior**

The majority of the sample group had travel 3-5 times/year (43.3%). The most Thai tourists make a decision about attractions(95.4%) and accommodation (79.2%)in the second group. The majority of tourists (86.7%) get information from the Internet and social media. The majority of them traveled with a group (30%) and spent approximately 1-3 days (90%)

**Table 1. Tourists' motivation and Satisfaction with attributes of community-based health tourism in Sea Salt Route, Phetchaburi Province. (N= 120)**

Attributes	Motivation		Satisfaction	
	Mean	Std. Dev.	Mean	Std. Dev.
F1 Visit, close and study the community environment	3.52	.721	3.65	.693
F2 Health promotion and nature consciousness activities	3.20	.789	3.37	.987
F3 leisure, relaxation, improve health and well-being	3.72	.676	3.89	1.035
F 4 Low cost travel	3.59	.789	3.69	.879
F5 Conveniently, safety and less time transportation	3.41	.608	3.63	.856
F6 Meet people, Socialization and Impressive service	3.79	.808	3.83	.904

#### Travel Motivation and Satisfaction

The Thai tourists were most motivation with meet people, socialization (Mean = 3.79) and followed by leisure and relaxation (Mean = 3.72) by using salt spa treatment and massage, fresh air and quiet place and followed by national attractions and activities (Mean = 3.52 and 3.20). Most Tourists were very dissatisfied with leisure and relaxation (Mean = 3.89). Followed by friendly and service mind local people (Mean = 3.83), low cost (Mean = 3.69) safe and less time travel (Mean = 3.83) and activities (Mean = 3.37).

**Table 2. Factor analysis of Tourists' motivation and Satisfaction evaluation of difference Demographic Characteristics**

Demographic Characteristics	Attributes							
	F1		F2		F3		Total	
	t	P	t	P	t	P	t	P
Gender /motivation	-4.763	.000*	-3.910	.070	-4.435	.503	-4.222	.000*
Gender/satisfaction	-2.717	.155	-1.981	.303	1.788	.932	-0.000	.245
	F	P	F	P	F	P	F	P
Age / motivation	2.899	.025*	4.102	.004*	1.312	.270	4.551	.002*
Age/ satisfaction	4.846	.001*	3.496	.010*	6.631	.000*	3.485	.010*
Education/ motivation	2.321	.103	.120	.887	2.417	.094	1.297	.277
Education/ satisfaction	.461	.632	.154	.857	2.222	.113	1.210	.302
Occupation/ motivation	3.110	.060	4.113	.004*	.886	.475	2.941	.047
Occupation/ satisfaction	1.666	.163	1.819	.130	11.392	.000*	3.248	.015*

\* significant at 0.05

#### Tourist' Motivation, Satisfaction and Demographic Characteristics

The study of Thai tourists profile in health tourism destination in sea salt route was found gender, age and career of tourists to be related to motivation and satisfaction. This is consistent with Sunisa and Pawanrat (2012) to study behavior and satisfaction of Thai tourists towards tourism, Raksawarin hot spring, Ranong Province, Thailand.

#### Guidelines for Development of Community-Based Health Tourism in Sea Salt Route

- 1) Government sectors and health community to set up the strategies and standardize in promoting the sustainable community-based health tourism including facilities and safety and service mind for the tourists.
- 2) The entrepreneurs should design program to involve tourists participate in the activities.
- 3) Study on the potential of community-based health tourism management to accommodate high potential tourists.

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# MATHEMATICAL PROOF ABILITIES OF THAI TEACHERS' STUDENTS MAJORING IN MATHEMATICS

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## ABSTRACT

This study aimed to investigate proof abilities of Thai teachers' students. Sample were teachers' students in year 2, 3, and 4 from two teacher collages who had already taken a course about mathematical proof in year 1. Instrument was proof test developed by the researcher to measure students' abilities in construction basic mathematical proof. The test required teachers' students to apply various types of proof: direct proof, proof by contradiction, proof by contrapositive, proof by mathematical induction, proof of existence, conjecture and proof, and proof by cases. Results were the following:

- (1) Overall, proof abilities of all mathematics teachers' students were not satisfactory ( $\bar{x} = 28.02$ , total = 70).
- (2) Proof abilities were increased when the number of years in studying mathematics increased. The averages of proof scores in year 2, 3, and 4 were 19.54, 26.31, and 36.88 respectively.
- (3) Most of teachers' students faced problem in simple proof about limit of a function by using  $\delta$  and  $\varepsilon$  ( $\bar{x} = 0.05$ ). This indicated that they didn't understand the definition of limit of a function which is an important concept in studying calculus and analysis.
- (4) Teachers' students could do simple direct proof ( $\bar{x} = 8.45$ ) and simple proof by contrapositive ( $\bar{x} = 7.45$ ) but their proof scores were dropped when they had to do proof by mathematical induction ( $\bar{x} = 4.93$ ).
- (5) For proof of existence ( $\bar{x} = 0.41$ ) and conjecturing before doing proof ( $\bar{x} = 0.72$ ), their scores were quite low.

**Key words:** mathematical proofs, proof abilities, and types of proof

## INTRODUCTION

Proof is usually used by mathematicians to convince people or mathematicians about theorems or branches of mathematics they are creating. Proof also helps increasing mathematics powers and confidence for those who are doing mathematics including school and university students. (Kaur, B. and Lee N.H., 2017)

Students' teachers, in their learning and teaching mathematics, might ran into some questions, ideas or statements which they have to justify whether they are true or not. Some of those were not proved in a textbook. So, they must use reasoning to justify the correctness or prove those questions, ideas or statements themselves. Consider the following statements:

1. For  $a \in \mathbb{R}$  and  $a > 0$ ,  $\frac{1}{a} > 0$ .
2. In the set of real numbers, there are more irrational numbers than rational numbers.
3. The product of a rational number and an irrational number is an irrational number.
4. There is no rational number between any two rational numbers.

Some of the above statements are true while the others are false. Statement 1 is an exercise in students' text. In proving it, we use proof by contradiction. Statement 2 is true but it needs knowledge about countable and uncountable sets. Statements 3 and 4 are false. To disprove them, we apply proof by counterexample.

In justifying a statement, we concern not only proof but also reasoning, conjecturing, and problem solving. In part of reasoning and proof, NCTM (National Council of Teachers of Mathematics) (2000) suggested

that reasoning and proof are fundamental aspects of mathematics. The council also pointed out that instructional program from prekindergarten through grade 12 should enable all students to—

- recognize reasoning and proof as fundamental aspects of mathematics
- make and investigate mathematical conjectures
- develop and evaluate mathematical arguments and proofs
- select and use various types of reasoning and methods of proof.

The above position statement about reasoning and proofs convinces mathematics educators about the importance of reasoning and proofs in teaching mathematics. For mathematics teachers' students, it is a necessity to be good enough at mathematics proofs. That is why the researcher desired to investigate proof abilities of Thai teachers' students and hoped to use the results of this study as a baseline data to improve mathematics education program.

### Research objectives

The objectives of this study were 1) to investigate overall mathematical proof abilities of Thai teachers' students and 2) to compare proof abilities of teachers' students in each type of proof.

### Research questions

1. What were the distributions of proof scores of students in year 2, 3 and 4?
2. What types of proofs were easy or were difficult for teachers' students.
3. What contents were easy or were difficult to proof.

### Population and sample

Population in this study was teachers' students from universities in Bangkok, Thailand in academic year 2017.

Sample was 142 teachers' students in year 2, 3 and 4 from a university in Bangkok, Thailand in academic year 2017.

### Instrument

Instrument in this study was a Proof Ability Test developed by the researcher. It was composed of 7 proof items for 100 minutes. The proof items were as follows:

1. Given  $a \in R$  and  $a > 0$ , prove that if  $|x| < a$ , then  $-a < x < a$ .
2. Prove that if  $a$  is even, then  $a^2$  is even for every integer  $a$ .
3. Prove that if  $a^2$  is even, then  $a$  is even for every integer  $a$ .
4. For every positive integer  $n$ , prove that  $n^3 + 3n^2 + 2n$  is divisible by 3.
5. In the set of positive integers, prove that there is no greatest positive integer.
6. Prove by using  $\delta$  and  $\varepsilon$  that  $\lim_{n \rightarrow 2} 5n = 10$ .
7. If  $x$  is a rational number and  $y$  is an irrational number, then  $x + y$  is irrational. Consider whether the given statement is true or not. Prove it if it is true. Give a counter example if it is false.

The classification about types of proofs, contents and scores was presented in table 1.



Table 1 Methods of proofs, contents and scores

Item no.	Methods of proofs	Scores	Contents
1.	Proof by cases	10	Inequalities and absolute values
2.	Direct proof	10	Integers
3.	Proof by contrapositive	10	Integers
4.	Proof by mathematical induction	10	Integers
5.	Proof by contradiction	10	Integers
6.	Direct proof	10	Limits of a function
7.	Proof by contradiction	10	Real number system

In grading a proof of each item, the researcher considered each steps used by students and then, assigned scores for each step depending on the complexity or difficulty of the step.

## Results of the study

### 1. Results about the distribution of proof scores

They were presented in table 2.

Table 2 Distribution of student proof - mean scores in each problem

Students	Problems							Total
	1 ( $\bar{x}$ )	2 ( $\bar{x}$ )	3 ( $\bar{x}$ )	4 ( $\bar{x}$ )	5 ( $\bar{x}$ )	6 ( $\bar{x}$ )	7 ( $\bar{x}$ )	
Year 2	1.63	8.02	6.39	3.38	0.03	0	0.09	$\bar{x} = 19.54$ $S.D. = 4.79$
Year 3	1.31	9.15	8.64	6.95	0.02	0	0.24	$\bar{x} = 26.31$ $S.D. = 5.71$
Year 4	1.87	9.02	7.22	7.85	1.92	7.16	1.84	$\bar{x} = 36.88$ $S.D. = 4.13$
Total								$\bar{x} = 28.02$ $S.D. = 4.61$

From table 2, mean scores of overall proofs of students in year 2,3, and 4 were 19.54, 26.31, and 36.88 respectively. The mean scores increased while the number of years increased. The items with low mean scores were items 1,5,6 and 7 which were about proofs by cases, proof by contradiction, and proof about limit of a function.

### 2. Proof abilities of teacher's students for each item

They were present in table 3-9 as follows.

Table 3 Teachers' students proof ability in item 1

Steps	Points	Students		
		Year 2 ( $\bar{x}$ )	Year 3 ( $\bar{x}$ )	Year 4 ( $\bar{x}$ )
1.1) $x < a, x > 0$ or $-x < a, x < 0$	4	1.60	0.6	1.67
1.2) $x < a, x > 0$ or $x > -a, x < 0$	3	0.02	0.38	0.12
1.3) $-a < x < a, x \in R$	3	0	0.33	0.08
Total ( $\bar{x}$ )		1.63	1.31	1.87

From table 3, mean scores of problem 1 proved by students in year 2,3 and 4 were 1.63 , 1.31, and 1.87 respectively.

The mean scores in each year were rather close and low. Students could not apply proof by cases in this item.

Table 4 Teachers' students proof abilities in item 2

Steps	Points	Students		
		Year 2 ( $\bar{x}$ )	Year 3 ( $\bar{x}$ )	Year 4 ( $\bar{x}$ )
2.1) $a = 2k, k \in I$	3	2.54	2.76	2.56
2.2) $a^2 = 4k^2 = 2(2k^2) = 2K$	5	3.92	4.47	4.56
2.3) $a^2$ is even .	2	1.52	1.92	1.9
Total ( $\bar{x}$ )		8	9.15	9.02

From table 4, the mean scores of item 2 proved by year 2,3, and 4 students were 8.0, 9.15, and 9.02 respectively.

The mean scores in each year were rather close and nearly to the total score. Students could prove by using direct proof.

Table 5 Teachers' students proof abilities in item 3

Steps	Points	Students		
		Year 2 ( $\bar{x}$ )	Year 2 ( $\bar{x}$ )	Year 2 ( $\bar{x}$ )
3.1) Plan to use contrapositive .	3	2.19	2.54	2.1
3.2) Given $a = 2k + 1, k \in I$	2	1.42	1.72	1.44
3.3) Conclude that $a$ is even .	3	1.84	2.46	2.06
3.4) Conclude the final result .	2	1.30	1.92	1.62
Total ( $\bar{x}$ )		6.48	8.64	7.22

From table 5, the mean scores of item 3 proved by year 2,3, and 4 students were 6.48, 8.64, and 7.22 respectively which more than half of the total score.

Most students showed that in proving this item, they could apply proof by contrapositive.

Table 6 Teachers' students proof abilities in item 4

Steps	Points	Students		
		Year 2 ( $\bar{x}$ )	Year 2 ( $\bar{x}$ )	Year 2 ( $\bar{x}$ )
4.1 Can state $P(n)$ .	2	0.80	1.38	1.88
4.2 Show that $P(n)$ is true.	2	1.33	1.56	1.88
4.3 Show that $P(k + 1)$ is true.	5	1.15	3.38	3.73
4.4 Conclude that $\forall n[P(n)]$ is true.	1	0.83	0.63	0.36
Total ( $\bar{x}$ )		4.13	6.95	7.85

From table 6, the mean scores of item 4 proved by year 2,3, and 4 students were 4.13, 6.95, and 7.85 respectively.

Students in year 2 showed low ability in writing the statements  $P(n)$  and in showing that  $P(k+1)$  is true. Students in year 3 and 4 showed abilities in proving by mathematical induction.

Table 7 Teachers' students proof abilities in item 5

Steps	Points	Students		
		Year 2 ( $\bar{x}$ )	Year 2 ( $\bar{x}$ )	Year 2 ( $\bar{x}$ )
4.1 Show idea of Proof by Contradiction .	2	0.02	0	1.88
4.2 Suppose that there exist greatest integers .	2	0	0.02	0.04
4.3 Find contradict statement .	5	0	0	0
4.4 Conclusion	1	0	0	0
Total ( $\bar{x}$ )		0.02	0.02	1.92

From table 7, the mean scores of item 5 proved by year 2,3, and 4 students were 0.02, 0.02, and 1.92 respectively.

So nearly all students in the sample were not successful in proving this item which was about proof by contrapositive.

Table 8 Teachers' students proof abilities in item 6

Steps	Points	Students		
		Year 2 ( $\bar{x}$ )	Year 2 ( $\bar{x}$ )	Year 2 ( $\bar{x}$ )
4.1 Write given $\epsilon > 0$ .	1	0	0	0.9
4.2 Can choose $\delta = \frac{\epsilon}{5}$ .	3	0	0	2.34
4.3 Prove that $ 5x - 10  < \epsilon$ .	5	0	0	3.9
4.4 Show conclusion .	1	0	0	0.02
Total ( $\bar{x}$ )		0	0	7.16

From table 8, the mean scores of item 6 proved by year 2,3, and 4 students were 0, 0, and 7.16 respectively.

So teacher students in year 2 and 3 fail to prove limit of a function by using  $\delta$  and  $\epsilon$  though the proof was a simple proof. Students in year 4 were successful in such proving

Table 9 Teachers' students proof abilities in item 7

Steps	Points	Students		
		Year 2 ( $\bar{x}$ )	Year 2 ( $\bar{x}$ )	Year 2 ( $\bar{x}$ )
4.1 Show idea of proof by contradiction.	2	0.09	0.04	0
4.2 Suppose that $x + y$ is rational .	2	0	0	1.84
4.3 Conclude that $y$ is rational .	3	0	0	0
4.4 Reach a contradiction.	2	0	0	0
4.5 State a conclusion .	1	0	0	0
Total ( $\bar{x}$ )		0.09	0.24	1.84

From table 9, the mean scores of item 7 proved by year 2,3, and 4 students were 0.09, 0.24 , and 1.84 respectively.

So, all students in each year were not successful in proving this item.

### CONCLUSION AND DISCUSSION

From this study, it could be concluded as follows:

1. Proof abilities of students increased as the number of years in learning mathematics increased.
2. Overall proof abilities of students were not satisfactory ( $\bar{x} = 28.02$ , total = 70 ).
3. Teachers' students were weak at proof by cases, proof by contradiction, proof about limit of a function, and justification of the truth or falsity of a statement and proved it.
4. Proof about limits of a function and proof about inequalities and absolute values were difficult for students.
5. For first year students, they were also weak at proof by mathematical induction.

To understand proofs clearly, students needed to understand symbolic logic, truth values of compounded statements, tautologies, logical equivalences, and to have experiences in applying methods of proofs which had those tautologies and equivalences as the back bones of the proofs.

Besides strong background on logic, the true understanding of contents, definitions, and theorems is also important to support proofs. In this study, for example, if the teachers' students did not understand the definition of limit, they could not prove even though a simple proof on limits of a function. Some technology ( *Khairiree, K.(2016),Kaewsaiha, C.(2012)*) might help students more understand about limits of a function or others mathematics contents. Teacher professional development is also an important point to consider. PCK (pedagogical content knowledge) (Shulman, L.S., 1986) was proved to be an effective way for teacher education both in science and mathematics.

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# ENHANCING UNDERGRADUATE STUDENTS' LEARNING ACHIEVEMENT IN CALCULUS THROUGH REMEDIAL TEACHING STRATEGIES

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## ABSTRACT

Calculus plays an important role in predicting or controlling rate of change in business, environment and experiment in science. In the second semester of academic year 2017, it is proved that undergraduate students in Bachelor of Science Degree of Suan Sunandha Rajabhat University have difficulty with calculus. Many students initially enrolled were at-risk students not pass this course every academic year. Therefore, they dropped the calculus course, or withdrew from the course after received midterm test scores which was made educational waste. From studying the related research, the results indicate that the remedial teaching can be one strategy to solve this problem for at-risk students. There were two purposes of this study: (1) to design the remedial teaching activities in learning calculus effectively, and (2) to enhance achievement of undergraduate students in Bachelor of Science Degree. The population was undergraduate students in Bachelor of Science Degree. The samples of this study were 25 students who got below criteria score of midterm test in calculus and at-risk to fail in this course. The contents prepared for the remedial teaching were topics on 'Limits and Derivatives of Functions'. The period of this study was the second semester of academic year 2017.

The results of this study showed that the design of the remedial teaching activities in learning calculus had the Effectiveness Index (I.E.) 99.15% and students' achievement scores in learning 'Limits and Derivatives of Functions' for midterm retest was higher after using remedial teaching. From the total 25 scores, students' mean scores and standard deviation before applying the remedial teaching were 11.76 and 4.08, respectively which only 4 students (16%) passed criteria score and students' mean scores and standard deviation after applying the remedial teaching were 15.84 and 4.12, respectively which 25 students (100%) passed criteria score.

Keywords — Calculus, Effectiveness, Learning Achievement, Misconception, Remedial Teaching

## INTRODUCTION

This study is a pilot project to investigate the usefulness of the remedial teaching strategy in teaching 'Calculus'. This strategy can be one approach to help at-risk undergraduate students in Bachelor of Science Degree of Suan Sunandha Rajabhat University in learning calculus taught by the lecturer of Informatics Mathematics Program, Faculty of Science and Technology. Many at-risk students cannot pass this course every academic year and affects them to drop or withdraw from the course after received midterm test scores.

Education Bureau of The Government of the Hong Kong Special Administrative Region (2007) suggested the four steps of remedial teaching process: (1) Analysis of pupils' performance, (2) Preparation before classroom teaching, (3) Teaching (group/individual/co-teaching), and (4) Evaluation/Observation. According to Ongartyuthakorn, Doakrajang, Tirangkoor, Kaewsaiha, and Kunasaraphan (2017), the four steps of remedial teaching affected on improving the undergraduate chemistry students' abilities and there was highly satisfaction with the implementation of the remedial teaching strategies in learning 'Units of Measurement'.

The purposes of this study were (1) to design the remedial teaching activities in learning calculus effectively, and (2) to enhance achievement of undergraduate students in Bachelor of Science Degree. This study provided four steps for remedial teaching process to correct students' misconceptions and help them to pass the midterm test criteria. For step (1), the researchers analyzed at-risk students' misconceptions in calculus before designing remedial teaching with the lecturers of Chemistry Program and at-risk students. This collaboration action research emphasizes on the desire for PSMT graduate students of International College Suan Sunandha Rajabhat University become more experiences in teaching mathematics before taking practicum courses (Practicum I and Practicum II). The researchers assigned three PSMT graduate students performed the remedial teaching in step (2) for preparing topics on 'Limits and Derivatives of Functions' to develop useful skills in performing calculations and checking reasonable solution by using applications on mobile devices, such as Photomath Program and Mathpix Program. In step (3), they applied co-teaching (One Teach-One Observe-One Assist) for remedial teaching. For step (4), the researchers evaluated at-risk students by observation and determining the retest scores of the midterm.

## LITERATURE AND THEORY

Educational research has demonstrated the effectiveness of applying the remedial teaching in learning mathematics to help students in both conceptual understanding and problem-solving.

### Remedial teaching

According to Government of the Hong Kong Special Administrative Region (2007), the students under remedial teaching have characteristics of learning difficulties; for examples, (1) poor memory, (2) lack of learning motivation, (3) weak in problem-solving power, (4) fail to grasp information effectively, or (5) fail to transfer knowledge to the related learning areas appropriately. In addition, the process of remedial teaching should start from 'Analysis of Students' Performance' which focuses on their prerequisites, learning needs, learning abilities, learning styles, and learning interests. Next, the teachers should prepare the remedial teaching activities before classroom teaching such as (1) setting teaching objectives, (2) adapting the curriculum, (3) organizing teaching materials, (4) choosing appropriate teaching strategies, and (5) collecting and preparing supporting materials.

In this study, the researchers set the objectives to increase the at-risk students' scores after retest the midterm test in calculus on two topics: 'Limits and Derivatives of Functions'. The co-teaching strategy was choosing for the remedial teaching and preparing mobile device to help at-risk students study anytime and anyplace for self-confidence and literacy in calculus on the limits and derivatives of functions topics.

### Calculus literacy

The first year students who are in science program at Suan Sunandha Rajabhat University have to study a course of calculus I including the following contents: limits and continuity, derivatives, and integration. The lecturer starts teaching concepts with a review of the analytic geometry and function concepts.

The OECD (2013) defined mathematical literacy as:

Mathematical literacy is an individual's capacity to identify and understand that mathematics plays in the world, to make well-founded judgments and to use and engage mathematics in ways that meet the needs of that individual's life as a constructive, concern and reflective citizen.

The idea of mathematical literacy as defined above was adopted to define calculus literacy in this study as:

:

Calculus literacy is an individual's capacity to identify and understand that calculus concerns itself with change, to provide the necessary techniques (the change of slope of a graph of function) for the explanation and judgment in the change of chemical context.

In this study, the researchers investigated the descriptions of contents and learning outcomes of teaching 'Limits and Derivatives of Functions' as shown in Table 1.

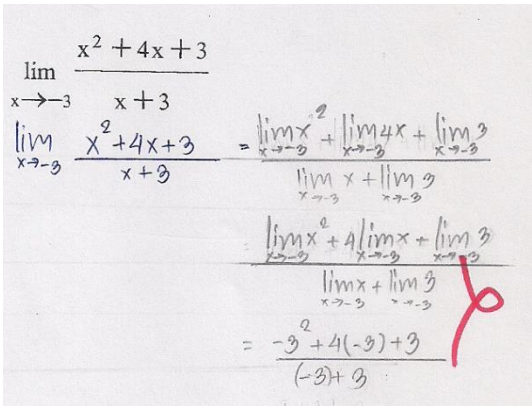
Table 1: The descriptions of contents and learning outcomes of teaching 'Limits and Derivatives of Functions'

Descriptions of Contents*	Learning Outcomes*
1. Limits: The limit of a function	1. Find the limit of a function using the Limit Laws; 2. Find infinite limits and limits at infinity.
2. Derivative of elementary algebraic functions and trigonometric functions	1. Find the derivative of elementary algebraic functions and trigonometric functions using the differentiation formulas; 2. Find the derivative of a function using implicit differentiation.

**Note:** \* Analysis from the midterm test paper prepared by the lecturer of Informatics Mathematics Program

In addition, the researchers analyzed at-risk students' misconceptions from taking the midterm test before applying the remedial teaching approach. This information was useful for planning the remedial teaching activities as shown in Table 2.

Table 2: Examples of at-risk students' misconceptions in 'Limits and Derivatives of Functions'

Misconceptions	Correct Concepts
<p>Case 1: Find the limit</p> 	<p>Find the limit</p> $\lim_{x \rightarrow -3} \frac{x^2 + 4x + 3}{x + 3}$ <p><i>Solution:</i></p> $\lim_{x \rightarrow -3} \frac{x^2 + 4x + 3}{x + 3} = \lim_{x \rightarrow -3} \frac{(x + 3)(x + 1)}{x + 3}$ $= \lim_{x \rightarrow -3} x + 1 = \lim_{x \rightarrow -3} -3 + 1 = -2 \text{ (Answer)}$
<p>Case 2: Find the derivative of the following function:</p>	<p>Find the derivative of given function:</p> $\frac{d}{dx} \ln(\sec x + \tan x)$ <p><i>Solution: Formula:</i> <math>\frac{df(u)}{dx} = \frac{df}{du} \cdot \frac{du}{dx}</math></p> <p>Let <math>f = \ln(u)</math>, <math>u = \sec x + \tan x</math></p> <p>Therefore:</p> $\frac{d}{dx} \ln(\sec x + \tan x) = \frac{d(\ln u)}{du} \cdot \frac{d(\sec x + \tan x)}{dx}$ $= \frac{1}{u} \left( -\frac{1}{-1 + \sin x} \right)$ $= \frac{1}{\sec x + \tan x} \times \left( -\frac{1}{-1 + \sin x} \right)$ $= \frac{1}{\frac{1}{\cos x} + \frac{\sin x}{\cos x}} \times \frac{1}{1 - \sin x}$ $= \frac{1}{\frac{1 + \sin x}{\cos x}} \times \frac{1}{1 - \sin x} = \frac{\cos x}{1 - \sin^2 x}$



$f(x) = \ln(\sec x + \tan x)$ $= \ln \sec x + \ln \tan x$ $\frac{dy}{dx} = \frac{d}{dx} \ln \sec x + \frac{d}{dx} \ln \tan x$ $= \frac{d}{dx} \ln(\sec x + \tan x)$ $= \frac{1}{\sec x + \tan x} \frac{d(\sec x + \tan x)}{dx}$ $= \frac{1}{\sec x + \tan x} (\sec x \cdot \tan x + \sec^2 x + \tan^2 x)$	$= \frac{\cos x}{\cos^2 x} = \frac{1}{\cos x} = \sec x \text{ (Answer)}$
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For Case 1 in Table 1, the researchers checked reasonable of each step and found that student had understanding about the substitution -3 for  $x$  failed. Since, in mathematics does not allow divided by 0. However, this student failed in devising a plan to solve the problem. For Case 2 in Table 1, the student applied incorrect formula to solve the problem. However, three PSMT graduate students developed useful skills in performing calculations and checking reasonable solution.

### Innovation and Technology in Mathematics

The National Council of Teachers of Mathematics (NTCM, 2000) and Institution for the Promotion of Teaching Science and Technology (IPST, 2013) suggested about innovative meaningful learning that is actively constructed; diversity forms and purposes of assessment; and the appropriate use of technology to enhance understanding in mathematics. In addition, teachers of mathematics must develop students' abilities to use technology tools, such as calculators, computers, or application on mobile devices for engagement and guide the exploration of mathematical process and skills in problem solving, reasoning and proof, communication, connections, and representations.

IPST (2013, p.5) mentioned about teaching and learning mathematics to support the 21<sup>st</sup> century skills which composes of (1) skills for using information communication technology (ICT), (2) thinking skills and problem solving include higher order thinking such as critical thinking and creative thinking, (3) skills for communication and collaborations.

In this study, the at-risk students were introduced the applications on mobile devices, such as Photomath Program and Mathpix Program to foster self-confidence in learning calculus. In addition, they had the opportunity to think critically in problem solving, communicate and work with their friends and PSMT graduate students.

*Photomath:* Provides 'Camera calculator and Handwriting recognition' .



*Mathpix*: Supports for arithmetic, fractions, algebraic equations, roots, logarithms, trigonometry, integrals, derivatives, and infinite series.



## RELATED WORKS OR DISCUSSION

Calculus is not a topic for ordinary mathematics in high school. The students have less preparation in background knowledge for learning calculus. Furthermore, students would have much more practice with word problems in science courses related to conceptual understanding and basic knowledge with limits and derivatives of functions and their graphs. The applications of topics in calculus particularly helpful for students to know how to apply the topic(s) to chemistry, for example, derivatives (used in chemistry to find maximum or minimum value); differential equations with modeling (used in chemical kinetics and thermodynamics); partial differential equations (used in chemical reaction kinetic, mass transport and thermodynamics). In this study, the researchers searched related works for applying the remedial teaching approach to help the undergraduate students in learning mathematics as the followings.

### *Evidencence of classroom action research*

Kingmala & Boonsook (2017) developed the supplementary lesson in Calculus 1 Course on limits and continuity of function for Undergraduate Students. The sample consists of 32 students from Public Health Program, Faculty of Science and Technology, Rajabhat Rajanagarindra University, Chacherngsao Province. This research showed two results: (1) the efficiency of the supplementary lesson was 78.91/75.83 which higher than 75/75 for the standard criteria; and (2) the learning achievement after using the supplementary lesson was statistical significant higher than before using supplementary lesson at the significant 0.05.

Plaikaew (2012) used activities “Brainstorming” to teach Calculus 1 (MA1013) for 21 undergraduate students of Faculty of Science and Technology, Huachiew Chalermprakiet University, Bangkok. The researcher provided five stages of research methodology as follows:

Stage 1: Explore and analyze students’ behaviors;

Stage 2: Understand the purpose of classroom research;

Stage 3: Divide students into 4 small groups;

Stage 4: Do the research for five tasks as follows:

- 4.1 Instructors assign each small group to discuss, analyze, and summary of content on each topic.
- 4.2 When each student has finished activity in 4.1; they will schedule appointment outside the class to take oral examination.
- 4.3 Instructors assess students’ understanding by asking what students have learned the lesson;
- 4.4 Students are asked to prepare the problem /word problem by them self and show the calculation method to solve the problem.
- 4.5 Instructors inform students about their level of assessment results, Any part of problems must be modified.

Stage 5: Conclusion

For Stage 5, the research results showed that the students’ GPA of this course was 2.14 and no student failed in Calculus 1. In addition, the students’ satisfaction survey showed ‘Strongly Agree’ in each item as follows: (1) To promote thinking skills (84.21%); (2) To promote communication skills (73.68%); (3) To promote collaboration skills (89.47%); (4) To promote responsibility (89.47%); (5) To promote human relationship (68.42%); and (6) To satisfy overall learning activities (89.47%).

### *Evidence of correcting misconceptions*

Many studies have been undertaken in order to investigate the types of misconceptions that students encounter in Calculus. However, few studies focus on the skills necessary to identify and correct students' misconceptions. In this study, the researchers were interested in one method of learning mathematics which is known as a 'counterexample'. The counterexample is not technically a proof. It is one way of showing that a given statement cannot possibly be correct by showing an instance that contradicts a universal statement.

Klymchuk (2012) mentioned that students understand the role of counterexamples to disprove wrong statements can generate many questions for discussion. For example, 'What changes will make the statement at hand correct?', 'How can you change a counterexample and have it remain one?', 'Can you find another type of function altogether that will be a counterexample or construct a general class of counterexamples to statement at hand?'

Klymchuk stated that teaching experience has shown in an international study involving more than 600 students from 10 universities in different countries with the results as the followings:

92% of the participating students found the use of counterexamples to be very effective. In addition, the students reported that it helped them understand concepts better, prevent mistakes, develop logical and critical thinking, and made learning mathematics more challenging, interesting and creative.

In this research, the researchers assigned the PSMT graduate students to apply the counterexamples instead of prove the statements to correct misconceptions because the students in science program have no background how to proof the theorem or statement.

## **METHODS**

Descriptive research design was used in this study. The study was conducted with 25 first year undergraduate students from Chemistry Program, Faculty of Science and Technology, Suan Sunandha Rajabhat University (SSRU). These students got below criteria score of midterm test in calculus and at-risk to fail in this course. The contents prepared for the remedial teaching were topics on 'Limits and Derivatives of Functions'. The period of this study was the second semester of academic year 2017. The students' midterm test results were used as data collection for pre-scores (first midterm test) and post-scores (retest midterm test). The total score in midterm test was 25, the questions include short answers (9.5 scores) and written test (15.5 scores) on two topics: Limits and Derivatives of Functions.

Data analysis for the two purposes of this study were two descriptive statistics: (1) Effective Index (E.I.) value to determine the effectiveness of designing the remedial teaching activities in learning calculus with target score 63.50% (midpoint of interval value 62-65 equivalent to Grade C) and accept criteria for E.I. was higher than 50% (Kitrakarn, 2002), and (2) the percentage of students passing the criteria of midterm test to determine the enhancement of at-risk undergraduate students' achievement on learning Limits and Derivative of Functions.

## **RESULTS**

The results were obtained regarding at-risk students' enhancing their achievement on two topics: Limits and Derivatives of Functions. The data were presented using Effective Index (E.I) and the percentage of students who passed the criteria of midterm test shown in Table 3 and Table 4, respectively.

Table 3: Effectiveness Index of the remedial teaching strategy in Calculus (N = 25 Students)

List	Percentage (Average)	Effective Index (E.I.)
Pre-Score	47.04	$E.I. = \frac{63.36 - 47.04}{63.50 - 47.04}$ $= 99.15 \%$
Post-Score	63.36	
Target Score	63.50	

From Table 3, the average score in percentage of Pre-Score (Before Remedial Teaching), Post-Score (After Remedial Teaching), and Target Score were 47.04%, 63.36%, and 63.50%, respectively. The Effective Index was very high about 99.15%.

Table 4: Number of student taken midterm retest and pass the criteria (Total score = 25)

List	Mean	S.D.	Number of Students	
			Pass	No Pass
Before Remedial Teaching	11.76	4.08	4	21
After Remedial Teaching	15.84	4.21	25	-

From Table 4, the mean score of students received before remedial teaching was 11.75 with S.D.= 4.08 and after remedial teaching was 15.84 with S.D. = 4.21.

### CONCLUSION AND FUTURE WORK

The researchers analyzed at-risk students' misconceptions in Calculus 1 and use of the application on mobile device to encourage students study before retesting the midterm test. The remedial teaching strategy made students earned higher scores with the high value of Effective Index (99.15%) which higher than expected criteria 50% (Kitrakarn, 2003). The researchers determined the mean scores obtained after applying the remedial teaching higher than before applying this strategy and every at-risk student passed the expected criteria 12.5 score. This results can be concluded that students 100% success in learning through the remedial teaching follow the steps of the Government of the Hong Kong Special Administrative Region (2007).

For further study, the researchers can use any innovation and technology going along with every step of the remedial teaching process suggested in this study for other topics at any levels any periods of time to help students have correct concepts through Multisensory Strategies (Mattuvarkuzhali, 2012) and Computer-based Instruction (Zavarella, 2008).

### APPENDICES

#### Scoring Rubrics Example for Limit Problem

$\lim_{x \rightarrow \infty} \frac{-4x^3 + 7x + 9}{11 + 5x^3}$	$= \lim_{x \rightarrow \infty} \frac{-4x^3 + 7x + 9}{\frac{11 + 5x^3}{x^3}}$	0.5 point
	$= \lim_{x \rightarrow \infty} \frac{-4 + \frac{7}{x^2} + \frac{9}{x^3}}{\frac{11}{x^3} + 5}$	0.5 point
	$= \frac{\lim_{x \rightarrow \infty} (-4) + 7 \lim_{x \rightarrow \infty} \frac{1}{x^2} + 9 \lim_{x \rightarrow \infty} \frac{1}{x^3}}{11 \lim_{x \rightarrow \infty} \frac{1}{x^3} + \lim_{x \rightarrow \infty} 5}$	0.5 point
	$= \frac{-4 + 0 + 0}{0 + 5} = -\frac{4}{5} \text{ (Answer)}$	0.5 point
Total		2.5 points

Scoring Rubrics Example for Derivative of Function Problem

Given $y = \sqrt[3]{1 - 5x + x^2}$ , find $\frac{dy}{dx}$ .	
$\frac{dy}{dx} = \frac{d}{dx}(1 - 5x + x^2)^{\frac{1}{3}}$	0.5 point
$= \frac{1}{3}(1 - 5x + x^2)^{\frac{1}{3}-1} \frac{d}{dx}(1 - 5x + x^2)$	1 point
$= \frac{1}{3}(1 - 5x + x^2)^{-\frac{2}{3}}(-5 + 2x)$	0.5 point
$= \frac{-5 + 2x}{3\sqrt[3]{(1 - 5x + x^2)^2}}$ (Answer)	0.5 point
Total	2.5 points

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# **ERROR ANALYSIS IN ENGLISH ESSAYS OF MASTER STUDENTS, MATHEMATICS EDUCATION, INTERNATIONAL COLLEGE, SUAN SUNANDHA RAJABHAT UNIVERSITY**

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## **ABSTRACT**

The purpose of this study aimed to investigate error analysis in English essays of master students, Mathematics Education, International College, Suan Sunandha Rajabhat University. The participants of this research included 11 master students. The research instruments in this study were 48 English essays. The topic of the essays derived from the International English Language Testing System (IELTS), academic version in two writing parts, task1 and task 2. The researcher analyzed data by calculating frequency and percentage. The findings showed that students' errors were in various types of errors which the errors at the word level were higher than those at the sentential level. The top five highest frequencies of students' errors were spelling, word choices, prepositions, nouns and fragment, respectively. According to the sentential level, the most frequency of students' errors was fragment, followed by capitalization, and tense, respectively. From the word level, the highest frequency of students' errors was spelling, followed by word choices, and prepositions, respectively. Therefore, for the effective teaching and learning implications, teachers should make a comparison of the similarities and differences between Thai and English language in all aspects, including analyze errors and investigate learners' processes of learning and acquiring language, especially second language in order for both teachers and learners to realize and understand what and how English writing errors occur and have an effort to pay more attention on those errors as well as improve teaching and learning English language effectively.

Keywords : Error analysis, English essay, the International English Language Testing System (IELTS)

## **INTRODUCTION**

English language is an essential tool for people to communicate all over the world. English is the most commonly spoken language in the world. English is the language of science, of aviation, computers, diplomacy, and tourism. Knowing English increases lots of chances of getting a good job both in multinational company within home country and of finding work abroad. In education, English is important for people to have opportunities to find an appropriate school and course to suit their academic needs. Particularly for Thai students, most of them aim to have a great job especially in the international level or continue studying aboard. Therefore, they are necessary to have good English language skills, including listening, speaking, reading and writing. English writing skills are the most difficult and complicated for English language learners (Torwong, 1995). Many learners, including Thai learners also struggle with writing in English and it seems a real challenge to improve. Writing in English is not only the ability of creating the word order of sentence but purposively sending and interpreting the information and experiences relating to communicative skills in a variety contexts and situations. Rivers (1970, pp. 243-24) addressed that effective writing skills in English include the abilities in spelling, understanding sentence structure, and selecting vocabulary in the particular contexts. The common mistakes occur when using vocabulary, sentence structure, punctuation and writing styles.

However, Thai students still face with the deficiency in English writing, deriving from direct translation and different sentence structure between native and target language. Hence, Thai students are necessary to improve their English writing skills, particularly graduates in Master degree from International College, Suan Sunandha Rajabhat University. Following to the graduation requirement, graduates must meet the requirement of English proficiency, Test of English as a Foreign Language (TOEFL) or the International

English Language Testing System (IELTS). Particularly, graduates in Master degree (Mathematics Education) who get the scholarship from the special project of the Promotion of Science and Mathematics Talented Teachers (PSMT) under the Institute for the Promotion of Teaching Science and Technology (IPST) are required to have the score of IELTS 5.5 before assigning for government teachers. Most of students prefer IELTS to TOEFL because it is easier and more comprehensive. IELTS consists of four parts, listening, speaking, reading and writing. Writing part is the most difficult for students while it is the part that is not too hard for students to practice, improve and get higher score. Therefore, the purpose of this study is to analyze error analysis in English writing of Master students in the program of Mathematics Education, International College, Suan Sunandha Rajabhat University. The results may use as a guidelines for effectively supporting and improving students' abilities in writing English, especially for IELTS.

### **LITERATURE & THEORY**

Error has been presented by experts in various definitions. However, there two main definitions of error, 1) error is a systematic deviation, when a learner has not learnt something and consistently gets it wrong, and 2) error is systematic deviations from the norms of the language being learnt (Dulay, Burt and Krashen, 1982; Klassen, 1991; Corder, 1981; Lado, 1977). Teachers would investigate and focus on the specific types of error which require remedial teaching instead of wasting time on other errors which are not made as frequently by students. Error analysis is a tool to avoid native language interference in the target language. Error analysis is beneficial for teachers to realize why students are making errors and then plan appropriate remedial lessons, and for students to find out and minimize their errors as well as improve their abilities in learning language (Dulay et al, 1982; Corder, 1981).

In this study, error is divided into two categories, 1) error at the sentential level consisting of tense, subject-verb agreement, fragment, word order, punctuation, capitalization, and 2) error at the word level comprising of, nouns, pronouns, verbs, prepositions, adjectives, adverbs, literal translation from Thai, parts of speech, word choices, spelling, transition words. From previous studies, the results showed that error most frequently occurred were punctuation, articles, subject-verb agreement, spelling, capitalization and fragment (Hengwichitkul, 2006; Runkati, 2013; Sermsook, Liamnimitr, & Pochakorn, 2017).

### **METHODS**

Participants in this research consisted of 11 graduate students in Mathematics Education, International College, Suan Sunandha Rajabhat University, studying in academic year 2015-2017.

Instruments applying in this study were IELTS tests in only writing part, consisting of two sections as follows:

#### **Task 1**

This task requires candidates to write a summary of at least 150 words in response to a particular graph (bar, line or pie graph), table, chart, or process (how something works, how something is done). This task tests the ability to select and report the main features, to describe and compare data, identify significance and trends in factual information, or describe a process.

#### **Task 2**

This task requires candidates to write at least 250 words. They will be presented with a topic and will be tested on their ability to respond by giving and justifying an opinion, discussing the topic, summarizing details, outlining problems, identifying possible solutions and supporting what they write with reasons, arguments and relevant examples from their own knowledge or experience.

The researcher collected the data following to the steps as follows:

1. The researcher selected 10 IELTS tests in the writing part, task 1 and 2.
2. The researcher assigned students to write the essays in task 1 and 2 each week, since August to December.

The researcher analyzed the data following to these processes:

1. The researcher analyzed errors in students' 48 essays.
2. The researcher categorized types of error and presented the results as percentage with examples of error.



3. The researcher analyzed types of error in order to reinforce and improve students' abilities in writing essays.

## RESULTS

The findings of this study demonstrated that students' error in writing essays were 500 errors divided into 2 categories, errors at the sentential level and errors at the word level. Errors at the word level occurred more frequent than at the sentential level, 352 (70.40%) and 148 (29.26%), respectively. The researcher found various types of error at the sentential level as well as errors at the word level.

Errors at the sentential level consisted of tense, subject-verb agreement, fragment, run-on sentences, word order, punctuation, capitalization, meaning, and redundant sentences. In addition, errors at the word level comprised of articles, nouns, pronouns, verbs, prepositions, adjectives, adverbs, parts of speech, transition words, spelling, and word choices.

The researcher found that the first five errors occurring frequently were four errors at the word level, followed by another error at the sentential level. Spelling was the most frequency error (80 errors, 16%), followed by word choices (78 errors, 15.60%), prepositions (54 errors, 10.80%), nouns (52 errors, 10.40%), and fragment (24 errors, 4.80%), respectively.

*Table 1 Errors Occurred in Student's English Essay Writing*

No.	Types of error	Frequency	Frequency(%)	Ranking
<b>Errors at the sentential level (148)</b>				
1	Tense	20	4.00	8
2	Subject-verb agreement	18	3.60	11
3	<b>Fragment</b>	24	4.80	<b>5</b>
4	Run-on sentences	6	1.20	19
5	Word order	18	3.60	12
6	Punctuation	20	4.00	9
7	Capitalization	22	4.40	6
8	Redundant sentences	8	1.60	16
9	Meaning	12	2.40	14
<b>Total of errors at the sentential level</b>		<b>148</b>	<b>29.26</b>	<b>-</b>
<b>Errors at the word level (352)</b>				
10	Articles	16	3.20	13
11	<b>Nouns</b>	52	10.40	<b>4</b>
12	Pronouns	8	1.60	17
13	Verbs	22	4.40	7
14	<b>Prepositions</b>	54	10.80	<b>3</b>
15	Adjectives	12	2.40	15

No.	Types of error	Frequency	Frequency(%)	Ranking
16	Adverbs	2	0.40	20
17	Parts of speech	20	4.00	10
18	<b>Word choices</b>	78	15.60	<b>2</b>
19	<b>Spelling</b>	80	16.00	<b>1</b>
20	Transition words	8	1.60	18
<b>Total of errors at the word level</b>		<b>352</b>	<b>70.40</b>	<b>-</b>
<b>Total</b>		<b>500</b>	<b>100</b>	<b>-</b>

According to errors at the sentential level, the three highest frequency of errors students made were fragment (24 errors, 16.22%), capitalization (22 errors, 14.86%), and tense and punctuation (20 errors, 13.51%), respectively. For errors at the word level, the three most frequency of errors occurring in students' essays were spelling (80 errors, 22.73%), word choices (78 errors, 22.16%), and prepositions (54 errors, 15.34%), respectively.

*Table 2 Errors at the Sentential Level Occurred in Student's English Essay Writing*

No.	Types of error	Frequency	Frequency(%)	Ranking
1	<b>Tense</b>	20	13.51	<b>3</b>
2	Subject-verb agreement	18	12.16	4
3	<b>Fragment</b>	24	16.22	<b>1</b>
4	Run-on sentences	6	4.05	7
5	Word order	18	12.16	4
6	<b>Punctuation</b>	20	13.51	<b>3</b>
7	<b>Capitalization</b>	22	14.86	<b>2</b>
8	Redundant sentences	8	5.42	6
9	Meaning	12	8.11	5
<b>Total</b>		<b>148</b>	<b>100</b>	<b>-</b>

*Table 3 Errors at the Word Level Occurred in Student's English Essay Writing*

No.	Types of error	Frequency	Frequency(%)	Ranking
1	Articles	16	4.55	7
2	Nouns	52	14.77	4
3	Pronouns	8	2.27	9

No.	Types of error	Frequency	Frequency(%)	Ranking
4	Verbs	22	6.25	5
5	<b>Prepositions</b>	54	15.34	<b>3</b>
6	Adjectives	12	3.41	8
7	Adverbs	2	0.57	10
8	Parts of speech	20	5.68	6
9	<b>Word choices</b>	78	22.16	<b>2</b>
10	<b>Spelling</b>	80	22.73	<b>1</b>
11	Transition words	8	2.27	9
<b>Total</b>		<b>352</b>	<b>100</b>	<b>-</b>

### CONCLUSION AND DISCUSSION

The findings of this study are consistent with the research findings relating to error analysis of essay writing both in Thai and foreign context. The highest frequency of errors was more errors at the word level than at the sentential level, such as word choices, punctuations, and sentence structure (Hengwichitkul, 2006; Runkati, 2013; Sermsook, Liamnimitr, & Pochakorn, 2017; Pyo, 2000; Lee, 2003; Shuang-mei, 2009; & Subramaniam, 2009).

Therefore, making comparison of similarities and differences between native and target language and analyzing error in student's essay writing are significant for teachers to understand their students' language acquisition and errors. Teachers must realize which the priority errors should be focused on primarily. According to the results of this study, teachers should emphasize on error correction in usage of prepositions, sentence structure, capitalization, subject-verb agreement, punctuations, nouns, spelling, and word choices. Furthermore, teachers should investigate more error analysis and compare analysis between native (Thai) and target (English) language in order to understand all errors and language differences. These are great help for teachers to implement different kinds of methodologies in the classroom, especially in error correction during the communication of the students to the teachers and among themselves as well as for students to learn from their errors.

### RECOMMENDATION

1. The researcher should investigate other types of writing such as free writing, guided writing and controlled writing.
2. The researcher should study the reasons of errors in writing in order to predict the types of errors and make correction effectively.
3. The researcher should conduct classroom action research by applying the results of this research as a guideline for creating and designing exercises and lesson plans in teaching essay writing.

### ACKNOWLEDGEMENTS

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# EFFECTIVE AIRLINES DISTRIBUTION

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## ABSTRACT

Recent research found that there are many Airline's distribution factors that effect to channels of customers reflected to the Airline Industry regarding psychological believes, economical, and communications. The airlines need to give the best channel for customers. Along with the researches in the passengers' decision making and judgment have studied through the behavioral violations of rational and marketing theory as the first internal framework. From that framework found that the airline's customer decision making was the single internal made and reflected to behavioral itself to choose the most convenient. The aim of this paper is to identify the conveniences of the passengers' decision making choosing the most favor distribution channels according to communication from the airlines. This paper investigates by second-order confirmatory factors analysis to examine in marketing communication tools with the model of the Reputation, Safety, Services, Conveniences, and Correspondents. The conceptual framework analyzed on passengers' decision making regarded to the ticket purchasing through the communications tools from the airlines. This article found that most of passengers relied on the convenience from the airlines ticket price more than other factors responsively whilst the passengers were happy with the online distribution.

Keywords: effective, airlines, behavior, factor, marketing

## INTRODUCTION

As the Airline industry are non-stop growing up, both Premium and Low-cost Airline are kicking themselves to serve the best to the customers. In the year of 2016, the growth of the airlines were amazingly growing up. The airlines needed to push themselves to invite the customers to choose their airlines. Along with the technology development which move quickly forward every day. The human still need to use the airlines service, with this to complete human basic need, it must be completed by the opposite responsive but how the human needs would be responded. The mental image of ourselves and others are creating in minds. The human brain will process an image of society and things to be liked. Human learned through the environment they were around, expecting and presume that the other can make them meet the expectation. Consumers also feel the same, once they have decided to choose or need something, the expectation occurred. In Thailand, there are many airlines to response the consumers' needs. There are so many Premium airlines also Low-cost airlines in the past ten years. These made the competition between airlines more and more. Premium airlines need to sell the ticket and service that passenger would not be upset, in a meanwhile, Low-cost airlines are doing hard work on communicating with the selling tickets. As the research paper of Department of Civil Aviation analyzed that the airline industry was affected by the economic crisis in 2009, the airline industry still survive with the expectation of passenger growth consequently. This was why the airline tried to communicate to their passengers in all communication channels. Once the communication occurred, the consumers would choose the best and easy distribution channel or platform for purchasing the airlines ticket. With the expectation of what the customers received that the airlines would keep the promises to consumers. The promises that happened during the communication between the advertisements along with the service of the airlines that served through each airline's personnel.

This research based on the confirmation analyzing on the result of the consumer's choices of the distribution channels or platform from the airlines. The first framework is the perception about the factors concerning to platform and convenient of the airlines ticket purchasing through the communication characteristics before the consumers select to choose the service. The second framework is the perception about age and educational concerned with the technology knowledge of consumers

## LITERATURE

The airlines need to be in lead as the service provider which could be the tour agent but as the technology came up, they need to shift themselves to be more variety channels of product distributions. Previous to further knowing the human's need, the airlines need to understand about the hierarchy of need by Maslow

which are basic needs, safety needs, social needs, esteem needs, and self-actualization needs. Also the unconditioned response to an unconditioned stimulus by Ivan Pavlov. Nowadays, communication technology help connected with the perception of a human which could be communicated when the human's brain required something, along with the perception that human has in the previous knowledge form up as the mental image. Basic media tool was the advertisement that the airlines use through the media to facilitate the consumers about the airlines. A common pattern of communication in the past has been changed by new communication technology by giving a new role of acting. Powell's study described one of powerful new media environment (as cited in Warner J. Severin, Jane W. Taker, Jr (2001)) is the digital. We must accepted that we are in the technology period of communication. As McManus identified some of the new media environment characteristics is previously distinct technology such as printing and broadcasting are merging, shifting from media scarcity to media abundance, shifting from content geared to mass audiences to content tailored for groups or individuals, and shifting from one-way to interactive media. These new media communication, most of the airlines need to adapt themselves to the world to respond to the consumers as quick as possible. Once the media has been used, the consumer would use their mental image plus the characteristics from the airlines met their needs or not which reflected to the human's cognitive behavioral. Thoughts, feelings and behaviors are all intertwined and related to sensations. These reflected an interpersonal communication which we communicate message through our body or even the digital media.

#### ***Related researches***

As from some research stated that a specific flight filled with the dynamic pricing strategies. The airlines marketing mix would be varied by all main Four Ps' which are Product, Price, Place and Promotion. The research from Dileep Kuma (2013) found in his paper that where the forces fails... there the business learns the customer value as human resource and documents issues were mainly operational inefficiency and the solution was exploring varied strategic inventions on operational and manpower issues to achieve customer's satisfaction which in the airlines need to achieve also. Annamaria Esposito (2014) studied on marketing communication strategies in low cost, low price, high value service companies found that the companies could not overlook over communication which is ultimately inspires many of offers can conveying intangible values which was the reason why customers believe and buy the products. Kannapat Kankaew (2012) studied on passenger's expectation and satisfaction on airlines delivering services: a case study of full services airline in Thailand described the passengers paid attention to the safety and services of the airlines through airlines' personnel and their channels of the communication. The satisfaction was high in all aspects of the service.

### **METHODOLOGY**

The methodology in this paper was quantitative analysis by the 400 questionnaires were accidental collected in around Bangkok, Thailand. Analyzing by using the statistics percentage, mean, standard deviation and the confirmatory with the psychological theory that the airlines had used crossed with the communication characteristics effectively responding to the consumers' needs.

### **RESULTS**

This research found that correspondents were mainly female more than male, mostly aged between 21-30 years old as a students of the bachelor degree with the income lower than 15,000 THB. From the experiences of using the airlines in previous period was experienced with 90.3% and non-experienced 9.7% which both of groups of correspondents selected to use the price comparing application. The correspondents concerned about the price of the ticket then consider on routing and safety of the airlines. Mainly selected the distribution channels by price comparing application then check with airlines' website. From the four characteristics of distribution factors; Tour agent, Direct airlines website, Price comparing application, and Airline ticketing counter. The airlines had used the communication theory with all characteristics of communication aspects with the consumers about the airlines reputation. Even though, the airlines communicated with the promotions and the services they provide to the consumers through all media. The consumers received the information and form the mental image which differently created in person about the airlines. The results showed that the consumers trusted the price comparing application and the price of the ticket no matter technology or the convenient the airlines provided to consumers. The airlines would resume communicating clearly in what they could do for

consumers and keep their promises to consumers. Also, the message that airlines need to relate the important messages which were safety and convenient of the consumers all the times.

Table 1. Experienced travelling by airlines

Personal Experience	Total	Percentage
Experienced	361	90.3
Non-experienced	39	9.7

The research also found that the tour agent platform has an easy direct access to ask the questions by the person, while the direct airlines website and the price comparing application, there were an easy direct access for quick response to the consumers' need. The airlines ticketing counter at the airport has the lowest selection but in this category, the consumers expressed the feeling that the airlines safety for money transfer, good reputation, and informative person to answer all requires to the consumers.

Table 2. Distribution channels consideration

Distribution channels factors	Total	Percentage
Tour agent	26	6.5
Direct airlines website	159	39.8
Price comparing application	194	48.5
Airlines ticketing counter at airport	21	5.3

## CONCLUSIONS

This research found the important of communication through all types of media by the airlines which would effect to the consumers' selection of distribution platform. The mean of the distribution platform that the consumers select was the price comparing application and price to respond back from consumers when they decided to purchase a ticket. Whichever, the communication is still in need to be the best tool to communicate between the airlines and consumers to understand well with distinguish satisfied results.

## RECOMMENDATIONS

This research is not completed with the study of partly correspondents of Thailand and mainly were the young adults. This should be next study to know if there are any differences to use the communication technology to communicate with the consumers. With coming future, what type of communication we would use to communicate for clear understanding between the airlines and the consumers.

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# **FACTORS AFFECTING DECISION TO STUDY B.A. (AIRLINE BUSINESS) INTERNATIONAL PROGRAM: A CASE STUDY OF INTERNATIONAL COLLEGE, SUAN SUNANDHA RAJABHAT UNIVERSITY**

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## **ABSTRACT**

The purposes of this research are (1) to study the factors affecting decision to study bachelor degree in international program at International College Suan Sunandha Rajabhat University, a case study of international program student, Suan Sunandha Rajabhat University. (2) to study the relationship of various factors affecting decision-making in studying to study bachelor degree in international program at International College Suan Sunandha Rajabhat University. This paper was a quantitative research. A total of 150 students from the first year to the fourth year of International College, Suan Sunandha Rajabhat University were interviewed via questionnaire by applying non-probability sampling. The data analysis based on SPSS statistics at the significance level at 0.05.

Base on the results, the findings are as follows: 1. The findings of factors influencing the decision to study bachelor degree in international program at International College Suan Sunandha Rajabhat University, indicated that most of the samples were female students, studied in 3rd year. The majority of sample's parent average income per month was 20,000-30,000 Baht per month, the most sources of funding were their own private funding. 2. The study indicated that the highest opinion level on factors affects the decision to study bachelor degree in international program at International College Suan Sunandha Rajabhat University was the desire to get a job with high salary after graduated at level of 4.70. The highest average results were at 4.40 on both Thai and foreigners' lecturers have specialized knowledge in their field. Followed by the course that was conducted in English Language and teaching in international program at 4.35, which is still the highest level. Furthermore, there are variety courses available in consistent with the current labor market needs and taught in English language, this was at high level at 4.27.

**Keywords**— Factors affect decision making, Motivation Factors, Motivation, Decision Making

## **INTRODUCTION**

### **Background**

The Thailand 11<sup>th</sup> National Economic and Social Development Plan 2011-2016 identifies the core mission of national development which was to develop the quality of Thai people to be moral, lifelong learning and having a good living skill. The main goal is focusing on Thai people to have the ability in learning continuously, ability in health improvement, ability in increasing morality, in order to enhance the stronger of social institutions. (Office of the Economic Development Board and National Society, 2016: online). Government and private institutions are also accelerating to produce skilled and knowledgeable employees with competencies in specific industry and related businesses, which are including English proficiency skills along with basic business management background in relevant business. The emphasis is on the development of graduates to meet the current demand for manpower in the manufacturing and service industries to support the continued growth both domestically and internationally. [1] By providing quality education, internationalization and proper marketing, theses should be in line with the needs of the labor market and students interest. It is very necessary to look back in the educational institute to deliver quality graduates to the labor market and meet the needs of student's choice of study after high school graduation or equivalent as well as the educational institute that offers an international program.

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Currently, there are 161 international educational institutions, including 110 international schools and 51 higher education institutions. For 187 schools, under the affiliation of Ministry of Education that teaches in English program, 66 of them are government's schools and 121 of them are private's schools. Besides, there are 11 vocational schools and 14 short-term course schools. From the information of the Office of the Higher Education Commission, there are 18 international and 21 public international universities respectively. (International Institutions, 2015).

Suan Sunandha University is one of the leading universities in Thailand. The International College of Suan Sunandha Rajabhat University (SSRUIC) is one of the authorities under the supervision of Suan Sunandha Rajabhat University. The mission is based on the requirements of higher education for social and community services. The teaching and learning at the International College are conducted in English as standard, and there is a real focus on practical activities for the students. [2]

The International College, Suan Sunandha Rajabhat University has collaborated with foreign universities and has the memorandum of understanding (MOU) with many top universities around the world and within Thailand. Suan Sunandha Rajabhat University offer a two-degree program, in addition, engaged in academic and teaching cooperation with universities in Asia, Europe, the Americas and Australia and have been promoting and developing teaching and learning in the English program in line with the guidelines for the development of education in the country. In order to produce graduates with advanced academic knowledge, and to support the labor market in tourism and service industry, Suan Sunandha Rajabhat University has established educational programs in the English language program as following disciplines:

[1] Undergraduate

- 1) Airline Business
- 2) Tourism Management
- 3) Hospitality
- 4) International Business Administration

[2] Master's degree

- 1) Mathematics Education

The researcher is interested in studying the factors affecting decision to study bachelor degree in international program at International College Suan Sunandha Rajabhat University, a case study of international program student, Suan Sunandha Rajabhat University. The results of this research are a guideline for improving the development of teaching and learning in order to obtain qualified graduates to develop the country. Including planning for public relations, educational guidance in the future.

## **RESEARCH OBJECTIVES**

### **This research aims to:**

1. To study factors affecting decision to study bachelor degree in international program at International College Suan Sunandha Rajabhat University, a case study of international program student, Suan Sunandha Rajabhat University.
2. To study relationship of factors affecting decision to study bachelor degree in international program at International College Suan Sunandha Rajabhat University, a case study of international program student, Suan Sunandha Rajabhat University.

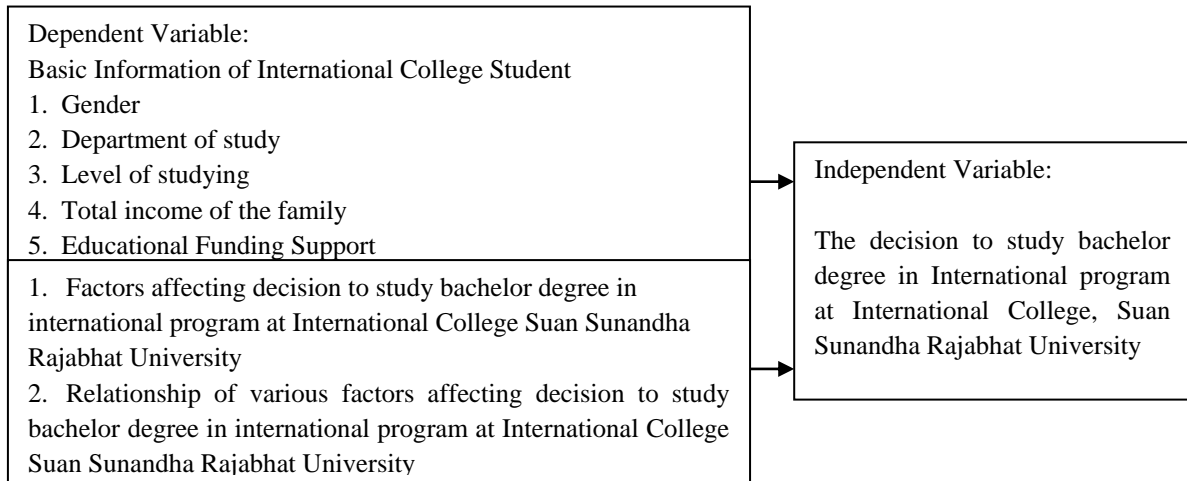
## **RESEARCH METHODOLOGY**

In this research, the researcher conducted a research on the factors affecting decision to study bachelor degree in international program at International College Suan Sunandha Rajabhat University by divided the research process into 3 parts. The first part is to study the factors affecting decision to study bachelor degree in international program at International College Suan Sunandha Rajabhat University and the second part, is to study relationship of factors affecting decision to study bachelor degree in international program at International College Suan Sunandha Rajabhat University. The third part is to study relationship of various factors affecting decision to study bachelor degree in international program at International College Suan Sunandha Rajabhat University. The researchers conducted the research using quantitative research by using descriptive statistics

method and collected data only once, from students in International College, Suan Sunandha Rajabhat University and described characteristics or relationships among difference substances.

## RESEARCH FRAMEWORK

In this research, the researcher set up a conceptual framework based on the research objectives and results as shown in Figure 1.



*Figure 1 Variable relationship Framework*

*Source: Review of Literature*

From Figure 1, shown the relationship between dependent and independent variables which are affects to the decision to study bachelor degree in international program at International College Suan Sunandha Rajabhat University

## DATA COLLECTIONS

This research is a quantitative research. The researcher created a measurement tools to collect data in quantitative research by designing the questionnaire in accordance with the conceptual frameworks, research objectives, and research questions. The questionnaire was used to measure the level of feedback of the respondents.

This research was designed as follows:

**Research Tools:** The researcher used the 1-5 Scale from Likert Scale (Scale 1-5) as well as using the range (Range) and ranged up to determine the average scores. The lowest average mean was 1.00-1.80 and the highest mean was 4.21-5.00, respectively.

**Population:** This study, the researcher investigated the target population which are students who participated in academic year from 2014-2018 from the first year to the fourth year and are studying in International College, Suan Sunandha Rajabhat University.

**Samples:** In this research, the researcher defined the sample, which represents the total population used in the study by selecting the sampling type, using non-probability sampling method (Non-probability Sampling). The samples were students who participated in academic year from 2014-2018 from the first year to the fourth year and are studying in International College, Suan Sunandha Rajabhat University

**Data Collection:** The researcher collected quantitative data from the field using questionnaire as a tool to collect data. The researcher delivered 150 questionnaire forms as a hard copy format to students in International College, Suan Sunandha Rajabhat University, and 150 copies returned with a questionnaire return rate of 100 %. The data collection period was 30 days in total.

**Data Analyze:** The researcher used the statistics and techniques to analyze the data and the relationship of two variables and divided by using descriptive statistics (Descriptive Statistics), this statistic and technique was used to analyze the data as well as to evaluate the frequency, percentage, mean (X) and standard deviation (SD).

## RESEARCH RESULTS

This research result is divided into three parts: Part 1: General information of the sample. This result presents the general characteristics of the respondents that were sampled. Part 2: The factors affecting decision to study bachelor degree in international program at International College Suan Sunandha Rajabhat University. This result presents the overall opinion on the factors affecting decision to study bachelor degree in international program at International College Suan Sunandha Rajabhat University. Part 3: The relationship of various factors affecting decision to study bachelor degree in international program at International College

### **Research Result Part 1: General information of the sample**

The analysis results of the general characteristic of respondents from 150 questionnaires are as follows: The study indicated that most of the samples were female at 73.33%. and most of the samples are studying in the first year was at 53.33% followed by second year student at 20%, and third-year student at 16.67%, and fourth-year student at 10% respectively. The results showed that most of the respondents studied in International Colleges, Suan Sunandha Rajabhat University airline business was at 43.33% percent, followed by studied in tourism management at 22.67%, and hotel management at 14%, restaurant management and International Business was accounted for 10% accordingly. The most of total income per month of the sampling's family is between 20,000 – 30,000 Baht was at 22.67%, followed by a total monthly income of more than 50,000 Baht at 21.33% respectively.

### **Research Result Part 2: The factors affecting decision to study bachelor degree in international program at International College Suan Sunandha Rajabhat University**

The findings from figures 2 of the overall opinion on factors affecting decision to study bachelor degree in international program at International College Suan Sunandha Rajabhat University indicated that, the highest average value is the factors that they want to get a job with high salary after graduated at (=4.70) followed by the needs to develop foreign language proficiency was at (=4.68) and the factors to get an employment opportunity in labor market, the factors to secure family's financial burden and the desire to wear International College Uniform were at the same level at (=4.65) respectively. Due to the student's desire to be succeeded and be accepted in international organization after their graduation, therefore, they choose to study the undergraduate level in International College, Suan Sunandha Rajabhat University. Wherewith, in this field, the study will be conducted in English and offered many foreign languages such as Chinese, French, Japanese language as their secondary subject which can also enable in improving their language ability, all these factors affect the decision to study bachelor degree in International program at International College, Suan Sunandha Rajabhat University because when student think that they could have the possibility in getting a higher salary job and high income with acceptable career in the society after their graduation they could have the ability to lighten their family burden at the end. Moreover, the results of the research also indicated that students want to live in a good society and meets foreigner friends and have the opportunity to be an exchange student in another country and also have the opportunity to travel abroad. Another factor is, the desire to wear International College' uniform, as it is elegance and enhance professional looks which support their dignity, their pride and the desire to be successful as professional in the future.

Table 1. Factors affecting the decision to study bachelor degree in Airline Business Program at International College Suan Sunandha Rajabhat University

Motivation Factors	$\bar{X}$	S.D.	Level
1. To be accepted in international organizations after graduation	4.61	0.644	Highest
2. To get an employment opportunity in labor market	4.65	0.634	Highest
3. To develop foreign language proficiency	4.68	0.594	Highest
4. To increase a variety of career options	4.57	0.639	Highest
5. To get a job with high salary after graduated	4.70	0.610	Highest
6. To have an opportunity to be an exchange student abroad	4.37	0.840	Highest
7. To have an opportunity to meet new foreign friends	4.55	0.738	Highest
8. To have an experience to travel abroad	4.56	0.709	Highest
9. To wear International College Uniform	4.65	0.579	Highest
10. To secure family's financial burden	4.65	0.840	Highest
<b>Total</b>	<b>4.59</b>	<b>0.663</b>	<b>Highest</b>

### Research result Part 3: The relationship of various factors affecting decision to study bachelor degree in international program at International College, Suan Sunandha Rajabhat University

The results of relationship of various factors affecting decision to study bachelor degree in international program at International College from figure three was as following:

Table 2: The relationship of various factors affecting decision to study bachelor degree in international program at International College, Suan Sunandha Rajabhat University

Factors Affect Decision Making	$\bar{X}$	S.D.	Level
1. University is renowned for its world university rankings	4.05	0.826	High
2. The curriculum is offered in accordance with the needs of the current labor market	4.25	0.687	Highest
3. The Curriculum is diverse and in line with the current labor market needs	4.27	0.682	Highest
4. University is the Educational leader in Quality, for example: it's got the quality assurance award	4.23	0.734	Highest
5. Excellent academic record student's scholarships is available	4.07	0.836	High
6. Graduate Students can continue their study in higher levels in leading universities abroad	4.19	0.775	High
7. International College has cooperated and has MOU with other International Institutes abroad	4.26	0.737	Highest
8. International & Standardized educational system	4.19	0.781	High
9. The curriculum offers teaching in English	4.35	0.714	Highest
10. International field trip abroad programs is available	4.11	0.901	High
11. International student exchange programs is available	4.13	0.924	High
12. Information technology was applied in teaching and learning techniques	4.23	0.796	Highest
13. Specialized Thai and foreign lecturers in specific fields	4.40	0.714	Highest
14. Modern Teaching Equipment available	4.28	0.761	Highest
15. Transportation and shuttle bus service is available	4.21	0.864	Highest
16. Surrounding with good environment in the campus	4.01	1.033	High
17. College dormitory is available	3.83	1.052	High
18. College facilities are available	3.88	1.036	High
19. Excellent security system	3.95	0.922	High
20. Various Payment program and funding is available	3.95	0.951	High
<b>Total</b>	<b>4.14</b>	<b>0.628</b>	<b>High</b>

From Figure 3, the result of the finding indicated that the opinions on overall relationship of factors affecting decision to study bachelor degree in international program at International College, Suan Sunandha Rajabhat University at the overall level (= 4.14), followed by specialized Thai and foreign lecturers in specific fields. (= 4.40), and the curriculum offers in English. (= 4.35). There are modern teaching equipment available (= 4.28), Then, the curriculum is diverse and in line with the current labor market. (= 4.27). Next is, the International College has cooperated and has MOU with other International Institutes abroad. (= 4.26), and is in accordance with the needs of the current labor market. (= 4.25). There is an Information technology that was applied in teaching and learning. (= 4.23). Quality education, or quality assurance award (= 4.23). Transportation Service and or shuttle bus service is available. (= 4.21), and the International & Standardized education system. (4.19). Students can continue their study in higher levels in leading universities abroad. (= 4.19). An International student exchange programs is available. (=4.13). International Field Trip Abroad programs are available. (= 4.11). Excellent academic record student's scholarship is available. (= 4.07). Universities are renowned for their world university rankings. (= 4.05). Good environment (= 4.01) with excellent security system. (= 3.95), Various Payment program and funding is available. (= 3.95), followed by excellent college facilities. (= 3.88) and college dormitory is available (= 3.83), respectively.

### **RESEARCH SUMMARY**

The study indicated that the highest opinion level on factors of product, marketing and promotion affects the decision to study Bachelor Degree in International Program at International College, Suan Sunandha Rajabhat University indicated in specialized Thai and foreign lecturers in specific fields. Followed by, the curriculum that offers in English and there are variety courses and available in consistent with the current labor market needs

Moreover, The University credibility as well as being a well-known university has signed MOU and cooperate with many international institutions abroad. These enable student to further their studies at leading universities in the future. The study also indicated that the University applied information technology and various instrument in modern teaching environment. Moreover, the use of information technology as well as the scholarship, student transportation is also available. All these factors affect the student's decision to continue their Bachelor Degree in International Program in International College, Suan Sunandha Rajabhat University.

### **RECOMMENDATIONS**

In this research, the researcher recommended to provide information about lecturers in lecturer's website and curriculum which should be easy to access and the benefit of why the new comers should decide to study in International program at International College. The exchange students program also should be put on the website or social media; it can motivate students who look forward to get a good occupation to enroll in the college. Moreover, to offer the installment payment system that enable student to effort the semester fee should be in consideration.

### **ACKNOWLEDGEMENT**

This research was successfully completed with the great support of all team. The researcher would like to express gratitude to Assoc. Prof. Dr. Luedech Girdwichai, President of Suan Sunandha Rajabhat University, Assoc. Prof. Dr. Thanasuwit Thabhirunrak, Vice President for Research and Development, and Asst. Prof. Dr. Suwaree Yordchim, Director of the Institute of Research and Development, Asst. Prof. Dr. Krongthong Khairiree, Dean of the International College, for their supportive on the development of research and dissemination of research results. The researcher hopes that this research will be beneficial to others and would like to dedicate grateful gratitude to parents, teachers, professors, and related persons who express their supportive to this research. For any various defects that may occurred in this research, the researcher is solely responsible for this and will be welcomed to receive any feedback for future development accordingly.

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# ASSESSING DON MUEANG INTERNATIONAL AIRPORT SERVICE FACTORS

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## ABSTRACT

Airport is one of the main infrastructures in air transport system. It is a place which support the passengers, crew and cargo processing. A well-designed airport facility, spacious, comfortable and good service would attract more travelers. That is the airport could be the destination, itself. This study is to evaluate the casual relation of airport service factors of Don Mueang International Airport (DMK); Thailand with service quality. Researcher has identified three airport services attributes; servicescape, service personnel and services from (Fodness & Murray, 2007). The questionnaires were administered to 400 Thais who used DMK. The researcher also assesses the degree of differences among three genders; male, female and transgender. The structure equation model was employed to analyze data. The result found that servicescape has highest relation to airport service quality followed by service personnel and the services. And there is no degree of different among genders. It can be summarized that the airport's servicescape is highly important for Thai passengers. For recommendation, the airport should provide spacious facilities with enough chair in waiting area, and the decoration filled with Thai arts and culture or music for recreation during travelers are in the airport processing. Since IATA (2013) cited that passengers are most stress while on the ground.

Key words: Service Quality, Airport Service, Don Mueang, Service Factor

## INTRODUCTION

As of the past, the airport was built to support and facilitate the passenger's processing. And it is a place where passengers change type of transportation from air to ground and ground to air vice versa. Today, there are more functions and facilities have been provided in modern airports; such as shops, bars and restaurants. This has shifted the passengers' expectations. Whereas, arriving at comfortable, beautiful and convenient airport could generate a good impression toward nation. As a result, travelers would come back to use the service again. This means the revenue to the airport, to others related business and to the country. So that attracting, accommodating the tourists and supporting the growth of aviation industry, many nations have developed and improved the airport services by either building the mega hub or offering a secondary airport. The airport services become more and more competitive in today airline industry.

## LITERATURE REVIEW

Don Mueang was a second airport of Thailand after Saprathum airport started its operations in B.E. 2457. It was later known as Bangkok International airport. It was once shut down the operations since the government has operated new airport Suvarnabhumi International airport (BKK). Because of the limitation of Don Mueang capacity. Howbeit, DMK was reopen again because of the growth of aviation industry of Thailand so that only BKK airport could not accommodate the numbers of passengers and flights. Don Mueang International airport, then, was assigned as DMK a secondary airport of Bangkok for low cost and charter operations (Kankaew, 2015). In the beginning of DMK reopened there was only one terminal for the whole flight operations. Currently, DMK has operated two terminal one for international operation and the other for domestic flights with full spectrum of facilities and services. Certainly, the airport service quality of facilities, functions and service personnel have been set as standard in order to satisfy users.

Boonlert (2008) mentioned that the good service airport should consist of ten characteristics; the fast and efficient of access and egress, the efficiency of baggage handling, the service quality, the airport capacity that can accommodate traffic demand, good facilities for passengers' comfort, availability of good dutyfree



shop, a well-planned facilities, good environment, availability of ground transportation, the effectiveness of safety and security system. The level of airport service frame-work, then, was set into 6 level from A to F as a standard benchmarking as shown in table 1.

Table 1 The level of airport service frame-work

LEVEL OF SERVICE	MEANING	ATTRIBUTES			
		Safety	Process Flow	Waiting Time	Comfort
A	Great	Great	Free flow	None	Great
B	Very Good	Very Good	Normal flow	Few	Very Good
C	Good	Good	Normal flow	Acceptable	Good
D	-	Fair	Unstable	Fair	Fair
E	-	Poor	Unstable	Unacceptable	Poor
F	-	Fail	Confused	Fail	Fail

Source: Adapted from Boonlert (2008), Airport Management (Bangkok: Thammasarn) p. 179

However, airport service quality was studied by various scholars in multiple aspects and assessed tools. For instance, Jones at al., (2010) conducted the tourist exit survey of Punta Cana International Airport employing IPA technique. The result found that airport users stress the importance on cleanliness, the process of immigration, the convenience of airport location, the ease of finding tour and hotel contacts after arrival, and personal safety and security. Kankaew (2015) conducted IPA technique studied on Suvarnabhumi Airport's service quality from the passengers' viewpoint by adapting a set of questions from the airport service quality program of the Airport Council International (ACI) and reviewing from (Fodness & Murrey, 2007) that the airport service quality model was constructed into three aspect. Those are servicescape, service personnel and services. The result illustrated that all airport service attributes were important especially the passengers require free internet connection and the clarity of directions.

## METHODOLOGY

Four 270 questionnaires were collected at Don Mueang airport, administered to Thai passengers only. The other 130 questionnaires were distributed to students of International College; Suan Sunandha Rajabhat University. These students were enrolled to airport management subject and once visited DMK. The questionnaires were set by applying ACI airport service quality in benchmarking with the study from (Fodness and Murray, 2007). A descriptive statistic was employed, and structural equation model (SEM) to test the casual relations with Chi-square/degree of freedom <5.00, Goodness of fit index (GFI) >0.90, Comparative fit index (CFI), Normalized fit index (NFI), Relative fit index (RFI) ≥0.90 and Root mean square error of approximation (RMSEA) <0.08.

## RESULTS

The respondents were 170 males accounted for 42.5 percent, 214 females accounted for 53.5 per cent and 16 transgenders accounted for 4 per cent. Most of the respondents were around 30-35 year-old accounted for 24.5 per cent, with bachelor degree 40 percent. The respondents weighted the three airports' service factors t: servicescape, personnel and the services have high related to the airport service quality. The highest score was personnel was 4.02, followed by servicescape 3.95 and services 3.83 as shown in table 2.

Table 2 The overall of airports' service factors

Airports' service factors	Mean	S.D.	Causal degree	Rank
Servicescape	3.95	.431	High	2
Personnel	4.02	.432	High	1
Services	3.83	.446	High	3
Total	3.93	.296	High	

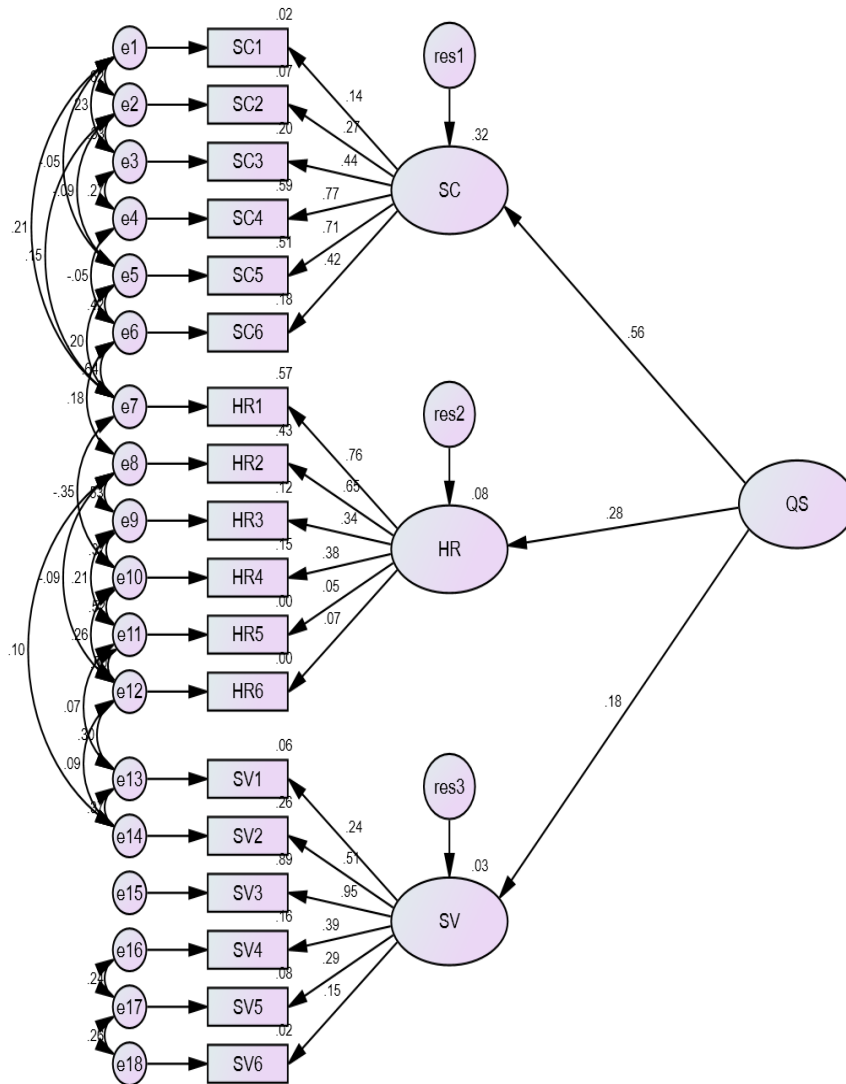
The hypothesis was set as H0: different gender focus on the same airports' service factors and H1: different gender focus on the different airports' service factors. The test shown that they were focus on the same airports' service factors as shown in table 3.

Table 3 The result of hypothesis testing on different gender focus on different airports' service factors.

Overall Airports' service factors	Variance	SS	df	Mean Square	F	Sig.
	Between group	.035	2	.018	.200	.819
	Within group	35.05	397	.088		

\*Sig. level .05

Then the structure equation model was tested the causal relation of airport service quality with servicescape (SC), personnel (HR), and the services (SC). Each of the service attribute was represented by six attributes. The attributes for SC were; SC1 the feeling of safety and security when located in the airport, SC2 terminal design is easy to find directions, SC3 cleanliness of WC, SC4 cleanliness of terminal with natural lights, SC5 representing art, SC6 terminal decoration with local art and culture. And the attributes for personnel or human resources (HR) were HR1 the courtesy and willingness to assist of security personnel, HR2 the courtesy and willingness to assist of airport's personnel, HR3 the airport's personnel personality and grooming, HR4 the airport has enough manpower to solve the problem, HR5 the airports' personnel greet with smile, HR6 the airport's personnel has knowledge on local area and can provide advice to travelers. Last, the service attributes including SV1 free WIFI, SV2 Shops and restaurants value for money, SV3 passengers can get travel information through technology, SV4 enough and comfortable seats in waiting area, SV5 there are varieties of shops and restaurants, SV6 the availability of banking services/post/and money exchange. The result found that servicescape has highest related to the airport quality followed by personnel and the services as shown in figure 1.



Chi-square=117.495,df=105,p=.191  
 Chi-square/df=1.119, GFI=.968, AGFI=.949,CFI=.993,  
 RMSEA=.017, RMR=.029

Figure 1 The structure model of airports’ service factors with airport quality

### CONCLUSION AND RECOMMENDATIONS

In summarization, the Thais airport user perceived that the servicescape has highest effect to airport service quality at the degree 0.56. And within the SC factors, SC4 cleanliness of terminal with natural lights, and SC5 representing art have high level to servicescape at 0.77 and 0.71 respectively. Secondly, the personnel or human resource (HR) has 0.28 level to airport service quality. Whereas, HR1 the courtesy and willingness to assist of security personnel, and HR2 the courtesy and willingness to assist of airport’s personnel have high effect to HR at 0.76 and 0.65 accordingly. Last, the service has less effect to the airport service quality at 0.18 level. In the service, the respondents focus on SV3 passengers can get travel information through technology, and SV2 Shops and restaurants value for money at the degree 0.96 and 0.51.

It can be seen that Thai passengers stress the important on airport atmosphere and the environment, where they can relax before the flight, admiring art and feeling comfort of natural lights. The courtesy and willing to help of airport personnel at all functions especially security could ensure the reliability of the airport. Howbeit, the implementation of technology for supporting the airport customer services could not be ignore.

Since, the result has shown that travelers admired the use of WIFI and acquiring data from the automatic machine rather than human. It is also could make the customer service processing more efficient.

#### **ACKNOWLEDGEMENT**

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# **THE IMPACT OF NEW COMMERCIAL AIRPORT (UTAPAO), THE NEW DESTINATION OF TRAVELER**

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## **ABSTRACT**

Nowadays Airline industry is growing rapidly especially in Thailand. Focus on Eastern Economic Corridor (EEC) which lead to one of the government's Eastern Airport Cityproject. As Bangkok's two international airports are operating beyond capacity The government intends to turn U-Tapao, a military based airport, into a commercial airport which is a third major destination for airlines. Utapao International airport becomes a joint civil-military public airport serving Rayong and Pattaya cities in Thailand. It is in Ban Chang District of Rayong Province. A new second terminal, which will increase airport capacity from 800,000 to three million persons per year. Terminal 2 was opened as in Nov 2017.

Utapao International Airport is the new update of airport in eastern part of Thailand that brings about the new position of transportation. Rather than sea freighter, the air transportation will bring along the freighter, human transport etc. As Pattaya is the main hub for traveler all around the world as well as Utapao International Airport will be the nearest airport. The main aim of the paper is to study the major impact of Utapao International Airport that effects to traveler on transporting to main destination as Pattaya. It would change the way of human movement, product movement, economic movement etc. The paper will show the impact and effect of Utapao International Airport to the new economic zone as known as EEC.

Keywords: Eastern Economic Corridor, Economic, EEC, Transportation, Travel

## **INTRODUCTION**

Tourism has emerged as one of the major global economic businesses in the 21st century. Tourism can be understood as a process of individuals or groups traveling from one place to another place to gain pleasure or business experience. In Thailand, tourism is one of the largest and key sources of foreign currency in Thailand. Cultural and natural tourism, adventure and sports tourism, pilgrimage and religious destinations, and national parks are the areas of the Thai tourism industry. Tourism cannot be developed without a functioning of transportation system.

The tourism industry can only operate with the availability of other tourism essentials such as transportation, accommodation, entertainment, food and so on. Transportation is the most important contributor to the tourism industry. In general, the main function of transportation is transit, carrying people and goods from one destination to another. People use transportation services to travel from one place to another seeking tourism or to deliver tourism goods. Transportation is by far one of the most essential components of the tourism industry. A well-developed and functional transportation system means a well-structured possibility of reaching various markets and providing the best quality service to the traveler.

There are many ways of travelling both by land, by sea, or by air, travellers can choose their travelling option from

their convenience. Air transportation can bring about the change of travelling style of people in EEC area who love to visit the eastern part of Thailand which are Chachoengsao, Pattaya, Rayong, and Chonburi. This is leading the ability of outcome to gain more economy of scale for people and business in the area.

### **Literature review**

Air transportation is the fastest and the most regulated transportation system currently. With new technology and development came along fastest jet planes and aircrafts, that allowed traveling faster than ever. Now the travelers can explore new areas and long distance travel in short time. The expansion in air transportation in tourism industry introduced many untouched and non-popular areas to not only western society, but also travelers from around Southeast Asia. As a matter of fact, at the moment any corner of world can be reached under 24 hours.

It has managed to gain significant part of the transportation market in recent years, especially to destinations longer than 500 kilometers away. A scheduled air transportation system offers a safe, convenient, reliable, frequent, and consumer-centered service. Air transportation is becoming more and more popular among the travelers who want to arrive at destinations quickly. (Cooper, Fletcher, Fyall, Gilbert & Wanhill 2008, 419.)

On February 1, 2018, the Thai parliament approved the law for trade and investment in the Eastern Economic Corridor (EEC). With the EEC, Thailand hopes to develop its eastern provinces into a leading ASEAN economic zone.

The EEC straddles three eastern provinces of Thailand – Chonburi, Rayong, and Chachoengsao The government hopes to complete the EEC by 2021, turning these provinces into a hub for technological manufacturing and services with strong connectivity to its ASEAN neighbors by land, sea and air. The government has identified four “core areas” essential in making the EEC a renowned economic zone: (1) increased and improved infrastructure; (2) business, industrial clusters, and innovation hubs; (3) tourism and; (4) the creation of new cities through smart urban planning. The government predicts the creation of 100,000 jobs a year in the manufacturing and service industry by 2020 through the EEC.

“Aerospace and aviation are key industries in Thailand,” said Korbsiri Iamsuri, Director of Thailand Board of Investment in North America; “The expansion of the U-Tapao International Airport for commercial traffic and for maintenance and repair operations, will further enhance our already strong offering in the aerospace sector.”

### **Methodology**

The research methodology is look through the review from the secondary data on the purpose of;

1. The impact of EEC to traveller
2. The future of EEC on travelling campaign

As from the review found that:

The Eastern Economic Corridor (EEC) Development Plan under scheme of Thailand 4.0 aiming to revitalize and enhancing of the well-known Eastern Seaboard Development Program that had supported Thailand as a powerhouse for industrial production in Thailand for over 30 years.

Under this initiative, the Eastern Economic Corridor Office of Thailand (the EECO) has been assigned to drive the country’s investment in up-lifting innovation and advanced technology for the future generation. The EEC Development Plan will lead a significant development and transformation of Thailand’s investment in physical and social infrastructure in the area. To establish the third main international airport in Thailand for business expansions, as well as to better facilitate the establishment of a Special Economic Zone in anticipation of the EEC expansion. In addition, this will serve a passenger link to Don Mueang International Airport

and Suvarnabhumi International Airport, while simultaneously supporting growth as a regionally important aviation hub.

This project accepts private investments in developing the U-Tapao International Airport as a part of the U-Tapao International Airport and Eastern Airport City Development Project. Private Public Partnership investments will allow continuous development of the airport and many various activities including: construction readiness and serviced maintenance of the Terminal 3 building, as well as the Commercial Gateway, Phase II Air Cargo, Phase II Maintenance, Repair and Overhaul services, Phase II Aviation Training Center, and the Free Trade Zone.

The expansion of the U-Tapao International Airport for commercial traffic and for maintenance and repair operations, will further enhance our already strong offering in the aerospace sector. Moreover, The EEC connectivity, the U-Tapao International Airport and the high-speed train that links major three airports will make Pattaya the heart of the eastern cities. Plenty of attractions in the area will lure lot more foreign and domestic tourists in the future."

### **Key factor**

Pattaya is increasing in popularity all the time with visitor numbers from almost all areas of the world rising annually. Not only short term visitor, but also long-term visitors, business man also increase in Pattaya and Rayong. Since there is no public airport from Don mueng or Suvarnabhumi to Chonburi, Pattaya and Rayong, opening U-Tapao International Airport in Rayong province, just 30km from Pattaya, is bringing the new era of transportation to these provinces.

To improve connectivity by air, Thailand is expanding the U-Tapao International Airport with the opening of a second passenger terminal and runway, the U-Tapao International Airport's passenger capacity will increase from its current 800,000 people to 3 million. The expansion will not only facilitate an increase in tourist arrivals – attracted to Thailand's eastern beaches – but will also transform U-Tapao into a hub for aviation maintenance, repair and overhaul, air cargo, and logistics to accept the large number of passenger in the next 10 years.

Nowadays the airport is already popular with the domestic carriers such as AirAsia, Bangkok Air and Kan Air, with China Southern Airlines also having many flights to and from the airport, but it is hoped that the expansion will not only be good for local business on the Eastern Seaboard, but also be beneficial for tourists. As a result, from number of travelers who visit Pattaya and Rayong or any other eastern province such as Chantaburi and Trat, developers, investors and most businesses in Pattaya will have a chance to better business. Long term visitors in the form of working expats are also like to increase in the city as it is the destination of choice for many.

An increase in expats and tourists show a bright future for the city and gives it a firm foundation on which in can grow still further. The city is booming and it seems that everyone wants to be a part of it.

### **Result**

Look back to the main problem of lack of commercial airport in EEC area.

1. There is no public airport to travel people from Bangkok to Pattaya, Chonburi and Rayong. As passenger especially foreigner need to travel by coach and taxi which are quite dangerous. The road accident in Thailand still got high risk.
2. Foreigners like to go to that area as they are a massive of travel attraction like Pattaya. This can bring about the significant economic growth.

Those are 2 common issue that effect to safety atmosphere to traveller. As they would like to go to EEC area, there are only a few ways to get there that lead to the safety issue as well as cut of some travelers who want the comfortable way to get there. We found that travelers who demand comfortable life they willing to spend more money than general backpacker.

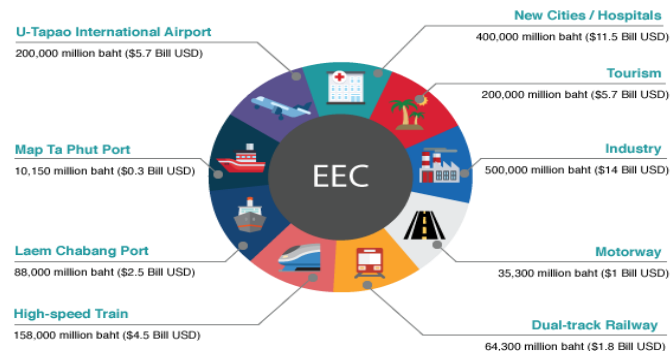


Figure 1: The economic ability of EEC

The result after open Commercial airport (U-Tapao), foreigners can travel to EEC area with air that safer and faster. This can bring the way of traveling for both Thais and foreigner to travel to the area. We are predicting that the economic would grow triple. The new hub of the airport in EEC area can bring traveler, cargo, and business. With the expansion and upgrading of Utapao International airport, there are several airlines available. These airlines fly to different destinations locally and internationally. Some of the major local destinations include Chiang Mai, Phuket, Hat Yai, Udon Thani and Koh Samui. Popular international destinations include Macau, Shanghai, Nanning and Nanchang in China and Kuala Lumpur in Malaysia. In the recent times, the airport has airlines that fly to other major cities in the world. Some of the major airlines and destinations include:

- Air Asia to Chiang Mai, Hat Yai, Phuket and Udonthani. Plus Macao, Nanning, Nanchang and Kuala Lumpur
- Bangkok Airways to Phuket and Koh Samui
- Hainan Airways to Haikou and Sanya
- Donghai Airlines to Shenzhen
- Qatar Airways to Doha
- Thai Lion Air to Chiang Mai
- Nok Air to Changsha, Nanchang and other Chinese cities

The airport can gain the most significant criteria into the location includes number of traveler in the area, growth of economic, growth of career and growth of developed landside. All those significant criteria lead to the high development and can challenge the old destination to become the modernized destination.

### Conclusion

The EEC Development Plan will lead a significant development and transformation of Thailand's investment in physical and social infrastructure in the area. To establish the third main international airport in eastern of Thailand under the EEC Development plan will lead to a business expansion, as well as to better facilitate the establishment of a Special Economic Zone, is also lead to a significant development and transformation of Thailand's investment in physical and social infrastructure in the area. The government predicts the creation of 100,000 jobs a year in the manufacturing and service industry by 2020 through the EEC. And new private investment and public infrastructure investment would be about Baht 300 billion each year from now. Investment in the EEC alone could spur economic growth by 2 percentage points on top of the current average 3 per cent GDP growth.



The U-tapao expansion project was expected to enable Utapao / Pattaya airport to handle 15 million passengers within the next five years, 30 million in the next 15 years and 60 million in the next 20 years.

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# COMBATING WITH UNRESOLVED ISSUE OF PIRATING: TO WHAT EXTENT PRICE DIFFERENCES MODERATE THE RELATIONSHIP BETWEEN INTENTION AND PURCHASE BEHAVIOUR OF PIRATED CDs?

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## ABSTRACT

**Abstract**— Pirated products are not a new challenge to manufacturers all over the world. The problem had even before the development of the advance technology today. Pirated products can be divided into many categories such as medicine, fashion, movies, music and many more. There are many past studies on pirated product issues. Majority of them focus on determinants that influence consumers' intentions to purchase pirated products while only a few studies investigate the relationship between intention to purchase and the actual purchase behavior of pirated products. This study examines the relationship between behavioral intention and purchase behavior of pirated CDs and the moderating role of price differences between intention and purchase behavior. An intercept survey involving 371 respondents was conducted at hot spot areas selling pirated CDs in Malaysia. A self-administered questionnaire was designed using established scales. Using a questionnaire, data were collected and analyzed to test the hypotheses. Data were analyzed using descriptive analysis, correlational analysis and regression analysis. The results show that behavioral intention and purchase behavior is positively related and the strength of this relationship is stronger with the existence of price differences between original and pirated CDs. This study offers theoretical and practical contributions for academics and professionals. This research provides an understanding of consumers' pirated product purchase behavior. The research findings can be used by policy makers and original product producers to formulate strategies to curb counterfeiting activities.

**Keyword:** Behavioral Intention, Counterfeiting, Pirated Products, Price differences, Purchase Behavior.

## I. INTRODUCTION

Music piracy is a big business. It refers to copying of a music recording without proper permission from the copyright holder. Almost 40% of all compact discs in circulation worldwide were identified as pirated copies (Khadka, 2015). Over the years the illegal purchase of copyrighted CDs has a very great impact on the music industry as it have embellished the market alongside with original music CDs (Sinclair & Green, 2016; Ugolini, 2015). In fact, a recent study by Sinclair and Green, (2016) acknowledged a large decline in CD sales immediately followed the onset of this illegal distribution.

Piracy hurts legitimate producers, since the users who would have purchased an original content, can purchase it illegally. This issue has reached a critical stage when music piracy is viewed globally as a criminal act and even on par with narcotics, weapons, human trafficking and terrorism (Riekkinen & Frank, 2014). Jesse (2015) noted that music piracy either online or offline have posed a serious global threat because the market is growing more rapidly in developing countries than in the advanced nations. In fact, researchers observe that the social acceptance of pirated music has increased tremendously (Huang, Lin, Su, & Tung, 2015; Lin, Zeng, Cheng, & Wang, 2015; Nova, Rahayu, & Handayani, 2015; Sinclair & Green, 2016). This can be attributed to the consumers who knowingly and deliberately purchase pirated version of original CDs (Arli, Tjiptono, & Porto, 2015; Chiou, Cheng, & Huang, 2011; Li, Miller, & Ruiz, 2014). This shows that they are not deceived in purchasing pirated CDs and carefree about using pirated CDs. Ultimately, this contributes to the surge in demand for pirated CDs (Asif, 2013; Dilmperi & King, 2012).

Understanding the determinants of counterfeit purchase behaviour has been the focus of considerable research in studies pertaining to counterfeit purchase. Much of this research used Social Cognitive Theory (Bandura, 2000), Theory of Reason Actioned (Ajzen & Fishbein, 1980) and Theory of Planned Behavior (TPB; Ajzen, 1991). These theories all converge on viewing intention (i.e., decision or motivation to perform the behavior) as the key proximal determinant of behavior. However, as been indicated by McEachan et al. (2011),

the relationship of intention with behavior is far from perfect; it equates to only a medium-large effect size for behaviors. The present study contributes to our understanding by investigating the extent to which this intention-behavior gap (Sheeran, 2002) changes as a function of the motivational basis of intention.

## II. LITERATURE REVIEW

Ajzen (1991) defines behavioral intention as “the motivational factors that influence an individual’s readiness to act and to demonstrate the effort they would strive to perform the behavior”. As being mentioned by Kaewwongwattana, Phimolsathien, and Pimdee (2015), behavioral intention is the main predictor and regarded as the immediate antecedent of individual behavior. This is highlighted in the Theory of Planned Behavior (TPB) introduced by Ajzen (1991). Bian and Moutinho (2011) stated that by implementing intention in consumers, there will be higher chances for the intention to turn into actual behavior. Nonetheless, in pirated music studies, it showed that intention has a significant effect on purchase frequency (Dilmperi, 2013; Ouellet, 2007; Robertson, McNeill, Green & Roberts, 2012; Sinclair & Green, 2016; Van Belle, Macdonald & Wilson, 2014). In the middle-east market, Fernandes (2013) found that the likelihood to buy pirated goods among consumers is positively related to higher behavioral intention. In the same vein, researchers who study about unethical behavior such as Riemenschneider, Leonard and Manly (2013) has concluded that behavioral intention is a perfect proxy for consumer behavior.

From the discussion, it shows that behavioral intention has been found to influence consumer behavior in many circumstances. This indicates that it is essential to study the construct of behavioral intention and that it cannot be ignored. Ajzen and Fishbein (1980) emphasized that behavioral intention should constantly explain behavior given there exists associations between measures of behavioral intention and behavior and that behavioral intention stays constant prior to involve in the behavior. Therefore, we develop this hypothesis:

H1: Behavioral intention is positively related to consumer purchase behavior of pirated CDs.

Despite the fact that behavioral intention is a good predictor of behavior, there are a few studies that demonstrated a considerable gap between behavioral intention and behavior and relatively little empirical studies have examined factors that may explain and help to overcome the gap between behavioral intention and behavior (Blake & Kyper, 2013). The gap between an independent variable, which is behavioral intention, and a dependent variable, which is the purchase behavior, showed an evidence that a third variable may influence the direction and/or the strength of the relationship between intention and behavior (Baron & Kenny 1986). Therefore, the third variable is known as moderator. Previous study stated that price differences is essential in ensuring the consumer to purchase pirated products (Ahmed, 2016). When consumer is very concern with price differences, the probability for the consumer to switch from original or genuine product to pirated products is highly possible. Patiro and Sihombing (2016) proved that when the difference between the genuine products is big, consumer tends to consider other alternative or choice which is pirated products. Price differences between the two compared products will enhance the consumer decision in choosing pirated products (Cheng et al, 2011; Poddar, 2012).

Previous study by Lu (2013) found that there is a significant different of price level between the consumer who already own pirated products with the first time pirated products buyer. The price level for experienced consumers are slightly higher than the first time buyers. However, both group of consumers expected that the quality of the pirated products should be acceptable to encourage them to purchase it. As a conclusion, there is not much difference between the two groups of experienced buyers and first time pirated products buyer in term of acceptable quality of pirated products. However, the price level for these two groups are different as the first time pirated products buyers refused to pay more for pirated products. Pirated products offers products at a price lower than the genuine brands. Although the products quality are lower, pirated products still been considered as the best alternative to consumers who are value conscious for money (Ang et al., 2001; Wang et al., 2009). Lu (2013) stated that price differences between the original and the pirated product moderate the relationship between intention to purchase and actual purchase behavior.

Abid and Abasi (2014) found that price gap between the original product and pirated product is significant in moderating the relationship between intention to purchase and purchase behavior. This is supported by findings that show when pirated products are available at a price much lower than the genuine products, consumers tend to purchase pirated products (Gentry, 2006; Ergin, 2010). Pirated products are cost effective. Consumers with price sensitivity have higher tendency to purchase pirated products (Haque et al., 2009; Gino, 2010). Abid and Abasi (2014) further noted that the greater the gap between the original product and the pirated product, the higher the chances for consumer to purchase pirated products. This is supported by Phau and Teah (2009), that the role of price differences between the original and pirated product influences consumer to

purchase the pirated products. When the price of pirated product is less than half of the original product, consumer intention to purchase the pirated products will be increased (Hashim, 2011). Janaszewki and Lichtenstein (1999) stated that people used their experience to set the lower and upper limit of price expectation. The price expectation is used as the reference price when purchasing the pirated products. Michaelindou and Christodoulides (2011) discovered that reference price is created from various sources such as previous experience, lower price and the price differences between the two products. In this study, the price differences between the two products is the price differences between the original products and the well-branded pirated products. Thus, this study hypothesized that:

H<sub>2</sub>: Price differences between pirated CDs and the original CDs moderate the relationship between intention and purchase behavior.

### III. METHODOLOGY

Data was collected using an intercept survey approach at three main areas where pirated CDs were widely sold in Malaysia. Respondents were asked to take part in the survey and self-administered questionnaires were used to acquire responses from respondents. Following a similar method used by Phau and Teah (2009), every fifth respondents who entered the main entrance of the area were approached. Out of the number of respondents intercepted, 75 percent of them (371 respondents) agreed to take part in this survey.

The purchase behavior measure for the present study was adapted from Wang, Zhang and Ouyang (2005). It required respondents to rate their responses towards four items relating to pirated CDs purchase behavior. Behavioral intention is measured in terms of intended, expected and desired to buy pirated CDs using scale developed by Kim and Karpova (2010). Price differences were operationalized as the price differences between the pirated CDs with the original CDs (Lu, 2013). There are four items used to measure price differences. We used the five-point scale ranging from “highly likely–highly unlikely” in our questionnaire to assess the behavioral intention and purchase behavior of the respondents.

### IV. RESULTS

Out of the 371 respondents, almost half of them were female (55%) and the remaining (45%) were male. The greatest number of the respondents are at the age between 21 to 35 years (60%). Most of the respondents are working in private organization (33%), followed by government servants (18%) and self-employed (13%). Majority of the respondents are high school leavers (46%), followed by degree holders (34%) and master/PhD (20%). Reliability values and mean scores for each variables are shown in Table 1 below.

Table 1 Reliability Values and Mean Scores

	Reliability values	Mean Scores
Behavioral Intention	0.81	3.73
Purchase behavior	0.73	3.16
Price differences	0.91	3.33

Table 2 Correlation between Variables

	Behavioral Intention	Purchase Behavior
Behavioral intention	1	
Purchase behavior	0.48**	1

\*\* $p \leq 0.01$

Table 2 above presents the correlational relationship between behavioral intention and purchase behavior. In order to test hypothesis 1, a simple regression was employed to analyze the relationship between behavioral intention and purchase behavior of pirated products. Result generated is presented in Table 3.

Table 3 Regression of Behavioral Intention on Purchase Behavior of Pirated CDs

Independent Variable	Standardized $\beta$	t-statistics	p-value
Intention	0.382	4.51	0.000**

$n=371$ ;  $adjusted R^2=0.41$ ;  $F=6.653$ ; \*\*  $p \leq 0.01$

As shown in Table 3, result indicates that behavioral intention is a significant variable having influences on purchase behavior of pirated products. This predictor explained 41 percent of the variance in purchase behavior of pirated CDs. In conclusion, hypothesis 1 is supported.

In order to investigate whether one variable (i.e. price differences) has a moderating effect on the relationship between the other two variables (i.e. behavioral intention and purchase behavior), hierarchical regression is used (Baron & Kenny, 1986; Pallant, 2013). As depicted in Table 4, behavioral intention is used as the indicator to predict purchase behavior of pirated CDs. In Model 1, without the inclusion of price differences as the moderator, the result only explains 40.9 percent of the variance. Once, price differences is added as the moderator, the result explains 74.2 percent of the variance. The adjusted R-square also improved from Model 1 (.408) to Model 2 (.741) with a significant F change Value ( $R^2$  change= .333,  $p < .01$ ). This indicates that by adding price differences as the moderator between behavioral intention and purchase behavior, the variance explained increase by 33.3 percent, indicating moderating effect. Thus, supporting hypothesis 2, as the value of R square increases and significant.

Table 4 Hierarchical Regression of the Effect of Price Differences on Behavioral Intention and Purchase Behavior

Independent Variable	Model 1 B	Model 2 $\beta$
Behavioral Intention	.640	.284
<i>Moderating Variable</i>		.678
Price Differences		
R2	.409	.742
Adj R2	.408	.741
R2 change	.409	.333
Sig. F change	.000	.000

\*\*p<.01

## V. DISCUSSION AND CONCLUSION

This study found a significant influence of behavioral intention on purchase behavior, which consistent with many past findings in this regard (e.g., Reimenschneider et al., 2011; Fukukawa, 2002; Phau & Teah, 2009). This indicates that consumer behavioral intention has high explanatory power to predict consumer behavior towards purchase of pirated CDs. This supports the argument made by Ozcaglar-Toulouse, Shui and Shaw (2006) that individual's behavioral intention is believed to have a direct influence on behavior. The positive association between behavioral intention and purchase behavior of pirated CDs further confirms previous finding by Su, Lu and Lin (2012) that purchase behavior of textbook piracy among Taiwanese respondents is influenced by piracy intention. This also echoes the finding of Wu, Lai, Tong and Tao (2013) that Chinese gamblers involve in gambling behavior because of their behavioral intention to do so. The finding demonstrates that consumers have a positive impression towards pirated CDs and that their actual purchase behavior is due to a strong belief that pirated CDs are cheap, easy to get, safe, at par with original CDs and identical to original CDs. Therefore, consumer good perception towards purchasing pirated CDs has changed consumers from choosing original towards pirated CDs.

This result showed that price differences act as a moderator influencing the relationship between behavioral intention and purchase behavior. This result is supported by Lu (2013) and Hashim (2011). Both studies stated that the price differences between the original and pirated products strengthen the relationship between consumers' intentions to purchase with the actual purchase behaviors. In this case, price differences play a significant role as a modifier that enhance the relationship between behavioral intention and purchase behavior. The existence of price differences stimulate the relationship between consumer intention and actual purchase of pirated CDs.

As consumers could not afford to purchase the original CDs, pirated CDs is the best alternative to fulfil their needs. Scholars agreed that price is one of the determinants that influence consumer intention to purchase. Thus, it is not surprising if price differences or price gap could become the moderator between the intention to purchase and the actual behavior. The price gap could hold the ultimate key on whether a consumer will finally decide to purchase the pirated products. Therefore, we could conclude that the larger the price differences between the original products and the pirated products the higher the chances for the actual purchase of pirated products to take place.

Pirated products has emerged as a world problem that is impossible to be solved overnight. To be successful in combating with pirated CDs, it requires proper preparation and implementation of strategies that fit with the right target of consumers and suppliers. Thus, to be able to solve the piracy issue, original CDs manufacturers need to recognize the underlying factors that trigger consumer purchase behavioral intention and behavior towards piracy CDs. As been mentioned by prior researchers such as Prendergast, Hing Chuen, and Phau (2002) and Phau and Teah (2009), consumers are regularly lack of knowledge regarding the undesirable effects of piracy business. To weaken consumers' behavioral intention and behavior towards pirated products, more organized and consistent works should be carried out to alert consumers the effects of their actions buying pirated CDs on the nation, social and in fact on themselves (Nia & Zaichkowsky, 2000). Messages aimed at educating them about pirated CDs must be tailored in such a way that buying "pirated CDs really does not give value for money but rather makes you lose money".

At this point, some limitations of the study may also be observed. The study is conducted in the geographical and social context of Malaysia. Therefore, the context may be noted while appreciating the study. Being a cross-sectional investigation with a particular sample, it may only be generalizable to Malaysia, unless further validating studies are conducted across countries. Future research may call for adopting qualitative studies along quantitative validation as well. Qualitative studies may be aimed at identifying new variables that may affect the consumer behavior. In the context of pirated products behavior, many past author have emphasized this approach to explain consumer behavior further, although a very few study could be traced that actually followed qualitative method and/or mixed method in this specific case.

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## ENHANCING THE GLOBAL VALUE CHAIN FOR THE FISH INDUSTRY IN UGANDA

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Uganda as often stated is gifted by nature. 15.3% of its landmass is covered by open fresh waters, which makes it a sanctuary for fish. Uganda exports over 25 tons of fish and collects in excess of USD \$ 124m annually. Fish contributes about 12.49% of the country's export revenue. Investment in the sector is currently estimated at USD \$ 200m with employment of over 700,000 people. Uganda is currently on the list of exporting countries recognized by the European Union Commission. It employs a marketability value chain model, whose central governance mechanism is "price". The Nile perch is the main export specie because of its similarities with codfish (*i.e neutral flavor, & bone free fillets*). The above notwithstanding, the fish industry still remains a budding sector with high potential for investment, profitability, and an avenue for curbing the rampant unemployment at full exploitation, and with mechanism in place of quality assurance and curbing wastages. Currently, there is limited government. The linkages between value chain activities are elusive (*i.e what binds the producers, middlemen & exporters is the product & price*). This paper therefore seeks to: map out the fish value chain in Uganda with keen interest in the design (*i.e identifying key payers, governance structures, linkages, marketing structures, distribution, & existing support mechanism*); and discuss the impact on the structures of the chain, their challenges, and how they can be improved for effectiveness and efficiency.

**Keywords:** Investment, Potential, Profitability

# THE MOTIVATION FOR AIRLINE SAFETY IMPROVEMENTS AFTER ACCIDENTS: A GAME THEORY APPROACH

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## ABSTRACT

Abstract—Most of accidents are serious, so it usually arouses huge public concerns and responses. Recently, two fatal air crash events happened in Taiwan with the same airline, TransAsia Airways. The GE222 Accident in Penghu on July 23, 2014 and the GE235 Accident in Taipei on February 4, 2015, had a strong impact on public safety perception toward the airline. Customers are not willing to use the airline because of public fear of flying and safety concerns, but owing to abating of worries, passengers may return again. Therefore, if there is less airline rivals and the airline can pass the impact duration, they may not be motivated to spend extra costs for safety improvement. It is important that if airlines improve safety to rebuild market confidence, social benefits may increase to ensure to lower possibility of accidents. But if the government is not strict, airlines may only satisfy the lowest requirement. Moreover, airlines are considering maximum of profits, making it a trade-off with safety. The purpose is to make a game to analyze the interaction between one airline and customers and provide a prospective to specify the safety problem. To describe this phenomenon, a non-cooperative game theory composing two players with two strategies respectively (airline: do, undo; customers: use, don't use) is adopted to analyze the airline strategy and customer behaviors. This is a game with imperfect information because airlines cannot precisely predict passenger's willingness to use, and customers normally are not familiar with what airlines have done for safety. It's also a game with incomplete information because airlines don't know passengers' preference for mental relief or airline selectivity. The model is illustrated with an extensive structure. Analysis shows customers' attitude control airlines' motivation, and communication between multiple stakeholders is necessary to make win-win condition.

Keywords— Aviation Accident, Game Theory, Safety Improvements

## INTRODUCTION

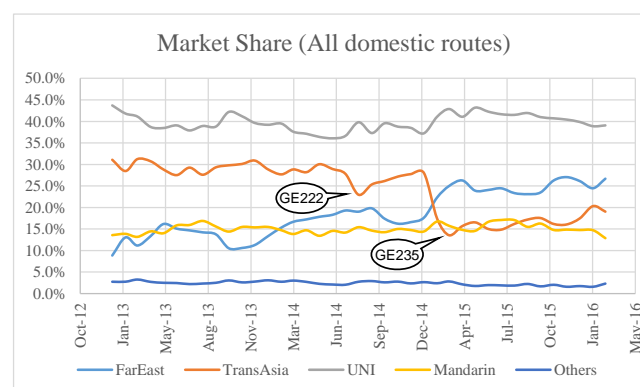
### *1.1. Accident History and Passenger Decrease: Case in Taiwan*

On average, an accident occurs during or just before an off-peak period, the involved airline may face 22.11% monthly traffic decline, and other airlines may also lose 5.62% of passengers monthly because of public fear of flying in Taiwan [1]. Based on public safety concerns, recent accidents can be inferred to reduce customers' confidence toward the aviation market, and to change people's airline selection criteria. Nevertheless, according to data from Civil Aeronautics Administration, the Ministry of Transportation and Communications (MOTC) of

the Republic of China (Taiwan), market share among airlines after these two accidents show different outcomes in Figure 1. Currently there are five airlines operating domestic routes in Taiwan, and market share of airlines for domestic routes indicates that TransAsia Airways lost customers right after the GE222 Accident, but recovered in half a year. Another accident (GE235) occurred to the same airline, and induced a serious decline since then, revealing a big difference of two accident social influences. This explains the second accident had much stronger impacts on people's behaviors than the first one. It also shows that one accident does not change the market performance much, while repeated accidents strongly and continuously discouraged people to use the airline.

Therefore, it can be inferred that customers are still willing to use the involved airline after one accident, but risk of accidents still exists, resulting in a repeated accident. There were several airlines suffering from financial crisis or bankruptcy after air crash events including Pan American World Airways (Pan Am), Swissair, and Malaysia Airlines. Previous experiences and the above-described phenomenon in Taiwan expressing the differences after accidents motivated us to explore the relationship between airlines' consideration and customers' perception.

**Figure 1**  
**Market share of domestic routes from December 2012 to March 2016**



### 1.2. Problem Statements

This research brings up a problem that the level of safety may be affected by public perception change in Figure 2. If there are few rival airlines and limited flight alternatives, particularly for the domestic aviation market, customers have less airline choices but use it. Some who are not sensitive to safety issues are still willing to use it regardless of accident records. As long as the involved airline could maintain financial balance to pass impact duration of an accident, the airline may not spend extra expense for safety measures after accidents if customers return after a period due to abating of worries or flight schedule limitation, resulting in safety problems.

Aviation safety is a concept of risk, which is a combination of possibility and consequence. If airline companies can implement safety management thoroughly and continuously, the risk of accident occurrence would be lower, ensuring long-term safety for future air transport. Nevertheless, for small-scale or new airlines which have inadequate budget and cannot obtain the financial support from the government, a loss of passengers may lead to bankruptcy. Consequently, it is not socially beneficial for long-term aviation development.

Figure 2

Problem process of airline's safety motivation

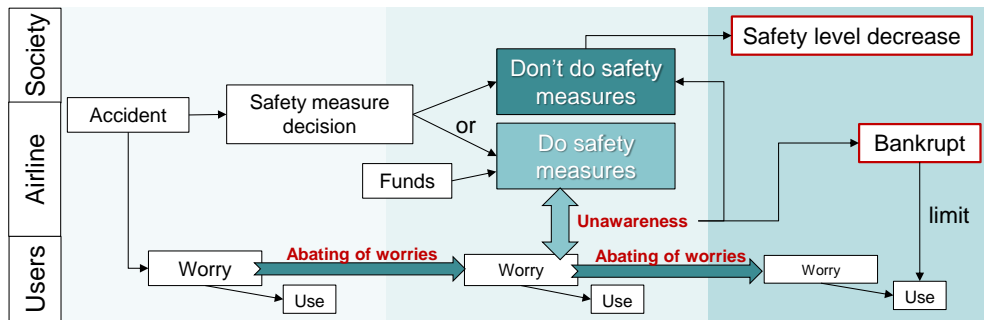


Table 1

Airline's consideration for safety improvements

	Decision Making	Consideration	Constraint	Hypothesized Consequences
Airline	Don't do safety measures	Users' abating of worries, choice limitation	Capital turnover, few airline rivals	Safety level decrease
	Do safety measures	Safety upgrade	People's unawareness [2]	Bankruptcy

Table 1 summarizes the consequences of two decisions. If the airline does not conduct safety measures after accidents, level of safety will decrease. But if the budget of safety upgrade system cannot be reimbursed from customer recovery, it may face financial problem and then bankrupt. Therefore, there is a problem for aviation safety and market performance that should be clarified.

### 1.3. Objectives

After accidents, airlines are supposed to conduct safety measures to reduce risk. For their own safety, some of customers will select an airline according to their safety perception to reduce worries. However, people's worries will decline over time, making safety perception less dominant of airline choice criteria. Also, those who are not sensitive to safety issues or due to airline choice limitation, customers do not have other alternatives but use the airline. Therefore, the airline may not conduct costly safety measures to enhance level of safety, instead, they can give airfare discount and improve service to attract customers, because they assume passengers will return due to abating of worries over time.

This makes a tradeoff of safety and profit between the airline and customers, and can be expressed with a non-cooperative game. For sustainable and sound development of aviation industry, safety improvements are considered to be very important. Airlines are expected to improve safety after accidents. As a result, we would like to use this game to discuss to interaction between the airline and customers, and provide a prospective for policy makers to find the situation that is beneficial for both and the society.

This study is aimed to build a structure to demonstrate the interaction between customers and airline companies. Therefore, consideration for diverse stakeholders can be defined to find a solution to motivate airlines to upgrade safety management system after accidents for safe and sound development of aviation market, to help people better understand aviation safety, and to provide a scheme for airlines to implement safety measures.

## LITERATURE REVIEW

Game theory is widely used for decision making with different player's strategy and the utility. The players of the game are the main portion to make decisions, and they are involved to participate in a game for getting maximum benefits in a suitable action. The main elements in a game are players, information, strategy and payoff functions. Game theory provides a framework for interpreting the interaction among decision-makers for determining the outcome jointly. Game theory is to model conflict and cooperation among independent players, and is a powerful tool in understanding the relationships such as competition and cooperation.

In transport or administrative field, it was firstly used to model behavioral hypothesis for route choice, and after that diverse application has been addressed. Roumboutsos and Kapros [3] extended game theory to the issue of integration within urban public transport networks provided by service operators. Wang and Yang [4] used a game theoretical approach to model the strategic interactions between the operators in a deregulated bus market, taking into consideration competition over price and service frequency. Sun and Gao [5] modelled passengers' choice of route and mode by applying game theory. Dong et al. [6] found there are conflicts of the interest for cleaner production between a local government and a potentially polluting firm, and used game theory and add some policy variables to change the payoffs, which can improve the current policies. Talebpour et al. [7] compared the difference for players with complete and incomplete information with an example of the Nash non-cooperative game. A full literature review of game theory applied to transport modelling has been summarized by Hollander and Prashker [8].

## GAME OF SAFETY IMPROVEMENTS

### 3.1. Game Formulation

Hypothesis of this game is both of the airline and customers have two strategies, making it possible to create a non-cooperative game to interpret the interaction among decision-makers for determining maximum benefit for individuals and the outcome jointly. The game composes two players with two strategies respectively in Table 2 is adopted to analyze the airline strategy and customer behaviors.

**Table 2**  
**Game formulation.**

Player		Objective	Constraint	Strategy
Player A: The airline		<ol style="list-style-type: none"> <li>1. air transport service supply</li> <li>2. maximum profits</li> </ol>	<ol style="list-style-type: none"> <li>1. budget</li> <li>2. authority audit</li> <li>3. don't know B</li> <li>4. policy making timing</li> </ol>	active action: do safety measures  passive action: airfare discount
Player B: Customers		<ol style="list-style-type: none"> <li>1. air transport demand</li> <li>2.1 less worries</li> <li>2.2 better service</li> </ol>	<ol style="list-style-type: none"> <li>1. limited choices</li> <li>2. know B's type, but don't know A</li> </ol>	use the airline  don't use the airline
[B type I] safety > service	[B type II] service > Safety			

- Player A: the airline which had one accident occurred

In order to attract passengers to use the airline again, Player A has strategies of active or passive action: the airline can conduct safety measures to rebuild market confidence and to reduce accident risk; or assume passengers will return gradually, so provide airfare discount and improve service to attract customers.

- Player B: customers/potential passengers

Customers are considering to use the airline or not to use the airline. Furthermore, there are two kinds of people should be divided. People who are sensitive to safety issues are type I, while those who regard all airlines are safe and consider service as priority including price attraction, operation satisfaction, flight schedule preference, limitation of seats, airline choice, etc. belong to type II.

### **3.2. Game Assumption**

The big problem is that airlines do not do safety measures, but customers are still using. Our target is to find the condition when airlines do safety measures and customers use the airline. To support the hypothesis, there are several conditions and assumptions for this game, and are summarized as follows.

First, this phenomenon may potentially happens in developing countries, where aviation safety law is not well equipped. These airlines consider safety improvement is much more expensive, even affordable, than financial loss during impact period; also, if the government aviation authority is not strict on safety standards, as long as the airline satisfies the lowest requirement, there is no needs for them to expend expense for extra investment. Second, for domestic routes in one country, if airfare is not much different from airlines and also affordable, price won't be a dominant of airline choices. In most of cases, few airlines are operating in the same route, so for customers there are also few airline alternatives for them to select. Third, what customers perceive is different for individuals. Worries will be relieved over time. Some people are willing to take the airline even they feel unsafe due to limited flight choices and lower airfare. Therefore, these factors can be included into service perception, representing price attraction, limitation of provided seats, flight schedule preference, airline choice, etc. Tradeoff of worries and service quality can be two strategies for customers as well. Forth, if the airline found there is no sign that passengers will return, they may change their strategies to conduct safety measures. Timing of implementation is an important factor for airline decision making, because customer confidence may still remain low even the airline has already made efforts, inducing a long-term challenge. Lastly, airlines have to control budget and estimate the cost performance to get maximum profits for long-term plan. For poor airlines, it is highly possible to avoid expensive safety measures due to budget limitation, if they didn't receive supports from the government.

## **GAME MODELIZATION**

### **4.1. Game Setting**

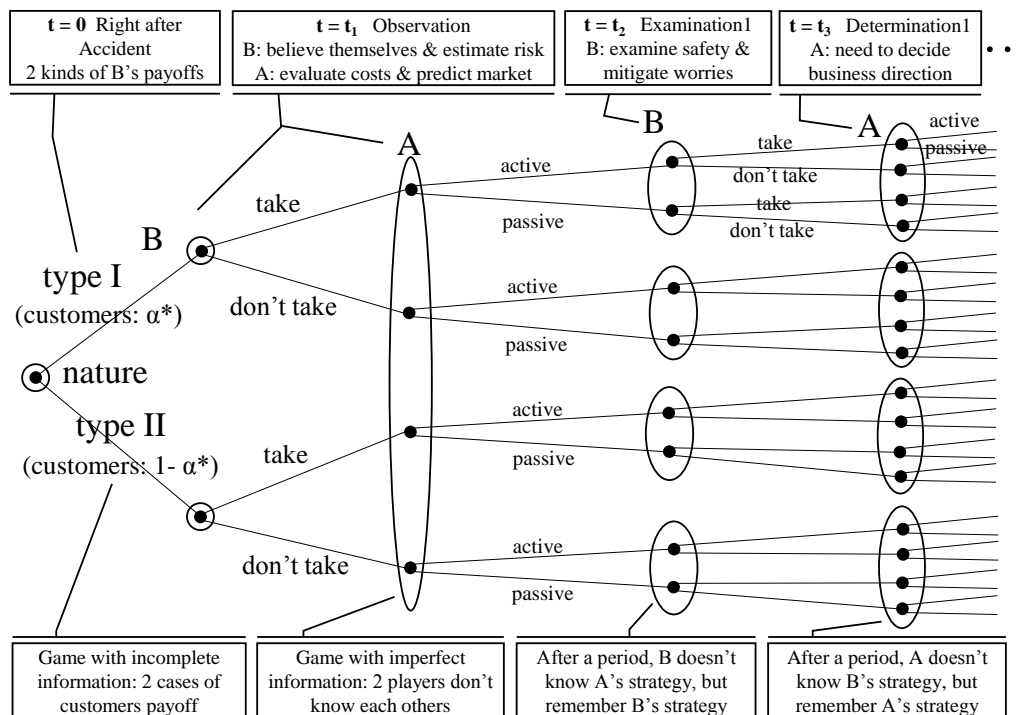
Lay people are not familiar with aviation safety, so their perception are totally different from experts in some conditions [2]. Customers' continual usage regardless of accident records may make airlines not to improve safety, while their unawareness of aviation safety may let one airline lead to bankruptcy, resulting in an unbalanced aviation market. Therefore, it is possible to create a multi-players game, covering two players, the airline and customers, to explore the interaction.

Customers can be regarded as one group, because they have similar characteristics, and be divided into two types, becoming a two-player game. We aim to let customers, regardless type I or II, can use the airline, and the airline conducts safety measures. Several game setting are described in Table 3. Extensive form in Figure 3 can make it clear to observe decision making process.

**Table 3**  
**Game setting**

<b>Two-person non-zero-sum game</b>	Nash equilibrium exists.
<b>A game with imperfect information</b>	Because the airline cannot predict customers' willingness, and customers normally are not familiar with safety measures, meaning two players make decisions at the same time.
<b>A game with incomplete information</b>	Airline cannot specify what customers consider such as preference for safety perception or airline service, so a random nature to divide groups into type I and type II is necessary. Information asymmetry problem may also happen.
<b>Repeated game</b>	It can be finitely or infinitely, but using a discount factor $\delta$ can represent people's abating of worries with time passing, making the game continual.
<b>Game with perfect recall</b>	Both players A and B remember their previous decisions, and then make the next one.

**Figure 3**  
**Extensive form of the game**



**4.2. Information Asymmetry**

Because of information asymmetry, customers know which type they belong while the airline does not, resulting in adverse selection problem. Akerlof [9] firstly addressed in second-hand car market. Our game of safety improvements can be compared with lemon market, because both examples are cases of information asymmetry.

In lemon market, if the dealers don't know the quality of cars, they are only willing to pay a fixed price ( $p_{avg}$ ) to buy the car, which could be lemon (bad car) or peach (good car). Car owners know the quality, and they will sell the car when they hold lemon ( $p_{lemon} < p_{avg}$ ) or withdraw the deal when their car is peach ( $p_{peach} > p_{avg}$ ). Hence, adverse selection problem may happen because of market mechanism and information asymmetry, making high-quality cars from the market. In the same way, the airline pays a fixed price ( $p_{avg}$ ) to buy the customer's usage (type



I or type II). Customers sell the usage when they are type II (improved service quality and airfare discount) or withdraw the deal when they are type I (they are only willing to use when the airline takes safety measures), making type I customers from the market.

Consequently, airlines won't improve safety, and only type II customers are possible to use the airline, unless type I customers surrender to low safety perception airline. Because of asymmetry that player B has more while player A has less information, market isolation effect may occur, explaining the necessity of communication. Several countermeasures are drafted. For example, customers can express their consideration thought the media, and airlines can conduct a survey to understand what customers are thinking. By doing so, this motivation for airlines to implement safety measure can be enhanced and meanwhile customers are willing to use them.

## CONCLUSIONS

After accidents, safety investment is necessary for airlines to improve safety management system, but how people think and perceive are different from the industry, and alter the level of safety. For the involved airlines, if there is no/less other airline rivals and if they have already met safety standard, they may not be motivated to spend extra expense for safety improvements, because customers still have to use air transport due to choice limitation and continual usage. This research summarized this phenomenon to specify safety problem with game theory approach. Because each player only considers personal maximum benefits, turning it to be a non-cooperative game.

Two players (the airline, customers) have two strategies respectively, and meanwhile customers can be divided to type I and type II. Several characteristics and assumption have been explained and defined to make an extensive form. According to comparison of information asymmetry example with lemon market, type I customers (those who consider safety perception as priority) will be isolated from the market in the future. Several reasons have been summarized as follows: (i) safety measures are not well explained and clearly demonstrated to people; (ii) many people are unwilling to use the involved airline because of their distrust toward this company and frequent accidents; (c) people are not familiar with aviation safety, inducing their concerns and misunderstanding. Hence, communication between airlines and customers is needed to solve this problem.

Our results provide a prospective for policy makers to understand this problem. For long-term and sustainable development of air transport, if airlines improve safety, people will start to trust the airline again, and their worries would decrease as well. This makes win-win for multiple stakeholders, and meanwhile level of safety can be enhanced.

However, there are some issues should be further pursued. Payoff analysis for two players can be conducted to quantify their benefits via data collection, and then Nash equilibrium can be explored to identify the situation. Also, to summarize and evaluate airlines' safety measure performance is recommended. Several safety measures have be drafted by airline companies, but details and expected performances are not well propagandized to the public. Airlines may quantify the efficiency of safety measure with some methods, but how it defines and how it represents for the whole safety are also unknown. Factors of safety measure implementation include: cost, period, performance (expected results), priority, depreciable life, etc. of each measure. Therefore, to make an estimation considering diverse scenarios is desired.

## ACKNOWLEDGEMENTS

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# A COMPONENT OF LEAN MANUFACTURING FOR PRACTICES WHICH IS THE 5S PHILOSOPHY OF THE OTOMOTIVE INDUSTRY

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## Abstract

In the process of production of each manufactured item and in the process of consumption of each consumed item, in our world that resources are limited, the fact that provides the elimination of waste and the common idea above many disciplines is the concept of "lean". The first indicator that introduces business world to "lean" concept is "lean manufacturing" one of the components of "lean manufacturing" is 5S philosophy. 5S philosophy is sum of everything that surrounds business world, increases fruitfulness, shortens the time, increases the attendance of employees, ensures the conditions that can be standardize like organization, order, discipline.

In our studies content some touches were done through 5S in an automotive business. Our applied management is exporting to many countries, having business with its innovative structure and quality focused approach. We observed that management employees motivations increased, work accidents eliminated and working atmosphere relaxed with regulations done by our recommendations. In our study, our main purpose is to get sustainable fruitfulness by small touches in working areas.

**Key words:** Lean Manufacturing, 5S, Otomotive Sector

## INTRODUCTION

As production fact forms according to some needs and the requirements, it can be measured by the manufactured goods and services value that is created. In this regard, value according to Rother and Shook (1998) ,is to create production and services equipped with some aspects in return to a price that customer is willing to pay in particular time periods (transferred by Birgün and others,2006 ).

Value flow, on the other hand, is the basic delivery needed on the production process of a single production or services. In this delivery, information, relations with suppliers, goods and semi-manufactured goods, delivery, design and production development, in short from the starting point of a production till the last point that a production meets the customer is the flow of all equipment that added or not added value on particularly the production and service. Inside the value flow process to set a course for all the materials and information flow processes from suppliers to manufacturers and finally to the consumer is called 'Value Stream Mapping' (VSM) (Seth and Gupta, 2005).

Sources should be used effectively during the creating value process. Using sources effectively will cause to increase the benefit from the point of all partners who take place during the value chain and created value and this can be increased only by purifying from waste. Lean production, as a far-reaching philosophy, provides elimination of all wastes for programmed, controlled, tabulated and industrial production available for constant improving and developing.

## **1. LEAN PRODUCTION**

To understand the lean production, primarily the project about 'future automobile' done by MIT (Massachusetts Institute of Technology) with five million budget and lasted for five years should be examined. After this project was completed Womack and his friends shared all details in their book called 'Machine that changes the world'.

### **1.1. The birth of lean production**

One of the members of Toyota family, Eiji Toyoda's uncle, sent his nephew to Detroit and asked for investigation after visiting Ford. In Japan at that time government dominated and labour-art dependent production was done. However, Toyoda and Ohno witnessed some malfunctions that were applied on production system and they were worried about the implementation of the same system. Thus, Toyota Manufacturing System, later called lean production, was born as a production system with more different radical components than mass production (Womack and others, 1990).

### **1.2. Elements of Lean production**

In the project with the contributions of John O'Donnell, UMAP Programme manager, the elements of lean production were formed. These basic elements are; factory management system, automobile's designs, the coordination of implementation chain, customer relations management and lean enterprising management.

### **1.3. Lean production techniques**

Under the skin of a lean organization there are components that can control chaos by regularity (Jenner, 1998). Some of these components and techniques are; Just In Time (JIT), Kanban (traction system), Kaizen, 5S Poke-Yoke, Single Minute Exchange of Dies (SMED), U type line, Jideko or autonomation, total quality management, total productive maintenance. As our study is limited with the 5S other lean production techniques are defined only with one sentence.

#### **1.3.1. Just In Time:**

It is defined as a management that is oriented at organizing production and whole system of processes (Boone and Kurtz, 2013). It means to go beyond stock control and eliminate everything that doesn't add value.

#### **1.3.2. Kanban:**

On the contrary of propulsion system at mass production, the tension system developed at lean production completes just enough for production incomes that each production output needs.

Ohno describes this system as 'Just in Time Implementation' but it took him for more than twenty years to place this system (Womack and others, 1990).

#### **1.3.3. Kaizen:**

This compound noun that was suggested by Maasaki Imai means constant improvement and constant development. In organizational structure without level difference all individuals has to develop themselves. This is settled to those individuals life style. According to Imai (1994); Kaizen means constant development at home and at work, private life and social life.

### **1.3.4. Poke-Yoke:**

These are the systems that provide to decrease the man-made mistakes minimum and protects against malfunction (Krajewski and others, 2013). These malfunctions show up in the way of tiresome, absent-mindedness, tension under working stress, psychological or metabolic disorders. To make this technique more effective, it should be used with signals that are called 'andon'.

### **1.3.5. Single Minute Exchange of Dies (SMED)**

Exchange of dies technique is also in mass production. But it takes a lot of time to exchange the tonnes of dies and also worker safety weakens and causes accidents. By applying this technique to the lean production, it is aimed to decrease the time of exchanging the dies, to prevent waste of workforce and possible accident risks.

### **1.3.6. U Type Line :**

Besides producing in a short time it provides carrying less, decreasing in buffer stocks, developed coordination, simple tabulating and advantages working in narrow spaces.

### **1.3.7. Jidoka:**

It is to cut the process of line automatically for preventing faulty products to pass next level, on the other hand, it is to develop self-control of machines themselves and early warning system.

### **1.3.8. Total Quality Management:**

It is to have synchronized team spirit from the bottom employee to the top management and develop coherently. It found its complete meaning by being the component of lean production in Japan and this is what called 'quality rings' in the West and evolution that provides to be multifunctional.

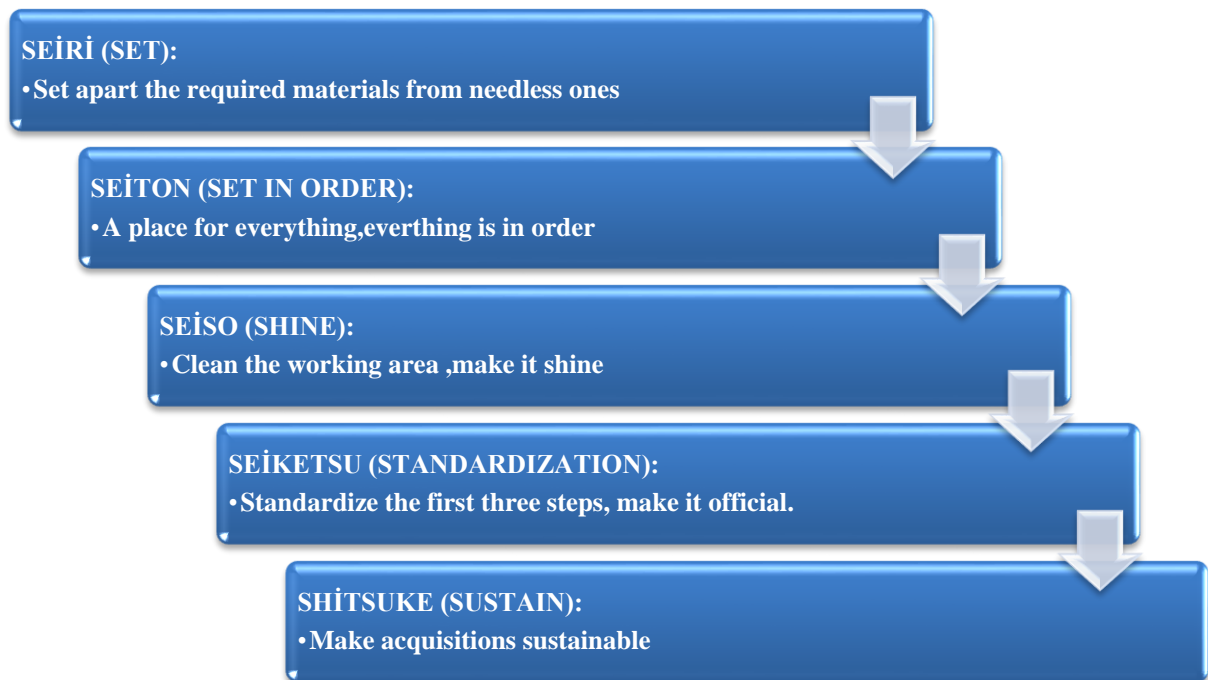
### **1.3.9. Total Preventive Maintenance:**

In mass production maintenance of machines and equipments routine controls were done periodically. This is because employees work only in one single area. After long studies Ohno provided that every worker could maintain the machine he used without failing the production by suggesting that every employee could maintain the tools he used.

## **2. 5S METHODOLOGY**

This methodology is one of the lean production principals that has similar added values like working place aesthetics, relaxing working atmosphere, employee safety, work-time utility, work-safety utility, setting - visibility utility that is used for productive managements. 5S systematic is an appliance that can increase the motivation and team spirit by evaluating the measurable results besides being sustainable by inner touches.

**Figure 1. 5S Steps**



**Source :** Krajewski and others ,(2013):s.304. developed from quoting

Constitution of 5S philosophy is the result of some regulations that Ohno and Toyoda applied in Toyota factory in the name of correcting some malfunctions that they observed in mass production factory. Some of these observations are the examples that Womack and friends mentioned in their book 'Machine that Changed the World'. In mass production managements by recording all wasted items such as machines that are waiting to be repaired along the corridors, tools that can never be found when needed, irregular archives, products that are waiting to be stocked particularly because of mass product, employees that are waiting for shift change in the area, each of them is applied as the forms of lean production. These malfunctions in mass production are so many that while in the factory waste of another employee or litters stays, in lean production every employee takes care of eliminating each waste and litter.

The reason why this philosophy is called 5S is to achieve the steps of classification, regulation, cleaning, standardization and discipline at work by using the five words' capital letters in Japan. Same words also found their meanings in English. On the table below, with the definitions of steps, there are English and Japanese meanings.

The classification process is done according to the answers, If the tools at work are needed or not and If they are needed how often they will be needed. Products that are grouped in regulation process are formed product identity and inventory by hanging red and white cards on them. All pieces have a place so they can be found when needed. On cleaning step, work place cleaning, machines' cleaning and polishing is required. By this way area will be purified from bad views and cleaning will be done. To standardize these steps on employees, a score chart that works like auto control or 5S award team should be formed. The last step is to make the provided environment at work place sustainable.

### **3.5S SYSTEMATIC APPLIED IN A COMPANY, IN BUSINESS IN AUTOMATIVE SUPPLY INDUSTRY RESEARCH OBJECTIVE:**

Within our study our company chosen for pilot scheme;

- Within its vision to increase the power of international competition in sector to make real intercompany applicable changes and makes these changes sustainable.
- Telling the passing process to lean production and starting the steps of management, economical and physical transformation process.
- Giving the starter training and information to management and staff about process.
- Firstly, making the needed regulations and starting radical transformation.

#### **3.1. Investigation Method:**

Our investigation method is identified as choosing the company and making an application plan, determining work calendar and results check.

#### **3.2. Management General Information and Selecting Aim:**

Within our study throughout the years our company that 5S application was executed, started focusing on supplying the needs of local automotive industry. Since 1998, as milestone, our company has believed that with the effect of global fluctuation in our country and world, the fact that constant change and development will increase the competition power and widen the market share besides increasing customer satisfaction, will carry the company to the future.

By this means when company's current position is considered, it is seen that our company is a supplier that exports to eleven countries particularly Europe, South America, Australia and Turkish Republics and it is also seen that as 2023 vision our company aimed to be in the first five producers in the sector.

In our management, machining and chipless manufacturing, assembling, quality control and packaging and shipping steps take place. There are sixty-seven different machines scattered in our management. With this equipment Rascal Heater boogies are produced. These boogies are used as a power source and they are an essential material to start the engine. Primarily voltage is given to heater boogies thus boogies heat until over 850 C. By this means engine's capability of working cold increases however as there is no smoke it is an environmentally friendly product. These designs are performed in the quality management system ISO 9001:2008.

The reason why we evaluate this management is that in cooperation's quality management policy, constant development, constant improvement, involving staff, supporting employees training, maintain company's continuity with customer satisfaction and focusing on customer takes place so it makes us believe that it needs a serious touch on its current position. In this way, it is predicted that feedback will be taken as the result of improvements and landing up will be easier.

#### **3.3. Operation Mode:**

As an operation mode company authorities and employees were primarily given 5S training co-ordinately. Subsequently in the name of studying 5S team was formed and immediately a calendar was determined. While 5S team was forming, employees' responsibility in the company was considered and primarily areas were determined.

**Table 1: 5S Steps**

<b>1 st step Classification (Seiri)</b>	<b>2 nd step Regulations (Seiton)</b>	<b>3 rd step Cleaning (Seiso)</b>	<b>4 th step Standardisation (Seiketsu)</b>	<b>5 th step discipline (Shitsuke)</b>
Material picking process	Determining the places of materials	General cleaning at work	Performing sustainability	Principles becoming habits
Determining the future storage material	Reaching materials in a short time	Cleaning all material that will be used	Caring about the performing steps	Periodical checking
Materials that will be picked out	Shortening the piece operation time	Esthetic cleaning	Developing the work place culture	Informing team about the position
Taking safety precautions	Forming the general order	Purification of the ground	Standardization	Feedback control

During our pre-interviews within our report primarily by informing about predicted time, we stated that they should look over their work plans and support whole participation. Later, by reminding 5S steps and aims for each step, we started application by making a work maps. Process steps that are suitable for 5S systematic are these;

**Beginning, first step *classification* namely *picking*;**

This step needs two target studies. The first of them is to determine how often the materials are used, materials needed at emergency and materials not needed and will be stored or completely will be closed out by picking. Red and white papers are used to make it significant. Team benefited from taken inventory of all material one by one. Red cards are for the ones that will be stored or transformed to another management or sent for recycling, white cards are for the others. All departments were walked around and each unit is provided to be passed to the red and white card system.



**Second step *regulation*;**

Machines and materials that limit movement in the area were determined, cables, pipes, iron sticks that are free and threatens safety were sorted out. Material flowchart was examined and in this direction a new settlement plan was offered for machine equipment. Borders were formed not to regulate the working areas of employees' each other by considering the risks of production. Within the rule of a place for each material and every material in its place, no material that needs to be found was left in the middle, everything is regulated according to the answer



of the questions 'where', 'what', 'how many'. To clean the metal pipes, steel sticks from the area, by considering that hand shelf system that is attached to the wall is not safe as it is not ergonomic, it is decided to be packed by two handed shelf system installed on the ground. For small working tools a stable nailed table was asked. Needed materials were positioned suitable to reach in half minute in other words thirty seconds.



### **Third step *cleaning*;**

As our management is doing both machining and chipless production, it is determined that this management needs more frequent cleaning and maintenance as the dirtiness affects work health a lot and to increase the working productivity. First of all the atmosphere and cleanness here was comforted. By placing the wastes separately, it was tried to provide value. A person was appointed in charge of cleaning and maintenance for each machine. Daily supervision is said essential by 5S executives. A frame was formed for ventilation in particular hours, not to leave even a small material on the ground and not to drop oil and its derivatives on the ground. They were informed about difference of the products that may spoil on the ground and how each dangerous material will be cleaned.





#### **Fourth step *standardization*;**

This step is the interlude control for the previous three steps. It is the needed standardization, control and improvement to maintain the classification, regulation and cleaning and by this preventing the possible spaces in between. By this means, posters and illustrations that are positioned on particular places especially about work health and safety to attract. Meanwhile, chairs that employees are sitting for packaging are suggested that they are not ergonomic and not suitable for standards so they are suggested to be changed into revolving electrical comfortable chairs instead. For mentioning the importance of standardization one hour team activity was done but this was suggested to be done out of working hours.

#### **Last step *Discipline*:**

On this step some studies were done to provide sustainability and increase the motivation of the employees. First of them is to ask the satisfaction and the complaint levels from these touches in the name of proliferation of these 4 steps. Motivation was provided for sharing innovative ideas to continue sustainability. Supervision team presented the results to them. Periodical meetings were planned to present the suggestions and to provide discipline. Particularly in organizational communication not to cause conflict from the point of responsibility requirements and habits acquired within the 5S systematic, new acquisitions were gained.

### **RESULTS**

In lean organization every process that is unnecessary and not creating value evaluated as wasted and expressed as 'Muda'. According to Bayraktar (2007) waste accumulates in the management like cancer cells and managements that delay the treatment take their place in bankrupted company statistics. So the modern managements have to define and cure all kinds of negative dispositions that will cause lost such as unnecessary time, work force and finance.

As the management that we did application study wants to follow the competitive atmosphere of modern age, knows the importance of information process as well as producing goods, it started the studies about producing area and document archiving inside the 5S training immediately. After the fast spanning picking out activities employees primarily joined the regulation activities in their area. Management relaxed during the regulation step also was cleaned by the participation of top management and employees, maintenance and cleaning of equipments were done. In the name of settling the organization culture in the management following the malfunctions and to

form a total point of view at work place cleaning and regulations in other words to standardize, it was followed for three weeks.

During this period, from the point of producing, no lost was experienced on the contrary, by 5S the processes flew faster, not a stressful atmosphere occurred in between employees and safer environment were observed. In the company sorting out and counting all materials and adopting the principle of place for each document, each material and everything is in its place the stress because of time losing as a result of document lost and work waiting were decreased at all.

For cell type production to take care the suggestion inside the company and U Type setting plan and moreover, ordered flow namely Heijunka technique were considered significant and needed requirements were done. After one month time as a result of interviews with managers it showed up that employees can communicate better with each other and with the management. Among the interview data it is expressed that employee satisfaction increased, health complains decreased, sensitive topics like complains about attention deficit almost decreased very low levels. In areas where particularly employees work by sitting ,buying ergonomic revolving seat with wheels and back instead of stools in terms of supplying employees needs cause devotion on employees.

In the application management 5S study was evaluated primarily from the point of company later managers and finally on employees. Expected results were reached. By this way studies were started to synchronize the lean production application on the next step.

### **Thanks**

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# THE EFFECTIVENESS OF PEER TO PEER SUPPORT IN AN ESL CLASSROOM

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## ABSTRACT

This research aims to study the effectiveness of peer to peer support with English as a Second Language in mixed ability groups. The significance of the problem: The groups at SSRUIC are all mixed ability in English. The students range from Beginner to Advanced, in one classroom. This presents the challenge of keeping all students meaningfully engaged while teaching Basic English. The purpose of the research is to address this specific issue.

The methodology is quantitative and qualitative by using a pre and post test and in-depth interviews by open-ended questions to gather the data to be analyzed by comparing the test results and coding analysis on interview questions. The results are presented in both, descriptive analysis and in table form.

The study found that when pairing a strong and a weak student to work together, in tutored English classes, there was a greater improvement in those working in the paired groups, over those who were not paired. When comparing the progress of the two groups, the benefits could be seen in the increased score in the post-test and also in the classroom atmosphere. The 'paired' classes had a much more positive environment with all students more engaged in discussions and classroom activities. Finally, the effectiveness of streaming classes in ESL seemed outdated and counterproductive, both from the literature review and the positive outcome of the mixed ability group exercise used as part of this research.

**Keywords:** English as a Second Language (ESL), TEFL, Basic English, Peer to Peer Learning, Classroom Techniques

## INTRODUCTION

This study aimed to explore the benefits of peer to peer support in ESL classes with vastly mixed ability groups. The groups that this research was based on were student groups that ranged from beginner, where the student does not understand English, to advanced, where the students are fluent. This created the obstacle that, when one level of students was learning, the other was not. This study therefore sought to find a suitable teaching method that would provide a meaningful learning experience for these groups. To undertake this study effectively, the existing methods were explored that have been used to address this issue. The system of 'streaming' is an established method, but in many cases is deemed to be elitist and only to benefit the brightest students and not to help the majority. Throughout this research the validity of these claims was explored. It was also pertinent to explore the pedagogic philosophy of the Thai education system, to be able to understand the education experience of the Thai students that were part of this study. As Carl Sagan (Sagan, 1980) said 'you have to know the past to understand the present'. The Thai students are under huge pressure to do well in their tests because of the 'memorized knowledge' culture in the Thai education system. The students feel the need to get the highest score possible, to the detriment of a 'real' demonstration of their true abilities. The success of this study relies solely on the accuracy of the results obtained from the pre and post tests and the student interviews, to determine the effectiveness of peer to peer study in the ESL classroom. All attempts were made to create an authentic study.

## OBJECTIVES

1. To ascertain if pairing a strong and a weak student to work together, in tutored English classes, helps improve their English ability.
2. To observe and compare the progress of the groups with appointed study partners, and the groups who select their own partner.

3. To explore the effectiveness of streamed and mixed ability classes in ESL.

## METHODOLOGY

The methodology of gathering the data for this research was both quantitative and qualitative. The quantitative data was gathered by student testing. The quantity of students participating in the study (enrolment = 260 students = 8 groups) were junior undergraduate Airline Business students, with plans to continue in the airline business profession.

Over the course of one academic year (40 weeks of instruction), students attended 40 classes and completed 16 projects, both individual and group. The “recognition analysis” (primary trait) scoring scale for grading of students’ results is shown. Students were required to complete a diagnostic test at the start and end of each semester. Thus, monitoring the students’ progress.

At the start of semester one, the students completed the diagnostic test and then 4 groups were selected in which to implement ‘the buddy system’ and the remaining 4 groups allowed to choose their own buddy. The result was to compare the progress of the analytically provided buddy and the groups that chose their own (usually their friend) which could, incidentally, change throughout the academic year. The groups with designated buddies, were not be allowed to change.

The method of designating the study buddy was by analyzing the diagnostic results and pairing the weakest with the strongest, in the four groups. The outcome of this study was to compare the progress of the four groups that chose their own buddy and the groups that were assigned their buddy, based on the diagnostic test and see if the buddy method helped in the learning process.

Sensitivity was used in respect of the student’s feelings, with regards to not highlighting that one student was in any way superior to the other. It was stressed quite clearly that the benefits of this process were for every individual student. The lower English ability student would be aided by the higher ability English student and equally the higher-level student would learn from assisting the lower student. This rationale was discussed clearly with each group. There were no issues that merit discussion in concern to this area.

The diagnostic test used to formulate this research was the Straightforward Quick Placement & Diagnostic test. The Straightforward Quick Placement & Diagnostic test was designed to help decide which of the five levels of the ‘Straightforward series’ is the most suitable for the candidates. This test was selected because of the clarity of categories the students are banded into.

The Straightforward test has 50 questions, each worth one point.

## RESULTS

### Statistics Summary

Group	Paired/Non-Paired	Percentage Improvement	Number of Candidates
Group 1	Paired	60%	32
Group 2	Paired	63%	32
Group 3	Non-Paired	46%	28
Group 4	Non-Paired	47%	30
Group 5	Non-Paired	50%	32
Group 6	Paired	73%	33
Group 7	Non-Paired	56%	27
Group 8	Non-Paired	48%	29
Group 9	Paired	47%	32

### Overall Statistics Summary

<b>Paired/Non-Paired</b>	<b>Number of Candidates</b>	<b>Number of students who moved up a level</b>	<b>Percentage Improvement</b>
<b>Paired</b>	<b>129</b>	<b>76</b>	<b>59%</b>
<b>Non-Paired</b>	<b>146</b>	<b>73</b>	<b>50%</b>

As can be seen in the results of the test, 59% of the students from the 'Paired' groups showed improvement with 76 of 129 students moving up at least one level. The students from the 'Non-Paired' groups also showed improvement with 50% of the students improving, 73 of 146 students moved up at least one level. The results show that the students who worked in pairs with a higher and lower level group, improved 9% better than the random mixed pairs. The findings would show that this is a workable teaching method which is worth further study.

The writer must acknowledge several external factors which may also have influenced the outcome of this study. All the students are studying on an English Language program, so they are being taught in English in all their other classes. This will help all students to improve in their English ability. Each student will also undertake private study in their own time, which will affect each student's improvement. Also, some students have natural ability, and some may find learning Languages easier than others. All these external factors can affect the outcome of this study which have no relation to the teaching methods being researched.

## CONCLUSIONS

This study compared the outcome of two groups of students. One group paired by ability and one group random. The literature review was concentrated the impact of culture on learning styles and the methods of grouping students in the most beneficial way. It was found that, though many countries opted to 'set' or 'stream' groups history has shown that mixed groups, when taught correctly are the most beneficial to all students. According to the literature review 'streaming' and 'setting' students was beneficial to the brighter students but was detrimental to the majority. Studies in the area show clearly that, when not conducted properly, mixed groups were detrimental to higher level students because they would not be engaged and so would be detrimental to the higher-level students.

Research was undertaken to observe the benefits of positive pairing of lower and higher students to work in the ESL classroom. The intention was to observe the progress over one academic year of the students and compare them with students who chose their own study partner. The results from this study showed that the students did improve and that the classroom sessions were more engaging for both the teacher and the students. The study found that when pairing a strong and a weak student to work together, in tutored English classes, there was a greater improvement in those working in the paired groups, over those who were not paired. When comparing the progress of the two groups, the benefits could be seen in the increased score in the post-test and in the classroom atmosphere. The 'paired' classes had a much more positive environment with all students more engaged in discussions and classroom activities. Finally, the effectiveness of streaming classes in ESL seemed outdated and counterproductive, both from the literature review and the positive outcome of the mixed ability group exercise used as part of this research.

The preconceptions before beginning this study was that streaming or setting would be the best solution to the problem of mixed ability groups. The literature review cast doubt on that hypothesis almost immediately and further study showed that in fact the method of streaming or setting was detrimental. The quantitative research showed clearly from the testing results that the students progressed better in the mixed pairs

In reality, almost every class can be called a mixed ability class as it is made up of students who vary in terms of what they know and their ability. This research aimed to explore in part the effects of mixed ability factors and the advantages and disadvantages associated with teaching mixed ability classes. The literature review showed that teachers who view their students' differences in a positive way and embrace strategies for teaching mixed ability classes are better prepared and more successful in mixed ability classroom situations.

## RECOMMENDATIONS

This subject of mixed ability groups versus set or streamed groups, is a contentious topic with many conflicting opinions and it is fundamental to the basis of the education system where ever it is applied. Further study is crucial to understanding how best to work with mixed ability groups in ESL. This research uncovered the fact that in nearly every, ESL educational establishment, there are vastly mixed groups. Mostly due to the groups being created of those who are available rather than matching ability. Therefore, further study is required in the following areas:

- In-depth exploration of teaching methods using collaboration
- Effective learning for all
- Materials – Further development of learning materials.
- Variety – More diverse learning materials and methods of teaching with a different focus.

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# PERCEPTION OF AIRPORT SECURITY: SUVARNABHUMI AIRPORT (BKK) INTERNATIONAL AIRPORT CASE STUDY

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## ABSTRACT

The research aims to improve airport security process at Suvarnabhumi International Airport Bangkok, Thailand. This airport is chosen because it is the main airport of Thailand, and major aviation Hub in Southeast Asia. Aviation security is important because it is only one component that may affect passenger safety. The airline passengers should receive precise information about airport security process because they have the right to be protected from harm. The researcher will employ qualitative and quantitative methods to explore airline passengers' perceptions and to examine passengers' expectations of the airport security process.

### Rationale

Suvarnabhumi International Airport Bangkok Thailand is the main airport of Thailand, a major transit point into the Indo- China region and major aviation Hub in Southeast Asia besides Changi Airport in Singapore and KLIA in Kuala Lumpur, Malaysia. There are about 58 million airport passengers and transit passengers travel through this airport every year. Suvarnabhumi International Airport Bangkok is always congesting at departure security checkpoints process.

Since the terrorist attacks of September 11, 2001 in which the commercial flights were hijacked and crashed into New York City Twin Towers, aviation security has received much attention. Based on ICAO: Annex 17 (2018), aviation security is a combination of human and material resources to safeguard civil aviation against unlawful interference. Unlawful interference could be acts of terrorism, sabotage, threat to life and property, communication of false threat and bombing of airport. Cusick, Cortes, and Rodrigues (2017) explain that security specialists focus on intelligence to detect efforts that are underway to harm people and property and also physical security measures to impede plans once they are underway. According to Haldimann (2017) he described that in Switzerland, security is based on three pillars. The three pillars are intelligence, baseline security measures and unpredictable (Haldimann, 2017).

Improving security is considered critical in mitigating the perceived risk of terrorism and threat, though privacy sensitivity is frequently a consideration if not a concern of passengers. Passenger sensitivity to privacy, passenger awareness of security threat, passenger perception of effectiveness of screening technologies, passenger knowledge of functionality of screening technologies, and passenger knowledge of imaging and information storage and of usage, as factors of consideration in public acceptability of airport screening technologies.

### Statement of the Principal Focus of Intended Research

With a growing number of passengers and a continuous security threat, it is important to maintain and even increase the level of security. While passengers accept security measures to ensure their safety, it still is the most stressful part of the travelling experience. From a passenger, airline and airport point of view, it is important to increase passenger satisfaction. This is so because profit, airlines company image and country reputation are on the line. The passengers who find the treatments at airport unfair are likely to feel less safe. This may be the evidence that unfair service delivery in an environment may lead people to feel less safe.

Suvarnabhumi International Airport have to provide passengers information and guideline about airport security process through website, brochure, and signboard in order to enhance passenger' awareness during stay at this airport. This is because enhancing security or any aspect of airport operation is a two-step process that consists first of providing the appropriate guidance and instruction and secondly, of evoking an emotional response through the communication of a shared value (Eng & Sullivan, 2018, p. 230).

## Significance of the Study

The researcher works as a lecturer and a supervisor of Airline Business Bachelor Degree program at International College, Suan Sunandha Rajabhat University (SSRUIC), Thailand. There are about 700 students in the Airline Business Bachelor Degree Program at SSRUIC. These students have to enroll in the course IAM 4534: Internship/Cooperative Education: Work Integrated learning in Airline Business. They have to train at Suvarnabhumi International Airport at least 450 hours about four months. The researcher has to supervise SSRUIC airline students during their internship at Suvarnabhumi International Airport.

The researcher aims to use the findings from a research as following:

1. to revise the B.A. (Airline Business) curriculum of SSRUIC to match with the needs of the airline business company;
2. to improving teaching and learning in B.A. (Airline Business) and provide the students' precise knowledge on aviation security process before they go to workplace; and
3. to propose Suvarnabhumi International Airport management Bangkok, Thailand in order to improve the effectiveness of airport security process and set key performance indicators for airport facility management with focus on airport security.

## Intended Methodology and Project Feasibility

The researcher will employ qualitative and quantitative methods to explore airline passengers' perceptions and to examine passengers' expectations of the airport security process. The combination of airline passengers' perceptions and passengers' expectations of the airport security process will be analyzed.

The stratified random sampling will be employed in this research study. The sample units will be airport passengers and transit passengers travel through Suvarnabhumi International Airport Bangkok. The data will be collected by researcher and SSRUIC airline students during their Internships. The questionnaires of passenger' perceptions, and passenger' expectations, observations, semi-structure interview from airport passengers and transit passengers, SSRUIC students journal daily log book of their internship, the internet and other media, and past records data will be collected for the study.

Airline passenger' perceptions are usually based on three main factors:

- Passenger perception is evaluated on the amount of time security check process;
- The professionalism of security staff (cultural/ religion awareness); and
- Confidences in the security process to make the passenger feel safe.

Airport security measures can be grouped into two types; standardized screening techniques, which all passengers must undergo (e.g., baggage X-rays, metal detecting scans); and elevated-risk screening (including pat-downs and strip searches) for which only a sub-set of passengers are selected. In the current study, an undergraduate sample was surveyed regarding the professionalism of security screening staff, as well as perceived safety, threat to dignity, and enplanement intentions, following standard and elevated-risk screening measures. Consistent with our hypotheses, perceived professionalism and safety were positively correlated with enplanement intentions, and dignity threat was negatively associated with perceived safety. As the perceived safety from the use of a security measure decreased, enplanement intentions also decreased. Notably, when a screening measure is perceived as having negative consequences (threatening one's sense of dignity) the safety of the measure is personally invalidated. Airport security refers to the techniques and methods used in an attempt to protect passengers, staff and planes which use the airports from accidental/malicious harm, crime and other threats. Aviation security is a combination of human and material resources to safeguard civil aviation against unlawful interference. Unlawful interference could be acts of terrorism, sabotage, threat to life and property, communication of false threat, bombing

Airport security screening has undergone numerous improvements in the past decade. After the events of September 11, 2001, the Transportation Security Administration (TSA) and the Canadian Air Transport Security Authority (CATSA) were developed to improve the screening standards in place in North American airports. Furthermore security of airport in Southeast Asia has improved all over Asia.

The perceived professionalism of the security staff, there were a number of other factors relating to security screening that we predicted would impact on enplanement intentions. The passenger and baggage security in airport screening system is one of the most important factors that determine air transport safety and security. It prevents objects and materials that could be used to commit an act of unlawful interference from being placed on board an aircraft. The security screening system consists of x-ray screening devices, walk-through metal detectors and specialised software. However, a key element of the security screening system is the human – the security screener (SSc). The equipment and software helps the screener to find prohibited items, but also detects and records his/her errors.

## CONCLUSION

In conclusion The perceived professionalism of the security staff, there were a number of other factors relating to security screening that we predicted would impact on enplanement intentions is a must it is because passenger safety and conform will always come first .

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# MARKETING IN THE MOVIE, HOW PEOPLE ENGAGE FROM PRODUCT PLACEMENT

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## ABSTRACT

Marketing is expanding to every place. People are living with marketing and become part of their daily life. There are many marketing courses from school, university, organization etc.

The big number of marketing in television, billboard, and corner of the street, social media, newspaper, radio, or even the movie. Many movies show technique, strategy, and form of marketing inside the movie. Even though there is not the movie about marketing or management but there are an adventure, action, romantic, or even comedy. Those movies show marketing beneath the story. For example, the best practice of public relation and persuasion campaign from Hunger Game is the top generation idea of marketing from the movie. As well as, The Intern show the practice of growth strategy from Ansoff's matrix. Those two are the example of marketing that inside movie which is the popular one. Marketing is everywhere, you cannot live without marketing. Beneath from leaning marketing strategy from the movie, the main role of the marketing inside the movie that you can learn called "Product Placement". This is the tools to understand the marketing as well as selling the product at the same time.

Product Placement is one of the tools to let an audience know the technique and convince them to understand what the product can do for them. Therefore, you are learning marketing in every day as well as the addict to the marketing from every film.

**Keywords:** Film, Learning, Marketing, Movie, Product Placement

## INTRODUCTION

"Once who hated marketing cannot live in this beautiful world" this is the true sentence as now a day you are living in the world that full of the marketing campaign. There are plenty of marketing campaign around you.

In the past, you might learn marketing from the school in the subject called "Marketing". Whereas, this century you may learn marketing from every corner of the street. There are many of billboard of product advertisement, in-store marketing campaign, product logo at the car surface, etc. It means that you are with the marketing in every step. This research will show you the marketing that you can learn in your daily life which is marketing inside the movie.

There are many marketing techniques that movie try to convince and teach you. Once like Hunger Game, that fulfils of marketing like public relation for another district to create riot from Katniss Everdeen. But this movie is quite hard to understand. If you are not the marketing person. Once is easy to understand and learn marketing is called "Product Placement".

Product Placement is known as embedded marketing. This is the marketing technique to replace the brand within the media (Karrh, 1998)

Bubblebee<sup>1</sup> is the car kind of walking, talking, fighting car from the movie called "Transformer". What is this car? This is General Motor car. Chevrolet Cameo is the main character that placing into this film and run the aggressive sale afterwards. Superman was fighting around one of the most popular pancake store named "Shop" in Man of Steel film. Did Superman had pancake from IHOP? No, he did not but it shows the store for many minutes. Will Smith, he was the old fashion guy who addicted to sneaker named "Converse" in me, Robot

movie. Even though, this is the high technology film but why the main character still purchases this kind of sneaker. Because of this is the product placement. Another great film ever called “Back to the Future”, Nike was the main role of this film for the product placement.

All those mentioned films were the success in term of salary. Products had been learnt from the viewer and the mother of fact audience learn the benefit of the product and come up with purchase. Perhaps, investment in product placement creates a strong boost for sale after the film launch into the theatre.

People learn marketing from the movie, they learn product from the movie, they buy the product from the movie, the filmmaker got the money from the brand, the filmmaker show the benefit of the product to the audience, and both filmmaker and brand win over this campaign.

## **LITERATURE REVIEW**

Product placement defined as a paid inclusion of branded products or brand identifiers, through audio and or visual means within mass media programing (Karrh, 1998). Investment in product placement into the movie with a strong boost is aggressively important within the mega project film. Products and services which look attractiveness to all target find the better way to serve consumer needs after watching the film.

A Deloitte study (2010) supports the notion that product placement should strongly growth in the next 5 years and it is. Panda (2004) defines brand placement as “commercial interactions within a particular media program, intended to heighten the visibility of the brand, type of product or service”. Whereas, the exact definition of a product placement is still not shown (Fontaine, 2002)<sup>2</sup>. Steorz (1987) said that product placement can be a logo, brand name, or product inside the package that show appearance.

As well as, if product placement is handled very well and show strong appearance, it would merge with the movie in a beautiful way (Lehu, 2009). Along with, product placement is considered to be a hybrid form of communication tools such as celebrity endorsement, sponsorship from any event and product public relation (Hackley et al., 2008.). Whereas, now a day there are plenty of technique for product placement.

### **Characteristic**

#### *1.1 The Evolution of Product Placement*

The evolution of product placement had started before the 1st world war within the primordial times of Hollywood (Galician, 2004) in the year 1916. The silent film named “She wanted a Ford” in 1929 from LKO/Universal Studio was the first film with product placement which was Ford car.

The product inside the film was incorporated during the 30s when filmmaker or studio got the idea to promote products in the film by sending marketers promoting the product while shooting (Galican, 2004). Metro-Goldwyn-Mayer was the first placement office department to an allowed product to place inside the film.

E.T. from Steven Spielberg’s used Hershey’s Reese’s Pieces to attract the alien. This was the first time that product really attractive to audiences when watching the film. Product placement impacts the commercial and marketer become to get more involvement of specific product into the film.

#### *2.2 Product Placement Today*

Consumers nowadays are becoming more complex on attitude and behaviours. They are complex in receiving information. The information that giving to them must be clearly identified and show the right purpose. The communication techniques of product placement today is greater technique than in the start era of product placement. Lehu (2009) urged that “the placement principle rests in the fact that this unofficial ‘advertising insertion’ departs from the traditional screens that are generally reserved for it and therefore speaks to an audience in a context different from that of classic advertising communication”.

The high investment of product placement is now a billion dollar industry. Therefore, when placing the product inside the film today, the brand must consider on the quality as well as the name, and star of the movie as well.

Both things must come along together at the right time to impact audiences. The high investing of money in both product and film and the high value of investing in target audiences from product impacted.

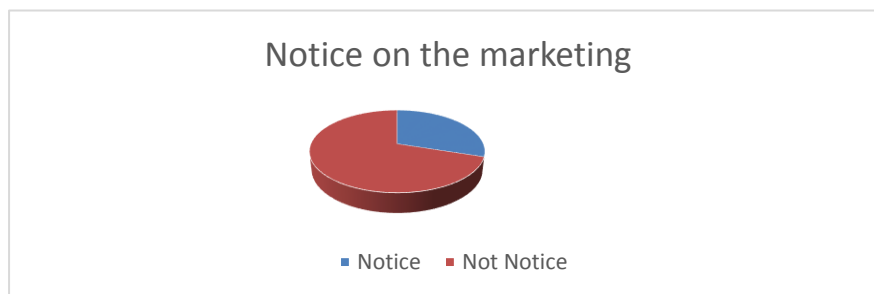
## METHODOLOGY

The research methodology is specific to a qualitative method. Questions that asking

1. Do you notice any marketing from the movie?
2. What brand do you see from the movie?
3. Do you normally purchase the product afterwards?

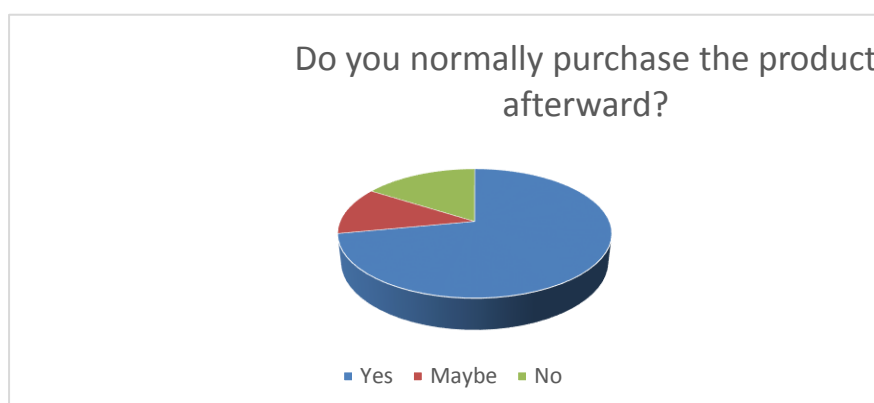
Those questions were asking from the film mania who watch many of films. This research found that some film does not has product placement inside the film by many of them (the popular one) always contain product placement.

The movie-like Teds, Transformer, Avenger, Top Gun, Daddy's Home, Back to the Future, etc. They are the most popular movie that film makers never missed out. So all those movies were mentioned while asking the specific questions.



From question 1, 70% of them did not notice anything about marketing from the movie whereas, 30% they understand there is the big amount of marketing in the film. Truly, they just watch the movie for fun and they did not graduate from marketing major.

Therefore, the 2nd question which asks about the brand that you saw in the movie. Majority of the answer, they saw and remember that brand as well as they happy and enjoy to notice the brand in the film. They saw Nike shoe in Back to the Future, Doritos in Ted, Rayban from Top Gen, Ford in Transformer and Dady's Home, and Beats, Adidas in Avenger.



The last question, the research found very interesting that 72% of the answer said that they rushing to purchase the product after watching the film especially if products are food and beverages. Only 12%, they want to think about it and 16% they never care.

Perhaps, from the research methodology found that audiences do not know much about the marketing that filmmaker put to the movie but this is not very important as the majority of them notice on the product and likely to purchase the product afterwards.

## 2. Model and Strategy

As audiences convince by marketing tool from the filmmaker (brand ownership), target audiences did not notice this is the marketing. Truly, they already accepted the marketing technique from the film and learn how to understanding marketing by instinct without the knowledge accepted. They learn by brain order the purpose of receiving instinctual drive from what they saw along with the primary process from the brain. This is the big instinct that no one needs to teach to you before.

Filmmaker and brand ownership want this instinct in product and brand recognition. The most attractive film always ties in the product in for some scene as placing the attractiveness into eye view of the audience. But do not forget that products must be related to the scene. Due to people will find smoothly and not get abstain on what they watch.

With all those theories of product placement, this research found that they are some others techniques that audience can learn marketing on product placement from the film.

- I. “Crossover product placement to the scene” It means that rather than just put the product into the right scene, we will put the product in a NOT right scene. For example, placing Ben and Jerry’s ice-cream in the bag of Lala Croff in Tomb Raider while she rides a motorbike in the jungle. It is funny, isn’t it? In the mother of fact, audiences would notice that instantly due to it is really biased to the scene. This product would be the talk of the town product that Lala Croft love Ben and Jerry’s and carry to the jungle. Jacky Chan threw Oral-B electric toothbrush to the villain in Bleeding Steel. How funny is it? Sadly, this could be your memorized scene ever.

Therefore, this technique is out of the mind of movie maker but filmmaker must find the right gap on the scene that can put the product into it. No need to be 100% perfect but do not less than 30% match. Due to some film and some scene you cannot place the product in but some scene you can do so. Thinking out of the mind and find the right place and right time.

- II. Advertisers are now frequently majority involved in the films. Perhaps, they can buy a storyline from the movie. For example, Spiderman is watching sneaker advertising in his bedroom while waiting for the phone call from Tony Stark. Pitch perfect, the choir group has been the brand representative of Dove shampoo in the movie. This perfectly matches.

This would help filmmaker easily making the film as planned but just adding up some scene to fulfil the sponsor and earning up more budget from the brand. This is a win-win purpose of product placement and movie studio.

- III. Represent the brand from actor and actress, this actually happened before with Dwayne Johnson or the Rock in many films like Fast and Furious that he always wears Under Armor cloths. Some actor and actress can be brand representative to the cloth brand. Perhaps, lets them use that brand in every scene. It can easily happen to cloth brand. This is quite hard in term of you must use this brand in every scene but it can be another option for the product placement.

As a result, all those 3 models of product placement can lead the big change and high value of marketing from the brand. As the majority of answerer notice brand and product and these techniques can lead to everyone to recognized product and instantly remember. This would help the brand to present strong value of the product to



audiences and willing to get the brand relationship from this instinct learning on the instinctual drive of the brain.

Therefore, marketing in the movie can reach the sign of acceptance by the audience to learn and earn this marketing like product placement. Product placement can make movie more fun and excitement whereas, people can learn and understand the marketing of that tools.

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# ASSESSING HISTORICAL AND CULTURAL HERITAGE SIGNIFICANCE FOR TOURISM DEVELOPMENT GUIDELINES: A DISTRICT CASE OF LAMPANG PROVINCE, THAILAND

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## ABSTRACT

Abstract—This study was conducted primarily based on the qualitative approach, using a case of a district in Lampang Province in the upper north of Thailand. The district is Thoen District, a town with historical significance during the Lanna Period. The study aimed to examine how potential the town could be a secondary tourist destination by selectively incorporating data concerning its historical, cultural and natural resources for assessment. The objectives were to study some sites and objects that represented the historical, cultural and architectural assets of the town, to assess their heritage significance and associated values, and to suggest guidelines for its tourism development as a secondary destination. The research was field- based using site surveys, documenting, taking photos and interviews conducted with local people. A small quantitative study was also carried out, using 30 questionnaires launched to local people as an addition to support the qualitative findings. Despite its location along the National Highway No. 1 of Thailand, the image of the district is not likely as a tourist destination. The history of the town lies upon the evidence narrating its involvement in the history of Lanna Kingdom as the frontier town and a busy trade town influenced by the trade boundary expansion of the Hariphunchai Kingdom. The findings also presented the town with geological significance showcased in the local culture of jewelry crafting from quartz locally found, with unique qualities. Furthermore, there was a potential of local people to involve in tourism development, reported by their highly perceived importance towards the local heritage and willingness to involve, whereas temples were found to play an important role in tourism development. Lastly, heritage interpretation ideas were also suggested.

**Keywords**—Heritage Significance, Historical and Cultural Heritage Assessment, Interpretation, Tourism Development

## I. INTRODUCTION

There is an issue about the heritage values of secondary destinations. Often, there are a few records of history or parts of the history of these lesser- known places. Much is rather oral- based and thereafter more studies are needed. Many times the heritage values of primary destination dominate those of secondary destination via advertisement or even some representations. This possesses a question: how to tell about secondary places into recognition and understanding of greater audiences, so that historical and cultural significance of those places share a greater deal of memories. Heritage gives a sense of past experiences, and even about those representing continuing cultural landscape that have been passed from generation to generation; they become alive and recognized in the present time in various forms, including the form of tourism and leisure attributes. Heritage is somewhat a qualification. Perception of heritage is subjective. Feelings towards heritage quality vary by individuals. Having this clarified, heritage tourism can be explained as it is when individuals travel and receive experiences during their visit to particular settings (places) that have features associated with ‘the past’, and perhaps visitors need to have some memories and recognition about these places or objects of heritage before, and have motivation to visit them. Couples of questions towards ‘the past’ include, for example ‘whose *past* is it?’, ‘how much does *this past* call great attention?’, or ‘to whom *this past* shares memories and significance?’. These questions call for a thought, in that main attractions in primary destinations typically have heritage places and objects, or relate with events that ‘share extensive values and significance of the nation, the region, or the globe’; the past or the history that has been recognized nationally and globally. Contrarily, heritage of secondary

destinations may not. What is interesting in relation with heritage management of primary and secondary destinations is about how to make linkage of the significance of the heritage between these two types of destinations. Places with heritage attractions are normally situated in the center, both physically and institutionally, and are attractive in tourism market by promotions of authorities. The core heritage places are naturally surrounded by other lesser- known places that can be called a periphery. These place located at the peripheries have normally been inhabited by local or indigenous people or communities. Adding peripheral places in tourism itinerary or in the same route to the primary destinations or within the touring circuit and trip schedule can bring the heritage of the peripheral places onto tourism map. This is what du Cros [1] explained that secondary attractions would appeal to tourists once they were already at a destination and were making decision for optional tour, or en route visit that was best suitable for their time. This means that cultural heritage tourism experiences of secondary destinations may not be offered separately from the primary destinations, at least until they receive higher recognition and popularity. Utilizing the case of Thoen District of Lampang Province in the upper north of Thailand, this paper proposed an idea of secondary tourist destination development by examining how potential the town could be a secondary tourist destination by selectively incorporating data concerning its historical, cultural and natural resources for the assessment.

## **II. LITERATURE AND THEORY**

### **2.1 The concept of primary destination**

To define a 'primary destination' may at first start with some of its characteristics that relate to its inherited attractiveness. Primary destinations can be regarded as places that have attractiveness, appeal, interest, and significance on their own; those are characterized by geography, topography or natural settings, history, architectural features, culture and people, all are called inherited resources [2]. Attractiveness of primary destinations can also be derived from created resources, for instance, tourism services, facilities and tourism infrastructure, special events, entertainment, shopping and other available activities. In tourism, these places provide tourism and leisure opportunities in various manifestations: sightseeing experiences and things to do, and more varieties. These places are usually well- developed in terms of tourist services and facilities, promoted and put on tourism map. There are considerations of product initiatives and marketing mix design for tourism product development and marketing. Travel companies normally select destinations to include in their product portfolio, that are considered to be easier in calling the wider market attention, creating tourism demands, managing and marketing tours in responding clients' preferences and seasonality. Another definition of primary destination involves 'a reason to travel'; the main destination that influences tourists to travel to. This can be thought of a well- constructed tourism image, and well- developed tourist market. Strong and positive image of tourist destinations has high influence in the international tourism market. The word 'must- see destinations' is usually seen on tourism brochures, websites, and the word is used to propagandize the market as well as assisting and guiding clients in making a reasonable decision to visit, and a quicker decision in their trip planning process. To address this, an issue about how the heritage values of primary destinations are treated is marked. Many times, the heritage values of primary destinations are restricted or classified within a particular fame by the authorities, which lead to the stereotype among the public, as it is called as a 'black box' treatment [3].

### **2.2 The concept of secondary destination**

If a destination is the main place to arrive and refers to the primary place of visitation, secondary place may not be explained by the meaning of 'destination' as the main place to arrive, but rather it is an added- on, alternative place for en route stop on the way to the primary destination (on tourist itinerary). Secondary place (or in this paper it can be called a secondary destination as well) attaches with 'a reason to travel within a bigger destination' [4]. It connects with the secondary market that provides secondary profits in terms of tourism business. It is not a 'must- see' or 'must- visit' destination. Secondary destination may influence tourists to make an immediate or an in- situ decision to take a visit during the trip to the primary destination or after completing the tour at the primary destination. From the marketing point of view, secondary destinations may be confined with a shortage or a lack of interpretation and information publicity resulting in being less chosen or less visited. Several of them may not have been established with a clear positive and tourism image [5], making

tourists feel reluctant to visit them. Secondary destinations, thereafter, may not be able to stand alone to call for larger tourism market's attention unless they receive strong promotion and interesting interpretation.

There are many primary destinations that serve tourism increasingly and gradually facing degradation and decline, both in physical conditions and senses of place, due to overwhelming development of tourism. Sustainability of the tourism industry is undeniably dependent on sustainability of cultural and natural resources. Seeking for secondary destinations and proposing them in the list of tourism itinerary cannot be thought just an act of exploiting national resources (which would occur without appropriate planning and management). Contrarily, this action benefits to the country in terms of promoting and safeguarding national lesser-known places and their heritage, with tourism potential, strengthening livelihood and economic well-being of local communities who live there. This provides greater impacts towards the sustainability.

### III. METHODS

The objectives of the study were to study some sites and objects that represented the historical, cultural and architectural assets of Thoen District, Lampang Province, to assess their heritage significance and associated values, and to suggest guidelines for its tourism development as a secondary destination. The study was conducted primarily based on the qualitative approach. The assessment was based on site surveys, documenting, taking photos and interviews. A small quantitative study was also carried out, using 30 questionnaires launched to local people as an addition to support the qualitative findings.

### IV. RESULTS

#### 4.1 Historical background

Thoen is a district, approximately 1 hour southwards of Muang District of Lampang Province, with an area of 1,634,863 square kilometers. Thoen's geographical location is along the Phahonyothin Road, Lampang- Tak route. The topography of Thoen is characterized by the basin, surrounded by mountains, with some low plains in valley areas where brooks and the main river, Wang River go through. The history of Thoen District lies upon the evidence telling that the district had been the frontier town of Lanna Kingdom before entering Lampang. The route through Thoen in the history had been used by the military and political troops of Lanna Kingdom, Krung Sri Ayutthaya (later was Siam) and the Burmese. The town had been ruled as the frontier town by them through which the troops transited and stopped for settling camps. The wars included those between Lanna Kingdom and Sukhothai Kingdom (was later unified with Ayutthaya Kingdom) [6], and between Ayutthaya Kingdom and the Burmese during the reign of King Tilokaraj and King Phra Borommatrailokaraj, including other small wars between towns. The archeological evidence was the ruins of "Ho Rob" or the fort tower and the defensive walls 67 kilometers eastwards away from the center of the town. Geographically, these defensive walls lie in the valley along the border between the western part of Thoen and Sawankalok of Sukhothai. This evidence tells us that there were military activities and troops in this area between Lanna Kingdom and Sukhothai Kingdom [7]. Historically, Thoen was also connected with the historic route used by the royal rulers as the main route of the land journeys from the 24<sup>th</sup> B.C. until the end of the feudalism system. This was the first route along the Mae Thoen Stream, used for traveling from other kingdoms to Lanna Kingdom (Chiang Mai), through Thoen, Li, Lamphun and Chiang Rai [6]. During the 16<sup>th</sup> – 17<sup>th</sup> B.C. which was the Hariphunchai Period, the regional trade was developed as the Chinese expanded their maritime trading from the towns near the oceans to the upper part; the part during that time had Hariphunchai Kingdom as the trade center (located along Ping River). The growth of trading influenced the Hariphunchai to expand the trade boundary in the vicinity or to the lower part along the Wang and Yom River. This factor also influenced Thoen to be a busy trade town, while bringing the development of beliefs, sciences and knowledge of art and cultures from the Lanna center. There are some old temples traced back to the Lanna Period and the period when the Lanna Kingdom had been ruled by the Burmese. These temples are, for example Wat Wiang Temple and Wat Um-Long Temple which represent the early Lanna architectural style and the Burmese- Lanna style during the Burmese governance time.

#### 4.2 Geological characters to the local craft

Topographically, Thoen is a small basin (Thoen Basin) as part of Lampang Basin that lies from the north to the south along the Phi Pan Nam Range and the Wang River Plain. Geological evidence tells us that there was the geological development for millions of years from the Precambrian Era until the Quaternary period of the Cenozoic Era [8]. Therefore, mineral resources of Lampang are rich, including those of Thoen, for example coal, diatomite, kaolinite, phosphate, ball clay, tin and tungsten, quartz and others. Regarding this, Thoen is famous for a kind of underground nature quartz gemstone formed out of the Granite stone, called ‘Kaew Pong Kham’ (Figure 1). Kaew Pong Kham is characterized by its strong, clear rock, so much that we can see things inside like a crystal. The meaning adhered with this name can be explained by three words: Kaew, Pong, and Kham. ‘Kaew’ means clear rock, whose inside appears various forms of textures and colors formed by minerals, for instance gypsum and iron pyrites. The names of Kaew Pong Kham are called differently depending on the forms that look differently inside the ‘Kaew’: iron feather (Tourmalinated Prehnite) and phantom quartz, for example. ‘Pong’ is the local word used to call areas where these quartzes were found. These objects are also respected as an amulet, and they were found as part of the votive tablets in many repositories at the old temples of Thoen District [9]. There are household craft productions of Kaew Pong Kham as the OTOP jewelry product; it is believed that they possess supernatural power or energy that protects wearers to be invulnerable and lucky and this belief is represented by the word ‘Kham’. The incredible object is the biggest Kaew Pong Kham with a height of 99 centimeters, a weight of 1,000 kilograms, and a perimeter measured at the base of 166 centimeters. Its nature-made figure similar to a Buddha image, the object becomes respectable among villagers. Annually in January a ritual of the village is held to worship the ‘Father of Kaew Pong Kham’ (locally called ‘Por Luang’- which literally means ‘the great father’), the spirit that holds the belief of the whole community towards the power of this stone (personal communication, August 25, 2015).

**Figure 1**  
**Kaew Pong Kham or quartz gemstones of Thoen District and how to craft them**

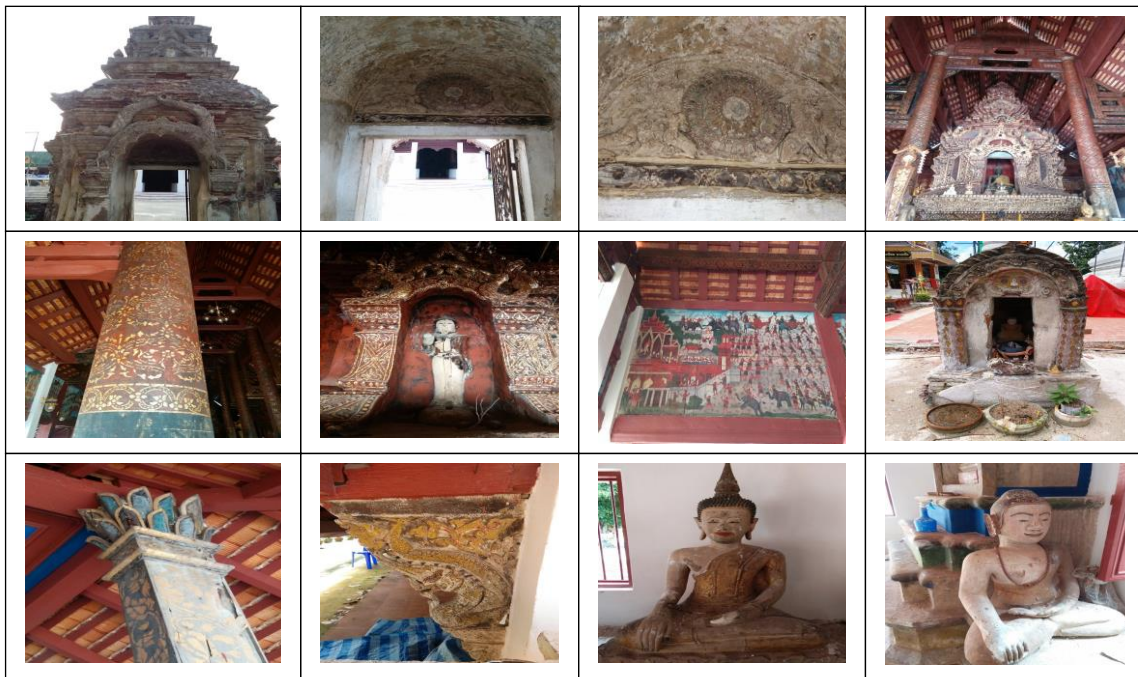


#### 4.3 Cultural sites

There are old temples scattered around the district, which present the unique architectural style of both the early and late Lanna Period. Two temples were selected to present in this paper. The first temple is Wat Wiang Temple (Figure 2), located in the old quarter of Thoen District. The existence of Wat Wiang Temple can be traced back to the earliest development of the town during the Lanna Period, as the center of the town along the Wang River. Based on a historical document, the temple was built in B.E. 2192 [10]. The temple has an association in terms of Buddhist events with some main temples located in the center of Lampang for instance Wat Phra That Lampang Luang Temple, Wat Lai Hin Temple, Wat Pong Yang Kok Temple and Wat Lampang Klang Temple [9]. Therefore, there are some common architectural characteristics among these temples. The significance of the temple places on its old age, distinctive and original monastery architecture in Lanna style. Its architectural style can be comparable with the architecture found in the more famous Wat Phra That Lampang Luang. The monastery plan is represented by the belief of Meru Mount or the Buddhist Cosmology,

characterized by the relationship of the “Pratu Khong” or “Ku” (or the ceremonial- structural gate accentuated by the Khmer- styled “Prasat” composition on its top) in front of the temple, and the high Prang- shaped pedestal that enshrines the principle Buddha Image in the Vihara. This provides the aesthetic and spiritual values of the place, as well as a sense of continuity and a lie between the human and Buddhist realm. The ‘Pratu Khong’ itself exists to define this place being once a ‘wiang’ or fortified monastery as the center of Thoen in the past. The temple showcases the picturesque Vihara built in lower structure, opened on all sides, with the outstanding and complete Lanna religious building architectural technique called “Mah Tang Mhai” rarely found today. Mah Tang Mhai as the traditional Lanna technique is of the wooden pieces in a triangle form like a gable, arranged to support roofs and columns of the Vihara. The so called was derived from an action of cattle and horses loading a number of silks in the old days, implying a weight balance in architecture from the main structure and roofs to columns and beams leading to large and airy architecture [11]. The wooden roofing demonstrates the typically ornamental features of Thai Buddhist temples, is descended in three tiers and supported by the strong, lacquered and gold- leave gilded columns. Inside the Vihara situates the graceful Prang- shaped pedestal seating the principle Buddha Image, influenced by the Khmer style during the Hariphunchai Period.

**Figure 2**  
**Art and architecture of Wat Wiang Temple**



Another temple is Wat Um- Long Temple (Figure 3). Tracing the history of Wat Um- Long Temple, the story was rather attached with the folk long been told from generation to generation about how the temple was built. The existence of Wat Um- Long Temple was believed to derive from the fact that Thoen was called ‘Sankhathoen’, the name that refers to towns ruled by monks (Sankha means monk). However, a historical document told the temple was built before B.E. 1157. The first site in the middle when entering the temple is a small building, built in B.E. 2465 [12] in wooden structure including the roof part, with the base part built with bricks and plastering technique. It is called in Thai ‘Hor Jamseen’ which had been functioned as the house for monks to practice the Buddhist doctrine. The significance is fabricated by its vernacular architecture, with a combination of Lanna, Burmese, Siam, Chinese, and Indian architectural styles. Inside the building appear a collection of 10 mural paintings depicting the scenes of ‘Bplong Asupha’ practice (Bplong means coming to a realization and Asupha means corpse) or the practice made by meditating at corpses in different stages of decay in order to achieve a stage of realization of the truth about human body. The collection of these mural paintings is of its rarity. The building close to this is the Vihara, built in B.E. 2463 in Lanna architecture, with the



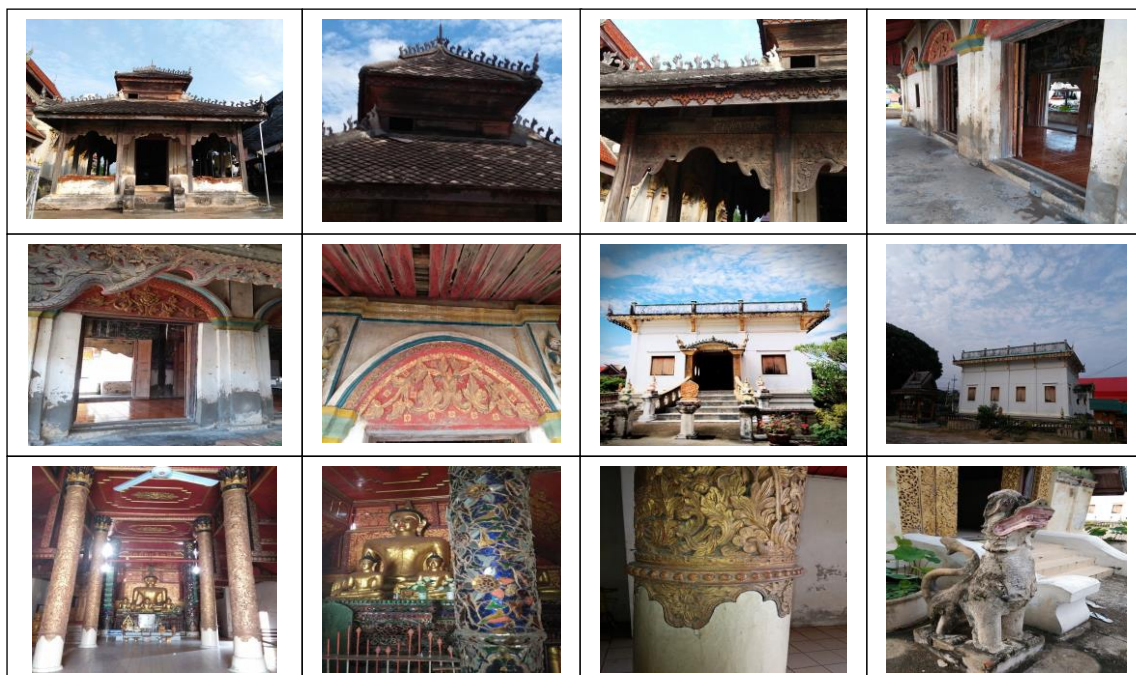
Burmese- style interior. Another outstanding building is the Ubosot located at the north of the temple, with its very unconventional style from other Ubosots generally built in Buddhist monasteries.

## V. DISCUSSION

### 5.1 Assessing significance and values

The significance of the town’s history associates with the history of Lampang, Lanna Kingdom and the Siam. Some archeological evidences can still be seen at the outer zone of the town, and at old temples that have a common artistic and architectural style with those of some famous temples in the center area of Lampang Province. There is an association between Thoen and Muang Lampang in terms of historical and geological significance. However, the historical value has not been much studied, written and publicized among wider audiences. Increasingly there is an awareness of the temples’ management, including the abbots who realize the significance of Buddhist art and cultural assets of the temples, and have put their efforts in revitalizing and preserving them. The abbot of Wat Um- Long revealed that the temple management had a will to make the temple more open both to local people and visitors, by opening the sites, chambers and artifacts of historical and cultural significance to the publics, and making the temple’s atmosphere to be more friendly. The temple is preparing a museum that will display a notable number of ancient artifacts and objects for instance old Buddha images and ancient Buddhist scripture cabinets (personal communication, October 25, 2015). Wat Wiang Temple is also classifying collections of ancient artifacts and searching for more information in order to establish a museum (personal communication, September 19, 2015).

**Figure 3**  
Art and architecture of Wat Um- Long Temple



Natural significance presents outstandingly through the local culture of crafting jewelries from the quartz called ‘Kaew Pong Kham’, which can be found widely in the area. This significance has also been fostered within the local spiritual beliefs and aesthetic value towards the quartz. The beliefs in the energy, power and holiness of Kaew Pong Kham have also been interpreted in connection with the belief towards the existence of the old temples, through the local narratives or folktales. Many beliefs related to the Kaew Pong Kham have been nurtured by a social group animistic and Buddhist belief originated from the significance made by nature. The jewelry product of Kaew Pong Kham can be identified as the object with aesthetic, spiritual and social

significance. The social significance is represented by the villagers who established the OTOP center for this craft production, creating local artisans. Sixty percent of the artisans and those who supply the quartzes are the locals [13]. There are different groups of villagers who supply in this local production chain, from the group that searches for 'Kaew Pong Kham', then sell them to the group of artisans who will cut and polish, before sending polished product to another group that crafts 'Kaew Pong Kham' rings and other ornaments. The story of Kaew Pong Kham, for instance the process of crafting Kaew Pong Kham and the ritual performed before digging, is put into the lessons taught in the village school, whereas the OTOP center is the place for learning about Kaew Pong Kham.

## **5.2 Interpretation and presentation to visitors as an initial guideline for tourism development**

Thoen is settled in the very strategic location near the highway as motivational factor for independent, domestic, automobile travelers and international tourist groups touring the northern route to stop for taking a short rest. There are some local businesses such as restaurants, souvenirs and small and simple accommodation (similar to motels in the American road trips culture). The town has tourism potential due not only to interesting sites but also to easy accessibility for en route visit. The significance of each selected sites of Thoen can contribute to tourism opportunities for two types of tourist markets: (1) international market: private and small group tours to the northern route; and (2) domestic market: self- drive visitors. Private and small group touring of international tourists is usually operated by tour operators from Bangkok heading to the north of Thailand. This type of tour is called 'tour around' which usually includes two main stops, Sukhothai and Lampang, before reaching Chiang Mai and Chiang Rai. Moreover, it should be noted that domestic tourism of Thailand has greatly been driven by the self- drive market. Thoen has good location for this market to stop and spend some times visiting the places proposed. An interpretation for the town, particularly with the sites of significance showcased above, can be done in the form of museum and learning center, using temples. The opinion of Wat Um- Long's abbot regarding his vision to make the temple more open to visitors reflects an initiative of utilizing the community space, which contributes to further interpretation and improvement of their environment [14]. However, antiques or heritage artifacts of the temples need appropriate recording and labeling. Moreover, narratives should be made by creating a linkage with the history of Lampang, Hariphunchai Period and Lanna Period, using old pictures and artifacts as jigsaws to narrate the whole story about Thoen as part of the Lanna Kingdom. Signage should be made at the entrance from the highway to let visitors know there are places they may make a visit to. Translation for content into English language can be considered. Also, it may be more accessible and portable for visitors if brochures and touring maps are provided at visitor information center (or at temples). An interpretation design for Kaew Pong Kham Community can be in a form of cartoon drawings in a storyline to demonstrate the process of Kaew Pong Kham stone handicraft making. This creates more entertainment and delight to visitors while they are learning, and this presentation can motivate visitors to buy Kaew Pong Kham souvenirs. Beliefs of people towards these precious stones can also be messaged in a form of poetry/ poetic narratives in order to create a sense of aesthetics and stronger identity. The community and local experts may need to help classify types of Kaew Pong Kham in accordance with the common spiritual meanings of each type, and then display them with different relevant themes by their spiritual virtues, such as warrior theme (strength, protection and power), wealth theme, health- related theme, and others. It is easier today to promote secondary destinations in the tourism itineraries, because of the advancement of information and communication technology, mostly the digital one. Digital communication channel has converged the demand side and supply side in tourism to meet each other more simply and productively. In particularly, user-generated content portals creates values of travel content between tourism suppliers and consumers and among consumers [15].

## **5.3 Potential role of local communities**

Tourism has a great deal with host- guest interaction. Cultural tourism plays role as an agent between them. In the case of Kaew Pong Kham Handicraft Making Community, local people can provide a demonstration for visitors how to make Pong Kham rings. Story-telling can be trained to local people to narrate about the ornament product, the meaning of each type of Pong Kham, and the spiritual beliefs held by the locals towards the spirit that protects the source of Kaew Pong Kham. A quantitative study was conducted with 30 local people to investigate how much important they felt about their cultural heritage and their willingness to participate in



tourism development. The study found that the majority felt their heritage were very important, whereas most of them viewed that temples must be center for learning of the locals (57 percent) as well as of visitors (45.7 percent). Moreover, the study found that 54 percent of them were willing to participate in developing the places of significance to be opened as community attraction. Today, training for young generation to be the community youth guide is widely held as a way to pass on knowledge and values of local wisdoms. Local schools should have this role as well. The interviews with the abbots revealed that they had an important role in driving out the cultural and social unity, identity and well-being of communities, through arranging not only Buddhist activities/ events but also tourism and recreational activities that associate with local history, traditions and Buddhist beliefs.

## VI. CONCLUSION AND FUTURE WORK

The assessment for the historical and cultural significance of Thoen District contributes to notable values of the heritage sites and objects of the town, which gives ideas of looking at historical and cultural assets for tourism development. Resources of secondary places with potential in tourism can be planned, developed and managed for serving as the secondary destinations. By this, these places can be a substitution for primary destinations, those are usually crowded or overcrowded with a numbers of tourists and tourism activities, and are vulnerable to physical pressures from activities of intensified mass tourism. Tourism development of secondary destinations could benefit local communities, travel companies, and tourists and visitors. Benefits to local communities can be noted by their well-being, sense of pride and identity, and economic aspect. The local well-being is not derived from income earned from tourism, but from the fact that their places will have more visibility through community social gathering and recreation, and more engagement in activities of the community. This will enhance the emotional well-being of local people and safeguard the social fabric quality. Tourism can be viewed as an integrated conservation tool that builds social values through communities' initiatives, which will call participation of local people. These are provoked by the presence of tourism potential and its occurrence. There will be opportunities for local entrepreneurs or sellers to make additional income from selling their goods, for instance local souvenirs, foods and drinks, and simple accommodation. Potential benefits for travel companies can be pointed out into the aspects of product diversification, opening to new tourist market and diverse tourism supply chain, trip management and reduced risks of seasonality. Benefits for tourists and visitors can be divided into the aspects of diversity of tourism experiences, conservation awareness arisen from their visits, and change of image and perception towards places. International tourists will also be introduced with new insights about the country they are visiting, apart from just travelling by programme offered by travel companies in the institutionalized system of the tourism industry. Future work may be conducted in a wider geographical and cultural context of the same site, or working further on interpretation planning and development with the locals.

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# IMPACT OF SOCIAL MEDIA ON TOURISM

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## ABSTRACT

The importance of social media is growing in the realm of the tourism industry. More and more researchers are undertaking studies in the areas of the impact of social media on the tourism industry. Social media plays a significant role in many aspects of tourism, especially in information search and decision-making behaviors. The aim of this study is to understand this growing importance of social media in the tourism industry and to understand the impact of social media in the tourism industry. This study reviews and analyses the research publications focusing on social media in tourism. Through a comprehensive literature review, this paper identifies what we know about social media in tourism, and recommends a future research agenda on the phenomenon. Research findings thoroughly demonstrate the strategic importance of social media for tourism competitiveness. This study also contributes to the academia and industry by identifying some research voids in extant research and providing an agenda for future research.

Key words: Social Media, Tourism, Services.

## INTRODUCTION

This paper reports on research conducted on the impact of social media and the tourism sector. In the last decade, social media and web 2.0 has fundamentally changed the way organizations communicate with their customers. The tourism industry provides perishable, intangible, and inseparable products to its customers. Technology and the internet enable consumers to search easily for information about products and services in order to reduce or eliminate the risks associated with purchasing an intangible product. They are searching for insights from people who experienced the services before and they expect to obtain similar services.

Social media sites in the internet today are used more frequently than the physical participation of individuals in a communication. Some of the popular social media sites are the Facebook, Twitter, Linked in, Instagram and YouTube. It is important to note that the communications in the virtual world are very rapid and news spreads faster than in any other form of communication over the internet. It is no longer necessary for the individuals to wait to interact physically to be able to understand the actual situation of a destination that they wish to travel to for the purposes of tourism. It is now possible through the social media sites to be able to get a word of mouth references. It is also possible to have access to the visual impact of the destination on the social media sites and the internet sites. This makes taking a decision easier and it also supports the decision making process as to which is the best offer for the travel to that particular destination. 74% of the tourists that have traveled to destinations write reviews about the destination and their experiences in the destination during their travels. 98% find that the Trip Advisor reviews on the social media sites are accurate and it does not leave the following travelers in a lurch as they know all the details before hand from the reviews. The study also found that the 53% of those who are potential travelers do not book hotels unless there is a review of the hotel available in the social media sites. 70% of the global tourism consumers claim that the second most trusted form of information on destinations is the destination reviews on the social media sites. 52% of the users of Facebook claims that they have either been encouraged to travel to a place or have changed their plans to travel to a place because of the pictures and photos posted by their friends in Facebook.

This research provides insights on the current uses of social media and theories that organizations that uses social media can increase customer satisfaction and profitability. The study first analyzed the variable that affected the impact of social media on tourism and then it analyzed the contribution of social media to the tourism industry.

## **Objectives**

The objectives of the study are: 1) To understand the full extent of the role of social media in the tourism industry. 2) To understand the impact of the social media on the tourism industry.

## **LITERATURE REVIEW**

### **Social Media**

The term social media is generally understood as Internet-based applications that contain consumer-generated content and facilitate a higher level of social interaction among travelers. From customer's viewpoint, the value of using social media lies in its richness on personal experiences and trustworthiness as electronic word-of-mouth. The impact of user generated content by social media on a traveler's decision making is well recognized in various market research reports. A number of prior studies have also examined the effect of social media on travelers' information search behavior suggested that travel reviews on social media sites help add fun to the planning process and increase confidence for travelers' decision by reducing risk.

### **Different types of media.**

Six types of social media have been identified: social networking websites (i.e. Facebook, LinkedIn), blogs, content communities (i.e. YouTube, Flickr, Scrib, Slideshare, Delicious), collaborative projects (i.e. Wikipedia, Wikitravel), virtual social worlds (i.e. Second Life), and virtual game worlds (i.e. World of Warcraft). However, there are other types of social media such as microblogs (i.e. Twitter), consumer review & rating websites (i.e. TripAdvisor, Epinions) and internet fora (i.e. ThornTree, Fodor's Travel Talk). Evidently, the number of social media is changeable, but their most important role is to encourage users and travelers to post and share their travel experiences, comments and opinions, by having them serve as a source of information for other users. Social media continues to impact communication either positively or negatively depending on the subjects under study and the type of communication (Steven M. Edwards).

Social media requires all marketing activities integration and uses persuasive advertising to provide a competitive product/service experience. The electronic word of mouth is important for marketers to understand this new platform for communication and support customer relationship in the best way. The electronic Word of Mouth can enhance visitor satisfaction due to product or service improvement. At the same time, eWOM can solve problems and doubts during the travel and it can help discover what tourists think and say about their experience. However, the main benefit can be monitoring of the company's reputation/image or even the analyses of the current competitive strategies. According to the eMarketer, by the end of 2015, million people in the USA will be social network users.

### **Relationship between Media and Tourism**

Customer satisfaction has been extensively researched and recognized as a key influencer in establishing a loyal customer base which influences future purchase intentions (Bowden 2009, Taylor & Baker 1994). With the convenience of social media, satisfied customers are more likely to tell others about their stay when they have a good experience state that increased customer satisfaction has a positive effect on an organization's profitability, brand loyalty and repeat purchases. According to Abdullah & Hamdan (2012) social media helps satisfied customers, to voice their overall opinion to millions of people and such positive reviews have been recognized as the "best advertisement money can buy". eWOM has been classified a unique opportunity to address customer issues and increase customer satisfaction (Field & Grande 2013). Reviews on TripAdvisor and other OTA's such as Expedia, Trivago display satisfaction ratings based on many attributes such as cleanliness, service, value (TripAdvisor 2014b). However, reviews on sites such as Facebook, Twitter offers a star rating based on the whole experience and organizations need to analyze the words customers used (Xiang et al 2015). Measuring customer satisfaction in the tourism industry is imperative, in order to identify shortcomings in meeting and exceeding customers' expectations. Reviews on sites such as TripAdvisor, Facebook, and Google local, help organizations address both positive and negative reviews to clarify the issues. At the same time, it offers the opportunity to enhance customer satisfaction by monitoring brand sentiment and

mentions, offering customer support and it empowers other customers to respond to other customers comments (Beard 2013).

Studies (Brodie et al 2011; Sashi 2012; Wei et al 2013; Cabiddu et al 2014; Chathoth et al 2014) suggest that organizations that engage with social media forge long-term relationships with existing and new customers. Wei et al (2013) believes that customer engagement takes different behavioral forms and his research suggests that user-generated hotel reviews can have a positive or negative impact on business reputation and that the management engagement and response should be specific and not generic. He further adds that a “three-way interactive network” exists between the actor (the person who writes the review), the respondent (the manager that engages with the actor when responding to the review) and the observer (the potential customer who is interested to find out more about the business) when engaging on social networking platforms and reviews sites

### **Role of Social Media in Tourism**

Social media is an important tool for the analysis of tourists’ attitudes and this is confirmed by the increased purchases and recommendations to other users. Building successful service-based brand in tourism means that each offer should be a unique value proposition based on the customer experience. Tourists need to know by means of reliable sources how their experience is going to be like in order to reduce uncertainty and create some expectations of what they are going to find at a destination. Due to the uncertainty of tourist services, a traveler should obtain the necessary information in order to make the right decision concerning the travel. Modern tourists have more trust in other travelers’ opinions using social media rather than official marketing advices. As social media becomes increasingly expressive, consumers are able to increasingly influence other consumers with their own opinions and experiences. Since social media is low-cost and bias-free, it represents an advantage for marketing communications. According to the Fotis and in the academic literature there is a disagreement on the classification of the social media types according to their level of social presence/media richness.

Research shows that organizations that engage with customers who post online reviews leads to increased loyalty (Loureiro & Kastenholz, 2011), increased turnover (Luo et al 2013) and competitive advantage (Serlen 2010; Alsobhi & Abeysinghe 2013). A very common approach used by many accommodation providers is to distribute the remaining hotel rooms on TripAdvisor to drive revenue to booking platforms and to increase customer turnover (Leung et al 2013). Studies (Sparks and Browning 2011; Ye et al 2011; Anderson 2012; Colaco 2014; Ladhari and Michaud 2015) suggest that eWOM and reviews have an exuding impact on customers booking decision. A majority of positive reviews influences the customer’s decision to book a room (Sparks and Browning 2011). Moreover, when managers respond to negative reviews with brand integrity and facts, it influences customer decision (Park and Allen 2013). Research conduct by Tsao et al (2015) also revealed that a large number of reviews has a negative bearing on customer decision when booking accommodation

### **Impact of Social Media in Tourism**

Facebook in particular has a great influence over consumer choices globally, especially in the travel sector. The research conducted in 2012 has shown that 76% of travelers post vacation photos on a social network and 40% post activity/attraction reviews. Over 90% of consumers from all over the world say they trust recommendations from friends, such as word-of-mouth, and only 48% of all the travelers who used social media to create travel plans, stuck with their original travel plans. Digital technologies have contributed to fundamental changes in the tourism industry and determined a better understanding of the decision making process of the travel, tourists’ behavior during vacation and post vacation activities. An online research with 4,600 respondents was conducted in October, 2012 across the US, Europe (EMEA) and Asia Pacific (APAC), specifically with Internet and social media users among travelers (who had traveled for leisure purpose in the last 12 months or intended to do so in the next 12 months). This interesting study collected the most important information related to the impact of social media on tourism. The study revealed that social media has a big influence on travel decisions as 44% of respondents strongly agreed that Internet reviews posted by travel bloggers helped them about the initial decision of vacation destinations. This is followed by 37% online travel forums, 27% Facebook, 24% Youtube/Vimeo, 22% Pinterest. Nearly half of the respondents would have used social media to plan their

vacation if free Wi-Fi had been available. From those who are “social active”, over 50% are likely to download travel apps while planning their vacation before they go. During vacation, the most popular application is (by 15%) Google Maps . After that come city guides, local weather, restaurant finder apps and public transportation apps.

Electronic Word-of-Mouth (eWOM) and user-generated content (UGC) can now reach millions of customers all over the world through social media channels, influencing a potential customer’s decision. Consumers share material and information about their experience with friends and followers on social media, therefore creating UGC and eWOM. This form of content has been recognized by the consumers to influence their perception about a product when considering booking travel accommodation. A recent global report conducted by Ipsos for TripAdvisor (2015: 35) found the 90% of consumers are influenced in their decision to book a room by the ratings of reviews and 88% of people are influenced by the online reviews and posts on TripAdvisor.

## **METHODOLOGY**

Social Media and its relationship with the tourism industry has been widely discussed and defined by many renowned researchers across the world. A quantitative analysis of available literature along with important definitions and aspects of various Social Media studies has been conducted to establish a working relationship between Social Media and tourism. Studies, surveys, and concepts discussed by eminent researchers have been analyzed and discussed in the context of various Social Media factors that influence tourism marketing. The definitions related to Social Media, the research methodology used along with the theories and conclusions provided in the studies and literature have been summarized in the Literature Review Section for easy reference and comprehension of results.

## **RESULTS**

It is evident that the generations are becoming more and more attuned to surfing for the needs rather than to physically look for them. The pace of life has become so fast paced, that very few have the leisure time to interact socially physically and it has become more convenient as the communication is immediate and rapid which saves time ,money and the wait period. As a result it is evident that the costs have been reduced for the tourism industry, the business flow has increased even though because of the current inflation the volumes are low. The profit margins and the expenditure on marketing and advertising campaigns have reduced substantially, this has made it possible for some of the hotels to pass on the benefit to the customer and increase their business share in an industry that is highly competitive because of the power of the social media and the internet possibilities.

The findings of this research together with those from the literature review shows that social media has a tremendous impact on tourism. As accommodation providers, if they are listening and engaging with customers as it helps them create long-term relationships, enhance customer satisfaction, and increase turnover and profitability, therefore helping them achieve a heterogeneous competitive advantage. Consequently if they fail to have a social media presence, it could affect their reputation, turnover and profitability.

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# THE EXPLORATORY STUDY OF SUSTAINABLE TOURISM TO PROMOTE NAKHON PATHOM'S TOURISM INDUSTRY

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## ABSTRACT

The objective of this research was to observe the views of 23 participants concerning the capacity of sustainable tourism to revive Nakhon Pathom's tourism industry. The samplings included residents, businesses, administration of the province municipality are invited at the roundtable to assess the situation, formulate common interests, and agree upon the goals and actions; all worked with tourism for no less than five years. The snowball technique and purposive sampling were used in collecting data. Information was gathered utilizing a meeting guide with the semi-structured interview. The gathered information was coded and broke down utilizing topical examination, which included grouping the most referred to codes into potential subjects and creating local maps. The real topics that rose up out of the informal investigation of the private part incorporated the utilization of sustainable tourism as a way to cement social connections among local people and voyagers and its capacity to energize rehash excursions. Many participants saw tourism as a gateway to increased business activity and local business development. Rehashed travels through sustainable tourism could offer ascent to the positive social change in the area by creating expanded outside money infusions and enhancing the social prosperity of Nakhon Pathom's resident and the Thailand economy.

**Keyword:** Administrative practice, enterprise, entrepreneurs, Nakhon Pathom, improvisatory administrative conduct, tourism business

## INTRODUCTION

Nakhon Pathom is the province 58 kilometer (km.) from Bangkok. It is claimed as one of the oldest urban areas in the Dvaravati Kingdom. The city's territory is 2,168.327 square kilometer (sq.km.). With seven regions, Wat Phra Pathom Chedi Rachavaramahaviharn is the regal sanctuary finding the greatest and the highest stupa of Thailand. The stupa is additionally the image of the city. (tourismthailand.org, 2017) Guests can visit Wat Rai Khing in Amphur Sampran. The asylum houses the Buddha picture in the aura of smothering Mara or 'Luang Pho Wat Rai Khing.' There is a market on every Sunday. With a lot of shades and enchanting domain, people can go out for a walk and feed an enormous number of fishes. In the asylum, there is a recorded focus showing collectibles in this area. For those who love blossoming flowers, tourist can go to Sampran Riverside which is the garden in Amphur Sampran close Nakorn Chairsri River. There are various kinds of blooms and presentations from neighborhood people.

Numerous territories are appealing for ecotourism. The nation's general excellence and numerous types of the original condition make it a perfect area for practical tourism (Decarvalho and Lewis, 2011). Be that as it may, practical tourism is not useful to a nation if the incomes produced from it do not remain in the nation (Decarvalho and Lewis, 2011; Buckley, 2012). Likewise, alongside the advancement of sustainable tourism in Nakhon Pathom, Thailand must come to understanding in regards to the objectives and results of practical tourism (Hall, 2011). Numerous maintainable tourism approaches in other creating countries have neglected to meet financial and ecological arrangement objectives because the two are frequently contradictory and market contemplations outweigh clear strategy (Bramwell, 2012; Hall, 2011; Pomeroy, Noble, and Johnson, 2011).



### ***Research Objective***

The purpose of this qualitative case study was to identify the effective, sustainable tourism implementation and management strategies for developing tourist market of Nakhon Pathom, Thailand.

### **LITERATURE REVIEW**

Tourism is generally defined as the movement of people to a location away from their home for more than twenty-four hours, necessitating an extensive infrastructure to support such travel: accommodations, transportation, food and drink, shopping, Entertainment, and activities (WTO, 2013). As an extension of this description, "tourists." may best be described as persons who are traveling under the following two conditions: they are away from home "for a relatively short period," and the trip is funded from their home base rather than earned while on the trip (Wall and Mathieson, 2006).

Sustainability is often used as an overarching concept today, covering several important principles: reducing our dependence on fossil fuels; substituting unnatural and toxic compounds with ones that are naturally abundant and can break down more easily in nature; using resources from well-managed ecosystems and using caution in modifications of nature; using resources efficiently and responsibly, and ensuring intergenerational equity. For public administrators, this translates to development decisions based on long-term planning to avoid the adverse effects of what unchecked private interests can lead to in our society: "a financially profitable, no sustainable aberration in human development [which] liquidates its capital [natural resources, living systems, and ecosystems] and call it income" (Hawken, Lovins, & Lovins, 1999, p. 5).

Regarding community development, sustainability is addressed in various ways. In an attempt to foster local government initiatives, the International City/County Management Association (ICMA) has published two Smart Growth Network policy handbooks, *Getting to Smart Growth* (2002) and *Getting to Smart Growth II* (2003). These handbooks are practitioner-oriented, providing real-world examples of successful approaches to sustainable development at the local and regional government level, in the hope that some or many of these success stories will serve as models (or at least inspire) for other municipalities to emulate. "Smart Growth" is the rubric often applied to sustainable development at the local level. The New Urbanism movement, advanced by the Congress for New Urbanism, espouses a similar set of precepts in urban settings, favoring mixed-use, transit-oriented, high density, bicycle-friendly, walkable communities (CNU, 2008).

### **RESEARCH METHODOLOGY**

The qualitative research comprised of meetings with 23 participants in both the private and open segments of Nakhon Pathom, Thailand's tourism industry. The participants included residents, businesses, administration of the province municipality are invited at the roundtable to assess the situation, formulate common interests, and agree upon the goals and actions; all worked with tourism for no less than five years. The snowball technique and purposive sampling were used in collecting data. Information was gathered utilizing a meeting guide with the semi-structured interview. The gathered information was coded and broke down utilizing topical examination, which included grouping the most referred to codes into potential subjects and creating local maps.

The researcher proposed to venture out to Nakhon Pathom to gather every single essential datum. Introductory access to the example was performed through reaching tourism-related associations, for example, the Ministry of Tourism and Cultural Affairs and the National Tourist Board and its united workplaces in the Provinces. The specialist was mainly situated not exclusively to make this exploration all in all yet in addition to accumulating the investigation populace because of her unsaid and unequivocal comprehension of this industry.

Table 1: Participant profile and background information

No.	Gender	Age	Occupation	Education
1	Male	50	Government Official	Undergraduate
2	Male	41	Business Owner	Undergraduate
3	Female	35	Government Official	Undergraduate
4	Male	28	Business Owner	High School
5	Male	29	Government Official	High School
6	Male	30	Local Business Owner	High School
7	Female	32	Business Owner	High School
8	Male	55	Tourism-related workers	High School
9	Male	42	Local Business Owner	Vocational
10	Female	44	Tourism-related workers	Vocational
11	Female	45	Local Business Owner	Undergraduate
12	Male	38	Tourism-related workers	Vocational
13	Male	27	Business Owner	Undergraduate
14	Male	38	Tourism-related workers	Undergraduate
15	Male	42	Tourism-related workers	Undergraduate
16	Male	55	Tourism-related workers	Vocational
17	Male	42	Government Official	High School
18	Female	44	Local Business Owner	Undergraduate
19	Female	45	Government Official	Undergraduate
20	Male	38	Government Official	Undergraduate
21	Male	27	Government Official	Undergraduate
22	Male	38	Business Owner	Undergraduate
23	Male	42	Government Official	Vocational

## RESULTS

### The sustainable tourism implementation and management strategies:

#### 1. Government Intervention

##### 1.1 Capital concentrated ventures

The capital-concentrated ventures are expected to expand room limit concerning great occasions amid the Christmas season. The arrangements distinguished by meeting members were to a great extent following these setting particular hindrances and incorporated a requirement for neighborhood money related and institutional help, including private infrastructural ventures and universal speculation motivating forces to build up the nation all in all and enhance the conveyance of political administrations and the implementation of security.

##### 1.2 Good governance

Change and great administration of the tourism business will persuade experts in the service to play out their obligations well in the advancement of the goals of manageability of the tourism business in the Republic of Nakhon Pathom, Thailand. The service needs labor and monetary assets to make a trip to these destinations in the western territory landmass woods and seashore to record exercises in these territories. Work on these vacationers' destinations can turn out to be a piece of a comprehensive strategy to enhance the upkeep of need locales significantly, the nature of the earth, and the neighborliness business all in all.

#### 2. Build tourism long-haul ground-breaking strategy

An end-all tourism strategy, when arranged, would be of enormous help in the budgetary designation of rare assets to rescue, modernize, or build new structures for the convenience of these traveler locales and provincial capitals too. The Ministry of Tourism ought to wind up a self-bookkeeping specialist by taking care of all bookkeeping related issues identifying with expenses, licenses, in room impose and so on. The government official should prepare the public facility to be accessible for the improvement of travelers' destinations, for example, eco-stop advancement in all need zones in the western zone and the urban areas

around vacationer locales. The money related influence of the service would not just give authoritative help to environmental projects to be executed en route, however incredible mindfulness would be developed by the citizenry living in those territories which could be instrumental in developing supportability ideas for the assistance of the tourism business in Nakhon Pathom, Thailand. The service could implement environmental laws and give proficient chances, alongside money related and tasteful advantages, for people and families dwelling in these vacationer site territories.

### **3. Motivate Stakeholders Intervention**

Stakeholders in Nakhon Pathom, Thailand who may be interested in the results of this study would include, but not be limited to, governmental agencies, industry actors, business leaders, environmental and economic development activists, as well as community members residing in and around protected areas. Companies and citizens whose livelihoods depend on the tourism industry may be concerned about protecting the environment and providing more economic opportunities to alleviate poverty in Nakhon Pathom, Thailand.

The long-term recommendations for best practices are in line with the thoughts of those of the interview participants. Good governance in the management of resources collected from tourism fees, licenses, and levies should be reinvested in the maintenance and modernization of priority sites. The enforcement of environmental regulations for tourism preparation and decreasing the damage to biodiversity, preserving networks, conserving national traditions, lessening poverty, refining maintainable livings, and familiarizing to the authenticity of an altering climate represent the requirements of proper governance of the tourism industry (UNWTO, 2011).

The accomplishment of ideal fulfillment is the critical issue in the possible advancement of tourism. Then again, the accomplishment of ideal fulfillment all things considered, in a general sense, is a "squaring the hover": because of them to a significant degree different structure of tourism action, ideal fulfillment of a few partners can cause profound disappointment with alternate partners. The partners in a specific goal are, in the meantime, the contenders planning to enliven the equivalent or comparable portions of visitor request, in any case, additionally, they are colleagues who ought to together take an interest in the improvement of incorporated goal item.

### **Recommendation for the Future Research**

There should be further research on the best way to build up the model of innovative monetary exercises for advancing and supporting favorite visitor items and OTOP results of Nakhon Pathom area, for example, pork-related items, pomelos, rose apples, young coconut and so on. Moreover, there ought to be an examination on the remote visitor bunches about their thought processes and practices in creative tourism and how to drive the advertising to serve their requests in proactive ways. The accomplishment of ideal fulfillment everything being equal is the crucial issue in the maintainable advancement of tourism. Then again, the accomplishment of ideal fulfillment everything being equal, in a general sense, is a "squaring the hover": because of the amazingly composite structure of tourism movement, ideal fulfillment of a few partners can cause profound disappointment with alternate partners. The partners in a specific goal are, in the meantime, the contenders expecting to vitalize the equivalent or corresponding sections of vacationer request, at the same time, additionally; they are teammates who ought to mutually take part in the improvement of incorporated goal item.

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# MARKETING MIX FOR SMALL ENTERPRISE: SEA SALT SPA

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## ABSTRACT

This research aims to study the marketing mix of sea salt spa enterprise in order to develop guideline to improve marketing mix for sea salt spa small enterprise. The samples had been selected using homogeneous sampling method. The samples selected include an owner of sea salt spa, two employees, and three customers. The semi-structure interview questions had previously been tested content validity before applying with those samples using item objective congruence method with the scores of .9404. The questions related with 5Ps marketing mix in spa industry; product, price, place, promotion, and personnel. Data collected had been analyzed using descriptive method.

The result of this research showed that all 5Ps marketing mix affected the operation of sea salt spa. Product was the most important factor that affects customers' preferences since it directly contacts with customers. The elements of product included atmosphere and environment of the shop, sea salt product used or sell in the shop, scent in the air, rhythm used in the shop, and other treatment such

as body, facial or foot treatment. The second important factor was personnel. An owner should provide a social welfare as well as develop a good relationship among owner and worker. As a result, workers will, in turn, offer a high-class service to customers. Price setting must be carefully calculated with consideration of fixed and variable costs plus a required profit. However, it should not be higher than common price of similar product sells by competitors. Finally, promotion campaigns could be set regarding to point of sale. For instance, customer can get a free hand treatment before buying a product.

**Keywords**—Health tourism, Spa, Sea salt, Marketing mix.

## INTRODUCTION

Recently, tourism industry is playing an important role in developing economies, including Thailand. Increasing number of travelers each year indicates the inflow money to the country. Some destinations in Thailand, however, has less ability to serve high number of travelers at the same time. In this case, the collaboration between private and government sectors are needed to increase ability to cope with numbers of travelers as well as to increase the readiness of destination for supporting foreign travelers. This has been considered to be main important strategy for Thailand in order to increase market share in this highly competitive market.

Due to the changing perspective of travelers to health tourism trend, there is emergence of new group of tourists. They tend to focus on getting experiences through participating with local activities that concern with healthcare. This trend creates new health promotion services, such as spa, massage, and beauty business. This new business is the main focus of the government strategic planning in year 2017 [1]. Nevertheless, the density of tourism still places among the big cities, such as Bangkok, Phuket, Pattaya, and Chiang Mai [2]. So, there is a need to develop destination in another cities, especially the cities along the west coast of Thailand, so called Royal Coast. These cities, Phetchaburi, Prachuap Khiri Khan, and Chumphon are destinations for those who love cultural, environmental and coastal, and health tourism. However, they still need to enhance infrastructure to link logistic systematically, add value for tourism service, improve quality and standard of tourism, manage sustainably environment, and increase capability of human resources in order to conduct a strategic plan for improving capability of destination for supporting numbers of travelers in the near future [3].

Phetchaburi, a city with various cultures and local wisdom, is famous in farming a sea salt for many years. The process of sea salt production has been transferred over generations using environmental process, especially

sun light. The production can take around 4 to 5 months or more if there is a heavy rain. Thus, the final product may be less in number comparing with the time spent for production. Because of this uncertain process, the sea salt process is hard to inherit to the new generation. Therefore, to protect this knowledge, the salt farmers in Phetchaburi has added value by offering salt fanning experience together with selling salt products. Business relates with this value-added tourism is spa business. These firms, often be small and medium enterprises (SMEs), are normally selling salt products that has special qualification of relaxing physique and mentality together with offering spa or massage [4]. Thus, supporting this spa business can help increase income for those salt farmers.

Because of this problem, the researcher wants to increase competency of those salt spa business to attract more travelers and customers to Phetchaburi. To do this, marketing mix has been exploited to identify appropriate strategy for small enterprises offering sea salt spa so that they can apply this marketing mix with their business in the future.

## LITERATURE REVIEW

### *1.1 Spa Business and Health Promotion Service*

Ministry of Public Health has given the definition of healthcare spa as a business that provides health treatment and support through massage and the use of water. The promotion service includes exercise, nutritional and diet therapy, yoga and meditation, herb therapy, and other alternative medicines. Spa is a Latin language of ‘Sanus per aquam’ meaning health from water and water therapy. Traditionally, types of spa categorize regarding to its activities. Health spa service refers to a business that offers care and health support through massage and water therapy. Massage spa includes Thai massage, body massage, and facial treatment. The last type is medical spa service means spa for beauty treatment, such as computer-aided cosmetology instrument (CACI) face-lifts, Botox injections, laser hair removal, and microdermabrasion [5]. The International Spa Association (ISPA) also divide spa business according to its location. Club spa provides fitness and variety of professionally administered spa services on a day-use basis. Day spa offers a variety of professional administered spa services to clients on a day-use basis. Destination spa is a facility with the primary purpose of guiding individual spa-goers to develop healthy habits. This type of spa provides a comprehensive program that includes spa services, physical fitness activities, wellness education, healthful cuisine and special interest programming. Medical spa offers a facility that has a full-time licensed health care professional on-site, which is further defined as a health professional who has earned a degree of Doctor of Medicine (M.D.). All applications are reviewed individually, and international standards are taken into account. Mineral spring spa provides an on-site source of natural mineral, thermal or seawater used in hydrotherapy treatments. Resort or hotel spa located within a resort or hotel provides professionally administered spa services, fitness and wellness components. Lastly, cruise ship spa located on cruise or large ship offers spa services, fitness and other wellness components [6].

Spa business and health promotion service in Thailand has continue increasing in number since 2012. Currently, number of registered business-pass the spa standard set by Ministry of Public Health-is around 2,053 enterprises. Table 1 indicates number of registered spa business regarding to types of spa [7].

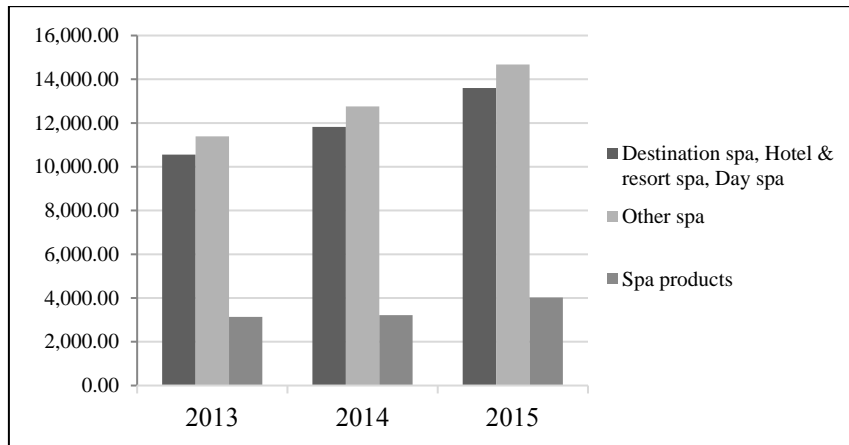
**Table 1**  
**Number of Spa Business Regarding to Types of Spa**

Types of spa	Number of business	Average
Health spa service	531	25.86
Massage spa service	1,217	59.28
Medical spa service	305	14.86
<b>Total</b>	<b>2,053</b>	<b>100.00</b>

Due to the increasing of spa business, money inflow into spa industry grows as well. Department of International Trade and Promotion, Ministry of Commerce has announced that the revenue from spa industry in

year 2013 is around 979.7 million US dollar with 22.5 million of customers. In year 2014 spa industry grows around 7 percent and in year 2015 grows around 16 percent as shown in figure 1.

**Figure 1**  
**Value of Thai Spa Industry in Year 2013 – 2015**



Tezak et al. who study the 3 level of influences of wellness in selecting tourism destination in 5 resorts in Istria, Croatia using Chi-square and One-Way ANOVA analyzing method suggested that different level of health care concern among the customers can affect their choice of destinations [8]. This result is also supported by the research of Chanin et. al. in year 2015 that consumers behavior and preferences are highly related with the way they select the destination and purpose of traveling [9]. Thus, destination selection often has a high effect on travelers’ decision-making.

### **1.2 Service Marketing Mix**

Kotler & Armstrong has suggested that there are 7 marketing mix for service industry includes; product/service, price, distribution or place, promotion, personal, physical and process [10]. For this research, however, the marketing mix developed by Office of Small and Medium Enterprises Promotion which made especially for spa industry will be applied. There are five elements; product/service, price, place, promotion, and personnel. Product/service is spa service with five senses including vision, hearing, smell, taste, and touch. Price tells customers about value of products or service. Place identifies the location of point of service. Promotion increases recognition of brand among target market. Finally, personnel deals with skilled workforces that can create value to customers.

From the research of Chantaburee on the opportunity and competitiveness of spa business in Thailand using in-depth interview and small group work for brain storming, the result shows that Thai spa has grown continuously, generating more revenue to tourism industry. However, finding source of fund and skilled workers still be a barrier to success for this industry [11]. This result is consistent with the research of Wutthiwatthanakul who studies the effect of marketing mix, attitude, and living style on consumer selection of spa service in Nontaburi province, Thailand. By analyzing hypothesis using multiple linear regression, the result illustrates that marketing mix, attitude, and living style affects the way customers selecting spa service [12]. Moreover, the work of Hoang et. al. [13] and Seyidov and Adomaitiene [14] also supported the fact that destination attractiveness and marketing mix has a high relationship with tourists’ behavior.

### **METHODOLOGY**

This research is a social science study using in-depth interview and observation method collecting data from sample group. All data is analyzed by content analysis method with the purpose of exploring marketing mix that appropriate for spa service in terms of small business scale. The sample group has been selected using homogeneous sampling method consists of one business owner, two service provider, and three customers. The place conducting a research is a famous spa shop in Bang Kaeo sub-district, Phetchaburi province named Kanghunlong Salt Spa. This shop is providing massage spa with sea salt products. The shop is selected due to its high recognition among spa shops operating by local community and the award of OTOP Product Champion 3

stars [15]. The semi-interview structural questions have been conducted based on five elements of marketing mix for spa business: product/service, price, place, promotion, and personnel. The content validity of this interview questions is 0.9404 [16].

## RESULTS

### *2.1 Marketing Mix for Sea Salt Spa Business*

After interview the owner, customers, workers and observe the shop, the results show that for product/service elements, Kanghuntong shop provides all five senses: vision, hearing, smell, taste, and touch effectively. For vision side, the architecture of the shop focus on Thainess which leaves a sense of warm welcome of Thai culture to customers. The reception area is well managed with systematic service. For hearing sense, light music helping customers to relax while experiencing spa service. The sense of smell in the shop comes from herbal essential oil, such as Cananga flower and Cassumunar ginger. This aromatherapy helps customers feel relax, calm, and joyful. The taste management is concerning with salt spa products and spa equipment. All products have been kept appropriately on the shelf with the room temperature. The equipment is maintained and kept in good condition. The final sense, sense of touch is concerning with the experience that customers will get from the business. They allow customers to test their products before making a decision. This strategy leaves a first impression on the customers' heart.

The second marketing elements is price. The price of Kanghuntong products is appropriate with its raw material and production costs. Moreover, the owner has used price comparison with competitors to set the price of their products and spa service. As a result, customers like to buy their products since the price is not high and quality is good when comparing with other competitors.

Place or distribution channel is the third element of marketing mix. The result illustrates that Kanghuntong has two main distribution channels; the Kanghuntong spa shop and web site. For first-time customers, the spa shop can build the good impression since the shop provides product testing with the five senses that customers will experience. Customers can also get advice from spa expertise and learn about benefit of sea salt. These first-time customers consist of both Thais and foreigners who comes with tour guide. Another channel of Kanghuntong is web site. It is used for giving information and selling for those repeated purchasers who wants to buy the products again.

The result from promotion elements demonstrates that the business is going well in terms of building a brand recognition. They apply public relation strategy to establishing their brand name. They also build a good relationship with customers by allowing them to test the products before buying. Furthermore, they expand their target market by participating in exhibitions within Thailand and international venues. These promotion methods help the brand recognition growing nationwide.

For personnel factor, the result shows that spa owner gives important on training for the workers both in terms of massage and knowledge about sea salt properties. However, the owner should improve their English language because they have to explain about their products to foreign customers. In terms of customer relationship management, the owner can create successful relationship with them. The management is systematically planned in advance so that the workers can work productively.

### *2.2 Spa Marketing Mix Strategy for a Small Enterprise*

From the data analysis above, the researcher has summarized spa marketing mix strategy that suitable for a small business offering similar products like Kanghuntong sea salt spa as shown in table 2.



**Table 2**

**Spa Marketing Mix Strategy for a Small Enterprise**

Marketing Mix Strategy	Elements
Product/Service	<ol style="list-style-type: none"> <li>1. Architecture and environment <ul style="list-style-type: none"> <li>- Thainess atmosphere</li> <li>- Systematic waste management</li> <li>- Reception located separately from service area</li> <li>- Clear environmental policy</li> <li>- Clean and no pollution</li> <li>- Well water management</li> </ul> </li> <li>2. Products and equipment <ul style="list-style-type: none"> <li>- Identify benefits and terms of use on label of all products</li> <li>- Offer high quality of products and standardized service</li> <li>- Products and equipments should be kept at the good condition</li> <li>- Products should be guaranteed, at least, by government agency</li> <li>- All equipments should have a user manual</li> </ul> </li> <li>3. Aromatherapy <ul style="list-style-type: none"> <li>- Essential oil should made by herbs or natural ingredients</li> <li>- Provide a good sense of smell while service customers</li> </ul> </li> <li>4. Sound <ul style="list-style-type: none"> <li>- Use light music for customers' relaxation</li> </ul> </li> <li>5. Service <ul style="list-style-type: none"> <li>- Provide basic spa services, such as body massage, body and foot scrub, face mask</li> <li>- Have well trained service providers</li> <li>- Provide herbal drink</li> <li>- Have a service manual</li> </ul> </li> </ol>
Price	<ol style="list-style-type: none"> <li>1. Spa service pricing method <ul style="list-style-type: none"> <li>- Setting a spa price should consider the cost of workforce and the product used in spa operation and the price should be apparently listed on the menu</li> </ul> </li> <li>2. Product pricing method <ul style="list-style-type: none"> <li>- Mark-up pricing: adding profit margin to the product costs</li> <li>- Going-rate pricing: comparing price with competitors</li> </ul> </li> </ol>
Place/Distribution Channel	<ol style="list-style-type: none"> <li>1. Various distribution channels, such as shop, website, e-commerce, etc.</li> <li>2. Provide rest area in the spa shop</li> </ol>
Promotion	<ol style="list-style-type: none"> <li>1. Offer product and service testing</li> <li>2. Build a brand recognition through exhibition, road show, and online advertisement</li> <li>3. Build a brand awareness by getting a support from government or private organization</li> </ol>
Personnel	<ol style="list-style-type: none"> <li>1. Owner of the spa shop <ul style="list-style-type: none"> <li>- Well manage customer relationship</li> <li>- Have excellent communication skill</li> <li>- Have ability to do a marketing plan</li> <li>- Have a good relationship with employees</li> <li>- Provide consistent training to employees</li> <li>- Have a well-organized business plan</li> </ul> </li> <li>2. Service providers or employees <ul style="list-style-type: none"> <li>- Have a good communication skill</li> <li>- Well trained</li> <li>- Have high service experience and create first impression to customers</li> <li>- Have a good relationship with customers and colleagues</li> <li>- Maintain cleanliness and tidiness of products and spa equipment</li> <li>- Be able to provide information about products and spa service</li> </ul> </li> </ol>

Table 2 indicates that all five elements are playing as important criteria for successful spa business. Among these five, product/service is the most important element since customers get direct experience of all five senses through the spa service. Thus, atmosphere of the spa, environment, spa equipment, and products are the main

factors that can affect customers' decision making. Providing a spa service requires well trained service providers, thus personnel element is considered the second important strategy. Price setting can also affect the way customers make a decision. Often, customers are sensitive with price changing. So, setting the price by comparing with competitors' price can minimize customers' switching cost. The small spa shop should promote their products and service through the selective distribution channel in order to reduce cost of promotion.

### CONCLUSION AND RECOMMENDATION

In conclusion, marketing mix for a small spa business consists of five elements; product/service, price, place or distribution channel, promotion, and personnel. For product/service element, all five senses should be met when providing spa service to customers. This element focuses, particularly, taste sense which can influence customers' decision making. All spa equipment should have a user manual to ensure that all employees will follow the use instruction. Moreover, all products should have label that states benefit and information of that products so that customers can easily decide to purchase. In terms of service, the spa shop can also provide other services, such as face mask, body and foot scrub to attract new customers. The second element, price, can help attracting customers if the price of products and service are similar with those of competitors. Place or distribution channel also plays an important role in building a brand recognition to new group of customers or travelers. Various channels will increase the purchasing point for customers or travelers within and outside Thailand. The small spa shop should also promote their products and service through various method, such as participating in exhibition or road show. They should also use product testing since customers tend to purchase a spa service based on their direct experience. Finally, personnel element also put a high effect to customers' or travelers' decision. Owner needs to support and encourage employees to train their skill continually. Building relationship with both customers and employees is the key to success. Furthermore, maintain standard with attentive service could increase customers' impression and, in turn, create customers' satisfaction.

Although this guideline can help small spa business managing their success, the research has conducted with only one well-know spa business. Thus, for further generalized result, increasing number of sample is needed. The research should also further compare this marketing mix of spa business with other similar industry to see whether any differences between industry can cause changes to customers' decision.

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# A STUDY OF RENEWABLE ENERGY POLICIES IN ASEAN: A CASE STUDY OF SOLAR CELLS ENERGY

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## ABSTRACT

ASEAN has a rapidly growing energy demand driven by regional economic growth and social development. Otherwise, ASEAN does not have enough fossil energy resources for growing energy demand. Renewable Energy is an important energy target of the ASEAN Economic Community [1]. Solar cells energy, one type of renewable energy, is likely to grow at a high rate because of low solar cells prices and Feed-in Tariff (FiT). The study of policies and measures to promote solar cells energy from different countries can be a guideline and recommendation for implementing policies and measures to promote solar cells energy in Thailand.

The aims of this research are to study policies and measures for promoting solar cells energy in ASEAN member countries and to study good practices in regional and global solar cells energy measures. The lessons learned are used as guidelines to develop innovations for measures or promoting solar cells energy in Thailand. This research has collected data using qualitative technique, In-depth interviews, to extend and examine information from literature reviews. The result suggests that policy recommendations for solar energy are summarized as follows; 1) Specific Feed-in tariff (Fit) for projects using local content 2) Flexible Feed-in tariff (Fit) system 3) Setting the bid price policy for large solar cells Projects. 4) The government should provide funding for R & D in solar cells energy. 5) Financial policies such as low interest loans and loan repayment period extension. 6) A tax exemption or reduction policy. and 7) Accelerated depreciation for renewable energy projects.

**Keywords-** ASEAN, policy, solar cells energy, renewable energy

## INTRODUCTION

Following the United Nations Conference in September 2015, the Meeting endorsed 17 Sustainable Development Goals (SDGs), with renewable energy being targeted at Goal 7: Affordable and Clean Energy. ASEAN member countries, including Thailand, have adopted the SDGs as part of their energy strategy. ASEAN has included Renewable Energy in the ASEAN Economic Community Blueprint 2025. ASEAN has a rapidly growing energy demand driven by economic growth and social development in the region. ACE estimates that the overall energy demand of ASEAN in 2078 will be high up 2.7 times compared to 2013, but ASEAN has no sufficient fossil energy resources for growing energy demand [2].

Renewable Energy is an important energy target of the ASEAN Economic Community (AEC Blueprint 2025) [1, 3], and it has set the challenge of increasing the proportion of renewable energy in ASEAN at 23 percent as following ASEAN Plan of Action on Energy Cooperation 2016-2025 : APAEC. According to IRENA & ACE, ASEAN will have to invest US \$ 27 billion per year, or US \$ 290 billion in 2025, to increase renewable energy production to meet renewable energy targets of 23 percentage [4].

Solar energy is a type of renewable energy that has a high growth potential in the past due to low solar cells prices. In Thailand, electricity from solar power has increased from 200 megawatts (MW) in 2011 to 2,149 megawatts (MW) in 2015. ASEAN member countries, such as Vietnam, Singapore, Philippines, are likely to increase the production of electricity from solar energy.

The development of solar energy is in line with the major Thailand's national plans as following; 1) Thailand's 20-Year National Strategy : Strategies for creating growth on the quality of life or environmentally friendly growth. 2) The Twelfth National Economic and Social Development Plan: Strategy 7 Infrastructure and

Logistics Development Strategy focused on energy development to increase the proportion of renewable energy to final energy consumption and reduce dependence on natural gas for electricity production; and 3) Thailand 4.0 policy discusses alternative energy in many areas, such as renewable energy and the establishment of a regional innovation hub. Solar energy will be installed as an Innovation Hub on Smart Energy in the Northeast.

Solar power generation in Thailand is driven by renewable energy policy [5]. The goal is to continuously increase solar energy. Increasing the proportion of solar energy production can increase the country's energy security. Thailand faces a decline in fossil energy sources, especially from the Gulf of Thailand and rely on neighboring country's energy having a change to switch to other countries. For example, Myanmar agreed to sell natural gas to China, thus reducing the proportion of exports to Thailand [6].

Government policies and measures are an important mechanism for achieving the set targets. Therefore, it is important to study the use of policies and measures by different countries to know the best way to implement them. The research on renewable energy policy in ASEAN and the policy of promoting solar energy can be a guideline and recommendation for the implementation of policies and measures to promote alternative energy in Thailand in line with ASEAN energy cooperation policy

## LITERATURE REVIEWS

Literature reviews of ASEAN Academic Articles International organization Institute of Energy in Thailand and abroad 1) Comparison of renewable energy policies and measures in ASEAN Member States 2) Guidelines for development of renewable energy policy and 3) Examples of measures in solar energy projects

1) Comparison of renewable energy policies and measures in ASEAN Member States ASEAN Center for Energy states that Indonesia, Malaysia, the Philippines, Thailand and Vietnam are among the progressive groups implementing solar policy determine by setting solar energy. Feed-in Tariff (FiT) is a key stimulus with indirect support, such as: 1) fiscal incentives such as import duty exemptions for machinery and equipment; 2) Financial support measures, such as low interest loans, etc. [2], and Sopitsuda discussed that Singapore did not use energy subsidy policies. Fixed Feed-in Tariff (FiT) by purchasing power is based on the market mechanism [7]. ACE conclude that the top three policy tools that influence the implementation of renewable energy projects by attracting the most important private sector investors are: 1) Optimal Feed-in Tariff (Fit) 2) Simple authorization process and 3) A mechanism for financial support and incentives [2].

2) Guidelines for development of renewable energy policy Ismail, Abdul Muhaimin, et al. explored the progress of renewable energy in ASEAN. The recommendations for the development of solar policy in five main areas are summarized as following; 1) Regulatory and Policy; Countries that do not yet have a policy to support solar power should adopt a Feed-in Tariff (FiT) system to accelerate the rate of solar energy use, which is the way to success in many countries such as Germany, Indonesia, Malaysia, Japan and the UK. 2) Finance; Funding for Feed-in Tariff (FiT) is most important. The government should adopt fiscal incentives to attract the entry of the solar industry. Malaysia is a good example of using fiscal incentives to promote the development of alternative energy technologies. 3) The market of PV industry. 4) Infrastructure, skill personnel and Research and development (R&D) and 5) Public acceptance and awareness. [8] UNESCAP presented policies for renewable energy, with opportunities and challenges for policy implementation as following; 1) Public Governance; to removal of administrative and market related obstacles and to development of transport, water, telecommunications and energy infrastructure. 2) Trade and Investment Facilitation; Reduction of non-tariff barriers, Trade renewable energy certificates and Foreign direct investment (FDI) promotion. 3) Economic Incentives / Tax such as Carbon taxes, Cap-and -Trade, Renewable portfolio standards and R & D tax credit. 4) Economic Incentives / Subsidy such as Feed-in-Tariff (FIT), Auctions and Tendering, Green bonds, Green public procurement and Soft loan with credit guarantees [9]. GIZ PV Rooftop Development in Thailand: Analysis of Regulations and Challenges presents an analysis of the development of the PV Roofing Project, which identifies issues and obstacles that Thailand faces from past projects, then offering good solutions or examples from abroad [6].

3) Examples of measures in solar energy projects. One of the key factors in the success of the solar development policy is the raising of funds used in the project because solar projects have a high investment compared to other types of renewable energy. Sopitsuda presented a model for raising funds for the development of solar energy projects as discussed; 1) Property Assessed Clean Energy (PACE) 2) On-Bill

Finance 3) Solar Crowdfunding 4) Solar Leasing and 5) Community-Shared Solar. The models are useful for solar project operators as following; 1) Reduce cost constraints on solar systems, and 2) Reduce the burden of owning a solar system. [7] Asian Development Bank (ADB), proposed models to realize the potential of renewable energy and energy efficiency in the Greater Mekong Sub-region as following; 1) Ownership Business Models; Public-Private Partnership (PPP), Multiparty Ownership, Lease or Purchase Model and Dealer Credit Business Model. And 2) Service Business Model; User Cooperative Format and Energy Performance Contracting. [10]

## METHODS

The aims of this research are to study policies and measures for promoting solar energy in ASEAN member countries and to study good practices in regional and global solar energy measures. The lessons learned are used as guidelines to develop innovations for measures or promoting solar cells energy in Thailand. This research has collected data using qualitative technique, In-depth interviews, to extend and examine information from literature reviews

In-depth interviews were conducted to collect data regarding on the development or implementation of renewable energy policy for ASEAN and Thailand from many experts of organizations in Thailand both public organizations and private sectors involving with the renewable energy policies. Public Organizations in Thailand such as The office of the National Economic and Social Development Board (NESDB), Thailand Broad of Investment (BOI), Ministry of Energy (Thailand), Ministry of Commerce (Thailand) and Ministry of finance (Thailand).

Document analysis from literature reviews provided a solid ground on the Renewable Energy Policy for ASEAN in general and good practices. Content analysis has been conducted to gain the highlight information from In-depth interview. In addition, we compared information between document analysis and content analysis. As a result, information from document analysis has harmonized with In-depth interview. We also archive more detailed information to construct the suitable policy recommendations for renewable energy and solar energy in Thailand from good practices of In-depth interview.

## RESULTS AND ANALYSIS

There are several types of renewable energy. Solar energy is growing at a global scale. This study shows that many countries are interested in developing solar energy as one of alternative energy options. The main driving force is the continuous decrease in system and equipment costs. However, there are many other factors that will encourage each country to develop solar energy to meet its goals, such as the potential of the solar area of each country. Government-sponsored financial policies, privilege, the incentive measures, the availability of technology and personnel in the preparation and maintenance of such equipment.

This study examined the opportunities and challenges of solar energy development in Thailand and link them to energy cooperation among ASEAN member countries as following;

1) Thailand has a relatively high solar energy potential based on the distribution of solar radiation intensity has the potential for solar power, especially in April and May.

2) Solar power has a high growth trend in the past due to low solar cells prices. The growth of global solar power installations has dramatically increased from 39 GW in 2010 to 219 GW in 2015 and is expected to reach 591 GW in 2020 and 1.760 GW in 2030, respectively [11].

3) Thailand is generating electricity from solar power from 200 megawatts (MW) in 2011 to 2,149 megawatts (MW) by 2016. Vietnam, Singapore, and the Philippines are determined to increase electricity from solar power by the higher solar cells energy targets.

4) The development of solar energy is in line with Thailand's national plans.

5) Thailand is the leader in solar energy in ASEAN, total of 1,298 megawatts (MW) of installed solar panels in 2014, at 83.6 percent of solar energy in ASEAN.

Solar energy production can increase the country's energy security. Thailand faces a decline in fossil energy sources, especially from the Gulf of Thailand and rely on neighboring country's energy having a change

to switch to other countries. For example, Myanmar agreed to sell natural gas to China, thus reducing the proportion of exports to Thailand.

Government policies and measures are an important mechanism for achieving the set solar goals. Challenges are to accelerate the implementation of these policies. The result suggests that policy recommendations for solar energy are summarized as follows; 1) Specific Feed-in tariff (Fit) for projects using local content 2) Flexible Feed-in tariff (Fit) system depending on the number of projects 3) Setting the bid price policy for large solar cells Projects. 4) The government should provide funding for R & D in solar cells energy. 5) Financial policies such as low interest loans and loan repayment period extension. 6) A tax exemption or reduction policy. and 7) Accelerated depreciation for renewable energy projects.

## CONCLUSIONS

The Research finds that the development of renewable energy is essential for the economic development of ASEAN Member States in terms of enhancing energy security and promoting environmentally friendly development policies. It must be consistent with both energy efficiency policies and renewable energy development policies in order to meet economic growth and energy needs, both at the national and regional levels. ASEAN has a framework for renewable energy cooperation under the ASEAN Energy Plan.

ASEAN member countries should accelerate the implementation of the ASEAN cooperation plan. The driving force behind the development of renewable energy in ASEAN are 1 ) global demand for reducing greenhouse gas emissions from fossil fuels; 2) developing countries reduce the risk of reliance on imported energy for energy security and 3) Renewable energy enables rural people to access electricity

Policy Recommendations are as following;

1) Strengthening policy cooperation and renewable energy planning in ASEAN region. The communication mechanism between the government and the agencies responsible for planning and policy for concrete renewable energy cooperation needs to be upgraded.

2) Create an Integrated Alternative Energy Planning Mechanism in ASEAN. To improve information and analysis of ASEAN renewable energy policy and planning, and to focus more on cooperation with international dialogue partners and organizations.

3) Strengthen research and development. There is a need to foster technological cooperation and joint research in clean energy technologies and regional grids to reduce the cost of clean energy development.

4) Use the ASEAN Regional Renewable Energy Network (RE-SSN) mechanism to work on renewable energy in the region.

5) Promote public awareness of the effects of climate change and the environment.

6) The establishment of a national technology working group comprising relevant sectors such as the public sector, industry financial institution and educational institutions. This work group helps to ensure rural electricity is available for a continuous period.

7) Long-term policy framework that reflects government commitment to short-term, medium-term and long-term plans, and is supported by a realistic action plan with mechanisms to monitor and evaluate results.

8) Promotion of research and development in renewable energy by the cooperation of industry sector, academic sector and the government with technical and personnel development in the short, medium and long term.

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# DEVELOPMENT GUIDELINE FOR AGO TOURISM ATTRACTION CASE STUDY OF SIGHTSEEING TOUR ALONG MAHA SAWAT CANAL, BHUDHAMONTHON, NAKON PATHOM

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## ABSTRACT

The study aimed to seek the potential ways for tourist attraction development, and SWOT analysis seeks strength, weaknesses, opportunities, and threats of the Ago Tourism Attraction along Maha Sawat Canal, Nakhon Pathom. The study is the quality research used the observation and deep interview manners with 30 interviewees of pillar groups. The relevant information from books, research, articles and document were synchronized into the study. The SWOT results found strong points; (1) Maha Sawat canal is historical water way for goods transportation in the reign of King Rama IV. It can be a learning center of community's way of life. (2) Location near capital city, the tourists who stay in Bangkok can travel to Nakhon Pathom easily. (3) Management by their own local community representatives (4) Good hospitality attitude from most locals toward tourists (5) Community cooperation with public sectors for national public relations (6) Current local agriculture career is a significant part of tourism development. However, there is weakness; (1) A number of villagers have a potential to bring their gardens or farms into agro tour program, but limited knowledge of the tourism development for their spaces. Some have limited time to participate in any community meeting because they work for living and no time for taking a training session as well. Nevertheless, the opportunity of the site also shown here; (1) Many potential natural resources and more agriculture areas could be allocated for tourism attraction development because repeated tourists expecting to explore more areas around, not only same sites every visit. (2) Apart from agriculture, also art, culture, architecture, history and local food are attracted by tourists (3) Implementing more tourism activities will enhance the community efficiency in terms of promoting tourism attractions such as teenagers' or kids' activities, this will lead to have more family group of tourist. (4) More accessible road have been building in the area, other options of transportation mode could be used to create more travel routes around the area such as motorcycle tour, bike rider tour or self-drive tour. On the other hand, some threats were found (1) Public relation budget is likely offered not regularly therefore it will impact on marketing plan. (2) Rainy season could obstruct the canal route tour therefore adding more options of travel routes will solve the problem such as accessible road route.

**Keywords**—*Ago Tourism Attraction, Local Community, Maha Sawat Canal, Nakhon Pathom Province, Tourism Development*

## INTRODUCTION

Agro tourism refers to people visiting working farms or other agricultural operations for the purpose of enjoyment, education, or other active involvement. Agro tourism encompasses a wide variety of activities and provides a means for farmers to diversify and supplement their income. Such activities may include wildlife study, horseback riding, cannery tours, cooking classes, wine tasting, harvest festivals, barn dances, farm stays, guided tours, and petting zoos (www.fao.org, 2018). While many visitors will engage in agro tourism for short periods of time, such as an afternoon of fruit picking, others remain for days and, in some cases, work on the farm. The Tourism Authority of Thailand (TAT, 2016) has been corresponding with the Royal Thai Government's initiative to boost the incomes of local communities by promoting agro tourism, offering the chance for tourists to enjoy eco-friendly activities and a taste of rural living as well as see local handicrafts being made. The initiative also forms parts of TAT's ongoing efforts on promoting and developing community-based tourism in local destinations across the nation. For an interesting site near Bangkok, TAT recommends the community-based tourism area along Mahasawat Canal, which is known locally as 'Klong Mahasawat' in

Nakhon Pathom, about 30 km. west of the Thai capital city. Visitors will be able to tour orchards and rice paddies, and visit local orchid and lotus farms to get a unique insight into Thai life.

### **PROBLEM STATEMENT**

The concept of Agro Tourism encouraged visitors to experience agricultural life in a natural setting. The momentum of its activities strongly relies on rural communities that grasped the benefits of sustainable development brought about by similar forms of nature travel. Visitors have the opportunity to work in the fields alongside real farmers and taste the community's authentic food with locals. But the issues are; will Agro Tourism cause pollution to the environment due to the unawareness about the physical development of the agriculture activities. Other than that, do the facilities provided in the studied area are adequate and convenient enough for the tourists to meet the needs and wants. In addition, will the Agro Tourism activities be able to provide better employment opportunities and balance their benefits among the society themselves. Expanding income is an important risk management strategy and local community may have to learn more about successful agro tourism ventures. They need not only a better understanding of tourist's needs and wants, but also potential liabilities of having more visitors on the farm.

### **RESEARCH OBJECTIVES**

1. To examine the SWOT analysis to seek strengths, weaknesses, opportunities, and threats of the Ago tourism attraction along Maha Sawat Canal, Nakorn Pathom
2. To seek the potential ways for tourism attraction development that influence from tourists and locals along Maha Sawat Canal, Nakorn Pathom.

### **SCOPE AND LIMITATION**

This research focuses only Agro Tourism route along Maha Sawat canal, Nakhon Pathom. SWOT analysis applied for evaluation. It further attempted to evaluate the opportunities for the farmers and local community to expand their income and reputation, besides observing the social/cultural and environmental impacts on tourism development in the area.

### **LITERATURE REVIEW**

As shown in this paper the word 'Agro Tourism' used and in the same meaning of 'Agri Tourism. The word 'Agri tourism' has been defined and labeled in various ways in the literature. Philips, Hunter and Blackstock (2010) provide a typology of definitions of Agri tourism. The term *agri tourism* has often been used interchangeably with *agro tourism*, *farm tourism*, *farm-based tourism*, and *rural tourism* (McGehee and Kim, 2004; Clarke, 1999; Ilbery et al, 1998; Roberts and Hall, 2001; Barbieri and Mshenga, 2008). Agri tourism may be defined as "rural enterprises which incorporate both a working farm environment and a commercial tourism component" (Weaver and Fennel, 1997; McGehee, Kim & Jennings, 2007). Barbieri and Msheng (2008) referred to agri tourism as "any practice developed on a working farm with the purpose of attracting visitors."

Farm enterprise diversification has become a strategy for small farms to remain viable especially in the face of high risks facing modern day farming. McGehee, Kim & Jennings (2007) have identified agri tourism as a form of enterprise diversification. Ilbery et al. (1998) describe 7 pathways to agricultural diversification, of which on-farm recreational activities are one survival strategy for farm businesses. Incorporating agri tourism as an alternative enterprise has the potential to contribute to agricultural sustainability, broaden farmers' economic base, provide educational opportunities to tourists, and engender a strong communal cohesion (Ilbery et al., 1998). Beus (2008) describes agri tourism as a possible strategy for many U.S. farmers to expand their incomes and stay in business. This practice, referred to as the "cultivation of tourists on the farm in addition to crops" is already well established in countries like Switzerland, Italy, New Zealand and other European countries. A common characteristic of alternative and farm tourism, unlike most forms of conventional tourism, is that the

visitors stay in or near the home of the host (Dernoi, 1981). Apart from that, rural tourism is based on a rural environment in general terms, whereas farm tourism depends on the farm or the farmer (Nilsson, 2002).

In addition, Aruninta (2011) found that *'agrotourism'* and *'ecotourism'* have become similar types of tourism attractions that represent an integration of 'development' and 'conservation' of rural cultural landscapes in interesting ways. She also described Thailand tour programs include visiting to *'tangible'* cultural landscapes such as important temples, palaces, monuments and buildings, as well as, those emphasized by individual alternative journeys to visit living cultures and local community, the *'intangible'* rural landscapes and rural life associated with agriculture become attractive values or products of so-called *'agro-tourism and eco-tourism.'* This could be said that the protection of nature and culture has been likely embedded into 'Agro tourism' as well.

## METHODOLOGY

Secondary research was done to collect agro tourism-related statistics and structure. Resources from publications, reports, news release from government sectors and authority were collected to understand current structure of agro tourism industry in Thailand. Primary research also included in-depth interview with stakeholders in agro tourism of Nakhon Pathom along Maha Sawat canal was done to explore their operational management and unique offerings. In-depth interview respondents were recruited through personal connections and solicitation. Interviews were conducted through face to face or telephone depending on the convenience of respondents. The interviews took between January-April, 2018. Observation was done in four agro tourism operators' premises where the tour route arranged by community representatives; (1) Lotus Farm, (2) Orchid Farm, (3) Fruit Garden (4) Rice village of Ban Saladin. Mainly to observe following conditions: attractions, amenities, accessibility, activities available, hospitality and safety as well as their public relations. The data from secondary research was summarized in qualitative form and the in-depth interview will be analyzed individually to examine SWOT factors and summarize to seek potentials to develop the agro tourism area for the future.

## RESULTS

The SWOT results found strong points; (1) Maha Sawat canal is historical water way for goods transportation in the reign of King Rama IV. It can be a learning center of community's way of life. (2) Location near capital city, the tourists who stay in Bangkok can travel to Nakhon Pathom easily. (3) Management by their own local community representatives (4) Good hospitality attitude from most locals toward tourists (5) Community cooperation with public sectors for national public relations (6) Current local agriculture career is a significant part of tourism development. However, there is weakness; (1) A number of villagers have a potential to bring their gardens or farms into agro tour program, but limited knowledge of the tourism development for their spaces. Some have limited time to participate in any community meeting because they work for living and no time for taking a training session as well. Nevertheless, the opportunity of the site also shown here; (1) Many potential natural resources and more agriculture areas could be allocated for tourism attraction development because repeated tourists expecting to explore more areas around, not only same sites every visit. (2) Apart from agriculture, also art, culture, architecture, history and local food are attracted by tourists (3) Implementing more tourism activities will enhance the community efficiency in terms of promoting tourism attractions such as teenagers' or kids' activities, this will lead to have more family group of tourist. (4) More accessible road have been building in the area, other options of transportation mode could be used to create more travel routes around the area such as motorcycle tour, bike rider tour or self-drive tour. On the other hand, some threats were found (1) Public relation budget is likely offered not regularly therefore it will impact on marketing plan. (2) Rainy season could obstruct the canal route tour therefore adding more options of travel routes will solve the problem such as accessible road route.

Apart from SWOT analysis above, the research also interviewed 30 people in the site. One of interesting result found this sightseeing tour route should be added more stations to enjoy more. Due to the original route currently comprise of 5 stations only, it means every time visitors will experience the same 5 spots to see and learn. This will effect on the repeated visitors who come back and experience the same things of tour program. Even the community has tried to prepare some more different local dish, the visitors want to enjoy expanding

agriculture areas around. On the other hands, adding more agro tourism attractions in the route, it may have an impact on 'time' arrangement during the trip. This means each stop may take times to finish and also gaps between those stops, therefore to complete the whole trip may take too much time. Because of the reasons mentioned, a recommendation has been addressed by a visitor who was interviewed for collecting primary data. The interviewee shared her interesting idea that agro tour program may be arranged by preparing a number of optional spots for visitor to choose. There may be 5 – 10 choices of agro tourism attractions in the list and visitors freely pick their favorite ones to go and enjoy by their personal preferences. They may love to have a half day trip, one-day trip or two-day trip as a tour package. Prices may vary upon the choice they selected. It creates variety of agro tour, as well as more local farmers will participate in community. As a consequence, more benefits will expand to more locals. Adding other routes from other villagers and farmers, the community has more opportunity to earn income from agriculture area. However, it may be necessary to improve some gardens or farms as new agro tourism attractions. In addition, giving advice on agro tourism development may be required for community.

### **CONCLUSION AND RECOMMENDATION**

Maha Sawat canal community has the development potentials of agro tourism as a leading community-based tourism. It is packed with many refined products made from plants and fruits, and beautiful cultural landscape along the canal and farm. More areas can be expanded and added in the agro tour program. The community really needs assistance both in the field of planning, development and management of agro tourism as well in post-harvest processing of plants and fruits. In addition, the community may consider restructuring the social and cultural aspects. Other sources of institutional funding or government funding should be offered to them for marketing and improvement of cooperation networks. Community empowerment will be a process for the community's independence in order to improve their living standards by using local resources as possible. The process of putting the public should be the main part of the development. Training programs that will be undertaken by the Government should be in the form of coaching to improve the ability of communities in order to utilize existing resources around the area. In developing the agro tourism as a leading tourist attraction, local people should participate in field practice and provide learning the facts that occurred in the area. Through these activities the community would be directly aware of the problems in their own area, so that people will have an idea to make a plan in accordance with local conditions. Potential gardens and natural beauty synergized with the potential for processed products in the community could be offered to visitors in the agro tour program. Optimally increasing promotion by utilizing technology and finding more cooperation and partnership of stakeholders for the sustainability of agriculture could be assisted in this case. Cichowska, J. & Klimek, A. (2011) also described not only material resources of agro tourism farms, their promotional activities, mutual cooperation between hosts, but also a departure from passive attitude and manifestation of initiative and willingness to take risks – these are essential elements that co-create the discussed activity.

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# THE ALTERNATIVES OF TRANS FATS REPLACEMENT FOR THAI FOOD MANUFACTURERS

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## ABSTRACT

Thai Food Manufacturers will be banned to use trans fats in foods by the end of 2018. Therefore the alternatives of trans fat replacement is closely paid attention. The process of hydrogenation to create trans fats in order to increase the shelf life of baked and fried foods. Ingestion of trans fats is related to an increased risk of cardiovascular disease. Alternatives to trans fats are needed now in order to preserve the freshness and provide an appealing texture of many packaged foods. As trans fats become phased out, there are eight types of approaches currently being developed to substitute for these fats as ingredients for baked and fried foods: (1) modified hydrogenation, (2) genetically modified seeds, (3) interesterification, (4) fractionation and blending, (5) butter and animal fat, (6) natural saturated oils, (7) natural unsaturated oils, and (8) fat substitutes. The use of these alternatives to trans fats will be dependent on each type of foods.

Keywords: hydrogenated, interesterification, oils, saturated, substitutes, trans fats, unsaturated

## INTRODUCTION

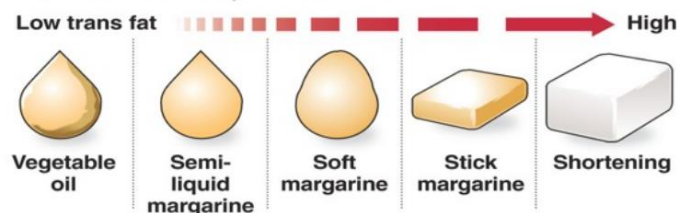
Consumers have been confused over the issue of trans fats in food products from the time Thailand's Food and Drug Administration (FDA) announced a ban, which takes effect in January 2018, on the domestic use and import of partially hydrogenated oils (PHO). Scientific evidence has shown that trans fats from PHOs are contributing to increased incidence of heart and related diseases. Fast-food outlets, bakeries and confectionaries, and items such as snacks, fried food, sweetened milk and non-dairy creamer and derivatives will be affected by the ban on PHOs. Vegetable oils contain a high concentration of unsaturated fatty acids. These fats bring about oxidation, which produces rancidity. Trans fatty acids or trans fats are produced when food manufacturers add hydrogen to unsaturated vegetable oils to saturate or partially saturate their unsaturated bonds for use in cooking, frying, or baking. This hydrogenation process increases the stability, resistance to oxidation, and shelf life of vegetable oils. In addition, hydrogenation raises the melting point of unsaturated vegetable oils, which are liquid at room temperature. This process hardens the oils and converts them into solid or semisolid fats. A solid texture is necessary for the manufacture of shortenings and margarine. Generally, the higher the saturated fatty acid content, the harder a fat will be at room temperature.

## Phasing out trans fats

The Food and Drug Administration is taking steps to eliminate trans fats in American diets.

### Adding hydrogen

Partially hydrogenated oils are the primary dietary source of artificial trans fat in processed foods



*As the product gets more solid, trans fat increases*

Graphic explains what trans fats are.  
(Credit: Yingling/MCT)

Figure 1 shows phasing out trans fats.

The main component of fats and oils is triglycerides, which contain one glycerol molecule and three fatty acid molecules. When these substances are solid at room temperature, then they are called fats, and when they are liquid at room temperature, then they are called oils. This article uses the terms fats and oils interchangeably.

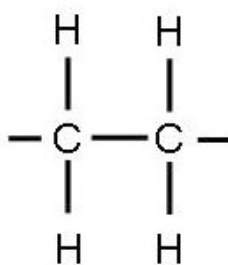
The ingestion of trans fats is associated with heart disease and, for that reason, the use of these substances as food additives is increasingly coming under attack. Trans fats are being removed from many widely sold foods and are becoming banned from use in restaurants in many communities. These oils have served a function in the food manufacturing and preparation industries and will need to be replaced by other types of oils. This article reviews the structure and function of trans fats and discusses their potential replacement.

### Dietary Fats

The major types of fats in the diet are saturated, polyunsaturated, monounsaturated, and trans fats. While unsaturated fats (monounsaturated and polyunsaturated) are beneficial when consumed in moderation, saturated and trans fats may not be. Intervention studies have demonstrated that trans fats raise low-density lipoprotein (LDL) cholesterol levels, lower high-density lipoprotein (HDL) cholesterol levels and raise lipoprotein(a) levels (Almendingen et al, 1995) . Trans fat intake has been positively related to plasma biomarkers of inflammation and endothelial dysfunction, including C-reactive protein, soluble tumor necrosis factor receptor 2, E-selectin, and soluble cell adhesion molecules (soluble intercellular adhesion molecule-1 and soluble vascular cell adhesion molecule). All these effects on risk factors with trans fat ingestion are associated with an increased risk of coronary artery disease (Zaloga et al, 2006). The positive relation between trans fat intake and cardiovascular risk is greater than would be predicted solely from an adverse effect on lipids (Zu et al, 1997) which suggests that an adverse effect on endothelial function might account for this additional risk. An additional health risk from ingestion of trans fats is decreased fertility (Chavarro 2007).

### Saturated Fats

Saturated fatty acids contain the maximum number of hydrogen atoms that the chain of carbon atoms can hold (Almendingen, 1995) . Saturated fats are usually solid at room temperature. They are inert and do not combine readily with oxygen to become rancid. Saturated fatty acids are found in animal fats and in coconut oil, palm oil, and cocoa butter.



### Saturated Fat

Figure 2 shows saturated carbon atoms, each with two hydrogen atoms, joined by a single bond. .

#### Monounsaturated Fats

Monounsaturated fatty acids contain a single unsaturated or double bond. They lack two hydrogen atoms. Monounsaturated oils usually are liquid at room temperature but solidify at refrigerator temperatures. Monounsaturated fatty acids can help decrease LDL cholesterol when substituted for saturated fats in the diet. Monounsaturated fatty acids are found in canola oil, olive oil, peanut oil, nuts, and avocados.

#### Polyunsaturated Fats

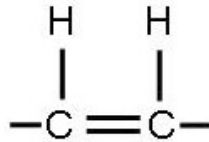
Polyunsaturated fatty acids contain more than one unsaturated or double bond and are liquid both at room temperature and in the refrigerator. They may combine with ambient oxygen and become rancid. Polyunsaturated fatty acids can help lower LDL cholesterol when substituted for saturated fats in the diet. These fatty acids are found in safflower oil, corn oil, sunflower oil, soybean oil, fatty fish (such as salmon, mackerel, smelt, herring, and trout), walnuts, and seeds.

#### Trans Fats

Trans fats are a type of fat that is formed when liquid oils are converted into solid fats (such as shortening and hard margarine) through partial hydrogenation of their unsaturated fatty acids. In this process hydrogen is added to polyunsaturated oil to fill some but not all of the unsaturated bonds. Trans fats are found in foods containing partially hydrogenated oils or cooked in such oils.

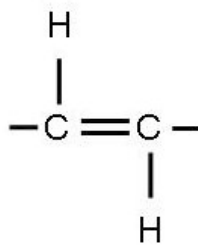
In trans fats the two hydrogen atoms are on opposite sides of an unsaturated double bond, as opposed to cis fats in which the two hydrogen atoms are on the same side of the double bond. The trans configuration results in a straight shape, whereas the cis configuration is bent (Figures 3) (Norlida et al, 1996). Compared to cis fatty acids, trans fatty acids molecules can pack closer together and are less fluid. Thus, trans fats, compared to cis fats, have a higher melting point. This property results in trans fats assuming a solid state rather than a liquid state at room temperature. Trans fats are incorporated into endothelial cell membranes and thus can alter cellular and macromolecular components acting at the interface of the blood vessel wall. These alterations could result in changes in the antihemostatic properties, altered vascular tone, hyperadhesiveness to blood leukocytes, and increased cytokine and growth factor production, all of which are characteristics of endothelial dysfunction (De Caterina R.,2000)





### Unsaturated Fat

Figure 3 shows unsaturated carbon atoms, each with one hydrogen atom, joined by a double bond in the cis configuration. .



### Trans fat

Figure 4 shows unsaturated carbon atoms, each with one hydrogen atom, joined by a double bond in the trans configuration.

During hydrogenation of monounsaturated and polyunsaturated fatty acids in vegetable and fish oils, far more trans than cis double bonds are formed. Furthermore, during hydrogenation of unsaturated fatty acids, cis bonds may be converted into trans bonds.

### Sources of Trans Fats

Almost all edible fats from plants contain unsaturated fatty acids in the cis conformation. Trans fats are found naturally in low levels in meat and dairy products because of bacterial hydrogenation of cis-unsaturated fatty acids in the stomachs of ruminant animals. However, the major source of trans fats in the diet is foods containing industrially modified and partially hydrogenated vegetable oils (Chen et al,1995).

As food ingredients, partially hydrogenated oils, compared to naturally unsaturated oils, decrease food spoilage. As a frying medium, however, unsaturated oils tend to become foamy, smoky, or dark colored after prolonged use. Restaurants may prefer to fry with partially or fully saturated fats because these fats need not be changed as frequently (Ismail, 1995). Food manufacturers may also prefer to use saturated fats rather than unsaturated fats in baked goods, candies, or processed snack foods that require margarines, spreads, or shortenings. Saturated oils in these foods will contribute to a desirably soft texture, volume, aeration, and feel of such foods at room temperature.

Most of the trans fat in a typical American diet comes from commercially fried and baked foods made with vegetable shortening, hard margarines, and oils containing partially hydrogenated oils and fats.

### Regulation of Trans Fats

As of January 1, 2006, the FDA has required manufacturers of conventional foods and some dietary supplements to list trans fat on their nutrition labels. Manufacturers of dietary supplements (e.g., energy and nutrition bars) must also list trans fat on the Supplement Facts panel when their products contain reportable amounts (0.5 gram) of trans fat. The FDA has estimated that by 2009, the beneficial effects of this labeling rule (entitled "Trans Fatty Acids in Nutrition, Labeling, Nutrient Content Claims, and Health Claims") will result in

a 0.1% decrease in total trans fat intake by adults. In the U.S. population, such a decrease in trans fat intake would be estimated to lead to a fall in serum LDL cholesterol (a risk factor for myocardial infarction) as a consequence of the expected dietary modifications from this ruling.

In March 2007, the California State Assembly Health Committee approved legislation that would ban the use of trans fats in oils, margarine, and shortening at “food facilities,” including restaurants, cafeterias, and other businesses. The measure would not apply to packaged food sold in either grocery stores or restaurants. If this bill becomes law, then California would be the first state in the United States to ban the use of trans fats.

The ban of trans fat usage in Thailand will be enforced on January 8, 2019. The Public Health Ministry has implemented a ministerial regulation to ban the production, import, and sale of products with partially hydrogenated oils. Those oils are the main source of trans fats, and medical researchers say their elimination will reduce people’s risk of cardiovascular diseases

There are many research on trans fat in food products in Thailand but there is little information regarding alternative of fat replacing trans fat. Jingan, Boonshu and Srimus (2014) researched only on the topic of preliminary survey: trans fat in fried food bakery but they did not provide some suggestion what is trans fat replacement products . As a result of this, there are certain questions about trans fat replacements in food products. The information about trans fat replacement of on this paper is reviewed to help solve Thai food manufactures to select trans fat replacement.

## **Alternatives**

Several factors have limited the introduction of alternatives to trans fats into the marketplace: (1) performance, (2) availability, (3) economics, and (4) safety. Replacement products for trans fats must be able to provide at least the same functional characteristics of the materials they replace. Partial hydrogenation allows creation of many engineered saturated or partially saturated oils with specific characteristics for use by the food industry. No alternate method for creating a wide range of fats for frying and storage of baked products has thus far been developed. The use of trans fat alternatives in major consumer products, such as fast foods, requires a large supply. New candidate oil products are not yet commercially available on a significant scale because of a lack of adequate acreage for growing new seed crops. These oil products could become widely available within a few years, however, if the food industry is committed to their use. The increased costs of developing and producing trans fat alternatives will be passed on to consumers of foods containing these products. The safety of any alternative to trans fats must be studied so that consumers are not simply ingesting an alternate form of saturated fat that will be just as dangerous as natural saturated fats or as trans fats.

The food industry is in the process of searching for alternative oils to trans fats that can provide good flavor, deliver good performance, and be purchased at a good price (Nielsen K. (2006). Much research is currently being conducted to develop new, healthier fats and oils for food production. Vegetable oils have only limited applications in food products when they are used in their native form. They must therefore be modified chemically, physically, or genetically in order to change their properties. When products containing partially hydrogenated fats or oils are reformulated to lower the trans fat content, functionality may require the reformulated products to have more saturated fat than the original product.

### **1.Modified Hydrogenation**

Full hydrogenation of vegetable oils would produce exclusively saturated fatty acids that are too waxy and solid to use in food production. Consequently, the partial hydrogenation process used by the industry is not intended to eliminate all the double bonds. Partially hydrogenated oils increase the shelf life and flavor stability of foods, as well as modify some of the saturated fatty acids that can oxidize and become rancid. Processes under development can generate hydrogenated oils containing less than half the level of trans fat produced under traditional hydrogenation conditions. The standard hydrogenization process can be modified by altering the type of catalyst, the time of the reaction, or the temperature and pressure of the process ( King , Holliday and List (2001) ) . This hydrogenation approach would be expensive on a commercial scale.

## **2. Genetically Modified Seeds**

Plant seeds can be developed through breeding or genetic engineering to be sources of modified oils (Serrano-Vega, Martinez-Force and Garces (2005)). This approach can reduce or eliminate the concentrations of polyunsaturated oils, such as linoleic acid and linoleic acid (containing two double bonds and three double bonds, respectively), that are most responsible for spoiling (Lichtenstein, 2006). Selective breeding programs have created soybean seeds and sunflower seeds with very low levels of unsaturated oils (Cahoon and Shanklin J (2000)). Low unsaturated fat oils are more stable than natural oils made from regular seeds. Plant breeding or genetic engineering can also be used to increase the saturated fat content of seeds to improve stability. High-stearic (saturated fat) and high-oleic (a monounsaturated fat) cottonseed oils are being developed to contain desirable mixes of saturated and unsaturated fats that will be stable in food preparation (Liu, Singhand and Green (2002)). These modified plants will produce oils that are more saturated and stable overall than natural oils, but not overly saturated or waxy where they would not melt properly in cooking. These plant oils with greater saturation than their corresponding natural oils are not industrially hydrogenated and they are virtually free of trans fats. This technology is expensive and not yet widely adopted to produce sufficient supplies of virtually trans-free oils. Consumers of these products will need to obtain essential dietary unsaturated fatty acids from other sources.

## **3. Interesterification**

Interesterification of vegetable oils is currently a widely adopted modification technique for hardening triglycerides contained in unsaturated vegetable oils (Idris and Dian (2005)). Interesterification is a chemical reaction that redistributes fatty acids on the glycerol backbone of a triglyceride molecule by blending fatty acids from more than one type of triglyceride. The rearrangement does not change the composition of any of the fatty acids from the starting materials, and because hydrogenation is not involved, trans fats do not form during this process. Unsaturated vegetable oils are blended with highly saturated oils under specific conditions. New nonnatural combinations of triglycerides with specific melting profiles and functional attributes are formed that are intermediate in hardness between natural unsaturated oils and fully saturated oils. The treated vegetable oils essentially become hardened when the glycerol backbones of these initially unsaturated fats become esterified by saturated fats. This type of chemical reaction can be controlled by sequentially running it below target melting points to initially precipitate the hardest most saturated oils and leave the desired less saturated oils in a liquid form. Later the intended final interesterified end products, which are intended for the food industry, can be isolated.

In a study of lipid levels following ingestion of margarines containing either trans fatty acids or interesterified unsaturated non-trans fatty acids, interesterified fat use resulted in significantly lower total and LDL cholesterol levels (Noakes and Clifton (1998)).

## **4. Fractionation and Blending**

Fractionation involves separating oils into their different components, which are characterized by different physical properties. Natural components of vegetable oils are low in trans fats and can be combined into various combinations (Norlida, Md Ali AR and Muhadhir (1996)). Each particular blended combination can be tailored to the requirements of a food in terms of required cooking and taste properties according to the overall characteristics of the blend (Babji et al. (1998)). This fractionation approach is costly and involves much testing to create optimal combinations of natural ingredients. A method for blending mix oil, water, and monoglycerides to form a multilamellar crystalline gel substance may provide the same structural and functional properties as trans and saturated fats (Idris and Dian (2005)).

## **5. Butter and Animal Fat**

An option for replacing trans fats is a return to butter, lard, and tallow as fat additives because these substances are very low in trans fats. However, these substances are high in saturated fat and cholesterol and extremely atherogenic (Constant (2004)). This approach of using animal fats to create good-tasting foods is not viable because of the adverse metabolic effects of this type of lipid.

## 6. Natural Saturated Oils

Solid vegetable oils were widely used in prepared food until the late 1980s when food companies mostly replaced them with hydrogenated oils made from soy, corn, and sunflower oils. While they are less harmful than fats high in trans fats, they are possibly still more conducive to heart disease than vegetable oils rich in mono- and polyunsaturated fats. Reports claiming and disputing a link between ingestion of natural saturated palm oils and heart disease have been published in recent years (Martinez-Ortiz et al, (2006)). At this point, the overall benefit or risk of palm oils is not established. These fats are probably a better choice than trans fats, for the food industry, but cardiovascular risk is probably reduced most effectively when trans fatty acids and saturated fatty acids are both replaced with cis-unsaturated fatty acid (Mensink et al, (2003)).<sup>39</sup> The approach of using solid vegetable oils as food additives is not attractive because of the suspected link between ingestion of these substances and cardiovascular disease (Pedersen et al, (2005)).

## 7. Natural Unsaturated Oils

One of the healthiest alternatives to using saturated or partially hydrogenated fats is the use of natural unsaturated liquid vegetable oils such as olive, canola, corn, or soy oils. This approach of utilizing unsaturated fats would lead to more rancidity and greater spoilage than is the case with partially or fully hydrogenated or naturally saturated oils (Romero, Bastida and Sanchez-Muniz (2006)). Foods containing unsaturated oils would not have a long shelf life.

## 8. Fat Substitutes

Some companies are replacing partially hydrogenated oils with nonfatty texture-building substances, such as plant fiber or whole oats.<sup>41</sup> In foods, these substances feel and taste like fat (Prindiville, Marshall and Heymann (2000)). Another trans fat-free technology combines emulsifiers with unhydrogenated unsaturated oil to mimic the performance of shortening. These products, when mixed with unhydrogenated oils, enable food companies to claim “zero trans fats” or “no hydrogenation” on food labels (Marangoni et al. (2007)). A microsaturation process that combines unsaturated oils with saturated medium chain triglycerides in a heated and agitated blender has been claimed to produce a dense mixture of fats that fold into each other and could serve as a replacement for saturated or hydrogenated vegetable oils.

## CONCLUSION

There is a growing movement in the United States and other countries including Thailand to ban the use of trans fats. At some point, viable substitutes for these oils will become established by way of one or more technologies that will have the necessary performance, availability, and cost. Because of the requirements for oils with specific properties by the food industry that uses them in frying and baking, a trans fat substitute will need to be closely related in structure to currently available saturated fats that are already known to be risk factors for heart disease. After trans fats are phased out and the food industry replaces them with new saturated or partly saturated fats, the medical community will need to study the next generation of frying and baking oils closely to evaluate their safety. At this time and possibly in the future as well, the best way to avoid trans fats and potentially unhealthy substitutes for trans fats is to minimize the intake of fried foods, packaged baked goods, and snacks.

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# AN ASSESSMENT OF STUDENTS' MOTIVATIONS AND PREFERENCE FOR HOSPITALITY AND TOURISM PROGRAMMES IN NORTH-EAST NIGERIA

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## ABSTRACT

In Nigeria, the hospitality and tourism industry is rapidly gaining recognition. Government investment in the polytechnics and universities offering courses in hospitality and tourism management (HTM) is a pointer to the direction that there is human resource planning to take care of the human resource needs of the ever-growing industry. Presently, there are many universities, federal polytechnics, state polytechnics, private polytechnics and monotechnics offering different levels of certificate, diploma and degree programmes in hospitality and tourism management across the country. It is opined that the student's choice of options within the programmes depends to a larger extent on career aspirations and opportunities in the industry. The issue of study motivation for hospitality and tourism management in the North-east sub-region of Nigeria where this particular profession which was hitherto regarded as a taboo is suddenly being embraced is of a particular interest. Five motivational factors, including 'self-actualisation', 'job opportunity', 'field attractiveness', 'ease of study' and 'scholastic achievement', were delineated from 23 motivational statements drawn from extant researches. Data obtained through structured questionnaire were analysed by descriptive and inferential statistics. Results show that job opportunity and field attractiveness are the strongest motivators. Females show slightly higher motivations than males. No statistically significant difference exists between the polytechnic students and university students in their preference for the profession. It is recommended that both government and the private sector should collaborate to sanitize the industry practice in Nigeria to give the aspiring students into the profession confidence. The hospitality and tourism industry is able to significantly reduce the unemployment and youth restiveness in the North.

**Keywords:** Perception, Study Motivation, Hospitality and Tourism, employment

# THE SOCIO-ECONOMIC IMPACT OF LANGUAGE-IN-EDUCATION POLICY IN ZIMBABWE ON MINORITY LANGUAGE SPEAKERS

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## ABSTRACT

The paper investigates the effects of language-in-education policy in Zimbabwe on minority language speakers. This takes into consideration the fact that the Education Act of 1987 (revised 1996, 2004, 2006) states that the three main languages of Zimbabwe namely Shona, Ndebele and English shall be used as media of instruction and shall be taught in schools. This excludes minority languages since they are not given any recognizable status in education, hence, have no or little written literature. This, then forces the minority language speakers to add to their linguistic repertoire, two more languages, English and either Shona or Ndebele as dictated by the geographical environment in which the school is located. This paper particularly focuses on minority language speakers of Zimbabwe and examines the effects of this forced multi-lingualism socially and economically. The paper argues that sidelining the home language at school brings about the question of language assimilation, accommodation and convergence, which does not only lead to the denigration of the language in question, but also the erosion of a particular people's identity. Thus maintaining a speaker's native language has an affective dimension, that of enhancing the speaker's self-concept, self-esteem and most importantly pride in his or her cultural background and identity. Forced multilingualism in education therefore, does not only impact negatively on minority language speakers' attitude towards education and academic development, but also on the socio-cultural and economic dimension. It undermines particular people's power, status and entitlement. The research findings point to the fact that such social status result in economic marginalization.



# **A SURVEY OF ACADEMIC DISHONESTY HAMPERING DISSEMINATION OF KNOWLEDGE IN SECONDARY SCHOOLS IN YOLA METROPOLIS, ADAMAWA STATE NIGERIA**

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## **ABSTRACT**

Academic dishonesty is a prevailing problem that hampers effective dissemination of knowledge in secondary schools in Nigeria and was investigated in this study. It is an offence that is committed by students and teachers in a bid to achieve cheap academic success. Academic misconduct impacts negatively on the mission of educational system, human capital development and societal values. This paper examines the students' perception of academic dishonesty and frequency of their involvement. Fifty students each were randomly selected from a public, a missionary and Islamic-based secondary schools in Yola, Adamawa State Nigeria. Data obtained through questionnaire were subjected to independent sample tests and two-way ANOVA. There was neither statistically significant difference between male and female students, nor interaction between gender and school ownership in commitment of academic dishonesty. It is recommended that value re-orientation and deterring measures can significantly contribute to behavioural change by students and teachers

**Keywords:** Knowledge management, Academic dishonesty, Perception, Academic success

## **INTRODUCTION**

Knowledge management is a process concerned with identifying, capturing, retrieving, evaluating and distributing knowledge effectively. One challenge hampering effective dissemination of knowledge in the school system is academic dishonesty. Academic dishonesty in secondary schools is a global problem. Both public and private schools seem to suffer the same fate. Even those secondary schools owned by religious organisations which are acclaimed to be more disciplined and morally fine-tuned are not left out of the train.. More and more students seem to be significantly cheating on their tests and assignments and therefore guilty of academic dishonesty.

For their part, students have always exonerated themselves for their involvement in academic fraud but conveniently place the blame on the school, teachers, parents, or society. On the other hand, increasing competition among students as well as the quest to be rated the 'best' by school administrators are actually catalysts for academic dishonesty.

Academic dishonesty is the sum of students' behaviours directed at finding an "easier" way to complete assignments, including cheating on examinations, copying assignments, reusing papers and reports in different classes, unauthorized collaboration with other students, unauthorized assistance from other students such as receiving a copy of a previous semester's examinations, and plagiarism (Smith et al, 2005). A study has shown that the pervasiveness of academic dishonesty has increased and as many as 80-90% of students have admitted to cheating prior to graduation from high school (Murdock, 2006). Worse still, teachers and administrators are known for falsifying students' standardized tests under pressure for high scores

Therefore, it is of paramount importance that continuous research in this direction should be considered necessary in order to find last longing remedies to this social malady, especially in Yola metropolis, Adamawa State, Nigeria. The findings of this research might serve as a basis for designing school rules and regulations to deter students from engaging in this act of adulteration in the educational system

The prevalence of academic dishonesty in the recent times and the way it is compromised by school administrators in disguise for academic excellence leaves many questions to be asked. Do students actually perceive academic dishonesty as unethical? How often do students engage in these practices? Do gender and type of ownership of schools have any effects on academic dishonesty in secondary schools? What can be done to reduce the incidence of academic fraud in secondary schools? These are salient questions.

The objective of this research is specifically to find answers to these raging questions with the following hypotheses:

**H<sub>1</sub>:** There is no significant evidence that secondary school students engage in academic dishonesty

**H<sub>2</sub>:** There is no statistically significant difference between male and female students in academic dishonesty practice in secondary schools

**H<sub>3</sub>:** There is no significant evidence that gender and school ownership could have effects on academic dishonesty among students in secondary schools.

### **Contextual framework**

Academic dishonesty is any type of cheating that occurs in relation to a formal academic exercise. It has been a widely debated issue in the recent times (Brown & Choong, 2005; Chapman, Davis, Toy, & Wright, 2004). Academic dishonesty negates the principle of effective knowledge management at secondary school level.

It is common to find students cheating during tests or examinations, copying assignments, reusing papers and reports in different classes, engaging in unauthorized collaboration with other students, seeking unauthorized assistance from other students such as receiving a copy of a previous semester's examinations and plagiarism (Smith et al, 2005). Reasons often given by many for this unethical behavior include inordinate desire for success (Landon,2005); "teach to the test" by teachers to beat time (Brian & Steven 2003); parental or family background (Carroll, 2002, Decoo, 2002), religious inclination (Decoo 2002); contextual factors such as threat of expulsion, increased punishment for cheating, sophisticated deterrents, unfair treatment by teachers, goal orientation and poor time management (Carroll 2002, Anderman & Midgley, 2004), ethical perception of students about academic cheating (Lupton, Chapman & Weis 2000)); and improved information technology.

No matter the shifting of blame to whoever, the effect of academic dishonesty is disastrous. One of the functions of education is to correct and put the society on the pedal of ethical values, but if on the contrary, dishonest practices have become the bane at the high school level, it therefore means doom for the future (Damast, 2007). Students who are dishonest in class are more likely to engage in fraud and theft on the job when they eventually enter the workplace (Nonis & Swift, 2001). Potential employers use a diploma or a degree as a representation of a graduate's knowledge and ability. However, for the fact that dishonesty pervades the system, not all graduates with the same grades actually did the same work or have the same skills and this makes it difficult to distinguish between which graduates are skilled and which are not. Therefore, there are high chances of engaging quacks. Where students cheat, getting away without achieving the required skills or learning, there will be poor service quality that will be delivered by such students. Employers who are conscious of this will not be willing to pay reasonably for new hire and as such even the honest graduates suffer.

Kisamore, J., Stone, T., & Jawahar, I. (2007) see academic dishonesty as an evil that undermines and interferes with the basic mission of education; the transfer of knowledge, by allowing students to get by without having to master the knowledge, causes emotional distress, discourages morale and destroys reputation

In view of the sad outcome of academic dishonesty, it has become paramount to take a giant stride to fight the problem headlong. Though not all factors causing academic dishonesty are under the teacher's control (Mocorro, 2008), he could yet take some steps to prevent or minimise it. Some of these include informing students of academic standards for scholarship and conduct, explaining how cheating harms students, taking visible actions to detect and minimize the opportunities for cheating and swiftly responding with disciplinary measures should cheating occurs (McCabe & Pavela, 2004).

## METHODOLOGY

The design of this study is a survey. It investigated the incidence of academic dishonesty among secondary school students in three selected secondary schools in Yola metropolis – a public school, a missionary school and a secondary school owned by an Islamic organisation. The sample size consisted of fifty students from each of the secondary schools through simple stratified random sampling. For the purpose of fairness, equal numbers of male and female respondents were drawn from each secondary school. The academic officers (vice principal academics) assisted in the collection of the questionnaire and this guaranteed the 100% return achieved. In order to maintain anonymity, no respondent was required to write name on the questionnaire; no provision for that.

Twelve practices taken from literature on academic dishonesty were included on the questionnaire (Brown and Choong 2004, Bruner, James & Hensel (2001). Respondents were asked to rate the ethical level of each of the practices on a scale ranging from 7, "very unethical," to 1, "not at all unethical." They were also asked to rate how often they had participated in each practice as students on a 6-point scale, where 5 was "Most frequently" and 1 was "Rarely." The sixth point 0 meaning "never." This approach adopted the method of Brown and Choong (2004). The scale allowed the measurement of the proportion of students who had engaged in each practice as well as the frequency of participation in each behaviour

The questionnaire also included 12 reasons taken from the literature as to why students might engage in unethical academic behavior. Respondents were asked to think of students who engage in such behavior and rate the likelihood that each item would be a reason for the behavior. The scale ranged from 7, "very likely," to 1, "most unlikely."

Descriptive statistics were used to determine the nature of and students' involvement in academic dishonesty in secondary schools. The relationship between male and female students' involvement in academic dishonesty was adjudged by 2 Sample T- Test while the influence of gender and school ownership on academic misbehavior was determined by a Two – Way Analysis of Variance.

## FINDINGS AND DISCUSSIONS

Results of descriptive statistics in (Table 1) show that students rated almost all the twelve behaviours listed as unethical or more unethical for mean score of 3.51 – 5.60 (SD = 0.89 – 1.22). However, for a mean score of  $\leq 3.39$ , they were not reasonably convinced that giving false excuse for not meeting a deadline, falsely claiming to have submitted work and giving or obtaining assistance in an examination without permission are unethical. The students 'more frequently' (mean = 2.65 – 2.78) engage in taking credit for group work without fair participation, give or obtain assistance during tests and examinations without due permission and copying from other students

during tests and examinations. For the other dishonest practices, the students admitted that they 'frequently' ( $\mu = 1.67 - 1.93$ ) engage in them.

The Independent Sample Test (Table 2) shows that there is statistically significant difference between male and female students on having someone check over a paper before turning it in, and using examination crib notes at  $P = .029$  and  $.002$  respectively. This means their mean scores are not same. However, for  $P > .05$ , there is no statistically significant difference between males and females on all other academic misconducts surveyed. In other words, the null hypothesis is upheld, indicating that both male and female students significantly engage in these malpractices. This finding concurs with Carroll 2002, Smith et al, 2004, Murdock, 2006)

A two-way ANOVA was conducted to examine the effect of gender and type of school ownership on level of academic dishonesty (See Table 3). There was no statistically significant interaction between the effects of gender and school ownership on academic dishonesty,  $F(2, 144) = 0.049, p = .952$ . While there was no statistically significant difference between males and females in involvement in academic dishonesty at  $p = .894$ , there was also no statistically significant difference between type of school ownership and academic dishonesty,  $P = .429$ .

A Tukey post hoc test results for the different types of secondary schools, from the Multiple Comparisons table (Table 4) show that there is no statistically significant differences between public and missionary schools, public and Islamic schools, and missionary and Islamic schools as they all have p-Value  $>.05$  (i.e. 1.00, .498 and .498 respectively).

Meanwhile the descriptive statistics shows a total mean between gender and school ownership of 2.87 and  $SD = 1.66$ . This translates into saying that males and females, public and private secondary schools, all 'very frequently' engage in one form of academic dishonesty or the other.

## CONCLUSION

Academic dishonesty is a prevailing problem in secondary schools in Nigeria and was investigated in this study. It is an offence that is committed by both male and female students, teachers and school administrators alike. It is caused by student, teacher and environmental related factors. Academic misconduct impacts negatively on the mission of educational system, human capital development and societal values. It is the duty of the teacher and the school administrator to take this problem as cancerous and mobilize resources to combat it.

Some recommendations are made within the context of this paper. There should be value re-orientation among students and teachers so as to see academic dishonesty as an evil that affects not only the future of students but also the reputation of school managers and the human capital structure of the country. While good behavior should be commended, deterring measures and regulations administered by constituted authorities should be put in place. Greater emphasis on ethics and values in existing subjects, addition of more citizenship related subjects to the curriculum, or adopting different teaching methods would eventually bring about the desired behavioral change. It is also not out of place to involve parents through PTA activities. In addition, overemphasis and greater pressure for paper grades should give way to development of talents that contribute to national growth. Not to say the least, high cost of education, be it in public or private schools, should be checked by government. Sometimes, a student engages in misconduct to avoid failure that will make him pay school fees twice.

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## Appendices

**Table 1: Ethical Level and Students' Involvement in Academic Dishonesty**

S/N	Academic Dishonest Practices	Ethical Level		Frequency	
		$\mu$	$\delta$	$\mu$	$\delta$
1	Having someone check over a paper before turning it in,	4.81	1.21	1.92	2.10
2	Giving information about the content of an exam to someone who has not yet taken it,	5.07	1.22	1.93	2.09
3	Using exam crib notes,	5.51	.96	1.81	1.30
4	Turning in work done by someone else as one's own,	5.44	.79	1.99	2.68
5	Taking credit for full participation in a group project without doing a fair share of the work,	3.51	.89	2.74	1.67
6	Visiting a teacher to influence a grade,	5.55	.85	1.92	2.12
7	Giving a false excuse for missing a deadline or falsely claiming to have submitted work.	3.39	.82	2.39	1.64
8	Giving or obtaining assistance in an examination without due permission.	3.36	.88	2.65	1.49
9	Giving money to obtain test answers	5.34	1.03	1.67	1.33
10	Assuming a student's identity with intent to provide an advantage for the student	5.58	.89	1.76	1.31
11	Sharing your own work with another student to help him or her satisfy a course requirement.	5.60	.85	1.72	1.38
12	Copying from another student during a test or exam with or without his or her knowledge.	5.49	.86	2.87	1.66

**Table 2: Male vs Female Participation in Academic Dishonesty**

	Academic Dishonest Practices	Male $\mu$	Female $\mu$	t	p-Value
1	Having someone check over a paper before turning it in,	2.29	1.55	2209	.029
2	Giving information about the content of an exam to someone who has not yet taken it,	1.88	1.97	-273	.785
3	Using exam crib notes,	2.13	1.48	3.172	.002
4	Turning in work done by someone else as one's own,	1.92	2.07	-335	.739
5	Taking credit for full participation in a group project without doing a fair share of the work,	2.96	2.52	1620	.107
6	Visiting a teacher to influence a grade,	2.07	1.77	.846	.400
7	Giving a false excuse for missing a deadline or falsely claiming to have submitted work.	2.27	2.52	-944	.347
8	Giving or obtaining assistance in an examination without due permission.	2.65	2.65	.000	1.000
9	Giving money to obtain test answers	1.64	1.69	-245	.807
10	Assuming a student's identity with intent to provide an advantage for the student	1.77	1.75	-124	.901
11	Sharing your own work with another student to help him or her satisfy a course requirement.	2.03	1.41	2790	.006
12	Copying from another student during a test or exam with or without his or her knowledge.	2.89	2.85	.147	.884

**Table 3: Tests of Between-Subjects Effects**

Dependent Variable: Copying from another student during a test or exam with or without his or her knowledge.

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	5.153 <sup>a</sup>	5	1.031	.364	.872
Intercept	1238.407	1	1238.407	437.685	.000
GENDER	.060	1	.060	.021	.884
SCHOOLS	4.813	2	2.407	.851	.429
GENDER * SCHOOLS	.280	2	.140	.049	.952
Error	407.440	144	2.829		
Total	1651.000	150			
Corrected Total	412.593	149			

a. R Squared = .012 (Adjusted R Squared = -.022)

**Table 4: Multiple Comparisons**

Dependent Variable: Copying from another student during a test or exam with or without his or her knowledge.

Tukey HSD

(I) Sec School	(J) Sec School	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Public	Missionary	.0000	.33642	1.000	-.7967	.7967
	Islamic	.3800	.33642	.498	-.4167	1.1767
Missionary	Public	.0000	.33642	1.000	-.7967	.7967
	Islamic	.3800	.33642	.498	-.4167	1.1767
Islamic	Public	-.3800	.33642	.498	-1.1767	.4167
	Missionary	-.3800	.33642	.498	-1.1767	.4167

Based on observed means.

The error term is Mean Square(Error) = 2.829.

# **CORPORATE GOVERNANCE IN THE MANAGEMENT OF NIGERIAN POLYTECHNICS: ISSUES AND CHALLENGES**

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## **ABSTRACT**

Polytechnics as an institution of learning are viewed by the society as centres that are catalysts in transforming knowledge into wisdom. Many researches have been conducted in the area of corporate governance. However, few works have been carried out on the compliance of corporate governance principles in relation to management of Nigerian tertiary institutions. The few papers that were found were on universities. This study intends to fill the existing gap. It examines issues and challenges relating to corporate governance in the management of Nigerian Polytechnics. There were many Issues in the management of polytechnics education which attributed to various factors by different authors and researchers, however, corporate governance is a major factor to this unstable structure in Nigerian polytechnics education. This study is conducted using Federal Polytechnic Kaura Namoda and Nuhu Bamalli Polytechnic Zaria. In view of these contestations, the design of this study is based on conceptual and empirical literature, which is used to explain and to propose an institutional ethical approach.

**Keywords:** Corporate governance, Compliance, Ethics, Nigerian polytechnics.



# **IDENTIFICATION AND REDUCTION OF CHILDREN'S MATH DIFFICULTY AND THEIR MISCONSTRUED MISBEHAVIOR**

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## **ABSTRACT**

The study, established that Grade I pupils have difficulties in Math like controlling skills/hand and eye coordination, focusing on test, left-to-right visual skills/math calculations /understanding and writing symbols and, math calculations. For the gathering of data, the researcher used a checklist to guide him in observing one subject-child every Math class. The parents/carers and teachers of participants were also interviewed focusing on the checklist. The misconstrued misbehaviors manifesting the learning difficulty in relation to math among the subjects are grouped into four areas namely; head, arm-hand, shoulder-waist, and waist-foot. For the reduction of children's learning difficulty and their misconstrued misbehaviors, a movement-based learning exercise was recommended as additional intervention.

Key Concepts: Math Difficulty; Misconstrued Misbehavior

# IS THERE REAL FREEDOM OF SCHOOL CHOICE? AN ANALYSIS FROM CHILE

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## ABSTRACT

Between 1981 and 1990, Chile began to implement an education reform based on school choice and a financing system through vouchers. In theory, the system ensures complete freedom of choice of school by families. This paper attempts to identify the existence of factors that conditioned the enrolment process in the different types of schools existing nowadays in the Chilean educational system, the largest quasi-market of Latin America. Results show a social stratification and separation by schools and indicate how geographical distance and social composition are the most critical factors for families when choosing a school.

**Keywords:** School Choice; Social Class, Quasi-Markets; Voucher, Chile

## INTRODUCTION

Between 1981 and 1990, during the military dictatorship, Chile implemented an ambitious education reform based on school choice and a financing system through vouchers (Delannoy, 2000). This reform of the educational system and subsequent reforms were aimed at improving the quality of education through the interaction between free choice for families and competition between schools for students. Parallel to this process, there has been a significant increase of the private sector share in education, especially private subsidised schools.

Although the voucher system is universal, and therefore every family can benefit from it, some studies show that the free school choice policy applied in Chile has resulted in a significant increase in social stratification between schools (Hsieh and Urquiola, 2006; Elacqua, 2012; Mizala and Torche, 2012). Specifically, there is a higher concentration of students from families with low socioeconomic status in public schools than in private schools. This increased separation can be explained by differences in the processes of choosing a school among families, as well as by the strategies developed by educational providers to select their students.

From the perspective of families, the educational policies implemented in Chile have been established assuming symmetric information and that families' school-choices are based on quality criteria. However, several international studies show that the costs of getting quality information are not equal for all families and many of them choose schools not strictly based on criteria linked to their educational quality (Karsten et al., 2001; Ball, 2003, Waslander et al., 2010). In addition, the academic literature shows how, in competitive environments, schools develop strategies to avoid being chosen by certain families while they enhance their opportunities to select the best students (Yair, 1996; Hoadley, 1999; Broccolichi and Van Zanten, 2000).

This paper analyses the factors affecting the choice of different providers by families and the role of provider behaviour in these decisions. The results reveal the importance of social class, information and family expectations on school choice. This conclusion, like Saporito (2003), Schneider et al. (2006) and Alegre and Ferrer (2010), show a social stratification and separation by schools and indicate how distance and social composition are the most critical factors for families when choosing a school.

The study is divided into five distinct sections. First, we introduce the main features of the Chilean education system, with particular emphasis on the different types of providers and the system characteristics that influence families' choice of schools. Second, we review the literature on the determinants of school choice by families and their consequences in terms of social stratification. Third, we discuss the methodological aspects of our analysis based on the description of the database and the variables used. Fourth, we present the results obtained based on the types of schools currently available in the Chilean education system. Last, we present our main conclusions.

### **The Chilean Education System**

During the 1980s, and in the context of the neoliberal reforms that were carried out in multiple sectors, Chile implemented an educational reform based on school choice and competition between schools. Because of these reforms, the Chilean education system has become the largest quasi-market of Latin America.

These reforms are characterized by the creation of a single system of public financing - voucher system- in which the government pays a fixed amount for each student enrolled in public or subsidized private schools. Moreover, another element that characterizes this model is the decentralization to the local level of the management of public schools (Bellei, 2007). About 90% of Chilean students in primary and secondary schooling have their educations funded through this voucher system (Paredes and Ugarte, 2011). At the same time, families have total freedom of school choice without any type of school zoning system.

Figure 1 shows the evolution of enrolment at all educational levels, except for higher education, by type of school. In the Chilean education system there are four types of schools: municipal public schools administered by local governments; subsidized private schools funded from the voucher system; private schools fully financed by families and, a fourth type established by corporations, which consists of technical secondary schools run privately but publicly funded. Because this study focuses on the primary level, we look at only the first three types.

As can be seen in figure 1, during the 1980s, and as a result of the educational reforms implemented during decade, the percentage of students enrolled in private schools (subsidized and non subsidized) increased dramatically, from 22% in 1981 to 40% in 1990. Moreover, it was beginning in 1999 when enrolment in subsidized private schools increased significantly again. As a result of this process, and based on the data from 2013, there is now a higher percentage of students enrolled in private schools than in public schools.

Although some reforms have been implemented over the past two decades to increase the resources of the lowest performing schools and aid the most vulnerable students<sup>1</sup>, the essential characteristics of the education system established in the early 1980s have remained intact (OECD, 2004; Hsieh and Urquiola, 2006).

One of the reforms implemented had a direct impact on the school choice process. The Shared Financing law (*Ley de Financiamiento Compartido*), approved in 1993, authorized subsidized private schools to collect a compulsory fee from families in exchange for a discount based on the amount charged in funding received through the public voucher system. Elacqua et al. (2013) argue that this policy increased separation because it encouraged segmentation within the subsidized private sector.

Regarding the information made available to families, it should be noted that the results of the national evaluation of schools are published annually and made available to families so that they know the average performance level of all schools. This information is widespread through many different ways. Every year all families received a report about the performance of the school where the children are attending and the performance of the rest of the schools of the municipality. At the same time, this information is available on Internet. About the possible asymmetries of information between rich and poor families, Zancajo et al. (2014) have shown how the majority of families know the performance of the school where they are attending and the

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<sup>1</sup> An example of this is the Preferential School Subsidy Act (*Ley de Subvención Escolar Preferencial*) adopted in 2008. It provides for a grant in addition to the regular subsidy received, for the schools that concentrate a larger proportion of vulnerable pupils. These additional funds are linked to the development of a plan to improve the school and an increase in national assessment results in educational performance.

differences between social groups consists in the importance of this information during the process of school choice.

### **Educational Quasi-Markets and School Choice**

Academic freedom and with it, the choice of school, have emerged as unifying principles of the Chilean educational system from the 1980s. Proponents of school choice policies argue that a greater choice capacity among families increases competition among schools and generates efficiency improvements in the overall system. They also argue that students from low-income families will benefit from the opportunity to attend higher quality schools (Chubb and Moe, 1990; Hoxby, 2000; among others).

However, opponents of school choice have warned that such policies may intensify the processes of stratification and separation between schools. These negative effects may be explained by supply and demand behaviour in the context of educational quasi-markets (Saporito, 2003; Alegre and Ferrer, 2010; Waslander et al., 2010). From this perspective, several studies have revealed differences in the way families collect and use information, a key element in the process of school choice, and related to their socioeconomic status (Schneider et al., 2000; Karsten et al., 2001; Ball, 2003). They also highlight the use of criteria in school choice among families that are not strictly related to the quality of schools (Elacqua et al., 2006; Härmä, 2009). In many cases, factors such as the social composition of the school and its distance from home may help explain families' final choices and be of greater importance than indicators that may be more directly related to the educational quality of schools. Results from Hastings et al. (2005) show how the families' preferences vary according to their socioeconomic status. Families who value academic criteria are more likely to be enrolled in high performing schools while the families enrolled in low performing schools value lesser extent academic aspects.

The empirical evidence for the Chilean case confirms these patterns. Schneider et al. (2006) show how distance and social composition are the most critical factors for families when select a school. This same study shows that choosing based on strict criteria of quality of schools is much more common among families with greater educational capital. Moreover, it also shows that one of the effects of educational reform in Chile has been the exodus of middle-class students from public schools, therefore increasing the concentration of students from low socioeconomic backgrounds in these schools (Hsieh and Urquiola, 2006). In this sense, Chumacero et al. (2011) show how low-income and less educated families have high probabilities to choose the nearest school to their home. In contrast, Gallego and Hernando (2009) don't find income and education level of family as a determinant of choice. For these authors higher educational expectation of parents about their children reduces the effect of distance and price in the process of choice.

A selection process carried out by schools is another element that directly influences family choice. A study by Contreras, Sepúlveda and Bustos (2010) based on 2005 data, reveals that 30% of students had to pass some kind of selection process, one mainly based on academic ability. These selection processes were much more frequent in subsidized private schools (55%) than public schools (6%). The authors identify two effects caused by the selection process: one, a direct effect, as it permits schools to select students that are less costly to educate and, two, an indirect effect, as it impacts on the social composition of the school.

These selection processes enable a school to "improve its market position without improving the quality of its educational services" (Bellei, 2007:28). Therefore, and according to this author, the competition between schools is focused on attracting the best students and not on improving educational quality. In this regard, the study by Contreras et al. (2010) shows how these selection processes directly affect the average performance of the schools that use them.

Finally, another factor that can influence school choice is the level and type of school (public, private and subsidized private) available nearby. Elacqua et al. (2012) show that the majority of students attending a low-performing school have no school of higher quality nearby. They add that in cases where alternatives do exist, they are not accessible to all families, due to the existence of selection processes and/or monthly fees. In this sense, Hastings and Weinstein (2007) show how even with high levels of information of school performance is most probably for parents to choose a high-performance school if these schools are closed to their homes.

### **Descriptive Analysis**

The data used in this paper comes from the Education Quality Measurement System (SIMCE<sup>2</sup>). This educational assessment is administered annually to students in different grades of the Chilean education system. Specifically, the 4th grade students are tested annually while the 8th and 10th grade are evaluated every two years. These tests analyse various competencies, including reading or math, and a family context questionnaire is also administered.

In this paper we used the data from 2011. We have selected students from 4th grade, which corresponds to those students whose families most have recently undergone the process of choosing a school. The initial sample included 230,911 observations, 10,806 of which were deleted because school or family information was missing.

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<sup>2</sup> SIMCE: System to Measure the Quality of Education (*Sistema de Medición de la Calidad de la Educación*).

All the variables that could be considered, based on the theoretical background and empirical evidence, as potential determinants of school choice were selected (see table 1). First, and as a principal and dependent variable of analysis, is the type of school. In the case of the Chilean education system, there are three types: public, subsidized private, and private.

Second, are variables related to school characteristics: location (urban or rural), number of schools by municipality and access requirements. This last variable is constructed based on the answers families give to different questions regarding the selection process in the context questionnaire. Two of the possible answers were considered as revealing potential requirements of selection: providing a certificate of family income and passing an entrance exam.

Third, the level of family information about the school. This variable was constructed taking into account if the family knows the pedagogical project, the pedagogical objectives and the codes of conduct of the school. Fourth, the information about the educational expectations of students' families and the reasons expressed for school choice.

Four, we constructed a variable related to the family background: an index of socioeconomic status (SES). This variable was constructed based on four variables included in the database: level of family income, father's education, mother's education, and number of books at home. The weight of each variable in constructing the index was calculated using categorical principal component analysis method (Jolliffe, 2002; Shaw, 2003). The level of missing values for these variables was: family income (9.4%), father's education (13.7%), mother's education (9.9%), and number of books at home (9.4%). The observations with two or more missing variables were deleted and in the other cases, the values were imputed using linear regressions for metric variables and logistic regressions in the case of categorical variables (OECD, 2008). Finally, other variables were constructed: student gender and continuity at the same school between preschool and primary. Additionally, we add the grade retention as a control variable.

The descriptive results indicate the importance of private schools in the Chilean education system. Sixty percent of all students are enrolled in private schools and 52% specifically in subsidized private schools. Another important characteristic of the Chilean education system is the low level of students who attend to schools in rural areas; only 11% of students are enrolled in a school situated in these areas. School supply statistics show the enormous disparities across the country resulting from the uneven concentration of the population. While on average, in each commune (municipality) families have approximately 50 schools available to choose from, this is not the real situation, as there is wide geographic variability ranging from having just one school available to

having more than one hundred. This situation can be observed seeing the histogram in figure 2. In addition, the sample does not take into account small municipalities without schools in their territory. In the case of access requirements, results show how 36% of schools request a prior exam or a certificate of family income as a condition for enrolment.

Regarding families, the information they have about the school and their expectations regarding the educational attainment of their members is relatively high, although with high variability at the same time. In addition, there are multiple reasons given as first reason for school choice. This issue is analysed separately in the second part of this paper. There are no differences in enrolment by gender. Around 50% of the students have moved from the school where they were enrolled during preschool. Finally, 12% of students in the sample have repeated one or more courses.

Table 2 shows the distribution of the students in the three types of schools by school location (rural and school supply), access requirements, family characteristics (information about the school, educational expectations and SES), and the individual characteristics of the student (gender and continuity at the same school).

First, the results show that public education provides a monopoly service in rural areas, where the dynamics of the education market seem not to have penetrated. Of the students who attend rural schools the 74.77% go to public schools. This percentage indicates an overrepresentation of this type of school. By contrast, in this area private schools have a limited presence.

At the same time, the density of schools by municipality shows another reality regarding the spatial distribution of schools in Chile. While the public schools are distributed priority in areas with low educational supply, subsidized private schools are relatively more implanted in zones with high supply. Finally, the fully private schools are more concentrated in medium supply areas.

Second, the analysis of access requirements shows very different results depending on type of school. While the total number of students admitted to the school without any requirement has a distribution mainly focuses in public schools, when there is any access requirements (medium or high) clearly most are located in private schools. In particular, it draws attention the existence of greater requirements for subsidized private schools.

Third, we find that families have a high level of knowledge regarding certain of the aspects central to schools' educational policy. In this context, families that send their kids to fully private schools show greater knowledge, followed by parents who send their kids to subsidized private and public schools. Clearly, the families with minor information about the school have a major presence in the public school. At the same time, family



educational expectations regarding children are higher at private schools in comparison with subsidized private and public schools.

Four, the results observed for the crossing between SES and school typology show that a higher percentage of students from families with the lowest levels of SES (SES1 and SES2) attend public schools, while a higher percentage of students from families with medium levels of SES (SES3 and SES4) attend subsidized private schools. Students from the families with the highest level of SES (SES5) are almost exclusively enrolled in private schools.

Finally, the data on students' characteristics (gender and continuity) not show big differences between types of schools.

Table 3 shows the distribution of the reasons given for school choice by type of school. The different responses are sorted by their weight in the total percentage. First, the proximity of the school to the student's home has been the main reason for choice of school for almost 40% of the total. At the same time, the distribution by school type indicates that the vast majority of students whose families give this as their main reason for choice are enrolled in public schools.

The second most frequent reason given is school educational excellence (16% of the total). This aspect is very important to the families who choose to educate their children in private schools. It should be noted that while information regarding school quality as indicated by student test scores on standardized tests is fully public and accessible to the entire population, there might be problems of asymmetric information between families.

The third most common reason given for choosing a school (accounting for 13% of respondents) is religious orientation. Here we must note that this was the main reason given by families choosing to enrol their children in private schools. Lastly, while it was mentioned by less than 7% of the total, we want emphasize the importance of order and discipline at the school for families who choose to enrol their children in subsidized private schools.

## RESULTS

From the sample selection described above, and given the unordered characteristics of the response variable, we estimate the following multinomial logistic model in order to know the main determinants of school choice:

$$\log \frac{\Pr(Y=j)}{\Pr(Y=j')} = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k,$$

where there are  $j$  categories of the response variable. The model consists of  $j-1$  logit equations, which are fit simultaneously. Multinomial logistic regression allows each category to be compared to a reference category, providing a number of logistic regression models (Long and Freese, 2006; Zelterman, 2006). Table 4 shows the results obtained.

First, rural context is an element that negatively affects the likelihood of attending a private school. This is the logical consequence of, as mentioned above, the existence of only public schools in certain geographic areas.

Secondly, the variable indicating the density of the supply presents an interesting result because it incorporates school location. The probability of attending a public school decreases as the total supply increases. Therefore, and in line with the findings regarding rural context, public schools are more prevalent in sparsely populated areas. A higher density increases the likelihood of attending to the subsidized private schools. In the case of private non-subsidized schools, their preference to settle in communities with an average density of schools is clear.

Third, access requirements (prior examination and /or certificate of family income) are revealed useful resources for selecting students in the case of subsidized private schools, especially when both requirements are necessary to be considered for enrolment. At the same time, the weight of these access requirements is lower at fully private schools (in the case of the two requirements being simultaneously requested). This fact could indicate that the subsidized private schools, free to set their fees for attendance, use this mechanism as a means for student selection and have no need to use other means.

Fourth, the degree of family information regarding the school the student attends corresponds to an increase in the probability of attending a private school. This trend is accentuated in the case of fully private schools. This result can be explained by the existence of greater diversity in the case of private schools and, therefore, the need for families to make greater efforts to obtain information about these schools. However, it also reveals that the families of middle and upper class students, very present in the private sector, are more likely to seek information on the quality of schools, either through SIMCE data, information offered by the schools themselves, or through private networks.

Fifth, the expectations of the family regarding the highest educational level that the student can achieve have a direct relationship with the probability of choosing a private school and, especially the fully private school.

Sixth, regarding the probability of families indicating a specific "main reason for choice of school" we find the following results: for families that enrol their children in public schools, being the only school in the municipality is the most prominent reason for this choice. In addition, other reasons that increase the likelihood

of a student enrolling in public school are, in order of importance, cost, that it is the only one that accepts the student, and proximity to home. All the above aspects have no relation with elements of educational quality. Regarding subsidized private schools, several factors share importance in families' decisions. Here we find religious orientation, order and discipline in the school and the quality of the facilities are the more relevant aspects. In the case of non-subsidized private schools, emphasize is placed on bilingualism and to a lesser extent, values. We can infer that bilingualism reflects other important factors for the families of potential students, such as academic excellence, facilities and discipline.

Seventh, the synthetic indicator for socioeconomic status (SES) shows an inverse relationship with the probability of attending a public school. Therefore, it is clear that this variable is a central element when families choose the school where their children will go. In the case of private schools the odds ratio indicates that the higher the student's SES, the more likely he/she is to attend this type of school. Specifically in the category SES5, the probability of attending a fully private school is huge.

Eighth, the likelihood related to continuity (defined as staying at the same school from pre-school to primary) is higher in the case of fully private school in comparison of the public school. In contrast, it is a negative for enrolment in subsidized private schools. Gender is not a decisive aspect.

Finally, as for the robustness of the regression, the sample size and the percentage of correct predictions of the estimated model (more than 70%) is considered in the literature to be a relatively high degree of reliability.

## **CONCLUSIONS**

This paper has analysed the factors that affect families' choice of school and the role of provider behaviour in that choice. To do this we used the System for Measuring the Quality of Education (SIMCE) database for 4th grade students for year 2011.

The initial descriptive analysis yielded information on the wide participation of private schools, which account for 60 % of the students enrolled in the Chilean educational system in a context of significant socioeconomic differences among the potential users of the three types of existing schools. In terms of demand, significant differences were observed when analysing enrolment by social class for each school type and we found clear differential characteristics regarding families' primary motivation for school choice.

The regression results reveal the importance of social class, information and family expectations on school choice. In addition, consistent with what we observed in the bivariate analysis, it was possible to establish the existence of differences in terms of the geographic location of the schools and the access requirements requested. Moreover, and about the main reason for school choice expressed by the families, there is a clear

relationship between the types of school and the general economic situation of the family. Lastly, we find that gender is not a factor in the choice of school, and retention has a different impact between the two private school typologies. This conclusion, like Saporito (2003), Schneider et al. (2006) and Alegre and Ferrer (2010), show a social stratification and separation by schools and indicate how distance and social composition are the most critical factors for families when choosing a school.

Overall, the descriptive analysis and the subsequent regressions show how school choice is strongly influenced by families' socioeconomic characteristics. This relationship can be explained by the existing asymmetry in the information available to families. In this sense, further research would be necessary to expand the evidence regarding the costs of obtaining information by family socioeconomic level and how these potential costs influence the different criteria used in the school choice process.

One of the least explored areas in both the Chilean context and internationally is the effect of the strategies developed by educational providers to affect the school choice process. The selection of students or the concentration of school supply in specific areas can have a decisive influence on the election process. Analysis of these conditions is of interest not only from the point of view of access. The results of school choice have important effects on equity and the efficiency of the system through separation and peer effects that may occur. The governments should consider these consequences in the moment to design the system of financing education.

Finally, it is important to note that data available presents some limitations. On one hand, some of the variables used as predictors are collected after the process of school choice. This is the case of the level of information that family has about the school, educational expectations regarding the maximum educational level that can be achieved by the students and the reasons for school choice. Because of the above must be some caution when interpreting the results.

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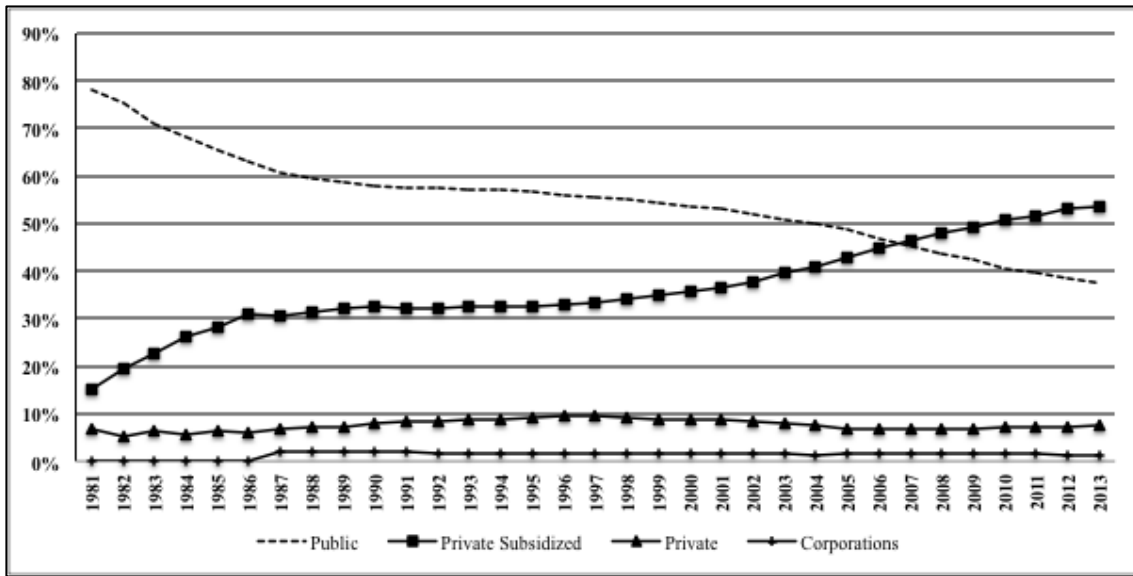
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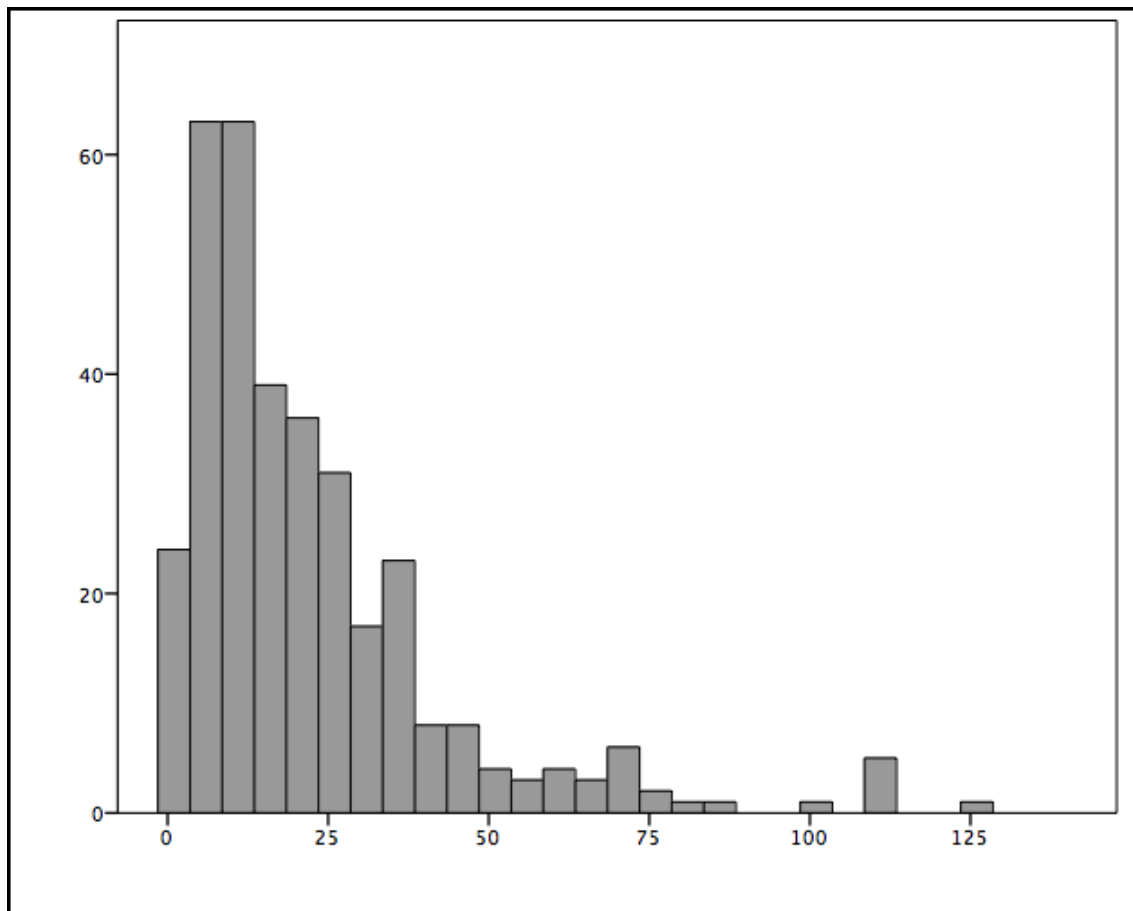
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Figure 1. Evolution of enrolment throughout the Chilean education system by type of school (primary and secondary education). Period 1981 – 2013.



Source: Compiled from the Chilean Ministry of Education.

Figure 2. Histogram of municipalities by school supply



Source: Authors from SIMCE 2011.



Table 1. Description of variables

Type of variable	Description	N	Mean	Stand. deviation	Min	Max
Type of school	Public	220105	0.40	0.489	0	1
	Subsidized private	220105	0.52	0.499	0	1
	Private	220105	0.08	0.269	0	1
Rural	<i>Dummy</i> . Value 1 if school is located in a rural area.	220105	0.11	0.312	0	1
School supply	Number of schools in municipality.	220105	50.91	32.51	1	128
Access requirements	Indicates the existence of previous requirements of access to the school. Elements considered as requirements are: prior exam or certificate of family income.	213141	0.36	0.534	0	2
School information	Indicates the level of information the family has about the school pedagogical project, the educational objectives and school rules.	205661	2.39	0.871	0	3
Educational expectations <sup>a</sup>	Indicates family expectations regarding the maximum educational level that can be achieved by the student.	202543	2.95	0.607	1	4
Reasons for school choice	Indicates the main reason for school choice.	197508	4.49	3.894	1	13
SES	Socioeconomic status. Index based on family income, educational level of parents and books at home. This index has been recoded into five quintiles.	209703	2.99	1.413	1	5
Gender	<i>Dummy</i> . Value 1 for women.	220105	0.49	0.499	0	1
Continuity	<i>Dummy</i> Value 1 if student is enrolled at the same school where he was enrolled during the pre-school.	208032	0.49	0.497	0	1
Retention	<i>Dummy</i> . Value 1 if the students has repeated course.	209307	0.12	0.333	0	1

<sup>a</sup> The variable expectations has 4 categories: 1 (less than secondary education), 2 (secondary education) 3 (higher education), 4 (postgraduate).

Table 2. Descriptive analysis by school typology (in %)

		<b>Public</b>	<b>Subsidized private</b>	<b>Private</b>
Rural		74.77	23.93	1.30
School supply <sup>a</sup>	Low	51.58	42.66	5.75
	Medium	35.12	54.17	10.71
	High	32.52	60.49	6.98
Access requirements <sup>c</sup>	Null	53.60	41.87	4.53
	Medium	13.10	73.15	13.75
	High	5.36	85.82	8.82
School information <sup>b</sup>	Null	56.73	41.02	2.25
	Low	47.33	49.17	3.50
	Medium	43.03	52.29	4.68
	High	34.69	55.32	9.99
Educ. expectations	Low	71.40	28.43	0.17
	Medium	62.91	36.98	0.10
	Medium-high	38.75	57.09	4.16
	High	15.89	52.57	31.54
SES	1	67.66	32.33	0.01
	2	54.09	45.85	0.16
	3	40.88	58.89	0.23
	4	28.12	70.38	1.49
	5	9.74	55.61	34.66
Gender	Women	34.36	52.91	7.73
	Man	39.88	52.19	7.92
Continuity	Yes	37.90	56.75	5.35
	No	40.91	49.31	9.79
Total		39.62	52.55	7.83

Source: Authors from SIMCE 2011. <sup>a</sup> Low: 1-30 schools by commune; Medium: 31-61 schools; High: 62-128 schools. Each category with 33% of the share in the survey. <sup>b</sup> The variable has been constructed based on knowledge of the school pedagogical project, educational objectives and school rules. <sup>c</sup> The requirements considered have been previous exam and certificate of family income. Null: no requirements, Medium: one requirement; High: two requirements. The sum of each row is 100%.

Table 3. Descriptive analysis by school typology (in %)

<b>Reasons for school choice</b>	<b>Public</b>	<b>Subsidized private</b>	<b>Private</b>	<b>% of total</b>
Proximity	54.40	43.26	2.34	40.40
Excellence	26.43	62.01	11.56	15.70
Religious orientation	5.82	75.77	18.40	12.59
Order and discipline	29.83	67.43	2.75	6.34
Siblings at school	37.41	52.98	9.60	6.05
School climate	36.25	55.07	8.68	3.72
Facilities	31.94	61.46	6.60	3.43
Other options	37.41	52.13	10.46	11.77
<b>Total</b>	<b>39.62</b>	<b>52.55</b>	<b>7.83</b>	

Source: Authors from SIMCE 2011. The sum of each row is 100%.

Table 4. Multinomial logistic regression results

		<b>Base Outcome: Public</b>	
		<b>Subsidized private</b>	<b>Private</b>
Rural		<b>0.4103 (0.0088)</b>	<b>0.5112 (0.0439)</b>
School supply	Low	Reference category	
	Medium	<b>1.3924 (0.0211)</b>	<b>1.6403 (0.0535)</b>
	High	<b>1.4952 (0.0288)</b>	0.9611 (0.0323)
Access requirements	Null	Reference category	
	Medium	<b>4.5726 (0.0709)</b>	<b>5.9303 (0.1666)</b>
	High	<b>12.8811 (0.8961)</b>	<b>8.2501 (0.7550)</b>
School information	Null	Reference category	
	Low	<b>1.2261 (0.0423)</b>	<b>1.3865 (0.1550)</b>
	Medium	<b>1.3210 (0.0449)</b>	<b>1.8896 (0.2072)</b>
	High	<b>1.4598 (0.0472)</b>	<b>3.1256 (0.3306)</b>
Expectations	Low	Reference category	
	Medium	1.0484 (0.0613)	0.5178 (0.3057)
	Medium-High	<b>1.2478 (0.0720)</b>	1.6162 (0.8929)
	High	<b>1.4300 (0.0881)</b>	<b>4.7017 (2.5992)</b>
Choice reasons	Others	Reference category	
	Proximity	<b>0.8121 (0.0240)</b>	<b>0.4359 (0.0256)</b>
	Excellence	<b>1.1738 (0.0379)</b>	0.9278 (0.0532)
	Values / Religion	<b>7.9844 (0.3325)</b>	<b>8.7940 (0.5567)</b>
	Order and discipline	<b>1.8293 (0.0671)</b>	<b>0.6615 (0.0567)</b>
	Siblings at school	1.0559 (0.0389)	0.9716 (0.0665)
	School climate	<b>1.2156 (0.0504)</b>	1.1254 (0.0882)
	Facilities	<b>1.4639 (0.0618)</b>	<b>1.2125 (0.1028)</b>
	Friends at school	<b>1.2681 (0.0710)</b>	<b>0.7317 (0.1034)</b>
	Economic	<b>0.7111 (0.0317)</b>	<b>0.1981 (0.0312)</b>
	Only one school in municipality	<b>0.1458 (0.0140)</b>	<b>0.0774 (0.0229)</b>
	Only one school which accepts the student	<b>0.7751 (0.0608)</b>	0.8445 (0.1429)

	Bilingual	1.3110 (0.0822)	6.3510 (0.5712)
SES	1	Reference category	
	2	<b>1.2493 (0.0241)</b>	<b>3.0175 (1.6625)</b>
	3	<b>1.6772 (0.0329)</b>	<b>10.6657 (5.4791)</b>
	4	<b>2.4900 (0.0521)</b>	<b>78.3014 (39.4332)</b>
	5	<b>4.7124 (0.1249)</b>	<b>3061.945 (1537.693)</b>
Female		0.9848 (0.0121)	<b>0.9229 (0.0233)</b>
Continuity		<b>0.8302 (0.0104)</b>	<b>1.7684 (0.0466)</b>
Control variable (Grade retention)		SI	SI
N		171.355	
Log-Likelihood		-103706.82	
Prob > chi2		0.0000	

Coefficient values: *odds ratios*. In brackets: standard error. Bold: significant values (95%). Correctly predicted probabilities: 70.39 %.

# STUDY ABROAD STUDENTS IN SALAYA, NAKORNPATHEM AND THEIR CONTRIBUTION TO THE LOCAL ECONOMY: GUIDELINES FOR THE LOCAL COMMUNITY

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## ABSTRACT

Abstract - The impact of study abroad has been identified by many scholars. Most of the studies center around the influences and benefits on the student themselves, but far less on the communities where they stay. This study aims to examine the financial contribution of study abroad students on their host communities. The data was collected from 20 international students undertaking short-term study abroad in Salaya, Nakornpathom on their one-month expenditures through the use of a personal finance mobile application. An in-depth interview was later conducted to identify the rationale behind their spendings within Salaya area. The results show that study abroad students have slight positive impacts on their local community and only on particular products and service categories. The students' minimal financial contribution was caused by their perception of limited activities and services in the community. Finally, suggestions are provided for the host communities to sustainably benefit from study abroad activities.

**Keywords** - Financial Contribution, International Student, Local Economy, Nakornpathom, Study Abroad, Thailand

## INTRODUCTION

Study abroad has inevitably become an integral part of modern higher education. Since the inception of study abroad, the main interest of academic research in the area has been around the impacts on the participants (Tompson, Beekman, Tompson, Kolbe, 2013). Study abroad programs in a variety of formats were discussed to associate with study development on their cultural awareness (Chieffo and Griffiths, 2004), academic performance (Lane-Toomey and Lane, 2012), and employment prosperity (De Jong, Schnusenber, & Goel, 2010). At a university level, having a high number of students attend in study abroad programs are seen as an indicator of institution quality (Stroud, 2010). Nevertheless, attention on the communities, which is a major contributor to study abroad activities, is still sparse.

In terms of the impact on a national level, study abroad students are claimed to contribute to the host country's innovation, international perspective in classrooms, preparing local graduates for international career, future business network, as well as, economic benefits (Institute of International Education [IIE], 2017). By focusing solely on the economic impact, for the most sought-after destinations are tremendously benefited from international students. In the US, the continued increase in international students coming to the US for higher education contributed more than 39 billion dollars a year to the US economy (IIE, 2017). The number was also notable in the UK at 20 billion pounds annually, or more than 26 billion dollars (London Economics, 2018). In a broader perspective, international students create and support jobs for the country (North American Free Trade Agreement, 2018). The host nation's can also be benefited from students' visitors (London Economics, 2018). On community level, study abroad students generate the income to the communities during their stays (Tompson et al., 2013). Until now, there is still little knowledge on how much and how the students' financial contribution is within their host communities, especially in a non-traditional destination, and how the communities can economically gain from the students. This study aims to fill this gap by examining

international students' expenditure pattern within the area they stay and their rationale. Furthermore, the guidelines will be developed for local communities to be benefited from hosting study abroad students.

## LITERATURE & THEORY

To comprehend study abroad and its characteristics, Harari (1992) broadly defines study abroad as the international mobility of students and scholars. Following that concept, Wells (2006) outlines that study abroad encompasses programmes in which participants complete part of their education by traveling to another country. Therefore, from this perspective, study abroad programs can range from short programmes to exchange programmes to internships. In addition, Institute of International Education (2010) proposes that there are four basic models used to describe study abroad: Direct Enrolment Model; Custom Designed Model; Hybrid Model; Faculty-led Model. Study abroad duration also can be varied, the programs range from an academic year, a semester, a summer or winter break, or another short-term break (IIE, 2010).

Considering study abroad host countries, in the most traditional form of study abroad, international students, particularly from developing countries, travel to countries in Europe, the US, and Australia as they can benefit from high-quality education and language advancement opportunities available in those countries (Binsardi & Ekwulugo, 2003). However, with the dynamics of globalisation pushing students to acquire international skills, university students in any countries are now motivated to participate in any types of study abroad programs (De Jong, Schnusenber, & Goel, 2010). Along with the classic destinations, a rising number of students have attended their study abroad programmes in a variety of destinations, including Latin America, the Caribbean, Asia, and Africa (IIE, 2018).

Thailand is now one of the emerging study abroad destinations, the number of international students has more than tripled in the last decade, and there is still much-untapped potential (IIE, 2010). According to Institute of International Education (2010) in Asia, Thailand was the fifth most popular destination, after China, Japan, India, and South Korea. Study abroad incoming students in Thailand is seen to likely continue to rise in the coming years despite the slightly drop in numbers of students in from 2009 to 2010 due to political situations and the subsequent U.S. State Department travel warnings (IIE, 2010).

In regard to economic impact estimation, it is notorious that researchers face data limitations and difficulties in practice, particularly when combining with the characteristics of developing country economies and tourism aspects (Tompson et al., 2013). However, the study suggests a standard approach to economic impact assessment to begin with quantifying some initial economic events, and then estimating three levels of economic effects resulting from the events, the three levels of economic activities are direct expenditure, indirect expenditure, and induces expenditure. In many cases, indirect and induced expenditures are integrated together as secondary expenditures, or as the secondary spending effects of a direct expenditure instead. According to London Economics (2018), another way to estimate economic benefits of international students is through the measurement of tuition fee income, knock-on (or indirect and induced) effects associated with universities' tuition fee spending, income from non-tuition fee expenditure of international students, subsequent knock-on effects associated with non-tuition fee expenditure undertaken by international students, as well as, income associated with international students' visitors. Giving a close look at the non-tuition fee expenditure of international students, the spendings in this category encompasses the cost associate with accommodation (rent, council tax, bills, etc.), subsistence costs (food, entertainment, personal items, etc.), direct course costs (textbooks, subscriptions of journals or libraries, computer equipments, etc.), facilitation costs (study-related travel costs), and spending on children (school and childcare) (London Economics, 2018).

An expenditure pattern of student spendings, Cook (1970) propose that the majority of male students living off campus spend on rent, meals, cleaning and laundry, toiletries, newspapers and magazines, books and school supplies, and barber shop. He also suggests that the expense will further increase if students smoke, drive, and drink. On the other hand, in a more recent study of Tompson and colleagues (2013), students' spendings during a Semester at Sea program, in which students were not in their home countries, were

categorized into restaurants and pubs, travel, entertainment and recreation, lodging, grocery, gifts and souvenirs, and other.

## METHODOLOGY

To accomplish the set objectives, a mixed-method through the use of personal financial mobile application and in-depth interviews. After thoroughly reviewed related articles and student forums regarding the expenditure pattern of students, particularly on international students in Thailand, the author developed spending categories of study abroad students in their local communities. Only direct non tuition fee expenditure of the students will be observed to evaluate economic impact of study abroad. "Spending Tracker", a personal financial mobile application, was selected to be the tool to collect the data of student spendings in different categories as it is convenient for students to update their spendings and enhance the accuracy of the data collected from the students.

In this study, 25 international students who were participating study abroad programs in Salaya, Nakornpathom during summer 2018 were randomly selected. The students were asked to record all their one month expenditure incurred in Salaya, excluding the payments they made with their study abroad agents or offices. They were explained the categories in their expense log. Their expenditure were classified into 7 categories: 1) accommodation-related, 2) basic living, 3) study-related, 4) transportation, 5) entertainment and recreation, 6) gifts and souvenirs, and 7) others. At the end, 20 students completed the expense log. The self-report data was later interpreted using Microsoft Excel. After that, in-depth interviews with 7 students were conducted to identify the rationale behind their spendings.

## RESULTS

From 20 study abroad students in Salaya, 80 percent are female and 20 percent are male. The average age of the students is 21.6 years old, and the age of students ranges from 19 to 26. The majority of them are from the US, at 65 percent. 20 percent of them are from China, 10 percent come from Germany, and 5 percent are from Laos.

The one month average direct expenditure per one international student and proportion to the total spending incurred in Salaya was explained in Table 1. The total monthly average spending in Salaya of one international student was 9,188 Thai Baht (THB). In order of the amount the students spend, the highest expenditure was in basic living at 4,605 THB, which includes basic meals, drinks, and snacks, mobile phone vouchers, personal items, groceries, and laundry. The second highest spending is accommodation-related, which students spend on average 2,119 THB. For their accommodations, they paid for their electricity, rents, water utility, and Internet. The average monthly expenditure on entertainment and recreation was 1,091 THB. The students spent on restaurants and bars, Muay Thai classes, cinemas, and spa and massage. The average expenditure on others was 653 THB, this includes mainly alcoholic drinks, healthcare, and beauty. On a monthly basis, transportation costed a student 639 THB, for taxis, buses, and minivans in the area. The students spend minimally on study-related group, encompassing printings and materials for their study projects, at 51 THB a month. Finally, on gifts and souvenirs, the average spending of a student was 30 THB.

Regarding to the proportion of expenditure in each category to the total spending in the community, more than half of their spendings were on basic living (50.12%), followed by accommodation-related (23.06%), Entertainment and Recreation (11.88%), Others (7.11%), transportation (6.95%), study related (0.55%), and gifts and souvenirs (0.33%).



**Table 1**  
**Average direct expenditure per one study abroad student and proportion to the total spending incurred in Salaya by category**

Categories	Average Monthly Spending per Student (THB)	Proportion to Total Spending in Salaya
Accommodation-related	2,119	23.06%
Basic Living	4,605	50.12%
Study-related	51	0.55%
Transportation	639	6.95%
Entertainment and Recreation	1,091	11.88%
Gifts and Souvenirs	30	0.33%
Others	653	7.11%
<b>Total</b>	<b>9,188</b>	<b>100.00%</b>

\*The exchange rate was approximately 32.70 Thai Baht to 1 US Dollar

When the students were asked regarding their highest expenditure on basic living among all categories, the students responses were that for other major costs, the students did not spend in Salaya area. The students wanted to explore Thailand and the region during their study abroad program, in most of their weekends, they traveled to other parts of Thailand and neighbouring counties. For the weekends that they stayed in Salaya, they usually went to Bangkok, especially for malls and nightlife as there were not many activity options in Salaya. The majority of students also did not pay their rents directly to their commendations, the rents often were included in their study abroad package and most student accommodations offered free minivan shuttle to universities. The students also agrees that they would spend more in Salaya especially on entertainment and recreation, especially on activities related to Thai culture e.g. Thai cooking, Massage, Muay Thai.

### CONCLUSION AND FUTURE WORK

The results of this study indicates slight positive contribution international students make to the local community where they participate their study abroad programs. In contrast to Cook (1970), study abroad student illustrate more involvement in travel-related activities than when they are in their home countries. Compared to students' spendings in Tompson and colleagues (2013), as an extensive stay in local communities often seen in study abroad programs, the communities may have more opportunities to economically gain from the students in addition to their basic living and accommodation spendings.

For study abroad host communities to be financially benefited from international students, the community should develop a strategy to encourage more spending from international students with the demand of community as a priority. By taking into account the needs of both community and international students, development direction will lead to a sustainable approach to develop the community. In addition, host communities should analyze their tourism position and offer international students with the right set of service and activity alternatives. Similar to the the pull factors for international tourists coming to Thailand, development of sightseeing-based activities or activity-based activities, particularly those that are related to Thai culture, may be considered (Yiamjanya, 2014). Ability to communicate in English of service providers, particularly in healthcare, in the area is also another factor that may be improved to attract more international students in the area.

For future studies, a larger sample size is recommended to increase the validity of the results. A focus group or interview with stakeholders prior to the data collection may provide a better understanding of the expenditure pattern in specific communities. Lastly, student demographics and cultural factors may also be included.

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# CRITICAL SUCCESS FACTORS AFFECTING BASIC GROUND HANDLING COURSE OF GROUND SERVICE AGENTS

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## Abstract

This research presents a mixed- method research, with the objectives are to (1) identify indicators and key success factors affecting a Basic Ground Handling Course (BGH) of ground service agent in airlines in Thailand, (2) develop an Analytic Hierarchy Process (AHP) model to indicate key success factors based on the experts' perspectives (Ground Service Agents and Ground Service Supervisors), and (3) examine significant differences between ranking results. Two certain groups of experts, fifteen ground service agents (GSA) with good working performance who passed the BGH course within one year and fifteen ground service supervisors who were appointed as mentors. Based on a review of literature, four primary key performance indicators (KPIs); effective work performance, customer's satisfaction, learning and development, and passing criteria, and 12 primary key success factors from four groups; (1) training course (2) instructor (3) trainees' qualification and (4) software and equipment, which were determined. Questionnaire surveys with key stakeholders to consider the applicability of these indicators and key success factors in the context of airline in Thailand were used before developing a hierarchy model. Pair-wise comparisons, weight were calculated based on AHP approach and consistency check were also conducted. Priority ranking of all key success factors was based on their global weights then, analyzed the relationship between rankings from two expert groups by Spearman Rank Correlation Test. The AHP Analysis results showed that, Spearman rank correlation coefficient weight value was 0.43, with null hypothesis was all rejected. Key success factors affecting a Basic Ground Handling Course of Ground Service Agents (GSA) can be prioritized in order as follows; (1) knowledgeable and skillful instructor (2) enthusiastic and committed trainees (3) curriculum is aligned with organization's goals. And from the correlation coefficient test, it revealed that there were no statistically significant differences in prioritization of the twelve key success factors of two expert groups.

**Keywords :** Basic Ground Handling Training (BGH), Ground Service Agent (GSA), Analytic Hierarchy Process (AHP)

## INTRODUCTION

The airline business impacts on other business such as aircraft manufacturing, hotel management and tourism. Today, flights performed globally by the airline industry from 2004 through 2018. Passenger air traffic and the number of flights performed are on the rise; in 2018, 36.8 million flights were operated worldwide. (IATA, 2018). Air carrier operations are generally regulated by the country of their registrations, for instance, CAAT (Civil Aviation Authority of Thailand) oversees prescribing, regulating, and auditing all activities of Thai civil aviation (CAAT, 2017)

Ground service agent should understand general terms and conditions article contain the following topics; fares, fee, taxes and charge, ticket condition, check-in and boarding, refusal of and limitation on carriage, baggage, schedules, delays, conduct aboard aircraft so ground service trainings are very challenging activities for successful achievement business and safety operations (Wald A., 2014). There are needs to find out the success factors involved. There are a lot of researches on flight crew training and cabin crew training factors in various aspects however, there are no concerned on ground crew or ground service agent training success. Therefore it needs to study in this area. This research is focused on studying supporting factors that lead to the success of a Basic Ground Handling Course of GSA training since the employees joined the company. The Analytic Hierarchy Process (AHP) is utilized to increase chances for success in identify the training success factors.

## Objectives

This study were to (1) identify suitable key performance indicators and key success factors affecting Basic Ground Handling Course of Ground Service Agents in Thailand, (2) prioritize these key success factors based on the

experts' perspectives (experience ground service agents and supervisor's perspectives), and (3) examine significant differences between ranking results of two certain groups of experts.

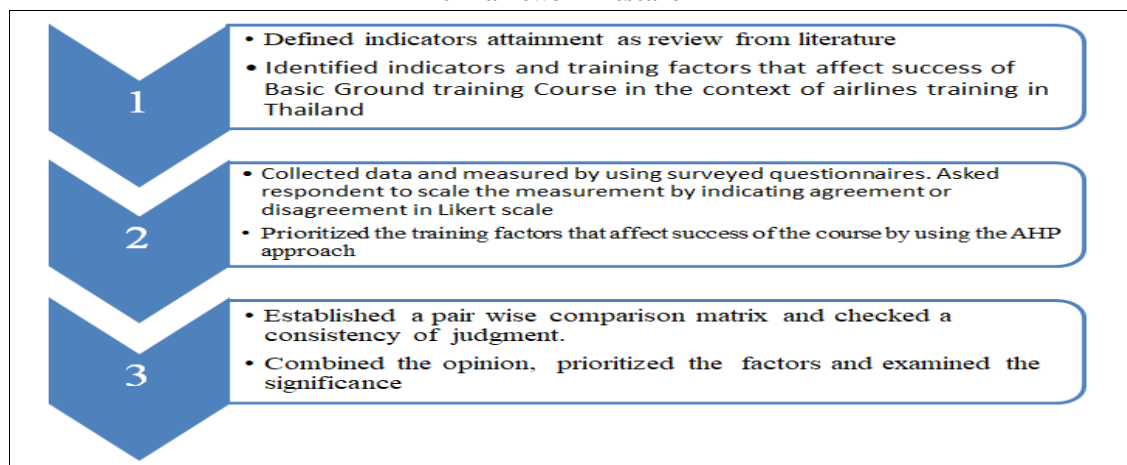
### Conceptual Framework

This research scopes include identifying and prioritizing key success factors that lead to a success of basic Ground handling Course in Thailand. The study was limited to Thai carriers such as Nok Airlines Co., Ltd, Nok Scoot Co., Ltd, Thai Lion Air Co., Ltd, Thai Air Asia Co., Bangkok Airways, Thai Airways International Public Co. Ltd., and NewGen Airways Co., Ltd. The survey has been conducted within the period or May to October 2018.

### Conceptual Framework

Defined indicators review of the relevant literature.

**Figure1**  
**The Framework Research**



### Assumptions

1. The AHP technique is appropriate for this study.
2. Each key success factor affecting the success of a basic ground handling course is important and unequal.
3. The priority of key success factors that were evaluated by the two groups of experts in ground service training are correlated.

## LITERATURE AND THEORY

The main role of an airline ground service agent (GSA) is to provide a hassle-free departure, transfer, and arrival experience for every passenger. The main mission of an airlines GSA is to provide assistance to passenger at the airport before they board the aircraft, during transit, and when they disembark from airplane before leaving the airport terminal. (Law C.,2014). Ground Service Agent (GSA) department in many airlines are being held responsibilities to arrange and deliver courses to ensure the employees especially new entrance employees can perform their jobs correctly. To understand the key success factor (KSF) that contributes to effective training in making all courses meet the accountabilities of training efficiency and employees performance outcomes effectiveness. Several leading airlines in Thailand have designed the courses to meet of their employee with knowledgeable instructor or mentor, course content specific, high technology, current, and state-of-the art training materials. The training manager want to ensure that all courses will be delivered effectively and efficiency, above all, the transfer of training to work place is very important. Training transfer is not just and providing easy software usage and what were learned in a training classroom to check in counter. Transfer of training involved how the background knowledge influences current and future learning and how previous or current training is applied or adapted to new situations. So the GSA do not have to constantly learn a new each situation that they encounter. The effective design of training is very important for airlines to realize that KSF to make trainees transfer all knowledge, skills and attitude to use and adapt with work place is therefore fundamental to all training. Motivation of the trainee is a determinant of successful transfer.

The mindset has been to deliver the training then rely on the employee to transfer this knowledge to the work place. More emphasis was placed on evaluating the inputs of the training than looking at the effectiveness of the outcomes of the training being delivered. (Hansen, 2001) Human resource training; is a process in organization development in a step-by-step manner for trainees can acquire knowledge, understanding, attitudes, and expertise in a given subject according to the needs of organization operation. Success of training outcomes; amount of learning and retention are results from conditions of training-input such as trainee characteristics, training program design and process and also work environment. (Thirty, 2004). Adult learners tend to be motivated by internal drives such as increased job satisfaction, self-esteem, their sense of accomplishment, and quality of life issues. (Beebe, 2004) Attention on the changes in performances against the training are needed to be evaluated and classified which is the sequencing of the training process. (Bramley, 1990) All training actions are aimed at changing behavior of three attributes. (Falletta, 1998) (1) Increased knowledge to cope up with changed environment and to compete increase productivity.(2) Increase skills and aid to mitigate loss of work due to lack of skills and experiences. 3) Changing of attitude to help create new ideas. Key Performance Indicators and Key Success Factors; KPI usually use for measuring or assessing performances in quantitative data to reflect the efficiency and effectiveness of operations. Indicators can be divided into several levels: Organizational indicators, Departmental indicators, and Individual indicators. (Traci, 2017) Objectives and indicators generally may vary depending on the supervisors' discretion. Key Success Factors; KSF are the factors lead to the success of organizations operations against organization's vision and mission. (Beebe, 2004) Training department must be more accountable and to be measured of its contributions. (Phillips, 2002) Hierarchical analysis; Analytic Hierarchy Process (AHP) is a multi-criteria decision-making process used in diagnosis. The AHP decision is effective by dividing the problem into parts in the form of a hierarchical chart, then diagnosis and compares of various factors by calculating and prioritizing them accordingly. The structure mimics the process of human thought. The AHP method consists to break down complex problems into a hierarchical tree structure (Hierarchy Structure) each class consists of a basis for decisions related to the issue. If there is a significant difference, important factors should be taken at least down to the floor next to it. Example chart AHP hierarchical structure with four levels as Level 1: Goal, Level 2: Main criteria, Level 3: Sub criteria, and Level 4: Alternative

## METHODOLOGY

This research is emphasize on the prioritization of the key success factors affecting Basic Ground Handling Course of Ground Service Agent, by means of Analytic Hierarchy Process (AHP) decision of two expert groups: 1) Group of 15 experienced GSA or supervisor mentors with working experience over five years. 2) Group of GSA who have passed the Basic Ground Handling with satisfactory results. Then test of the significant difference factors in prioritization between two expert groups. Research methodology is segregated into four parts: 1) Comprehensive review of relevant literature. 2) Identifying suitable indicators and key success factors of GSA training in airlines in Thailand by using surveyed questionnaires to collect data and measure. 3) Prioritizing the key success factors by using the AHP approach orderly for example develop a hierarchy model, establish a pairwise comparison matrix, check the consistencies of the judgments and combine the opinions from several experts by using geometric mean. Sources of the data were obtained in the airlines in Thailand. Some limitations were we found that there were only three out of seven airlines participated with fifty questionnaires together with depth interview were conducted and among them only 42 data can be used due to some questionnaires the respondent rated all question in neutral scale. To test the hypothesis in this study the questions were measures with a total 64 items response to all of the items on questions were made on 5 point type scale where (1= strongly disagree, 5 = strongly agree).

## RESULTS

The research methodology has come up with 4 steps, as follows:

**Step I: Identify of the key performance indicators (KPI) and key success factors (KSF) affecting Basic Ground Handling.** As reviewed of literature on performance indicators and key success factors of training, four success indicators as shown in table 1 were:

**Table 1**  
**Performance Indicators that reviewed from literature and related researches**

<b>Performance indicators</b>	<b>Description</b>	<b>References</b>
1.Effective work performance	Consisting of training outcomes that are;(1) Trainees' reactions to the training program.(2) Change in behavior and (3) Improvements in individual or organizational outcomes	(Govindarajulu, 2009) (Thirty., 2004)
2.Customer satisfaction	Customer satisfaction including correct and quick action to service to customer. The smooth of flight checking in, reliable, on time and make a right judgment as professional.	(Traci., 2017)
3.Learning and development	Learning consist of(1) application and program knowledge, rules and regulation (2) Performance skills, ability to guide and check in customer and to make good judgment (3) Attitude, self-esteem, values, and perception, that will motivate behavior.	(Beebe., 2004)
4.Passing criteria	Test scored more than 70% of all subjects which are Ground Handling, Dangerous Goods, CRM, SMS, and Aviation Security, will be considered to pass the theory examination. After that practical role play test will be acquired.	(CAAT., 2013)

Twelve key success factors (KSF) were:

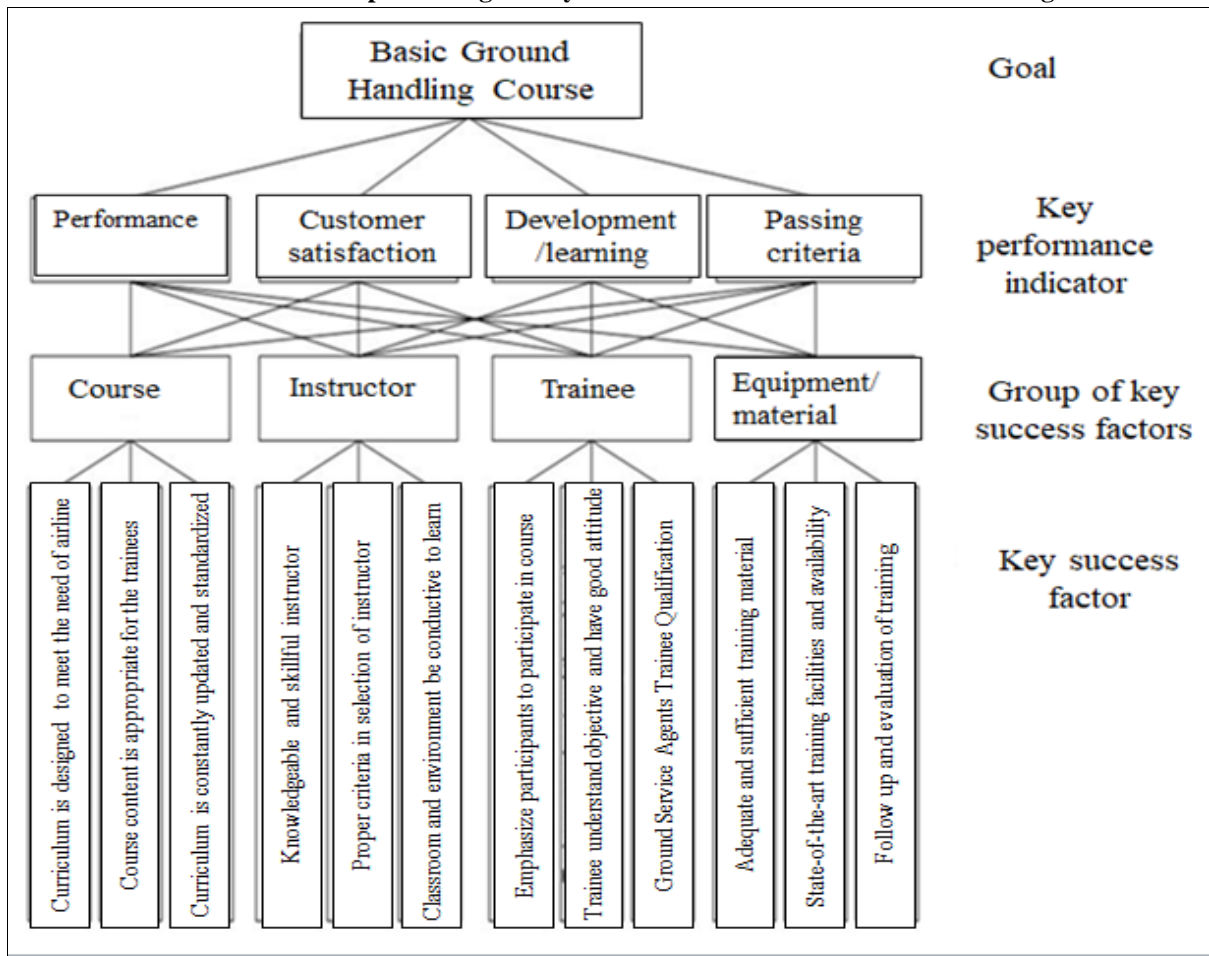
- KSF(1)\_ Appropriate Curriculum designed and met the needs of the airline. (Gonzalez, 2012)
- KSF(2)\_ Appropriate Designed content for trainees. (Govindarajulu, 2009)
- KSF(3)\_ Constantly updated and standardized Curriculum. (Traci, 2017)
- KSF(4)\_ Knowledgeable and skillful instructor. (Khawaja, 2012; Traci, 2017)
- KSF(5)\_ Instructor selection criteria. (Khawaja, 2012; Beebe, 2004; Traci, 2017)
- KSF(6)\_ Creating good training atmosphere. (Thirty. 2004)
- KSF(7)\_ Trainees participation in learning activities. (Gonzalez, 2012; Khawaja, 2012)
- KSF(8)\_ Trainees are enthusiastic and have a good attitude towards training. Gonzalez, 2012)
- KSF(9)\_ Trainees qualifications and self- efficacy. (Khawaja, 2012; Thirty, 2004)
- KSF(10)\_ Adequate and sufficient training equipment. (Khawaja, 2012; Beebe, 2004; Traci, 2017)
- KSF(11)\_ State -of-the art training facilities. (Khawaja, 2012; Beebe, 2004; Traci, 2017)
- KSF(12)\_ Follow up of evaluation results and improve the evaluation results. (Traci, 2017; Khawaja, 2012)

**Step 2: Identify the suitable key performance indicators and critical success factors in the context of an airline Ground Service Agent Training in Thailand.**

Used hypothesis testing, t-test, to determine each indicator is suitable in the context of an airline Ground Service Agent Training in Thailand, by which a mean score of an indicator greater than 4 indicates that this is suitable while a mean score less than or equal to 4 representing unsuitable indicator will not be included in the AHP-based model. All p-Values were less than 0.05. H0 will be rejected if the mean of the factors is greater than 4,

**Step 3: Prioritize the key success factors by using the AHP approach**

**Figure 2**  
**Hierarchical structure for prioritizing the key success factors of a Basic Ground Handling Course**



**Step 4: Examine whether there are significant differences between two sets of key success factors rankings by two groups of experts.** Supervisors' views were compared with results of GSAs' views by Spearman's rank correlation test to examine the statistically significant differences between two sets of rankings with a 95% confidence interval.

### CONCLUSION AND FUTURE WORK

This study addressed the factors affecting Basic Ground Handling Course to identify: (1) suitable key performance indicators and key factors affecting Ground Service Course in Thailand, (2) key success factors based on the experts' perspectives (GSA Supervisor and GSA with one year experience), and (3) any significant differences between ranking results of two groups' views. The findings demonstrated the importance of instructor and course contents that support in the transfer knowledge skills from training process to work place. Key Success Factors were prioritized as (1) knowledgeable and skillful instructor. (2) The training course aligned with organization's goals. (3) Trainees are enthusiastic and have a good attitude towards training. Two groups of experts rated the primary important factors in critical success factor to knowledgeable and skillful instructor, the training course aligned with organization's goals, curriculum is clear, concise, practical and complete, and adequate and sufficient training equipment. The experts did not perceive the necessity of having state-of-the-art training facilities in a given period.

In suggesting the utilization of prioritized key success factors affecting A Basic Ground Handling Course of Ground Service Agents (GSA), the following recommendations are proposed: Firstly, a more in-depth qualitative study combined with the quantitative study is recommended to determine factors affecting trainee performance during on the job training and redesigned the course for skill brush up for ground service agents to be prepared to adapt to technology and innovation changes in airlines. Secondly, Airlines should support GSA trainees to maintain the use of

newly learned skills and transfer them to the situation, a mentoring system needs to be developed where an experienced supervisor coach supports, and the courses for supervisor should be study to redesign the training to be more effective.

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# AN ANALYSIS OF PUSH AND PULL TRAVEL MOTIVATION OF FOREIGN TOURISTS IN VISITING WAT ARUN RATCHAWARAM RATCHAWARAMAHAWIHAN, THAILAND

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## ABSTRACT

This research paper aims to explore push and pull travel motivation of foreign tourists visiting Wat Arun Ratchawaram Ratchawaramahawihan, Bangkok. A questionnaire was employed as a tool in collecting the data. Mean and standard deviation were used in order to find the level travel motives that were important determinants in the respondents' decision making process to select Wat Arun as their destination choice. The lists consisted of 32 attributes representing push motivation (16 attributes) as "psychological factor", pull motivation (16 attributes) as "destination factor". As a result, for push motivation, the most foreign tourists perceived that they want to experience new and different lifestyles or culture, explore cultural resources, and visit a place they have not visited before. For pull motivation, foreign tourists perceived that there are culture sites along with there are outstanding Architecture, different from other temples and friendliness of Thai people.

*Keywords: Cultural tourism, Push motivation, Pull motivation.*

## INTRODUCTION

Nowadays, tourism industry is the main industry that plays important role to Thailand's economic and social development. Tourism industry is a one industry that earns large amount of foreign currency to the country. Thailand is one of the world destinations many tourists interested in visiting.

According to the data from the statistic "The World's most visited Cities in 2016" ranked top ten of the most visited cities in 2016. Bangkok had 21.5 million overnight visitors, the most of any city worldwide according to a recent report from Mastercard. By comparison, London had 19.9 million visitors who stayed at least one night while Paris had 18 million, Dubai had 15.27 million, and New York had 12.75 million (McCarthy, 2017).

Historical tour, culture, tradition and religion in Bangkok gain support the most important tourists especially the temples where is the historical area and the cultural diversity. Especially Wat Arun Ratchawaram Ratchawaramahawihan which is well known extensively among Thais and foreigners. Foreign tourists play attention to cultural tourism because they want to exchange their everyday life and local culture to the country that is different to get knowledge and new experience.

Therefore, the researcher would like to study travel motivation of foreign tourist to see and understand the primary motivations of foreign tourists visiting Wat Arun Ratchawaram Ratchawaramahawihan. Travel motivations of foreign tourists are also compared to get results used for reference for more information on the development of the tourist market in the future.

## Objectives

1. To explore push travel motivation of foreign tourists visiting Wat Arun Ratchawaram Ratchawaramahawihan, Bangkok.

2. To explore pull travel motivation of foreign tourists visiting Wat Arun Ratchawaram Ratchawaramahawihan, Bangkok.

### **Literature Review and Theory**

Bashar Aref Mohaammad Al-Haj Mohammad studied “An Analysis of Push and Pull Travel Motivations of Foreign Tourists to Jordan”. This may be important to marketing the highest push factor is the items “to visit a place that have not visited before”. The item “the site of new seven wonders” is the highest pull factors.

Adina Negrușand Medet Yolal referred to “Cultural Tourism Motivation-The Case of Romanian Youths” that the main reasons of students to attend cultural tourism are “need to experience something new” is push factor with pull factor like cultural motives.

Klinkesorn (2014) mentioned in his research about factor affected to Japanese tourist’s decision in Bangkok, and their attitude that have decided to travel in Bangkok that the main factor affect to make decision traveling in Bangkok is “Economic” because Thailand has a low cost of living and it is the most appropriate to their income.

Choeichuenjit and Sapsanguanboon (2015) described factors influenced to their decision marking are impressions namely kindness of local people, difference cultural and lifestyles and variety of tourist attractions.

Ming Tsai (2016) stated that push and pull motivation positively and directly affected intention to participate and push motivation have more importance influencing on intention to participate. Their main push motivations are new experiences in foreign land. Pull motivation are the special events in Songkran Festival.

Crompton (1979) explained tourism motivation as ‘a dynamic process of internal psychological factors (needs and wants) that generate a state of tension or disequilibrium within individuals’. Push and Pull theory is divided tourism motivation in two separate components. Push factors refer to the internal forces driving people to travel. While external factors are external forces that explain why this location has been chosen over other locations.

Push and pull theory is divided tourism motivation in two separate components. Push factors refer to the internal forces driving people to travel while external factors are external forces that explain why they choose this location over other locations.

Kassean and Gassita (2013) studied “Exploring tourists push and pull motivations to visit Mauritius as a tourist destination”. The most important push motives were rest and relaxation. The tourists expressed high levels of agreement towards items of the destination environment including beaches, the climate and weather, and landscape and scenery as pull motives.

Viet Hoang (2016) studied “Differences in Motivation to Visit Thailand among Vietnamese Tourists”. In regard of push motivations, tour group tourists would like to travel to Thailand because they want “to experience a new destination”. Independent tourists would like to visit Thailand to have a rest and relax, package tour travelers would like to enjoy interesting shows and entertainment, and to satisfy the need of abroad travelling in term of pull factors.

### **Research Methodology**

#### **Population and Study area**

Population in this study were 100 foreign tourists who visited Wat Arun Ratchawaram Ratchawaramahawihan around and inside the temple.

#### **Research Tool**

The Tool used in research is questionnaire. The questionnaire design was adapted from previous researchers, such as Ming Tsai (2016), Mohammad, B. (2010). The question were divided into three parts, including demographic information, push motivation (16 items), and pull motivation (16 items).The push and pull items were ranked, using a 5 point Likert scale, from 5 = strongly agree to 1 = strongly disagree

### Data Collection and Analysis

Data collection used the quantitative data collection methods by survey questionnaire which can be applied within shorter duration of time, during 6 – 20 April, 2018. The data was analyzed by percentage for general data by gender, age, status, nationality and mean values and standard deviation for push and pull motivation.

## Results

### General Data of Respondents

The study review the ranking of Foreign tourists about push and pull travel motivation in visiting Wat Arun Ratchawaram Ratchawaramahawihan, Bangkok, Thailand. The results were as follows:

Table 1. Demographic Profile of Respondents

Variables	Description	Percentage
<b>Gender</b>	Male	41.2
	Female	58.8
<b>Age</b>	15-24	29.4
	25-34	39.3
	35-44	25.5
	45-54	5.8
<b>Status</b>	Single	70.6
	Married	29.4
<b>Nationality</b>	Austrian	3
	Belgium	3.9
	British	1
	French	18.5
	German	6.9
	Italian	5.9
	Dutch	4.9
	Polish	3.9
	Spanish	10.8
	Sweden	5.9
	Swiss	9.8
	USA	23.5
<b>Visit</b>	Brazilian	2
	First time	80.4
	Second time	17.6
	More than 3 time	2
<b>Companion</b>	Families	49
	Friends	39.2
	Colleagues	2
	Relatives	4
	Alone	5.8
<b>Again</b>	Yes	33.3
	Not sure	56.9
	No	9.8
<b>Recommend</b>	Yes	100

The descriptive analysis of the demographic of participant is presented in Table 1. The gender distribution of foreign tourists was quite uneven, with 41.2 percent male and 58.8 percent female. They are mostly between the ages of 25-34 and 70.6 percent are single. The most respondents are American (23.5%), followed by French (18.5%), Spanish (10%), German (6.9%), and British (1%). There were 80.4 percent of tourists who visited for the first time, 17.6 percent for second time, and 2 percent for more than 3 times.

The respondents came with families (49%), with friend (39.2%), and alone (5.8%). There were 56.9 percent of tourists who are not sure to visit again, 33.3 percent will visit again, and 9.8 percent will not visit again. Besides, there were 100 percent of respondents who will recommend to others.

Table 2. Mean Values and Standard Deviation of Push Motive Items

Push Factors	Mean	S D	Rank
To visit a place that I have not visited before	4.50	0.65	3
To experience new and different lifestyles or culture	4.60	0.61	1
To explore cultural resources	4.56	0.50	2
To increase knowledge about history of Wat Arun	4.32	0.74	5
To exchange culture	4.28	0.67	6
To be away from home	3.94	1.06	4
To relax physically	4.12	0.82	7
To participate in new activities	4.04	0.78	9
To satisfy the desire to be somewhere else	4.04	0.90	9
To sightsee touristic spots	4.06	0.89	8
To enhance communication with local community	4.00	0.93	10
To meet new people	3.76	1.00	12
To relax spiritually	3.68	0.82	13
To have enjoyable time with my travel companion(s)	3.98	0.87	11
To visit a place that my friends have been to	3.26	1.24	14
To worship the golden Buddha image	3.20	1.13	15
Total	4.02	0.85	

### Push motivation

Table 2 illustrates the results of 16 items investigating on push motivation of foreign tourists. As a result the main push motivation why foreign tourists visited Wat Arun was to experience new and different lifestyles or culture which accounted for 4.60. Followed by to explore cultural resources accounted for 4.56, and push factor to visit the place that has not visited before accounted for 4.50. The lowest mean score is 3.20 in to worship the golden Buddha image.

Table 3. Mean Values and Standard Deviation of Pull Motive Items

Pull Factors	Mean	S D	Rank
Cultural sites	4.36	0.66	1
Safe Destination	3.96	0.93	12
Culture, Arts around Wat Arun	4.14	0.64	6
Outstanding Architecture, different from other temples	4.32	0.65	2
The best known Thailand's landmarks	4.08	0.80	8
Close to other famous temples	3.98	1.02	11
Outstanding Scenery	4.16	0.71	5
Good weather	3.84	1.00	12
Value for Money	4.06	0.79	9
History of Wat Arun	3.96	0.83	12
Attractions along Chao Phraya River	3.8	0.86	13
Thai are friendly people	4.24	0.72	4
Convenience of transportation	4.04	0.76	10
Affordable Tourist Destination	4.16	0.65	5
Peaceful area	4.26	0.66	3
Admission-fees are not high	4.1	0.68	7
Total	4.09	0.77	

### Pull motivation

Table 3. Illustrates the descriptive 16 items examining on pull motivation. The foreign tourists realized to cultural sites is the most important pull motivation which was reflected by the highest mean score of 4.36, followed by outstanding Architecture, different from other temples which is 4.32, peaceful area accounted for 4.26, and Thai are friendly people 4.24. And the least important is Attractions along Chao Phraya River with the lowest mean score of 3.80.

## CONCLUSION

The foreign tourists visited the temple with family (49%), Most of foreign tourists are female (58.8%), male (41.2%). They are mostly between the ages of 25-34 and 70.6 percent are single. The most respondents are American (23.5%), follow by French (18.5%), Spanish (10%), German (6.9%), and British (1%). 80.4 percent in first time visiting, 17.6 percent in second time, and 2 percent in more than 3 time. They will recommend others (100%), and in the future the most are not sure to visit again of 56.9 percent. The results

of this study revealed that the gender has a small influence on cultural travel. The age is influenced to cultural travel. The most of cultural tourists are between 25-34 years old.

In conclusion, the statistical finding showed the push and pull motivation. Most of them perceived on push motivation that 'they want to experience new and different lifestyles or culture' as the first rank, along with 'to explore cultural resources' and 'visit a place that have not visited before' in the second and third ranks, while the lowest rank was 'to worship the golden Buddha image'. For pull motivation, foreign tourists perceived 'There are culture sites' as the top rank, along with the second rank 'There are outstanding Architecture, different from other temples' then 'There are peaceful area' and in Thailand people are very friendly' in the third and fourth rank. But ' the attraction along Chao Phraya River' was in the lowest rank.

### **Discussion and Recommendations**

The study offers an attempt to understand tourist motivation divided between push and pull motivation. As a result, the main push motivation why foreign tourists attend Wat Arun is to experience new and different lifestyles or culture. The samples considered cultural sites to be the most important pull motivation. Compared to the research of Klinkesorn (2014), found that society and culture factors are comment in high level to make foreign tourists visiting Bangkok. The study reconfirms that the main push and pull factors affecting to tourists travel behavior in visiting temple is they want to experience new and different lifestyles or culture.

The data was collected only in Wat Arun and only 100 respondents within 2 weeks, the data may be insufficient. However, this study found interesting findings which inspired the future research to conduct an in-depth interview in order to get more accurate results and high-quality information.

### **Acknowledgement**

I would like to express my sincere thanks to Suan Sunandha Rajabhat University for invaluable help throughout this research. I also would like to acknowledge the Research and Development Institute, SuanSunandhaRajabhat University, Bangkok, Thailand for financial support and for their guidance, super vision and continuously encouragement throughout the research process. Finally, I also would like to thank Professor Doctor Krongthong Khairiree, Director of International College, SuanSunandhaRajabhat University

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# ASIA'S BOUTIQUE A UNIQUE AIRLINE: BANGKOK AIRWAYS AS A CASE

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## ABSTRACT

To set apart from rivals, Bangkok Airways (PG), a Thai regional carrier has named its slogan; Asia's Boutique Airlines. PG outperformed with the products and services according to its slogan. The result was guaranteed by Skytrax rewards world's Best Regional Airline and Best Regional Airline in Asia in 2017. As an intern student with PG, researcher objective is to review the airline's products concept with the products/ services provided by PG making it a unique proposition. As well as, researcher intends to evaluate the differentiation strategy of Bangkok Airways. Research employed both secondary data and primary data in collecting information. The primary data was collected by in-depth interview PG's senior employees, supervisor and myself observation from a routine duty. The result found that PG is distinguishing itself with six main points that define its initiative boutique lounges, boutique Airports, unique appetizing menu, exclusive service and colorful aircrafts.

*Keywords:* Airline's products, Boutique, Unique, Bangkok Airways, Differentiation

## INTRODUCTION

Bangkok Airways first began air transportation services in 1968 - established as Sahakol Air, it became the first private aviation company in Thailand. Initially, the airline provided charter services; regular charter assignments came from the OICC (an American construction company), USOM (United States Operations Mission), and other organizations, which engaging in oil and natural gas exploration in the Gulf of Thailand. Due to the rapid growth of tourism and business investments in Thailand, air transportation has become an increasingly important aspect contributing to both the economic growth and the infrastructure development to become a major destination capable of welcoming several million overseas visitors. In order to fulfill the increasing demands for air transportation, in 1986, PG began its operations as the country's first privately-owned domestic airline; offering scheduled flights from Bangkok to Krabi, Korat, and Surin. PG has obtained permits to operate scheduled flights over 20 different major routes. In 1989, the airline became a member of the International Air Transport Association (IATA). Subsequently, on 27 February 2013, the company was registered as a company public limited (Bangkok Airways, 2017).

Today, the aviation industry has growth dramatically because of the deregulations, along with Thailand is ranked top destination of tourists around the world. These has aroused the emerging of new airlines, especially low-cost carriers. As a result, air travel market has both offering more supply and stimulating demand with low of prices. In the mean time, it is the result of intense competition in pricing among airlines since most of airlines have offered the same products and services for instance; routes, class of services, seating conditions, type of aircraft etc., As Deshpande (2008) pointed out that airlines are in commoditized industry where they have few differences to compete, hence, most of airlines focus on pricing strategy. Howbeit, PG is an Asia's Boutique Airlines offering unique products making the airline differ from other players in the market.

## LITERATURE REVIEW

Global market, today, has high competition especially airline industry which the products and services offered to the market are quite the same. Firms require to get inside customer needs and wants then anticipating those needs to satisfy them. This is in order to be competitive advantages and run business profitably. Based on

IATA (2013) defined airlines' products are both tangibles and intangible consisting of benefits, activities, and customer satisfaction. Thereby, IATA has divided airlines' products into 2 perspectives including; product hardware and product software. The hardware side has 3 levels consisting of scheduling features, class of service features, and supplementary features. Whereas, the soft side are people and process as shown in figure 1.

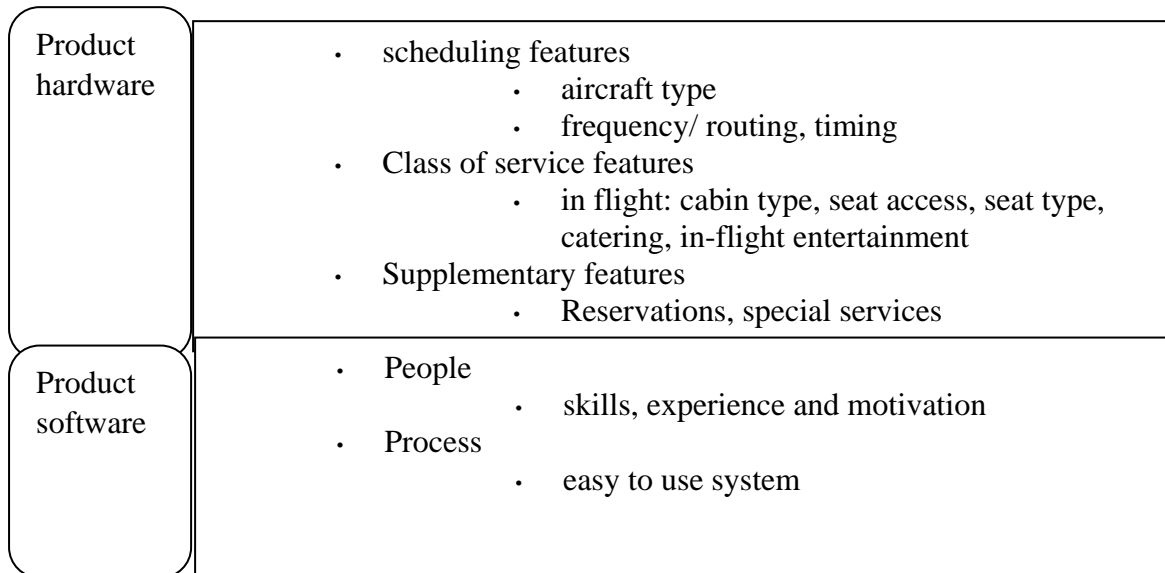


Figure 1. The Component of Airline Products

The well blended of both hard side and soft side is important to create customer experiences and satisfaction. There are various issues study on air travel customer preferences such as Kankaew (2013) employed Importance-Performance Analysis technique to measure service quality of full service airlines in Thailand including Thai Airways International and Bangkok Airways. The result shown that passengers were satisfied both on ground services and in-flight services. Kankaew also evaluated 7Ps (product, price, place, promotion, process, people, and physical evidence) which influenced customers' choice of flying. While, Alamdari (1999) presented four levels of airline product those were (1) core product consist of safety, schedule and reliability, (2) expected products for example, food & drink, seat comfort, cleanliness, (3) augmented such as limousine services, shower facility, lounge entertainment, and (4) potential services which airlines plan for providing in the future. Airlines that place brand position in other segment proliferate including the customer base, profit and income. Every airline try to be airline's lead but they have similar factor for example human resource, aircraft, cost, services so each airline create something different to make it unique. The consumer is the main target of the airline because if we have on the consumer we will not get income. Money is important thing that make airline growth so every airline has to make consumer impressed in their product. The products are one way to make the consumer interested and remember. Every airline has a technique to conquer the consumer by their product. A comparative study of factors affecting choice between premium airlines and low-cost airlines. Pawasa (2011) found that the reliability of the products or the reliability of the airline along with the services of ground staff and reception staff convenience food service the life or condition of the aircraft were something that passengers value. Chechai Somkhasirikul (2010) cited the study (Parasuraman et al., 1985) the expectations of consumers in the service are influenced by four sources personal needs, word of mouth, original experience, advertising from various service providers.

Howbeit, to be competitive advantage by able to identify the products aspect is not relevant. Airlines need to understand deeply the customer needs and wants, so that carriers could provide right products to specific target market. Meanwhile, IATA (2013) proposed airlines to set core strategy to be competitive by applying the competitive choices as shown in figure 2. There are four strategies; to be differentiation leader, to be overall cost leader both are in wide industry. The others are to be differentiation focus and cost focus in particular segment.



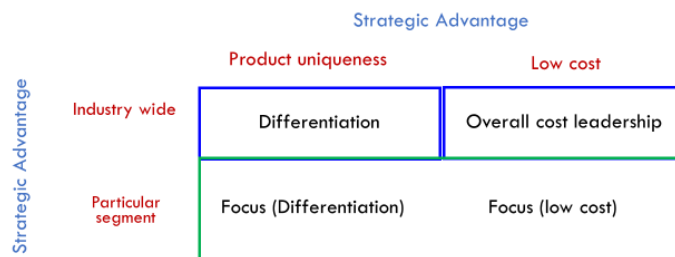


Figure 2. The Competitive choices.

### Methodology

Researcher studied the topic by reviewing secondary data from books, journal publication and social media. As well as, primary data was obtained by observing the product of PG from real experiences as intern student, in-depth interview with 10 PG’s managers, supervisors, and seniors employees. This allow researcher to monitor various part of PG services and products.

### Conclusion and Recommendations

From theory into practices in term of product hardware; the results found that PG, a full-service airline providing premium service to passengers and they are operating 2 classes Business class and Economy class. PG, also, owns and operates three boutique airports at Koh-Samui (1989), Sukhothai (1996) and Trat (2002) each airport was blended-designed with natural and cultural similar like of each three provinces (Bangkok Airways, 2018). Each airport has differentiated style of building. The terminal’s design depends on the environment around the airport in case of Samui airport, the terminal buildings blended seamlessly with tropical gardens and coconut groves of Koh Samui. Sukhothai Airport, situated among the calm rice paddies, reflects traditional Thai architecture. Finally, Trat Airport highlights the soul of the province's surrounding environment. The uniqueness of each airport has complemented PG’s boutique characteristics where the natural air inside terminal is the same.

Every route and airport that PG operated providing lounge for passengers in both business and economy classes. First boutique lounges, it is similar to business-class style lounges offered by other airlines, but the striking difference is that it is available to all passengers with no extra charge or hidden fees. Passengers can eat snacks and various choices of hot or cold drinks. Whilst, the most popular word of mouse that people share in social media is Khaow Tom Mud. It is sweet sticky rice with banana in banana leaf (Bangkokair, 2018). Moreover, PG provides special menu onboard during a festive period, such as magaron for sweet Valentines’ day. Passengers can also enjoy free Wi-Fi at boutique lounge and they have kids zone for young children. Second Blue-Ribbon Club Lounges it used for serve premium passengers flying with Bangkok Airways including Blue Ribbon Club (Business class), Boutique Premier Service and FlyerBonus Premier Membership (Virachai,2018). These provisions has distinguished PG from other airlines in Thailand.

Its boutique lounges, not just in the more extravagant design and a cozier atmosphere, but it offers greater personalized service and more attention to passengers needs hot meals and a personal shower room, personal library room, which can also be used as a personal meeting room, offers our passengers more private space. (Bangkokair, 2018). If you use Bangkok Airways lounge but you do not eat Khao-tom-mud it shows you not come to use the lounge. The menu on board every route with special menu, the passengers can require

special menu, every menu under the concept Tastes of Asia inspired by Bangkok Airways position as Asia's Boutique Airline (Flybangkokair,2014). Bangkok Airways's consumer can use exclusive service from boarding pass to be discounted the cost at Bangkok hospital or can recommend special service from counter check-in such as wheelchair, first time flyer who needs miss and assistance and now the passengers who hold the one card can use Blue Ribbon club lounge (Pinnarat, 2018).

Bangkok Airways's aircraft are also decorated with colorful liveries and unique strip that make the distinction that can appeal from the passengers. And Bangkok Airways is one airline that not use the same color and same strip on all of its aircraft fleet. Bangkok Airways received its first regional airline award in 2014 for the second time in 2016 and last year in the year 2017. This is the third time the airline has won a prestigious award. In addition, Bangkok Airways has been named Asia's Best Regional Airline since 2004 (Thairat, 2017). In term of product soft side, people are well-trained with problem solving competence. The employees were called for recurrent regularly training in dealing with situation, safety, security and personality. It can be seen clearly that PG differentiate itself in the region where its based. The airline provides unique products and services according to its slogan Asia's Boutique airlines.

It is important for both product hard side and soft side well blended to make consumer recognize and distinguish from others. Marketing position in the minds of consumers. To be identified with the feeling that is different from each product they have experienced. If consumers cannot distinguish the differences both products will be the same and will end at the price competition alone (Trachoo, 2014). The airline who can make the product to be airline's signature that means this airline overcome consumers' mind. As a Bangkok Airways' trainee I would say Bangkok Airways can treat the passengers with passion and can solve passenger's problem, in case of delayed flight other airline the passengers might be wait at the boarding gate without food and beverage but Bangkok Airways' passenger can wait at the lounge this is a simple thing that giving name Asia's boutique airline. Product services affecting the image of Bangkok Airways on the image of the company and brand image. The difference by product affects company image. Because airlines are providing services that are standards ensuring the reliability and consistency of the services. Which is different with the brand image in accordance with the blessing Piyawat Mehta (cited in Phanrapee, 2005). It is important to service something unique in a commoditized nature of the airline industry. As PG reflects on the different image of its brand to meet the needs of customers. Bangkok Airways is committed to providing good service to its customers, offering convenience in many areas, including catering services. Every flight, there is a special menu at the festival such as Valentine's Day, Mother's Day, for business class passengers, or even for economy class passengers, no other premium service airlines are available to serve the needs of customers travel in economy class.

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# STRATEGIC IMPLEMENTATION FOR MICE HOTELS: TOWARDS A CONCEPTUAL FRAMEWORK

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## ABSTRACT

MICE - Meetings, Incentive, Conferences, and Exhibitions - industry generates high revenues for the host countries. It is projected to continue growing in the global market. MICE hotel can be classified as the MICE venue providing meeting spaces, lodging, meals, and other services to business travelers. The demand for MICE hotel is still on the rise. Despite tremendous growth, one of the greatest challenges that MICE hotel face is maintaining a share in the increasingly competitive marketplace. The understanding of what's driving MICE strategies and how to implement them successfully can give hotels a competitive advantage. Predominantly research has been advanced offering prescriptions for strategic management. However, despite an extensive literature and the depth and extent of empirical research, the strategic implementation remains elusive particularly in the context of the MICE industry. The strategic implementation plays important role in developing and sustaining a MICE hotel's competitive advantage in complex and unpredictable environments. In this paper, therefore, we offer a definition of strategic implementation for MICE hotel. We also identify and reflect on a set of strategic implementation for MICE hotel. Building on the strategic implementation and MICE hotel literature, the framework covers all critical dimensions of strategic implementation for MICE hotel. On this basis, the future research and managerial implications are discussed.

Keywords – MICE Hotel, Strategy, Strategic Implementation

## INTRODUCTION

Meetings, incentives, conferences, and exhibitions (MICE), a type of business tourism, is a major driving force of the global economy as it can generate more revenue to the countries and cities that host such activities both direct and indirect ways, such as, event organizers, venues, lodging businesses, catering businesses, shopping destinations, tourist destinations, logistics and so on. Business tourists spend more than leisure tourists. Spending by business tourists has increased at a faster rate [1]. According to the Center for Exhibition Industry Research (CEIR), almost 40 percent of all U.S.-based exhibitions are conducted in hotels as MICE venues. In general, the majority of the MICE hotels known as convention hotels are international hotel chains, while some of them are local hotels [2].

In terms of strategy in the hotel industry, most of the hotels have targeted their own market segment based on customers' needs or preferences to gain the competitive advantage over its competitors. So, there are three types of business strategy; cost leadership, differentiation, and focus. If it is a focused differentiation approach, it competes with the differentiation in only one or few segments, such as MICE hotel which concentrates on serving a particular market or niche market (high potential customer from the unique product). However, the challenge for the MICE hotel industry in Thailand is to creating the effective strategy with high standards of performance through knowledge of MICE to maintain its position as a preferred MICE destination in the world. Long-term strategies are essential to enhance the performance in MICE hotel industry since the hotel focuses on business travelers who have high expectation on professional services and facilities standards. Based on the existing literature, there is a gap between strategy implementation theories and MICE sector in term of implementation factors that influence on MICE performance. Along similar lines, Noble argued that the well-formulated strategies may fail to produce a greater performance for the firm if they are not successfully implemented [7]. The available evidence seems to suggest that only 10% of strategies formulated are actually implemented successfully [3], and without effective implementation, even the best strategy will not be fruitful [4].

In this paper, therefore, we offer a definition of strategic implementation which focuses on MICE hotel. We also identify a set of strategic implementation factors for MICE hotel. Building on the strategic implementation and MICE hotel literature, the framework covers all critical dimensions of strategic implementation for MICE hotel.

## LITERATURE REVIEW

Given the challenges and opportunities in the globalized business, the top management has to focus on the long-term strategies to enhance the firm performance and its strategically competitiveness. Generally, Strategic Management involves with the process of determining missions, visions, goals and objectives. It consists of the analysis of both internal and external environments of the organization, decision-making by management level, and actions - that are the heart of strategic management [5]. Strategy analysis, strategy formulation, strategy implementation, evaluation and control in order to create and sustain competitive advantages. Today's managers need not only the ability to craft the right strategy, but also the skills to implement the strategy since the business cannot succeed without the right implementation [6].

### *1.1 Strategic Implementation Theories Towards a Definition*

Well-formulated strategies initiated by top management team can generate greater performance for the firm when they are successfully implemented [7]. Strategy formulation is not necessarily the only main success factors, and that implementation of the strategy is equally important. However, only 10% of strategies formulated are actually implemented successfully [3], and without effective implementation, even the best strategy will not be fruitful [4]. According to the literature, there are many definitions of strategy implementation. Okumus stated that Strategy implementation is one of the four main elements of strategic management; strategy analysis, strategy formulation, strategy implementation, and strategy control. Implementation has usually been regarded as being distinct from strategy formulation and as a matter of adjustment of organizational structures and systems [8]. Likewise, strategy implementation represents a pattern of decision and actions that are intended to carry out the plan. According to Noble, strategy implementation is defined as the communication, interpretation, adoption, and operationalization of a clearly articulated strategic plan. Implementation is the process that turns plans into action assignments and ensures that such assignments are executed in a manner that accomplishes the plan's stated objectives [7]. The implementation stage involves translating strategy into an operating plan [9]. Once obtaining the permission, a strategic decision can be put into the actions into practice. For Wheelen and Hunger, strategy implementation is the sum of the activities and choices required for execution of a strategic plan, involves taking ideas, decisions, plans, policies, objectives and other aspects of the chosen strategy and implementing them into action. The research on strategy implementation focusing on towards MICE business sector is limited. Furthermore, the strategy implementation is the action part of strategy formulation and make the plan happened to achieve the MICE hotel's goals. Thus, the focus of this research on strategy implementation that contributes to the competitiveness in MICE business sector.

### *1.2 Strategic Implementation Framework*

Reviewing strategy implementation literature shows that implementation factors can be categorized into two categories, these being, those involved with the organizational context and those concerned with the organizational process [10] & [11]. In each factor has several sub factors. One of the most cited implementation frameworks was proposed by Okumus, he developed his framework (2001) after identifying eleven key implementation factors which were strategy development, environmental uncertainty, organizational structure, organizational culture, leadership, operational planning, resources allocation, communication, people, control, and outcome. These variables were regrouped into four categories which are strategic content (strategy development), strategic context (environmental uncertainty, organizational structure, organizational culture, leadership), process (operational planning, resources allocation, communication, people, control), and outcome [11]. His previous research in 2001 on strategy implementation explain how implementation interacts with and influence other factors. In 2003, this paper provided explanations about the role and importance of each implementation factors and its relationship with other factors. Similarity, Waterman et al. argued that effective strategy implementation is attending to the relationship between these following seven factors (strategy; structure; systems; style; staffs; skills; and subordinate goals) and discussing each of these factors individually.

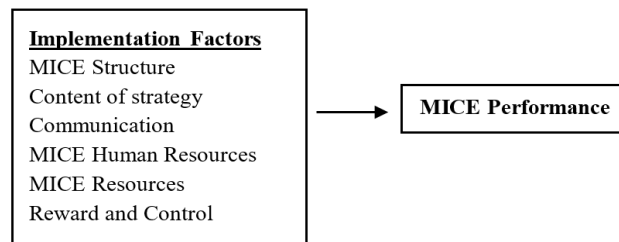
But they are not clearly explained for its relationship and interactions between factors [12]. According to the empirical research of Skivington and Daft, they investigated 57 decision in integrated circuits, petroleum, and healthcare organizations. They also divided the implementation factors into two groups; context (structure, reward and control) and process factors (communication and human resources. They attempted to determine how these factors interrelated during the implementation process [10]. The findings of this research explain that both framework and process factors can be used in implementing either low-cost or differentiation decisions depend on industries. Moreover, Miller investigated ten implementation factors for the model and further categorized them into realizer (backing, assessability, specificity, cultural receptivity, and propitiousness) and enabler (familiarity, priority, resources availability, structural facilitation, and flexibility). Based on this implementation literature, it concluded that realizers are more significant in implementing strategic decisions, whereas enablers are more various and their combined effect is not strong as realizers. Even though there are several empirical studies (framework testing) that have tested the relationship between factors, there are quite various in the methodologies and factors used. However, there is some framework which combined several elements under one factor. Meanwhile, others refer to each of this area as a key factor. In addition, the different titles are given to similar factors [11]. For example, communication is also called interactions [10].

### 1.3 The Proposed Strategy Implementation Framework

From an analysis of the previous frameworks discussed above, this proposed conceptual framework covers all critical dimensions that reflect on a set of strategic implementation for MICE hotel. The model consists of two main concepts: (1) Implementation (Context and Process) and (2) MICE performance which is shown in Figure 1. The proposed conceptual framework for MICE hotel. For the key implementation factors of MICE hotel, there are MICE structure, the content of strategy, communication, MICE human resources, MICE resources, rewards and control.

**Figure 1**

#### **The Proposed Conceptual Framework for MICE Hotel**



### 1.4 MICE Structure

Accordingly the organizational structure for MICE hotel and hospitality industry, it is similar to the structure in the widely business. There are three main types of structure to organization which are functional, multidivisional, and matrix [8]. First of all, functional structure is a basic pattern of small company and it is easy to make decision, communication and closely control the whole process and outcome. All the department heads have to report closely with a big boss of the organization who controls how the operations work. Generally, functional structure is centralized which is increasing power exerted by the center. Secondly, a multidivisional structure is based on each division or geographical area or customer-based structure is organized for expanding the market and fit company its size. There are many International Hotel Chains that use this kind of structure because they are suited to a fast-changing environment and high levels of customer satisfaction especially in larger businesses with multiple types of services [13]. Their organizational structures are based on brands, geographical area, and focused on customer preferences or called as a customer organizational structure. These structures are popular in larger hospitality companies as well as MICE hotels and always are decentralization. Finally, a matrix structure is combines some elements of functional structures with other form, sometime is called a hybrid structure. Some departments (Sales Event and Catering department) are assigned to work with one or more product or geographical area such as Marriott Hotels and Resorts, InterContinental Hotels and Resorts, and Accor Hotels Groups used this matrix structure to control functional department, product line,

geographic, customer, or service oriented in the same time, there are many reporting lines that caused “too many bosses” problem [13]. This matrix structure is decentralization with sharing authority and suitable for medium-sized organizations with multiple product. Therefore, the management teams have to carefully analyze their limitation of the organization structure and evaluate the suitable strategy before implementing.

On the problems of structure in the organization, many authors notice that there are some barriers or obstacles which impact to structure during implementation. In the early 1960s, there were several authors studied the relationship between an organization strategy and its structure. The first researcher, named as Alfred Chandler, mentioned about the important of strategy and structure relationship that an organization’s structure should be created to support the planned strategy of the company [14]. The organization can select the suitable structural forms after implementing a chosen strategy as organizations will gradually change their structure whenever they face the problems [4]. However, there are several important studies on the relationship between strategy and structure. Robbins suggested that structure can influence strategy because structure can impede strategic activity as well as simply constrain strategic choices. According to Hall & Saias, argued that in some cases the strategy might follows the structure depends on its existing organizational structure. While Mintzberg concludes that neither structure nor strategy takes precedence and both of them support the organization. So, they suggested that structure also influence strategy [18]. Alternatively, evolving organizational structure and implementation is important. Structure is slightly changes in the external competitive environment that make the organization have to introduce new strategies to organization may result in changing of organizational structure. To resolve this issue the strategy should synchronize with structure during implementation process. Unfortunately, there is no concrete evidence that whether structure follows strategy or whether strategy follows structure. From my point of view, the linkage between strategy and structure commonly go together, and normally found in the certain types of environments. Secondly, coordinating in organization for implementation activities was not effective enough. And this is closely related with key implementation tasks and activities were not defined in enough details especially implementation period. Furthermore, changing in responsibility of key players is not clear and also do not play an active role in implementation [15]. During implementation process, some organizations may not successful if they lack of employee empowerment, lack of routines, unclear line of responsibility, or following up is inadequate. Whenever cross-functional conflicts, it is always slowly responding to the market.

As mentioned previously, many authors assure that the structure is one of the critical factors to be considered during the implementation process. Therefore, this paper will focus on the impact of MICE structure on the success of implementation process by studying coordination of implementation activities among departments [8], roles and responsibilities [4], empowerment of employees [11], clearly tasks and activities, clear line of authority [16], structure and strategy are always interwoven [4].

### ***1.5 Content of Strategy***

Historically, the word of strategy comes from the Greek “Strategos” means art of the general which refers to the military’s planning and execution in a war setting, while making decision and tactics required to implement the plan by leader of the army [8]. According to the literature review, there are several authors defined what does the strategy mean? For Quinn (1980), he identifies strategy as a pattern or plan that integrates an organization’s goals, policies and action sequence into a cohesive whole. Meanwhile, Mintzberg portrays strategy as a plan – giving organization’s direction, a guide or course of action into the future – as well as a pattern, consistency in behaviors over time [18]. Most of organizations in MICE hotel and hospitality industry should have their owned fit strategy for giving company’s directions to achieve the goal. The top management team have to create a vision for the future from their experiences and knowledge as well as to know a method of controlling where the organization goes. The manager must know what the mission statement is, the purpose of a mission statement is to focus and direct the organization itself. The top management have to communicate primarily to all people concerned (both internal and external) and provide them a clearly understanding of organization’s intended direction.

According to some barriers or obstacles which impact to structure during implementation, many authors found that the main problems are lack of a strategic direction and unclear goal, objectives, or vision of the organization [4], not enough planning during implementation phase, lack of specificity of action plan [4] .

Furthermore, major problems surfaced during implementation that had not been identified beforehand or called as anticipate problems [4], no contingency plan [4], take more time than originally allocated [15], they also found a gap of measurement of strategic planning. As mentioned above, they caused for unsuccessful strategy implementation.

Strategy implementation required the strategy to be represented in an action plan. Whereas, Khemarangsan (2006) concurred with them that the content of strategy is very important in its implementation, as this provides direction to the implementers and acts as a set of performance evaluation criteria. It covers specificity of goal, anticipation of problem, availability of contingency plan and flexibility of the plan. Based on the literature review in MICE hotel and hospitality industry, most of hotels have targeted their own market segment based on customers' needs or preferences to gain competitive advantage over its competitors. So, there are three types of business strategy; cost leadership, differentiation, and focus. Thus, MICE hotel focus on serving a particular market niche (high potential customer from unique product). This paper points out that content of strategy is essential factor during implementation since every company need direction to follow. Hence, content of strategy in this study proposed the specificity of goals, realistic and measurable vision, anticipation of problems, and contingency plan.

### ***1.6 Communication***

In MICE hotel and hospitality industry, the success of organizations depends on various factors include communication within the organization. There are various definitions and descriptions of communication in the literature review. Communication can be defined as an activity that aims to provide information as one of the pillars of social life and organizational structure, as well as activities to build relationships between organizations and groups. They suggested that communication is the activity of exchanging messages or thoughts through speaking, pointing or writing, and communication event happens when messages have been completely conveyed. For Khemarangsan (2006), communication is an important factor when there is a need for change, even if the level of change is small, because any type of change will cause instability among employees who are affected. It is also known that a link exists between communications and a successful outcome. This factors includes the method of communication (the formal and informal messages, top-down and bottom-up communication within an organization) about the new strategy and the use of clear messages when informing all people concerned both internal and external of the organization [11]. Successful implementation goes beyond ensuring staffs members understand any new strategy, they must clearly understand it first as well as know exactly what to do to help implement it and be motivated to do it. According to the common barriers impact during implementation, many authors found that the problems are lack of communication between management level and implementers since problems required top management involvement were not communicated early enough, as well as, communication generally takes time, unclear content of message [4], lack of information sharing or communicate with suppliers and customers and lack of understanding of strategy of both middle level and implementers. Besides, there is lack of participant of bottom-up, sense of ownership or sense of urgency. Hence, effective communication is very crucial [4] proposed that "selling" the idea to all involved parties – internal, external, across the department and up-down the hierarchy.

There are many way to communicate, but it is necessary for implementers to know which methods are appropriate to ensure effective communication as well as enhance the successful implementation of the new strategy. Most of MICE hotels use both manual and technology to communicate from across departments and properties, using technology lead to competitive advantage in hotel industry. On the basis of the evidence currently available, integrated IT systems are required to enable employees to exchange information and share knowledge. In addition, several researchers proposed ways to strengthen the content of messages by exploring what types of communication technique is suitable in certain contexts [4]. Thus, methods of communication can be customized to fit each culture and situation. The existing literature on this topic in the hospitality field is not conclusive yet and there is a gap from conceptual and empirical studies into this area. This paper focuses on level of the content of message and the method of communication within MICE hotel to identify the communication effectiveness.



### **1.7 MICE Human Resources**

People is an important resource to every organizations especially service industry. Human resources is a key role in service quality, customer loyalty and satisfaction and other measures of firm performance. The most important thing is focus on long-term strategies to enhance the performance in MICE hotel industry since we usually work with business travelers who have high expectation on professional services and facilities standards. Many hotels have targeted their own market segment based on customers' needs or preferences to gain competitive advantage over its competitors. Considering the human resource (ability and skills) in the strategic decision [12], is a reflection of the need to maximize the utilization of human assets [4]. For MICE and event sector, though sharing many characteristics with tourism and hospitality, is often different in certain ways [16]: work is usually geared towards a particular point in time when the events are taking place, volunteers often form an important part of the workforce, and staff numbers have often had to quickly expand and then contract. To portray the issue in MICE hotel's terms, human resources is crucial to the successful implementation of strategy in most organizations [16].

According to the barriers impact during implementation, employees in small hotel or local people may not fully understand their roles and responsibilities in term of MICE knowledge if compare to employees based in Bangkok, this problem could affect the service quality [2]. The shortage of human resources who have relevant knowledge, skills and attributes to an industry is also important for MICE hotel industry especially English language capability, communication skills, computer and IT skills. Besides, management level is lack of professional skilled and capabilities [12] to run the international business events. It is argued that Thailand still need a lot of experienced staffs who have multi-skills and fully understand the complexity of this industry [2]. Next, there is a high rate of employee turnover because of a serious issue in hospitality industry in term of Convention and Exhibitions, they need a lot of staffs to service their business travelers for seasonal jobs or project-based jobs. Thus, it is necessary to seek for skilled staffs and well-planned in advance. Certainly, training and orientation are necessary tools for human recourses development in every organization [11].

However, it may be limited of research publications focusing on human resource of MICE hotel during implementation phase [2]. The literature shows no consensus on human resource factor have an impact on the successful of implementation process. Thus, this study aims to investigate MICE career capabilities and relevant skills, service mind and attitude, MICE knowledge and training.

### **1.8 MICE Resources**

Generally, the tourism, hospitality and events industries are service industry sectors including accommodation, restaurants and bars, catering, gaming, meetings, events (business and leisure), conference organizers, tour operations, tourist information services, tour guiding, holiday parks and resorts, cultural tourism, casinos and caravan park operations. Definitely, there are two basic types of product: goods (tangible) – things you can touch, and service (intangible) – service cannot be touched, but things done on your behalf or for your benefit [16]. The literature on resources abounds with examples of tangible product of hotel can be seen in the form of buildings, hotel rooms, facilities, food and beverage, and/or technology. In term of intangible can define as the quality of services that guest receives such as butler service, room service, experiences, skills, brand image, and etc. To better explain this issue, the existing literature review suggests that the competitive advantage comes from a hotel's unique tangible and intangible resources. It should be valuable, rare, inimitable, and no substitutable, and the hotel should be organized in a way that it can effectively and efficiently exploit the resource. If a resource is to be considered valuable, it should be contribute to the organization's performance [8]. Information Technology is prominent in the literature on resource's term of hotel, the available evidence point to IT investments will increase hotel's productivity, reduce their costs, and at the same add value to the products and services offered to their guests [17]. Although, the cost of IT investment is very expensive, but it is worth because IT investment play a critical role in managing hotels strategically. Normally, hotel use IT applications purely for front of the house and back of the house. MICE travelers or business travelers may require specific IT applications for their meetings such as Wi-Fi hotspots, in-room entertainment systems, and fast check-in/out from their mobile phone or hotel application [17]. Based on the existing barriers on MICE resources, people are more inclined to accept new things (i.e. high technology) when they see that these things work and lead to result, the IT application is too complex for those end-users, and some MICE hotels are not

ready for certified organizational standard as MICE venues. There is limited research on MICE sectors, but the existing literature review on tourism and hospitality industry can apply with this field. Therefore, this study is trying to fill in this gap by seeking to investigate that MICE resources (include value added to products and services, IT applications for guests, availability of MICE resources) impact to the outcome.

### ***1.9 Rewards and Control***

When we talk about reward and control in tourism and hospitality industry, there is a variety of terms that can describe reward such as ‘compensation’, ‘remuneration’, ‘reward’, ‘payment’, ‘wages’ and ‘salaries’. There are many theories of how remuneration can be calculated so that it directs the individual behavior of at all levels of the staffs towards their achievement [4]. The three fundamental types of control are culture, rewards and incentives, and boundaries and constraints. Not all organizations place the same emphasis on each of control. When the measurement of an individual’s performance is straightforward, control depends primarily on granting or withholding rewards [5]. For example, a sales manager has a budget goal to achieve if she/he can generate higher goal/ over sales volume, which is relatively easy to determine for rewards and incentives, commission, and/or bonus. According to reward and incentive system, this represents a powerful means of influencing an organization’s culture, motivating individual and collective task performance, and focusing on high-priority tasks [5]. To summarize, the reward can be defined the use of performance-based incentive systems to motivate all level of the employee for achieving the organization’s goals and objectives. Implementing a strategy in the organization requires that all employees are involved since introducing a system of incentives for corporate strategy implementation. Regarding the control mechanism, it is the process which allows top management to determine if a business unit is performing satisfactorily, and motivate that business unit management to do so [4]. Control and feedback define as the formal and informal mechanisms that allow the efforts and results of implementation to be monitored and compared against predetermined objectives [8]. Despite differences in organization types, MICE hotel has both rewards and control systems to motivate and monitor all employees to run the business during and after the implementation process. For MICE sector, all stakeholders also have a role in monitoring, whether that means determining what to monitor, how to monitor, conducting the monitoring activities, or analyzing the monitoring data for assessment. Due to the limitation of research on MICE sectors, the existing literature review on the tourism and hospitality industry will be applied with this field. Hence, this study is trying to fill in this gap by investigating the rewards (rewards and incentives systems) and control (project-based, budgeting, and daily operations) that impact MICE performance.

### ***1.10 MICE Performance***

Due to the complexity of empirical study and limited research on MICE hotel performance, the authors will apply for this existing literature review with the tourism and hospitality field. Performance is the result of the implementation process, many studies on organizational performance use a variety of financial and non-financial success measures. Financial measures include profit, the return on investment (ROI), returned on capital employed, inventory turnover, hotel occupancy or hotel room night, and/or hotel’s RevPAR. Non-financial measures consist of hotel standard, brand image, competitiveness, and innovation. In general, the measurement of organizational performance both financial and non-financial indicators are important to determine the company’s position compared with its competitors for further improvement. Business performance derives from the field of strategic management which is concerned with evaluating the efficiency and effectiveness of business actions towards the attainment of organizational goals. Generally, hotel general managers have an important influence on the success or failure of service quality implementation. Thus, their support as critical implementers of quality is paramount particularly in today’s highly competitive hotel environment. Therefore, MICE performance measure selected for this study will base on two factors; financial and non-financial measures.

## **CONCLUSION AND RECOMMENDATION**

This paper has proposed a framework to identify all critical implementation factors and reflect on a set of strategic implementation for MICE hotel. There are six implementation factors may impact upon the implementation process are MICE structure, the content of strategy, communication, MICE human resources, MICE resources, rewards and controls. For MICE performance consists of financial and non-financial measurement. Although there has been relatively little research on strategy implementation towards MICE

business sector about why some MICE hotels are able to perform better than others, or why MICE hotels fail to implement a successful strategy, some factors of MICE may impact upon the implementation process which will be tested in future research. The strategic implementation plays important role in developing and sustaining a MICE hotel's competitive advantage in complex and unpredictable environments. On this basis, the future research and managerial implications are discussed to enhance service MICE industry.

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# DEVELOPMENT A FRAMEWORK FOR SUSTAINABLE LEAN MANUFACTURING AND EMPLOYEE ADVOCACY: TOWARDS SUSTAINABILITY PERFORMANCE

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## ABSTRACT

Global forces such as climatic catastrophists, recession, and energy crisis result in fragmenting and increasing a variety of demand from customers. Manufacturing organizations have adopted lean manufacturing in an effort to achieve competitive advantage through operational efficiency. However, lean manufacturing applied in many manufacturing firms fail to deliver desired performance. The need for sustainable lean manufacturing to generate superior performance has been discussed in the literature. While the potential of sustainable lean manufacturing to improve the manufacturing performance has been raised, the employees who take part in the production are essential for the success of lean manufacturing. Employees are the most valuable assets. Employee with happiness and productive performance leads to growth in business. Advocacy employees are considered as the biggest influencers for a company. Nonetheless, the advocacy employee is an untapped territory. Thus, the purpose of this study is to develop a framework proposing a complete integration of sustainable lean manufacturing and employee advocacy in order to improve the sustainability performance. The future research and managerial implications are also discussed.

Keywords – employee advocacy, sustainable lean manufacturing, towards sustainability performance

## INTRODUCTION

The advent of recession at the beginning of twenty-first century forced many organizations worldwide to reduce cost and to be more responsive to customer demands. Lean Manufacturing (LM) has been widely perceived by industry as an answer to these requirements because LM reduces waste without additional requirements of resources. The best way to describe this innovative production system is to integrate it with craft production and mass production, the two other methods humans have devised to make things [1].

LM combines the advantages of craft and mass production, while avoiding the high cost of the former and the rigidity of the latter. Lean producers employ teams of multiskilled workers at all levels of the organization and use highly flexible, increasingly automated machines to produce volumes of products in enormous variety.

LM offers the organization a set of tools and techniques that can be used to achieve the objectives of LM in order to reduce or eliminate the wastes. Building blocks of Lean may be tactical and narrowly focused which only achieve maximum effectiveness by using them together and applying them cross-functionally through the system [2].

Instead of pay attention to LM alone, there is increasing concern in climate change, poverty and inequity, population growth, pollution, and the increasing cost of energy and resources. Companies across the globe are under pressure from customers, regulators, and other stakeholders to manage their operations in a responsible manner to improve their environmental and social performances. Thus, improving sustainability performance of industrial processes is no longer just nice to have, but a business imperative. Sustainability has emerged as a new competitive criterion [3], [4], [5]. According to Chiarini [6], the use of management systems to solve the current global challenge of sustainability has been explored. It is in this context that LM has emerged as a major part of the sustainability answer.

Many researchers and practitioners have studied the possible integration of lean and sustainability focusing on the relationship between Lean and sustainable perspectives. According to Hartini and Ciptomulyono, research lean and sustainable manufacturing has received increasing attention from researchers [7]. The number of articles focusing on lean and sustainability published from the last 17 years had been increasing. Many evidences suggested that lean is beneficial for sustainable manufacturing, dominantly on perspective environment and economic aspect manufacturing. There is the positive impact of lean and sustainable manufacturing on three bottom line performance which consists of Environment, Economic and Social sustain abilities.

Some of the extant articles cover different areas of firms and links between Lean and sustainable manufacturing performance. Application of lean is not limited to the automotive industry only but also found, it has also found in a wide range of manufacturing industries: electronics manufacturing, aircraft industry, furniture industry, ceramic industry, and other sectors.

Having employees that believe in your business is important as this shine through in the way they interact with customers and deliver operations. Employees who are advocates to your business refer your company to their friends and family members, potential customers and a potential employer. Companies can basically should treat their employees as “internal customers’ by focusing on their own wants and needs. Understanding to what extent employee are advocates of the business they are working for is therefore an important indicator for understanding not only staff satisfaction and staff loyalty but also the potential implications it has for your brand and the ability to attract new talents.

Employee advocacy is related to the transparency of company’s employment offers, and their willingness to act in the best interests of their employees and it’s influenced by firm treatment of employees. The firm methods to manage their employees effectively, and to ensure that their attitudes and behavior are conducive to the delivery of high quality service. It is a crucial indicator of the impacts on the firm’s performance. Additionally, employees with greater commitment tend to remain employed in the same organization for a longer period [8]. In addition, they are more efficient in their job performance [9]. It also assumes that there is a relationship between an employee and the firm, which contributes not only to the firm, but also to wider society.

Employee advocacy concerns an employee’s perception of the extent to which an organization values their contributions, and cares about their wellbeing [10]. Thus, employees tend to seek a balance in their exchange relationships with their organization, by basing their attitude and behavior on their employer’s commitment to them [11]. Therefore, it becomes interest to study employee advocacy has the potential to affect all aspects of an organization’s sustainability performance.

The key benefit of this research is to provide pertinent lessons for organizations to improve their actions that need to adopt to improve lean, employee advocacy and sustainability performance after identifying the interrelationships among them and analysis in the performance on the three key dimensions of sustainability: environment, economy, and social. This research objectives aim to consider the relationship between sustainable lean manufacturing and on sustainability performance. The study also investigates the association between employee advocacy and sustainability performance.

The research question, developed from a conceptual review of the literature to achieve the research aims and objectives, the following research questions have been formulated as follows

- Q1. What are sustainable lean factors?
- Q2. What is employee advocacy?
- Q3. What are sustainable performances?
- Q4. What are the relationship between sustainability lean and sustainability performance?
- Q5. What are the relationship between employee advocacy and sustainability performance?

The research plan to collect data from automotive industry in Thailand where the advance area of LM and sustainability are implemented to use questionnaire developed base on questions and issues highlighted in literature.

## LITERATURE REVIEW

### *1.1 Sustainability Lean*

Companies in many business sectors have adopted LM in their operation enabling them to improve their results and their competitiveness [12]. Although many companies have successfully implemented LM, others have not achieved the results that they expected. These companies cannot sustain their results over the medium and long term [13]. This has created an interest among researchers to examine why they are unable to sustain LM performances.

The concept of sustainability (environmental or ecological, economic and social) to be identified in this regard according to the definition, three key dimensions or elements of sustainability can be identified: integrating economic, environmental and social aspects in a “triple bottom line” (TBL) [14]. The triple bottom line term was coined in the 1990s by business consultant John Elkington, the founder of a British consultancy called SustainAbility to describe economic, environmental, and social value of investment that may accrue outside a firm’s financial bottom line [15]. His argument was that companies should be preparing three different bottom lines. One is the traditional measure of corporate profit—the “bottom line” of the profit and loss account. The second is the bottom line of a company’s “people account”—a measure in some shape or form of how socially responsible an organization has been throughout its operations. The third is the bottom line of the company’s “planet” account—a measure of how environmentally responsible it has been. This is referred to as the 3Ps (people, planet, profit), triple value adding [16], and blended value [17]. According to Hammer and Pivo, the business’s responsibility extends to all of its stakeholders, not merely to its shareholders [18]. In other words, it takes into account the impact of the business in terms of social and environmental values along with financial returns. Whereas traditional models were about making money and garnering profits, TBL accounting recognizes that without satisfied employees and a clean environment, business is doomed to be unsustainable in the long run [19]. It has gained traction in fields related to economic development including business, planning, finance, and real estate [18].

According to Savitz and Weber, TBL captures the essence of sustainability by measuring the impact of an organization’s activities on the world [20]. A positive TBL reflects an increase in the company’s value, including both its profitability and shareholder value and its social, human, and environmental capital. The current existing of TBL as a kind of balanced scorecard that captures in numbers and words the degree to which any company is or is not creating value for its shareholders and for society. Therefore, the studies aim to examine sustainable LM based on TBL perspective.

#### *1.1.1 Lean Economic Sustainability (Firm Profit)*

The alignment between lean management and economic sustainability is that economic sustainability is usually well understood. At the plant level, it is being operationalized as production or manufacturing costs. The triple-bottom-line concept suggests that firms are not only need to engage in socially and environmentally responsible behaviors, but also have positive financial outcomes [21].

Shop-floor employee involvement is critical to the successful adoption of lean production. Lean practices related to setup time reduction, cellular manufacturing, and quality improvement initiatives have varied direct effects on profitability has a significant direct effect on profitability. Most important, the evidence suggests that the use of Non-financial manufacturing performance measures (NFMP) related to equipment downtime, on-time delivery, scrap, rework, setup times, labor productivity, throughput time and manufacturing cycle efficiency measures mediates the effects that lean production initiatives have on firm profitability [22].

#### *1.1.2 Lean Environmental Sustainability*

Lean initiatives tend to promote substantial “green” benefits. Likewise, organizations implementing lean frequently do not quantify the environmental performance associated with their lean initiatives. Organizations should explicitly consider the environmental impact, savings and potential revenues of lean initiatives lean involves the ability to reduce waste, to improve productivity and quality, sustainable “green” initiatives should become an intentional objective [23].

Lean Methods and Tools with Associated Environmental Benefits include Kaizen Events benefit to uncover and eliminate hidden wastes and waste generating activities. Value Stream Mapping is benefit to magnification of environmental benefits of lean production (e.g., reduced waste through fewer defects, less scrap, less energy usage, etc.) across the network. Environmental benefits may be more broadly realized by introducing lean to existing suppliers rather than finding new, already lean suppliers. 5S can generate many advantages such as clean windows, reduce lighting requirements, spills and leaks noticed more quickly and reduce consumption of materials and chemicals. Equipment, parts, and materials are organized and easy to find. Cellular Manufacturing can reduce set-up times, reduce energy and resource needs, fewer product changeovers reduces energy and resource needed and defects may be noticed earlier including, reducing waste. Pull Approach can reduce lower in-process and post-process inventory; avoids potential waste from damaged, spoiled, or deteriorated products and less floor space needed; potential decrease in energy use. Total Preventive Maintenance can reduce increasing longevity of equipment decreases need for replacement equipment and associated environmental impacts and decreased number and severity of spills, leaks, and upset conditions: less solid and hazardous waste. Six Sigma can reduce defects which reduces energy and resource needs; avoids waste, focuses attention on reducing the conditions that result in accidents, spills, and malfunctions, thereby reducing solid and hazardous wastes and improving product durability and reliability can increase product lifespan, reducing environmental impacts. Pre-production Planning can reduce waste at the product and process design stage, similar to “Design for Environment” methods by using of right-sized equipment lowers material and energy requirements , reducing the complexity of the production process (“design for manufacturability”) can eliminate or streamline process steps; environmentally sensitive processes can be targeted for elimination, since they are often time-, resource-, and capital-intensive and less complex product designs can use fewer parts and fewer types of materials, increasing the ease of disassembly and recycling. Lean Supplier Networks can magnificent of environmental benefits of lean production (e.g., reduced waste through fewer defects, less scrap, less energy usage, etc.) across the network and environmental benefits may be more broadly realized by introducing lean to existing suppliers rather than finding new, already lean suppliers.

### *1.1.3 Lean Social Sustainability*

Lean Social sustainability means treating your employee’s right. This is also known as human capital and it relates to fair and beneficial business practices towards labor, the community and region in which a corporation conducts its business. According to Savitz and Weber, the balanced scorecard that captures in numbers under social outcome performance are labor practices, community impacts, human rights, product responsibility [20]. Regarding Panizzolo, and Traville & Antonakis, sustainability lean in social sustainability related to human resource and 6 sigma where should provide proper group problem solving, training, cross functional teams, employee involvement, workforce commitment [24], [25]. Six sigma, which this activity will focus, is targeting on reducing the conditions that result in accidents, spills and multifunction.

### *1.2 Employee Advocacy*

Employee advocacy is related to the transparency of company’s employment offers, and their willingness to act in the best interests of their employees and it’s influenced by firm treatment of employees. Therefore, the firm methods to manage their employees effectively, and to ensure that their attitudes and behavior are conducive to the delivery of high quality service. Therefore, some conditions are required in order to make employee advocate to company this means that company should provide complete and open information for employees, enables employees to share information about their experiences when using various products and service, attempts to represent the employees’ best interests, supports employee self-improvement, provide tools to help employees to choose between different options and attempts to improve employee satisfaction [26].

### *1.3 Sustainability Performance*

Sustainability is an evolving concept, which makes it difficult to define it. In theory, sustainability is nothing more than “meeting the needs of the present without compromising the ability of future generations to meet their own needs [27]. There are more than 500 definitions of sustainability, in general the term refers to the capacity to endure. In ecology sustainability describes how "biological systems remain diverse and productive

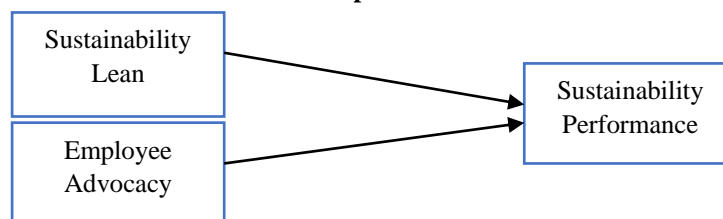
over time." For humans it is the "potential for long-term maintenance of well-being, which in turn depends on the maintenance of the natural world and natural resources" [28] and most of these pertain to the specific discipline or field-for example, sustainable community or sustainable design. Despite the varied definitions of sustainability, the concepts include these basic precepts: Living on earth has environmental limits. Humans have the responsibility of preventing or cleaning up pollution. The economy, environment and society are interconnected and interdependent [27].

However, the most common definition of sustainability is one from the area of sustainable development provided by the World Commission on Environment and Development (WCED), also known as the Brundtland Report, that states. "Sustainable development is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs" [29].

In the last decades it has become more and more important for manufacturing firms to be more sustainable in their operations. To achieve sustainable development of manufacturing firms, sustainability aspects need to be included in companies' manufacturing strategies, which in turn makes it necessary to have sustainability KPIs incorporated in the manufacturing performance. To achieve this, increased knowledge of and insight in drivers to achieve sustainability on shop floor level is required [30].

The most cited work on sustainability performance indicators (SPIs) is the study by (Veleva and Ellenbecker [31]. There suggested model is based on the indicator framework developed at the Lowell Center for Sustainable Production (1998). The three sustainability dimensions (Environment, Economic, Social) are transformed into six main aspects of SP: energy and material use, natural environment, social justice and community development, economic performance, workers, and products.

**Figure 1**  
**Conceptual Framework**



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# THE IMPACTS OF NETWORKING ON SMES INTERNATIONALIZATION IN THE INTERNATIONAL TRADE SHOW CONTEXT

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## ABSTRACT

International trade show is one of the international marketing strategies for small and medium enterprises (SMEs) to enter into the global markets. SMEs are typically restrained by limited resources. Therefore, international trade shows, considered as a highly cost-effective platform for meeting potential foreign customers in a short period of time. Indeed, international trade show plays an important role in facilitating or developing international business networks. However, the impacts of networking in the international trade show on SMEs internationalization have gone largely unstudied. Thus, this research aims to investigate the types of network that the SMEs as the exhibitors attain from participating in the international trade show. This paper also studies the impacts of the networking on SMEs internationalization, particularly market entry mode within the international trade show context. Based on literature, there are four types of networking, which are buyer, suppliers, competitors and government networks involving with SMEs' internationalization. Qualitative interviews were conducted with a sample of twenty two SMEs entrepreneurs. The results indicate the important role of networking on SME internationalization. Specifically, the buyer network plays the most important role in the SMEs internationalization. Moreover, the findings demonstrate that the internationalization paces can be divided into two types, gradual and rapid paces. According to the results, networking in the international trade show affect SMEs business expansion in both international paces. SMEs tend to use the networks to make their first-time market entry. The evidences suggest that SMEs utilize buyer network during the early stage of internationalization and continue using the buyer network after successfully entering into foreign markets. Two internationalization theories, Uppsala and Born Global models are applied to explain the findings.

Keywords - born global, entry mode, international trade shows, internationalization, network, small and medium enterprises, Uppsala

## INTRODUCTION

Trade show is considered to be one of the marketing strategies for both large and small firms. SMEs tend to enter global market place by participating in international trade show. Trade show is a growing field of research by using developing countries as evidence of studies such as Singapore, Thailand [1]. SMEs usually bring their business units to exhibit in international trade show organizing in various cities all over the world. Many developing countries that has export led policy usually has government agencies that facilitate firms in doing international business through various international activities. For instance, Malaysia External Trade Development Corporation (MATRADE), Enterprise Singapore, Hong Kong Trade Development Council (HKTDC), Department of international trade promotion (DITP), etc. This study aims at connecting international business theory particularly internationalization with SMEs' participation in international trade show activities. The research will examine validity of internationalization theories in the emerging economy. The two main theories that focus on the development of internationalization process, namely Uppsala and born global will be justified how small firms bring themselves to international markets.

## LITERATURE REVIEW

### 1. International trade show and SMEs

Trade show can be categorized based on various dimensions. Wen and Duan, as cited in [2], p. 56, stated that trade show can be categorized by geographical coverage, such as international, national, or local trade

show. By range of products: universal/general, special interest, industry-specific. Gopalakrishna and Williams, 1992 called vertical and horizontal trade show [3]. Vertical trade show is for a single or related industry for special customers whereas horizontal trade show is for many industries and products categories. In addition, they also divided by audience or visitors, whether it is business-to-business (B2B) and business-to-customer (B2C) shows. The two main functions of trade show are selling and non-selling. The selling function or sales goals are such as making direct sales and finding local sales representatives. The non-sales goals are such as building brand/image, maintaining contact with current and new customers, improving corporate image, gathering information about competitors, test new product, and increase employee morale [4], [5].

Generally, there is no single conclusion of SMEs definition among scholars. The interpretation of SMEs is varied among countries. Kaffash et al. proposed that the best definition of SMEs was given from Bolton Committee in 1971 [6]. They define SMEs as enterprise that has low partial ratio in competitive market and cannot influence on market price. Other scholars identified SMEs by using number of employee and amount of capital as the main criteria. For number of employee perspective, United States define SME as a company that has 500 employees or less. In Taiwan, number of employees in SME limited is 650 or less. Malaysia categorized small scale firm is a company with less than 50 full time employees and with turnover of less than RM 10 million, meanwhile the range of employee for medium-scale business unit is between 51-150 employees and annual turnover of between RM10 million to RM 25 million (Cavusgil, Knight, and Riesenberger, 2008; Lin and Chaney, 2007, cited in [7]). In Thailand, the Thai Ministry of Industry defines SMEs and classifies them into production, service, and trading sectors. Since this research use sample from Thai SMEs, therefore, the definition of SMEs is taken from Thailand Ministry of Industry. The emphasis is on size of employees as a main criteria. Hence, it is defined as the enterprise that has employees under control of less than 200 people.

## **2. Network obtained from trade show**

SMEs use international trade fair as opportunity to establish and strengthen relationships that can lead them to enter international markets. Trade fairs are seen as a networking platform that allow people to interact with each other and gives SMEs the chance to grow overseas [8]. Trade show allows sellers face-to-face contact with various stakeholders such as potential buyers, etc. [9]. Network with buyers in trade show are firms rather than end user consumers, therefore, the building relationship with another business unit is more complicated than individual customers who are end users of product or service. Exhibitors in trade show usually discuss about business with suppliers [10]. For example, participants will have opportunity to meet with their existing machinery suppliers [11]. In addition, trade show allows exhibitors to confronting with competitors and exchange information and experience with them [11], [12]. In some cases, there is opportunity for working together on the project that is too large for one company or enter new field [13]. Finally, professional and government agencies in emerging play a vital role in internationalization by assisting SMEs in export activities [2]. These includes trade show organizers press and media, trade associations, institutes, and professional associations. [14], [9], [15].

## **3. Internationalization theories**

Welch and Luostarinen define internationalization as the process in which firms increase their involvements in international operations [16]. One of the prominent theories is the Uppsala or stage model. This approach explained internationalization as a gradual process where a firm commits to international activities gradually. The model is set on the premise that market knowledge is the key factor for firm to expand market overseas, and that necessary knowledge can be developed once firm operate in such overseas countries. Psychic distance is the important underlying concept for Uppsala approach. Johanson and Vahlne defined psychic distance as all factors that prevent flow of information to come and go out from market [17]. It refers to the different aspects between home and foreign markets e.g., culture, language, or physical distance (Dikavo; Hennart, as cited in [18]). The stage or Uppsala model was revised in 2009 by Jan Johanson and Jan-Erik Vahlne [19]. The revised work incorporated a business network model of internationalization process. Network is seen as the mechanism of improving and protecting firm's position in target market. In addition, business relationship is the key element to identify and develop opportunities and impact on particular geographical market a firm decides to enter.

On the contrary, Born Global, refer to smaller firm that usually be technology-oriented companies that operate international market from the earliest days of their establishment [20]. The conceptual of internationalization are oppose to Stage model. The stage model explained the process of internationalization in the gradual form. Firms normally begin to export in the geographically nearby markets. Meanwhile, Born Global firm expand to multiple countries at the beginning stage of firms' formation.

The Network approach aims to explain intensity level of networking and how firm utilize network under difference internationalization scenarios rather than explaining development of firm's internationalization process. Johansson and Mattsson (1988) developed a network model of internationalization based on business network research [21]. The main point of model is the extent of relationship's level of firms in four different situations 1) the early starter, 2) the late starter, 3) the lonely international, 4) international among others. The model does not intend to describe process of internationalization as Uppsala and Born Global approach explained, but provide the importance of network in the different internationalization environments.

#### **4. International market entry mode pace**

Entry mode is one of the aspects of measuring internationalization of the firm. Pace of entry mode vary depending on the underlying of internationalization concepts presented in the above section. Stage model indicated that firm proceed international market gradually. There is some delay between marketing activities and actual sale. Therefore, the gradual pace of market entry is in accordance with the Stage model concept. For Born global firms, there is no exact agreement on certain interval of time taken to internationalize. Welch and Luostarinen referred to the firms that seek to export at the time of inception [16]. Chetty and Campbell-Hunt stated the range of time to internationalize is between 2 to 8 years [22]. Meanwhile, Knight, Madsen and Servais set the measurement of 3 years with at least 25 percent of sale must be from export [23]. Research from developing economy has even less data on specific time interval to classified firm as BG. However, the underlying reason is unclear. A few years of international sale since inception seems to be preferred definition that various researcher set their criteria. Other measure is, for example, Graves and Thomas (2008) stated that born global firms normally have exporting activities concurrent or near-simultaneous domestic sale movement [24].

Therefore, this study categorizes pace of entry mode into two: gradual and rapid by measuring time to internationalize as well as history of firm in international market expanding. It is inappropriate to justified only time dimension since there is no precise conclusion among scholars. If the firm precisely indicated that they have been never interested in international activities and/ or have solid track record of domestic sale at the time of founding company, then, that company will be classified as internationalize at gradual pace. Similarly, if it is found that a company entry foreign market since inception, that company would be considered as entry international market at rapid pace. This research employed main characteristics from existing researches and developed measures that will be used for this study.

#### **METHODOLOGY**

The goals of this thesis are to identify types network which affect to international market entry mode. Fontana and Frey (2003, as cited in [25], p.58) explained that interviews in appropriated method in finding complex issues and uncategorized set of data [19]. Thus, semi-interviewing is chosen as a qualitative method in obtaining data. Kvale and Brinkmann (2009) argued that the interview should be conduct until there is no new knowledge that contributes to the new discovery of research [26]. Questions are formulated according to literature reviews. Furthermore, the question set was translated to Thai with the reviewed and comments from expert. Twenty two Thai small firms were collected as samples. There are certain criterions for the sample selections. All of them must have experiences in participating international trade show. Sample SMEs must be internationalized SMEs. This means that they must have track record of the completion process of international expansion e.g. demonstrated evidence of exporting activities that accounted as part of firm's revenue, be able to identify destination countries of exporting, etc. In addition, the interviewees must act as executor in managing position especially position that directly involve with international business activities such as trade show during exhibiting hour. The interviews are transcribed. Then, results are evaluated according to the research questions.

## FINDING AND DISCUSSION

All respondents accept that meeting with buyers is one of the main reasons in participating trade show. Some even reveal that its first reason for exhibiting in trade show is to developing network with buyers. The example of buyer network from interviewing are from C21-Seyeglassess. The exception is as follow:

*“One of our main objectives in booth exhibiting is that we want to see a lot of customers at once so that we do not have to commute many times and are able to meet 30...40... or 50 customers in trade show. It is quite efficiency in communication.*

Apart from buyers, it was found that many Thai SMEs’ perspective on competitor is in accordance with the mentioned concept. Respondents specified in many situations that they view competitor as alliance. C12-Npet described that:

*“Direct competitor? Not really. It’s like indirect competitor. Like similar products but not exactly the same. It’s kind of competitor whom we can help each other. For example, my product line is pet collar. Another is other type of pet products. We exchange information such as...hey, I have a customer that you should go to talk to.”*

Supplier is another business network that small firms acquired. However, unlike buyer and competitor network, all respondent did not consider supplier network as main objective in developing relationship during trade show event. C08-Rspa, a spa product exporting firm elaborated that:

*“Sometimes...Umm.. supplier come to us, offer us. Or while we were walking in trade show, we meet suppliers such as packaging...manufacturing.”*

In addition, some respondents viewed professional and government as indirect international sale supportive units. Respondents were able to identify and willing to develop and strengthen relationship with them in order to open more business opportunity. Another spa product exporting company, C11-Dspa explained that:

*“We went (to trade show) many times with TAT (Tourism Authority of Thailand).”*

In conclusion, different types of network: buyer, competitor, supplier, professional and government were discovered during interviews. In general, small firms with gradual pace established themselves in domestic product first. Buyer network are found to have impact on firm’s market entry pace. Interestingly, informants could not provide specific evidence on how competitor, supplier, and professional and government network influence on speed of international market entry. Table 1 presented that eight out of twenty two companies were found for evidence of the influence of buyer network on market entry pace. Among these, C02-Sfruit, C17-Tplastic, and C18-Sbox had gradual pace of entry mode, whereas, C08-Rspa C01-Jsnack C04-Sfood C13-Cpet C11-Dspa were categorized in rapid mode.

**Table 1**

**The influence of buyer network to pace of entry mode**

Network	Pace of entry mode	
	Gradual	Rapid
<b>Buyer</b>	C02-Sfruit C17-Tplastic C18-Sbox	C01-Jsnack C04-Sfood C08-Rspa C11-Dspa C13-Cpet

### **a. Buyer network and gradual pace**

According to the collected data, international network occurred and through exchange of formal and informal conversation at variety of places such as cafeteria, seminars, exhibition booth, etc. Establishing relationship is primary objective of many SMEs that just enter into international markets especially SMEs that is in the international among others stage according to Johanson and Mattson network theory [21]. Small firms participated international trade show in order to leap the benefit of abundance of network that already established in the international environment. However, sometimes strong establishment of relationships did not occur in the short interval of time. For example, C02-Sfruit explained the network characteristic obtained from international trade show that contribute to first phase of its internationalization as follow:

*“Yes, in the beginning we have not seen the importance of trade fair. We only export to China in the beginning. Then, we begin to interested in other countries because our products are high quality. We went to trade show and think that the high quality products are always in demand. People like it.”*

C02-Sfruit insisted on the quality of customer. In addition, the company also mentioned about dimension of time that:

*“For example, we may not sell to the customer who we just meet. But we feel that this customer is good person. We want to develop relationship with him or her. We want to keep them for long term. They may not ready to discuss about business in the first year. They may just look around. Until second or third that they began to work with us. We are okay with that. We would like to keep them because they are good people.”*

There are many evidences specified that network started in the earlier stage of internationalization and continued after the firms already made successful entry into foreign markets. Network has been shown to be utilized in different degree depending on the progress on firm in internationalization. Small firms tend to use high intensity degree of network in order to make its first market entry. As stated above, C02-Sfruit previously had no interested in exporting. All exporting activities was carried by third party agents. Therefore, the company did not have to involve in any exporting procedures. The firm later used international trade fair as a tool for initial market entry of their own. Network can encourage firm to start the realistic market entry plan. The excerpt from C02-Sfruit indicated the gradual process of firm in entering foreign market through slow but ongoing buyer relationship development.

*“Yes, at first, I will look at the trust between customer and us. They may not give us high number in term of sale potential. But we feel that they have assertiveness to increase the sale for us.”*

Apart from trust, respondent continues explaining on the feeling toward potential buyer from neighboring country as follow:

*“When I went to trade show...I felt good when I meet with trustworthy or close culture to me. For example, when I went to Vietnam, I felt good. I felt that they are our neighbors. Their behavior and lifestyle, are similar to us.”*

Building relationship in the initial phase of firm’s foreign market development was critical step. Network encourages C02-Sfruit to made market entry through relationship reinforcement. The company highly justified market entry by feeling and trust between each other. It is obviously to understand from the interview that trust always takes time to build and easier developed, for this case, with the countries that have similar cultural background. Trust from network was considered as the key influential in market entry decision. New exporters try to acquired network from international trade show and start to develop trust from then. When firms increasing their involvement in foreign markets, trust and relationship increased as well. For this reason, it has been presented that small firm with long establishment in domestic market relied intensity utilization of network during earlier phase of international market development. Trust is considered to be the key elements in influencing small firm make progress in market entry with gradual pace.

In addition, the Uppsala model and the Uppsala revisited model in 1988 can be used to provide addition insight for the above phenomenon. The approach focused on psychic distant that make firm start from no

exporting activities to export via agent. Grave and Thomas interpreted that this type of firm will focus on domestic market and later expand to psychically close market [24]. In addition, they usually focus on small number of key markets. As presented above, the company has long length of domestic market establishment. The company gradual entered into less psychic distance market such as South East Asia markets. Finally, network enable company to access other markets that are further away in psychic distance span.

#### **b. Buyer network and rapid pace**

It was found that network acquired from trade show contribute to the first international sale of C01-Jsnack, C04-Sfood, C08-Rspa, C11-Dspa, and C13-Cpet in one year. For example, C04-Sfood explained sequences of participating international trade show that:

*“We export a lot this year. We start from zero in exporting and it started to grow. We are going to exhibit in THAIFEX trade show this year. Also, we get the quota to exhibit in Huabei province in China for free.”*

The respondent provided detail of customers classified by countries as follow:

*“I met many customers in Halal food fair. The product in the trade fair are not variety. But we met all type...Chinese and Japanese...They were all coming.”*

Finally, the informant added:

*“The Japanese customers came to meet us in our booth. They tried of food and they were okay about it. In the Halal food fair, there were Japanese. We have already penetrated to Chinese market. If it is successful, we plan to go to the Middle East.”*

The above statement implied that the firm relied on trade show in order to establish relationship with foreign importers. The two interested countries mentioned in the statement are customers from China and Japan. The firm finally established close network with Chinese buyers started to export to China in one year after series of international trade show. The Middle East market was mentioned for the next step of market expansion. This concluded that the trade show networking with buyers supported the first phase of firm’s international sale and influence ambition to access to variety of foreign markets.

Another example is C11-Dspa. The company set up business in 2001 and exhibited at an international trade show named Thailand Health and Beauty Show in 2002. The company went to Department of Export Promotion (Department of Export Promotion is currently Department of International Trade Promotion) and was advised to exhibit in the mentioned trade show. The company was eventually received first overseas order from Japanese customer who visit trade show.

*“Yes, we got order.”*

C11-Dspa explained further that:

*“There was a customer come to survey, but they did not buy in a big volume. But, after a while, we got a customer export to Dimaru department store in the first six months.”*

C11-Dspa explained that they received sale order from leading Japanese department store in the first six months since inception. In a short period of time after that, the company was able to cover various Asian markets.

Born global theory is the underlying concept explaining rapid pace of market entry as described above. The main characteristic of rapid pace is that firm is able to expand business overseas at the very beginning stage of company’s formation. The firm usually be able to access various foreign markets within two years time frame [24] (Graves C. and Thomas J., 2008). The mention firms C08-Rspa, C01-Jsnack, C04-Sfood, C13-Cpet, and C11-Dspa are able to export to many foreign countries within the first two years of inception.

## CONCLUSION

Four kind of networks: buyer, competitor, supplier, and professional and government, were found with precise explanations from interviewing firms. Not every types of network impact to firm's decision on international entry mode equally. Each SMEs weight unequally to the contribution of each network type to formulate strategic entry mode. The two mains theories underlying pace of internationalization are Stage (Uppsala) and Born global approach. This research undertook network element from trade show and measured their impact on pace of market entry. Therefore, some of firm in the Gradual or Born global category did not receive any affect from knowledge and/ or network from trade show. Buyer network is the only network that was observed of its contribution to pace of entry mode. Even though, it cannot be concluded that other network has no effect to entry mode, but, the result implied that not every network types can impact to entry mode process equally.

## IMPLICATION LIMITATION AND FUTURE RESEARCH SUGGESTION

Qualitative method is intended to discover the detail of meaning and process, however, it lacks of generalization. Future research should intake quantitative method to find generalization of the phenomenon. Various of this research findings carry implication for owner/ manager of SMEs that seeking to grow their business overseas despite facing limited resources. Participating international trade show as the exhibitor is the catalyst for acquisition of network necessity for them. Activities recommended in pre-tradeshow activities will resulted in highly effective time management during trade show. If invitations of participation are sent out several weeks prior exhibiting time, appointment must be well organized. Therefore, during trade show, SMEs' exhibition booth will be booked in advance. Managers will be expecting to meet pre-arrangement potential customers and learn about them before. In this case, networking created during trade show will be most efficiency and effectiveness.

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# FACTORS AFFECTING EMPLOYEE PERFORMANCE TO INCREASE EFFICIENCY: A CASE STUDY OF INTERNATIONAL COLLEGE, SUANSUNANDHA RAJABHAT UNIVERSITY

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## ABSTRACT

This research aims to study 1) to investigate an effect of the factors toward the development of efficiency in working of International College, Suan Sunandha Rajabhat University. 2) To find out the problems and the drawbacks in development of efficiency in working of International college, Suan Sunandha Rajabhat University. 3) To present the guideline in development of efficiency in working of International college, Suan Sunandha Rajabhat University.

The research samples were International College Personnel in Suan Sunandha Rajabhat University which has 56 samples. It was selected by using systematic random sampling. The research instrument was a questionnaire. The statistics used in the research were percentage, mean, standard deviation

The research findings were as follows: 1) The effect of the factors toward the development of efficiency in working were at the high level. 2) The policy of the personal development should consider the requirements and the expectations of personnel in various ways to respond to the requirements of personnel in International College. When they meet the demand. They will be satisfied and their performance will be more efficiency.

**Keywords:** performance efficiency, international college

## INTRODUCTION

Personnel are the important resource in the organization. They can develop and operate the mission of the organization to achieve its goals. Administrative organizations, whether public or private sector all focus on increasing performance to gain competitive advantages. The executives want to keep their personnel has developed, and they want them to keep having continual improvement. The personnel with the self-development at all-time are likely to be ready to compete and accept the changes. Any organization which has personnel with the self-development at all time. They will benefit the organization and help it to progress in the most effective and efficient manner. It not only benefits the organization but also encourages the personnel with the expertise to work and brings career advancement as well.

The current situation of education in Thailand is higher education institutions in Thailand have been teaching courses at the various and highly competitive, so the course is excellent and responding to the needs of the students, as well as parents. Nowadays, Students can decide to study in any discipline or any faculty, so each faculty and the university must accelerate the development of agency of the progress, the name, and build confidence for both students and parents. One of an important part to progress is effective work of personnel which can encourage institutions of higher education to have an advantage over others.

International College, Suan Sunandha Rajabhat University (SSRUIC) was established in 2004. SSRUIC was founded by the government's policy to promote Thailand as the center of the education for neighboring countries. In particular, the promotion and development of education management in the Institute of international education Foreigners which Foreigner students can study here. Thus, the researcher aims to study

on factors affecting the performance of the personnel in International College, Suan Sunandha Rajabhat University to take the result of the research to be the approach to improve and increase personnel performance effectively.

### **Objectives**

1. To investigate an effect of the factors toward the development of efficiency in working of International college, Suan Sunandha Rajabhat University.
2. To find out the problems and the drawbacks in development of efficiency in working of International college, Suan Sunandha Rajabhat University.
3. To present the guideline in development of efficiency in working of International college, Suan Sunandha Rajabhat University.

### **Research Procedure**

#### **Population and sample**

The population in this study is International College Personnel. There are 37 Academic personnel and 27 supporters in Suan Sunandha Rajabhat University. For the sample, the researchers used a sample size chart from Krejcie & Morgan (Krejcie & Morgan). The proportion of interesting subjects in the population was 0.5, the tolerability level was 5% and the confidence level was 95%. Overall, there were 56 samples.

### **Research Instrument**

This quantitative research used a questionnaire to study the factors affecting the performance of personnel in international colleges, Suan Sunandha Rajabhat University. The questionnaire was divided into 3 parts:

Part 1: General information of a questionnaire about gender, educational degree, work experiences, and position of the work at present

Part 2: Asking about the development of efficiency in working of International College, Suan Sunandha Rajabhat University.

Part 3: Problems, drawbacks, and recommendations

### **Data Collecting Procedure**

The data were analyzed using the statistical computer program for social science research (SPSS). The descriptive statistics were used to analyze frequencies and percent and Standard Deviation described the distribution of data. This study analyzed the data from the open-ended questionnaire. Drawbacks and suggestions were used a descriptive analytic to show the results. The researcher used a table with a description of the content for presenting the result.

### **Data Collection**

Researcher gathered the data by using a questionnaire with the population of the International College of Suan Sunandha Rajabhat University. The samples of this research were got by Systematic Random Sampling and the total of 56 samples was collected and 100 % was returned.

### **Summary**

#### **Organizational structure**

The result showed that an overview of the International College personnel, Suan Sunandha Rajabhat University, has an opinion about organizational structure at a high level ( $\bar{x} = 3.62$ , S.D. = 0.92). The factor which has the most effective to the efficiency of organization structure is “the organization has to assign a personnel obviously”. It makes workers are aware of their own duty and can work efficiently which related to Thomas J. Peters’s idea. He invented the 7-S framework which has an effect to the work efficiency in an organization and also has an organizational structure in the one of his framework.

### **Working system**

An overview of the factor which influences the efficiency of the working system is at a high level ( $\bar{x} = 3.72$ , S.D. = 0.94). The main point is “the organization has an uncomplicated working system”. The apparent working system can make the work fluently, the correct coordination among workers. Thus, workers are satisfied with their work. Preeyaporn Wonganuttararoj (1998) argued that the satisfactory in the work is the feeling of each person which has the positive effect on a person while working.

### **Management**

An overview of the organizational management is at the high level ( $\bar{x} = 3.58$ , S.D. = 0.90). The main point is “workers can take part in discussing, thinking and planning in the work. Participating in work from personnel can make more effective in working because workers can decide and argue their own idea in their work. Edwin Locke (1968) said that the recognition from supervisors or colleague can make the satisfactory of workers.

### **Personnel Ability**

An overview of personal ability is at the high level ( $\bar{x} = 3.78$ , S.D. = 0.88). The main point is “an organization has a chance for the workers to work with one's full effort. Giving an opportunity is the cause of effective working because the workers works happily when they can use all their knowledge, skills and ability.

### **Factors of motivation and support**

An overview of factors of motivation that affecting increase the performance efficiency of personnel in International College, Suan Sunandha Rajabhat University is at the high level ( $\bar{x} = 3.95$ , S.D. = 0.96). The main point is the personnel try to find a way to increase the performance efficiency. Personnel satisfaction with work is high. So they try to find a way to work better. The performance is more efficiency. This could be due to expectations of more salary, compensation and get promoted. Edwin Locke (1968) said that reward is one of the elements that cause satisfaction in work.

An overview of factors of support is at the high level ( $\bar{x} = 3.98$ , S.D. = 1.12). The main point is personnel in the organization is helping each other. The environment of helping each other's cause good relationship between personnel and factors of support increase the performance efficiency of personnel. The good colleague makes personnel feel happy to work and satisfied. When personnel happy and satisfied. Their performance is more efficiency.

### **Recommend**

Based on the conclusion of “Factors affecting increase the performance efficiency of personnel in International College, Suan Sunandha Rajabhat University.” The researcher's recommend are stages as the following:

- The policy of the personal development should consider the requirements and the expectations of personnel in various ways to respond to the requirements of personnel in International College. When they meet the demand. They will be satisfied and their performance will be more efficiency.
- It is suggested that an institution should organize a good work environment to boost productivity. They should provide need's equipment with manual ready to use.
- The consideration of getting promoted should have standard and equity evaluation. It can motivate and courage personnel's performance.

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