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Editorial

Dear Reader,

Welcome to Volume 5, Number 2 (2018) of the ASEAN Journal of Management and Innovation. This issue reflects an unusually high number of contributions focusing on marketing and consumer behavior. Perhaps that is a natural outgrowth of rapidly expanding local and regional economies and the emergence of both variety and competitiveness in the ASEAN region and the heightened chase the consumer dollar.

One of our authors provides a research justification for what we have intuitively known. Sutapat Kongkird reminds us, based on research on e-purchasing among consumers in Thailand, that strong product performance and an effective website will build consumer trust and repeat business. Without trust in the website there will be no growth. Apparently, that goes for governments as well. Without building trust among website users, governments risk destroying goodwill and creating a citizen army of cynics. A trust-based web presence is essential for immediate impact but more importantly, for long-term impact. See: "Model Development Through an Exploratory Factor Analysis of Online Shopping in Thailand."

Another unsurprising, but now an authoritatively researched-based finding about what we suspected, Pistawan Kahachote and Mayuree Aryupong found that, "status seeking is used as an initial driver for luxury goods consumption, mediated by snob and bandwagon effects." This is particularly strong in an expanding consumer society where brand consciousness is high and frequent changes in fashion is a strong driver to keep up with (and occasionally get ahead of) the proverbial Joneses, or in the case of Thailand, Siriporns and Somchais. The article says a lot more, though. Perhaps most importantly, the authors point out several "distinguishing points where national luxury brands could combat the global luxury fashion brands;" and that would be quite valuable to help local brands develop an advantage. See: "Conspicuous Consumption: Global and National Luxury Fashion Brands Purchase Intention."

Turning to the value of corporate social responsibility and eco-purchasing decision making among consumers, several articles inform our strategic thinking about an important and growing sector of the economies in the region. David Van Brecht, Anastasia Maga, Kristian Luciani, Danuch Sahakijpicharn, and Anna Semmerling explored the "link between Environmental, Social, and Governance (ESG) disclosure and market value of the firm: evidence from Thai listed companies" and discovered that indeed, it makes good sense to take the high road in corporate communications by pre-empting regulators and advocacy groups. In their words, as with many markets around the globe, "…the Thai market also responds favorably to ESG disclosure." Thus, making a conscious effort to meet the growing societal expectations for trustworthy reporting on key dimensions of what we have come to include in the concept of corporate social responsibility (CSR) actually pays off.

Turning to the consumer side of social responsibility, researchers have looked at the willingness to pay for solar power to electrify their homes and for other eco-friendly products that carry a premium in the early stages of the new product development lifecycle. Suthathip Suanmali Sirindhorn, Kanokbhorn Kokuenkan, Nutcha Lohananthachai Lohananthachai, Nichayakul Kumpong, and Thanaphat Suwatanapornchai looked at the question of solar power systems and found "factors that influence willingness to pay are income, energy consumption behavior, prior experience with renewable energy, environmental awareness, and trust." For further details, see their article: "Factors Affecting the Willingness to Pay for Solar Home Systems: An Empirical Study in Bangkok, Nonthaburi, Pathum Thani, and Samut Prakan Provinces, Thailand."

Similarly, Maneenart Srisakulpanich found that "income, global warming awareness, eco-friendly product awareness, and environmental attitudes significantly affects the decision to choose eco-friendly products." These findings are quite similar to those that influence buyer behavior when it comes to solar power systems. It is good to see the consistency in this research. Businesses can surmise next steps in their strategy to enlarge the area of positive consumer action in this segment. See "The Factors Affecting The Decision to Choose Eco-Friendly Products Among Thai Customers In the Bangkok Metropolitan Area."

Two more articles follow this theme of eco-friendliness and the rising segment of early adopters now demanding socially responsible companies and are willing to pay for the products and services that reflect this value. The first is by Pongsakorn Pitchayadol, "Farmer's Adoption Intention towards Eco-Innovation in Thailand." So, how can eco-innovation be widely adopted by major consumers in the agricultural sector? Several factors set the stage: when consumers have a high value-belief-norm (supporting current practice or resistance to change), the bandwagon effect (deciding to join the growing number of people taking up the practice) and the effect of government policy on the products (making it easier or cheaper to use). The author examined a way to break through the barriers to accelerate adoption and enhance the engagement of organic products in the agricultural sector of Thailand. See the article for complete details.

The second article by Suthathip Suanmali, "Determinants of a Customer's Willingness to Pay (WTP) for Green Hotels: An Empirical Study of Generation Y in the Bangkok Metropolitan Area" also sheds light on consumer behavior to pay a premium for a value-related purchase. According to the author, it seems, "…monthly income, attitude, and green behaviors affect the probability of a person's willingness to pay for green hotels."

As you can see by these introductory comments this is a marketing/consumer behavior-rich issue, but there is much more in addressing issues in public service quality, human resource management, effective pitching for venture capital, transportation routes, labor specialization in turnaround situations, fair value accounting and financial statement analysis, employee motivation to use e-training, managing the media during a crisis and school management for effective staff motivation. There is something for almost everyone and we at AJMI hope that you enjoy reading the articles as much as we have enjoyed bring them to you.

Sincerely,

John Nirenberg, Ph.D.
Editor.

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Key Success Factors for the Competitive Advantages of Human Resources Management on Golf Tourism in Chiang Mai

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Abstract

The purposes of this study aimed to analyze internal and external environments on golf tourism business in Chiang Mai, as well as key success factors on influencing the competitive advantages of golf tourism business in Chiang Mai. For research methodology, a five-rating scale – based questionnaire and an interview related to key success factors on influencing the competitive advantages of golf tourism business in Chiang Mai were both conducted with 445 golf court staff working for eight golf courts in Chiang Mai.

The findings of the study revealed that in terms of analyzing the external environments of golf tourism business in Chiang Mai, national economic factors influenced on all business ventures because national economic indicators were set up for the Thai citizens' demands in their buying. On the other hands, their valuable competence, in terms of analyzing the internal environments of golf tourism business in Chiang Mai, was mostly found in the management of golf tourism business in Chiang Mai. Also, key success factors on the competitive advantages of golf tourism-based human resources management in Chiang Mai were all rated at a highest level in terms of its infrastructure, system, and approach, followed by its model, professional skills, staff specialization, strategic management, and its shared values.

Keywords: Internal Organizational Environment, External Organizational, Environment, Human Resources Management, Challenge, & Key Success, Factors for the Competitive Advantages of Golf Tourism-Based Human Resources Management.

Introduction

The competition of tourism industry has nowadays increased rapidly because the varieties of jobs and revenues are all resulted from oversea tourists' travelling purposes. Thus, aging societies resulted in rapid changes and tourism challenges in Thailand have brought about tourists' specific tourism behaviors and styles, particularly sports tourism. In fact, "The 2015 Discover THAINESS project" with emphasis on the product approach conceptualized by the Tourism Authority of Thailand (2015) has directly affected tourists' value proposition on their travelling in Thailand; moreover, golf tourism was one of the most challenging sport activities, which encouraged tourists' excitement and pleasures.

Also, golf tourism also played an important role in promoting the increasing numbers of golf tourism-based industry revenues; otherwise, global economic impacts have gone up more dramatically. (Tourism Authority of Thailand, 2015). In 2016, Hot Golf magazine insisted that from November, 2011 to February, 2012, the golf courts' incomes were resulted from the growth of golf business with more than 50 % in Chiang Mai. This was because both Thai and foreign tourists' golf tournaments in Chiang Mai were mostly preferred, as well as eighty Korean tourists per day spent their golf training at all golf courts. As a result, both international and domestic airlines services were all served for the final destination of Korean Taiwanese, Malaysian, Singaporean, and Hong Kong tourists directly flying to Chiang Mai; moreover, the numbers of Korean tourists with 70 % and Thai tourists with 30 % directly affected the increases of golf business in Chiang Mai golf courts occurred in November, 2007. In fact, there were more than 10 golf courts served for the golfers' golf services from the year 2013 until at the present. (Tourism Authority of Thailand, 2011)

The Statement of the Problems

In the situations of golf tourism business in Chiang Mai happened from the year 2013 to at the present, golf business in its low season from June to October was induced by the decreasing numbers of foreign and Thai tourists taking their golf services in golf courts were all found in Chianmai, as well as the fewer numbers of golfers in some golf courts (Hot Golf Magazine, 2016). With regards to the statistical report on the numbers of Thai and foreign golfers surveyed by (Northern Golf Resort Association, 2016), it showed that the numbers of 123,924 Thai golfers were surveyed in 2015, meanwhile the numbers of 74,870 Thai golfers with its decreasing ratio of 39.58% were recorded in 2016.

Besides, the numbers of 170,726 foreign golfers were found in 2015 whereas the numbers of 130,415 foreign golfers with its decreasing ratio of 23.61 % were also identified in 2016. It was viewed that from 2015 to 2016, there were 294,650 golfers from all over Thailand and foreigners, meanwhile in 2015, there was a significant decrease in the number of golfers, both Thai and foreigners, by 201,287, or 30.32%. Nevertheless, tourism revenues from golf tourism business in Chiang Mai have decreased significantly, and many problems of different business in relations to the sales distribution of golf tourism sales were all found.

According to the survey on the golfers' behaviors and satisfactions (Tourism Authority of Thailand, 2010 : 11), it was stated that internal factors found in the problems of sales distribution and weakness of golf tourism business in Chiang Mai included golf court's no standards, staff' no service minds, unequal services between VIP guests and foreigners, staff's no good interaction with their customers, English spoken miscomputation.

Like previous researches conducted by Tourism Authority of Thailand, a preliminary study on the problems of golf tourism-based human resources management in Chiang Mai was detailed as follows.

1) In case of its strategic integration, no well-planned goals together with no expected outcomes, as well as no evaluation of successful business management were all caused by the golf courts' ineffective business planning based on human resource management;

2) The golf courts' no integrative human resource management was induced by its overlapped activities, and no working cooperation, and

3) The golf courts' rigid structures also caused difficulties in their self-adaptation and necessities for business ventures.

4) No manpower requirements were forecasted.

In this paper, this study is guided for the conceptual framework related to managing the competitive advantages of human resources management on golf tourism in Chiang Mai. In addition, the analyses of marketing situations and core competencies on golf tourism, and factors influencing the competitive advantages of human resources management on golf tourism in Chiang Mai are also explored for a well-organized marketing plan and effective human resources management served for the development of golf tourism business in Chiang

Mai. From literature reviews mentioned above, the competitive advantages of golf tourism-based human resource management in Chiang Mai are investigated and guided as databases on tourism promotion strategies served for golfers' attractions, as well as upgraded golf tourism-related products and tourism hospitality services.

Objectives of the Study

1. To analyze internal and external environments on golf tourism business in Chiang Mai, and

2. To analyze key success factors for the competitive advantages of golf tourism-based human resources management in Chiang Mai.

Scopes of the Study

1. Area :

Eight major golf courts were selected by the Office of Chiang Mai Tourism Authority of Thailand (TAT) in academic collaborations with Northern Golf Resort Association, and Thai Lanna Spa Association joining in "The 2016 Chiang Mai Golf Festival Championship". These included 1) Summit Green Valley Chiang Mai Country Club, 2) The Royal Chiang Mai Golf Resort,3) Mae Jo Golf Resort & Spa, 4) North Hill Golf Club, 5) Chiang Mai Inthanon Golf & Natural Resort, 6) Alpine Golf Resort Chiang Mai, 7) GassanKhuntan Golf & Resort, and 8) Gassan Legacy Golf Club.

2. Population

The population used in this study was as follows:

1. Executive boards and staff out of the eight major golf courts in Chiang Mai were selected by the Office of Chiang Mai Tourism Authority of Thailand (TAT) in academic collaborations with Northern Golf Resort Association, and Thai Lanna Spa Association joining in "The 2016 Chiang Mai Golf Festival Championship".

3. Contents

The scope of contents used in this study was detailed as follows.

1. External and internal environmental analysis: 1.1. The five forces model for competition, and 1.2. The Core Competence of Corporation.

2. The analysis of key success factors on the competitive advantages of golf tourism-based human resources management in Chiang Mai was conceptualized by the McKinsey 7's framework, including 1)structure, 2) strategy, 3) staff, 4) shared value, 5) system, 6) style, and 7) skill.

Theoretical Concepts Used in This Study

The Resource-Based View or the Resource-Based View of a Firm (RBV)

Resource-Based View (RBV) refers to such an organization's available human resources and organizational resources could be all implemented for its beneficiaries and the staff's working effectiveness (Barney, 1991). Besides, the advantages of organizational competition conceptualized by RBV mainly focused on its resources, and capabilities, which contained such an organization's assets, capabilities, working process, organizational identities, databases on information technology, staff's experiences, knowledge, and technology. Most importantly, in terms of its organizational capabilities, the availabilities of different resources were all merged for shifting organizational processes, as well as required organizational effectiveness (Amit And Shoemaker, 1993). In order to accomplish all the organizations' competition, as well as to differentiate major factors influencing the other organizations' unique competitive advantages, however, the profits and constraints led to the organization's final decisions on environmental surroundings.

Concepts on Business Competitive Advantages

- Analysis of External Business Organizational Environments

Sudjai Wattana-udomdecha (2013) stated that the analysis of external business organizational environments refers to the process of auditing and assessing external organizational environments that affected the entrepreneurs' better understandings of their business opportunities and anticipated obstacles, as well as environmental factors influencing business management, which was divided into four major aspects: (1) economic factors; (2) socio-cultural, demographical, and environmental factors; (3) technological factors, and (4) political, governmental, and law factors. Also, industrial environments directly affected the severity of industrial competition, as well as potentialities of making profits.

Furthermore, Porter (1998) presented the model designed for the analysis of industrial competitive environments, which was so-called "Five Forces Model of Industry Competition. As a result, this depended on the organization's industrial competitive situations, which were sorted into five major aspects: (1) threat of new entrants; (2) intensity of rivalry among existing competitors; (3) bargaining power of buyers; (4) bargaining power of suppliers, and (5) threat of substituted products.

- Analysis of Internal Business Organizational Environments

The core competence of corporation was resulted in the organization's sustainable business competitive advantages, which brought about the organization's vast beneficiaries. Moreover, assets found in the organization's core competencies did not influence on the other business competitors' market stake-holding. In order to sustain the core competence of corporation supported for such a different organization's competitive advantages, however, its valuable competence, rare competence, costly- to-imitated competence, and non-substitutable competence were all implicated for the organization's sustainable business competitive advantages (Suwat Sirinirun, 2009).

Factors on the Competitive Advantages of Human Resources Management

Netpanna Yawirach (2013) cited that the organizational effectiveness resulted from the correlations of seven major factors conceptualized by the McKinsey 7's framework is detailed as follows:

1. Strategy refers to planning with its SWOT analysis is reflected for environmental changes;

2. Structure refers to organizational structures in relations to the administrators' authorities and responsibilities were involved with their controls in both organizational centralization and decentralization, and the identification of organizational structures based on the staff's duties, products, customers, and region;

3. System refers to the continuing process and steps in running organizational management were well-organized;

4. Style refers to the styles of organizational management in relations to commanding, controlling, as well as motivation and reflection of organizational cultures were all appropriated for its organizational characteristics;

5. Staff refers to the selection of specialized persons, and the continuing development of personnel management in accordance with Wilawan Rapeepisarn (2011), she cited that trainings were used for the practitioners' self-development; moreover, their

awareness of self-academic development, good attitudes on their organization should be both supported. for upgrading their working effectiveness;

6. Skill refers to its uniqueness and expertise in production, sales distribution, and services, and

7. Shared values refer to the staff's interpersonal shared values and unity occurred in their organization.

However, seven major internal factors directly affected organizational drives on the advantages of business competition (Suwatsiri Nirun, 2009).

Golf Tourism

According to the previous study related to "The Scottish National Tourism Monitor" by Visit Scotland (2007), he cited that even though total tourism revenues in Scotland would decrease, its gross national incomes have been taken from golf tourism. Furthermore, golf tourism revenues were also served for different countries such as Europe, Middle-East, Africa and India. In 2008, the study of "Golf Travel Insight in EMA 2008" conducted by KPMG, he stated that a questionnaire and an in-depth interview through telephoning were both carried out with golf tourists, and in 2000, the increasing numbers of EMA countries' revenues taken from golf markets have reached € 2.7 billion.

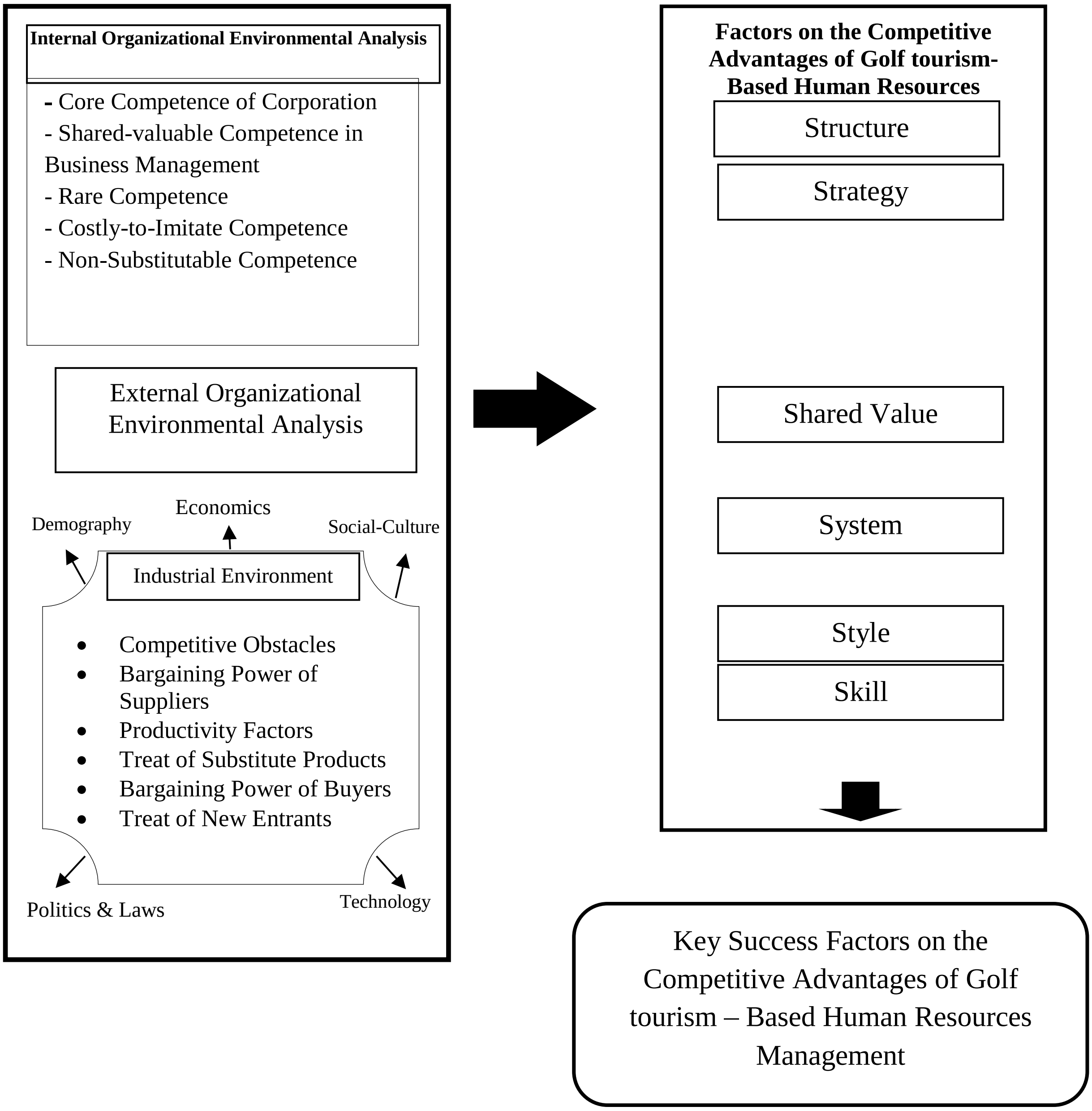
In 2010, Tourism Authority of Thailand also insisted that golf was one of the most charming, amusing, and highly-concentrated sports, which challenged golfers' self-competition; moreover, the golfers' regular trainings were mostly found in terms of their self-professional sports development. In addition to the golfers' popularity, expected opportunities in not only touching natural surroundings, but also creating their self-image, social values, as well as better lifestyle were all provided for golfers' business negotiation and their golf professionals. In 2014, Tourism Authority of Thailand's previous study on the potentialities and sizes of golf markets revealed that the tourists' golf popularity was mostly found in north-eastern Asian countries such as China, Korea, and Hong Kong etc., and followed by ASEAN countries (Philippines, Malaysia, and Singapore), and European countries (France and Netherlands).

Also, both the increasing numbers of middle and high-white collar golfers' popularity in Thailand was mostly found. With references to the related research on the foreign tourists' behaviors and satisfactions towards their golf tournament, it showed that the numbers of Asian tourists from Japan, Korea, Hong Kong, China, Malaysia, and Taiwan were mostly found in terms of the golf business entrepreneurs' major customer services, meanwhile both Japanese and Korean tourists' golf tournaments were mostly preferred. Also, the numbers of Asian tourists taking their golf services in Thailand have risen up more increasingly.

In addition to this study, the numbers of European golfers coming from Scandinavia, Germany, Finland, Denmark, France, Spain, and Netherlands were mostly found; moreover, Scandinavian tourists' golf tournament, according to the Tourism Authority of Thailand's report in 2011 related to the ratio of such a different tourism season, was mostly preferred. In terms of their demographical information, both Asian and European tourists' age of more than 40 with their no family cares was mostly found whereas both 3-day and 2-night program and 4-day and 3-night program were mostly preferred for the job-retired golfers' golf tourism packages.

This was because one time per day was spent for the foreign golfers' practices and the European golfers' spa services, business negotiation and nightlife-sightseeing were mostly preferred before their departure. Also, both Asian and European golfers' importance of the staff' hospitality management, service minds, and good communicative competence, according to databases on golf courts in Thailand, was mostly satisfied. In order to disseminate golf tourism in Thailand, however, golf tourism-based human resources management factors used as the main strategy should be explored. (Tourism Authority of Thailand, 2011)

Conceptual Framework



Methodology

The population used in this study was as follows.

1. Eight executive boards and human resources managers out of the eight major golf courts in Chiang Mai were officially certified by the Office of Chiang Mai Tourism Authority of Thailand (TAT) in academic collaborations with Northern Golf Resort Association, and Thai Lanna Spa Association joining in "The 2016 Chiang Mai Golf Festival Championship".
2. 445 customer service-related managers and staff out of the eight major golf courts were officially certified by the Office of Chiang Mai Tourism Authority of Thailand (TAT) in academic collaborations with Northern Golf Resort Association, and Thai Lanna Spa Association joining in "The 2016 Chiang Mai Golf Festival Championship".

Instruments Used in Data Collection

1. A semi-structured in-depth interview related to analyzing the five forces model for competition, and the core competence of corporation.
2. A five rating-scale based questionnaire related to key success factors on the competitive advantages of golf tourism-based human resources management in Chiang Mai.

Summary of the Study

The first purpose of this study, entitled "The Competitive Advantages of Golf Tourism-Based Human Resources Management in Chiang Mai", aimed to analyze internal and external environments on golf tourism business ventures in Chiang Mai. The findings of the study were detailed as follows.

External Environmental Analysis

1. Environment at Glance

1.1 Demographical Factors

In terms of its demographical environment found in golf tourism business ventures in Chiang Mai, it was stated that the Asian tourists' golf tourism, which was ranked from Korea, China, and Japan, was mostly preferred. In addition, the tourists' age of with 41 – 50 with their no family care-taking was mostly found, followed by their age of 31-40, and 21 -30, as well as the Asian tourists' tour packages spent for both 3 days with 2 nights and 4 days and 3 nights were mostly preferred. Also, one time per day was mostly spent for the foreign tourists' golf tourism, meanwhile the European tourists' spa services, nightlife, and business negotiation was mostly preferred before their departure.

1.2 Economic Factors

National economic factors directly affected all business ventures because both the people's purchasing power and a big market were used as indicators determining their national economic growth. Thus, this could help us plan for both short-term and long-term managements served for current economic situations and future economic trends. During the high season, the numbers of foreign tourists have spent on their golf services from every November to every March; otherwise, the numbers of Thai tourists spending their golf services were mostly found during the low season because of raining season.

1.3 Political and Law Factors

The entrepreneurs' golf business in Chiang Mai was affected by the government's policies on raising excise taxes, which were at the rate of 11 percent and the income tax with the rate of 7 percent, totaling 18 percent. This was because complementary coupons resulted from golf competition, as compared to the previous golf service rates with no charges, caused such a golfer's additional tax payment with 200 – 300 baht. Additionally, governmental policies on important cities' economic expansion brought good golf tourism business in Chiang Mai province; otherwise, the golf court owners' golf business ventures were only served. In terms of their information services and golf tourism business plans in connection with other different cities, international flights landing off at Chiang Mai International Airport were also provided for the increasing numbers of foreign tourists, as well as their golf court services in Chiang Mai province.

1.4 Socio-cultural Factors

Socio-cultural factors refer to all things were involved with social, cultural, environmental aspects, as well as local ways of life. Besides, such a different community context would be explored before the feasibility study of market places was surveyed. In fact, golf tourism business in Chiang Mai was induced by governmental policies on alcohol prohibition; otherwise, impacts on golf court business in Chiang Mai were rarely found. In terms of its natural resources and environmental surroundings, it was stated that the golf courts' natural and environmental conservations were signified with its minimum chemical uses of golf yards. In the aging society, golf tourism business in Chiang Mai was more facilitated for retired customers' golf services with their age of 35-50 than that of middle-aged customers. Also, additional activities such as running, bike-cycling, etc. were all substituted for retied customers.

1.5 Technological Factors

Even though inhabitants' different ways of life were influenced on global changes, technological applications, particularly computers and internets were all merged for the entrepreneurs' golf tourism business management in Chiang Mai. Moreover, Line, Facebook, Massager, E-service on reserving golf court and accommodation services, as well as information services on golf court activities were all provided for the customers' golf court services. In order to upgrade the golf courts' working effectiveness, as well as to decrease their mistakes on effective golf services management served for customers' impression, however, e-booking related to golf courts, catties, accounting management, and customer's payment was also facilitated. In fact, Mae Jo Golf Resort's semi-automatic sprinklers with timers were provided for measuring golf courts' humidity and climates as required.

2. Industrial Environments

2.1 New Entrants

The fewer numbers of new entrants running golf tourism business ventures were mostly found in Changmai because of the outnumbers of costs, inadequate golf court spaces, complicated regulations and laws on customer's golf court services.

2.2 Bargaining Power of Buyers

Bargaining power of buyers was mostly found in the group tours coming from Asian, European countries; moreover, the standard and well-decorated numbers of golf courts found in the Southeast Asia were induced by the customers' bargaining power of buyers. Therefore, the golf courts' customer services were presented for their more facilities.

In fact, Mae Jo Golf Resort's bargaining with agents was higher than that of their golfers' bargaining, meanwhile Chiang Mai Northern Hill Golf Court's no bargaining with buyers was found. In terms of the customer's membership, it was also stated that the golfers' universal regulations and terms of membership were all realized so that disputations or bargaining power of buyers found in Chiang Mai Northern Hill Golf Court were not found.

2.3 Bargaining Power of Suppliers

In terms of bargaining power of suppliers, the own business entrepreneurs' golf tourism business management was mostly supported so that the impacts on golf-tourism business were rarely found in bargaining power of suppliers.

2.4 Threat of Substitute Product

The threat of substitute products was not found in the entrepreneurs'' golf tourism business in Chiang Mai because the golfers' main activity was mostly preferred. In order to prevent the threat of substitute products, however, the golf business entrepreneurs' additional activities with one-stop services such as accommodations, seminar rooms, recreational activities, cycling, and other different extreme activities were all served for different groups of customers.

2.5 Intensity of Rivalry

Nowadays, the intensity of rivalry is mostly found in golf tourism business in Chiang Mai in terms of the golf courts' services, followed by reasonable prices, and service quality.

Internal Organizational Environmental Analysis

Core Competencies

1. Valuable competencies on business management

Golf tourism business in Chiang Mai is located on the upper northern part of Thailand; moreover, its good weather and natural surroundings attracted tourists' relaxation, as well as the inhabitants' economic growth in Chiang Mai has increased more dramatically. Most importantly, the golf court owners' or the golf court presidents' experiences have been resulted from designing and constructing different global golf courts so that the profits and constraints of golf court management together with academic knowledge on golf business management are reflected on customers' requirements.

In addition, Chiang Mai Alpine Golf Resort, which is surrounded among mountainous areas, is used as a first championship golf court designed by Sir Ron Emgarl, a world's notable global designer earning **"The Best Renovate Award 2007"**. Also, Chiang Mai Royal Golf Club was designed by Peter Thomson, a former five-won British Golf Open Championship, and more than one hundred internationally- standard golf courts were well-designed.

2. Rare competitive competencies

Kusson Khumta Golf Court and Resort awarded with the 2015 Thailand's best golf court was voted by Chinese tourists; accordingly, golf services with nine new golf holes out of the twenty-seven golf holes are all facilitated for golfers' golf challenges. On the other hands, Kasonleca Golg Club was awarded with the first three-year Thailand golf court award, and a green business award. As a result, both good environmental surroundings and golf court cares utilized with organic fertilizers were resulted in the golf courts' rare competitive competencies. Not only were the golfers' healthcare and environmental surroundings signified, but the only Northern golf court with its PPC style was also designed by Summit Curry, a world's leading golf-designing company. Also, Chiang Mai Summit Green Valley Country Club was designed by Mr. Denis Griffith, an American designer, and the numbers of caddies working for Chiang Mai Summit Green Valley Country Club were more beautiful than that of different golf courts.

3. Costly-imitated Competencies

Chiang Mai Summit Green Valley Country Club with the largest golf courts of 6,402 meters and the widest fairways, as well as easy-to-drive length of 20 minutes impressed golfers' golf challenges. On the other hands, the own entrepreneur's fruit gardens were mostly provided for Mae Jo Golf Resort so that the new golf court board's different Lanna fruit gardens were designed for the identity of Mae Jo Golf Resort.

4. Non-substitute Competencies

In Chiang Mai Summit Green Valley Country Club, the numbers of experienced caddies with their good service minds were served for customers' golf services; moreover, the new caddies' abilities in communicating English, Korean, and Japanese with customers were substituted for golf services. In Northern Hill Golf Club and Resort, a nearer airport with their length of distance of 15 minutes was also served for customers' golf services.

Summary on Key Success Factors for the Competitive Advantages of Golf Tourism-Based Human Resources Management in Chiang Mai

1. **Personal Factors**

Sexuality

According to this study, it has been found that those involved in golf tourism-based human resource management in Chiang Mai were female with 58.90% of, and followed by male with 41.10%.

Age

According to this study, it has been found that those involved in golf tourism-based human resource management in Chiang Mai were their age of 21-30 (44.40%), followed by their age of 31-40 (26.60%), and their age of less than 0-20 (3.70%).

Education Backgrounds

According to this study, it has been found that those involved in golf tourism-based human resource management in Chiang Mai earned a bachelor's degree (42.60%), followed by their high school diploma (20.22%), and their doctoral degree (0.70).

Working Experiences

According to this study, it has been found that those involved in golf tourism-based human resource management in Chiang Mai mostly spent their working of less than 5 years (53.40%), followed by their working of 6-10 years (20.22%), and their working of more than 20 years (6.40%).

Monthly Income

According to this study, it has been found that those involved in golf tourism-based human resource management in Chiang Mai earned their monthly income of 5,001 – 15,000 baht (85.30%), and followed by their monthly income of 15,001 – 25,000 baht (6.60%).

2. Key Success Factors for the Competitive Advantages of Golf Tourism-Based Human Resources Management in Chiang Mai

1. Key Success Factors for the Competitive Advantages of Human Resources Management's Structure	Mean	S.D.	Evaluative Meaning
- The ordinate's organizational decentralization and detailed job descriptions are signified.	3.94	0.83	Higher
- The ordinate's effective organizational management and clear job descriptions are signified.	3.81	0.83	Higher
- The ordinate's organizational re-structure supported for proper different situations are signified.	3.80	0.85	Higher
- The ordinate's self-assessment reports on working performance are signified.	3.79	0.83	Higher
- The ordinate's well-planned job descriptions in golf tourism-related organizations are updated.	3.83	0.86	Higher
Total	**3.83**	**0.74**	**Higher**
2. Key Success Factors for the Competitive Advantages of Human Resources Management's Strategies	**Mean**	**S.D.**	**Evaluative Meaning**
- Well-planed goals in accordance with its vision and mission are identified.	3.80	0.81	Higher
- Well-organized objectives, aims, and methods of organizational management are identified.	3.77	0.81	Higher
- Detailed job descriptions on the responsibilities of organizational management are identified.	3.81	0.84	Higher
- The significance of effective organizational management schemes is identified.	3.79	0.86	Higher
Total	**3.79**	**0.73**	**Higher**
3. Key Success Factors for the Competitive Advantages of Human Resources Management on Staff Development	**Mean**	**S.D.**	**Evaluative Meaning**
- The new incoming staff's methods of their working performance are signified.	3.82	0.87	Higher
- Policy-based staff regulations are identified.	3.80	0.89	Higher
- Appropriate systems are provided for staff's applications.	3.81	0.88	Higher
Total	**3.81**	**0.80**	**Higher**

4. Key Success Factors for the Competitive Advantages of Human Resources Management on Shared Values	**Mean**	**S.D.**	**Evaluative Meaning**
- The mutual assessment of human resources is signified.	3.76	0.85	Higher
- The credibility of mentoring system and internal assessment are provided.	3.71	0.86	Higher
- The management of databases on staff's different activities is supported.	3.75	0.84	Higher
- The risk management and analysis are signified.	3.73	0.85	Higher
- Good attitudes and idea sharing on organizational development are supported.	3.74	0.89	Higher
- Honesty, moral awareness, and good manners are served for the staff's human resources management.	3.77	0.90	Higher
Total	**3.74**	**0.75**	**Higher**
5. Key Success Factors for the Competitive Advantages of Human Resources Management's System	**Mean**	**S.D.**	**Evaluative Meaning**
- Systems on administrators' recruitment and their career progression are provided.	3.78	0.90	Higher
- Policies on staff's position-promoting are signified.	3.72	0.96	Higher
- Additional trainings on staff's self-development are provided.	3.95	0.94	Higher
- Evaluation processes on staff's working performances are implemented.	3.83	0.86	Higher
- Staff's academic knowledge and skills are supported for their working performance.	3.85	0.94	Higher
Total	3.83	0.79	**Higher**
6. Key Success Factors for the Competitive Advantages of Human Resources Management's Styles	**Mean**	**S.D.**	**Evaluative Meaning**
- Effective human resources management is signified for their staff's valuable working performances.	3.82	0.83	Higher
- The philosophy and values of working performances are signified.	3.79	0.82	Higher
- The utilization of resources is signified for appropriate working performances.	3.83	0.81	Higher
- The staff' s organizational ethics and morality are supported.	3.81	0.87	Higher
- The staff's strict organizational regulations are promoted.	3.85	0.85	Higher
- The staff's awareness of their colleagues' sensitivity is supported.	3.84	0.88	Higher
Total	3.82	0.72	**Higher**

7. **Key Success Factors for the Competitive Advantages of Human Resources Management on Staff's Skills**	**Mean**	**S.D.**	**Evaluative Meaning**
- The enterprise's risk management can be implemented for their working effectiveness.	3.85	0.88	Higher
- The enterprise's successful organizational management based on its low expenditures can be well-organized.	3.80	0.85	Higher
- Cost analysis was implicated for each management process.	3.84	0.85	Higher
- Available resource objectives and expected impacts are well-planned.	3.86	0.86	Higher
- Previous and present databases are analyzed for its expected organizational management.	3.84	0.85	Higher
- Information obtained from the enterprise's risk management can be implemented for their planning.	3.78	0.84	Higher
- Causes from human beings, machines, supplies, and proper methods can be all decreased.	3.81	0.88	Higher
- Mistakes causing direct organizational impacts can be decreased or solved.	3.78	0.85	Higher
- Risk management processes can be solved for the enterprise's occurring problems.	3.81	0.88	Higher
- The enterprise's no opportunities and damages can be decreased.	3.81	0.60	Higher
Total	3.82	0.72	**Higher**

From the findings of the study cited above, it revealed that key success factors on the competitive advantages of golf tourism-based human resources management in Chiang Mai were mostly found in terms of the enterprise's structure and stem with 3.83 %, followed by the enterprise's style and skills with 3.82%, the enterprise's staff with 3.81, the enterprise's strategy with 3.79, and the enterprise's shared values with 3.74.

Summary of the Study

External and internal organizational environments found in golf tourism business ventures in Chiang Mai were detailed as follows.

1. National economic factors directly affected other entrepreneurs' business Investment because the citizens' buying requirements and large-sized market places were identified for its national economic development, which helped run their short-term and long-term business ventures resulted from present economic situations and future economic trends. In fact, Thailand's worse economic situations have been mostly found; nevertheless, the citizens' living expenses fluctuated, and foreign customers' golf court services have still increased dramatically. However, economic impacts were rarely found in business ventures;

2. Social factors on such a community's socio-cultural circumstances and ways of life should be firstly explored before the entrepreneurs' marketing management took places, depending on such a different community's ways of life. In order to survey different market places served for entrepreneurs' business creditability, and such a community resident's interests, however, the incoming numbers of population and consumers' healthcare behaviors were resulted in their interests in fitness. Also, golf, which was one of the most highly-paid sports, was popular for wealthy consumers and new businessmen.

3. In terms of technological factors, present business ventures and future economic trends were resulted from technological changes and ICT advancements in relations to its technological systems and preparation in staff recruitment, which was so-called "Internet of Things". Not only were all the future information globally connected with the internet, but Thailand will being also prepared in the 2020 Thailand digital economy. Thus, technological applications via social media were facilitated for customers' golf court services, information accessibility, expenditure saving, as well as their expansion of customer service databases. Moreover, the golf court's effective golf services management in relations to its golf service-queuing, accommodation services, e-payment, e-accounting, and e-product storing system was upgraded for the golf courts' well-organized working effectiveness.

Chiang Mai is one of the most famous tourist attractions, which reflect tourists' requirements and lifestyles throughout all the year. Not only is it covered with natural surroundings such as national parks, forest parks, waterfalls, hot springs, and abundant species of forests, but also the different ethnical groups' local ways of life are identified in Chiang Mai. Thus, cultural diversities with its cold weather vary on archeological and religious sites together with its cultural and traditional identities. Moreover, transport services served for tourism industry, and a regional hub for international airports with direct domestic, and international flights were facilitated for convenient travelling purposes. Not only were different channels provided for the accessibility of various tourist attractions, but all the tourism-involved organizations' information services were also disseminated in Chiang Mai province. As a result, the numbers of incoming tourists visiting Chiang Mai have increased dramatically. Also, idyllic landscapes in Chiang Mai province geographically surrounded with its good weather were mostly served for golf services, and golf tourism business ventures.

4. Key success factors on the competitive advantages of golf tourism-based human resources management in Chiang Mai were viewed that the 7Ps-based marketing mix implemented for golf tourism-based human resources management in Chiang Mai directly affected their business ventures served for targeted golfers' satisfactions. Like the concept of Narin Chaemcharus (2007), he stated that its well-organized and rustic structures together with the golf court executive boards' service minds with their staff's good interpersonal interaction, their establishment of golf club served for panel discussions, their proactive strategy on business competitors' overcoming, their customers' credibility on golf services, and the staff's participation in effectively managing their self-disciplines, setting their goal, as well as controlling their self-responsibilities were all resulted from strengthening the competitive advantages of human resources management.

In terms of its shared values, it was also stated that their organizational management with a great deal of credibility was more coped with golf courts' quality of working effectiveness than that of their organizational system, which included small group discussions served for the staff's working effectiveness, good interpersonal interaction, and participation styles in their panel discussion. Furthermore, their family-based organizational management directly affected the staff's loyalty, and good human relations; moreover, the staff's concentration on their customer services, good team working, service minds, good interpersonal interaction with customers, and impromptu problem-solving skills should be all supported in terms of their professional skills. Like the study of Taweewat Taweepon (2015), he stated that strategic plans on key successes for private golf court management in relations to its golf courts, staff specialization, and golf courts' effective strategic management should be set up.

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Model Development Through an Exploratory Factor Analysis of Online Shopping in Thailand.

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Abstract

The main purpose of this study was 1) to develop a model using exploratory factor analysis, 2) to determine way to develop online shopping. A sample of 400 online shoppers who used to booked or purchased products and services on the web were used in this research. Data were collected through an online questionnaire. The analysis of the overall harmony index of the model according to Thai people, this indicates that the model corresponds to the empirical data. The 6 harmony indexes that have passed the accepted variable is Product Characteristics, Perceived Website Quality, Electronic Loyalty, Electronic Willingness.

The research result from the E-Loyalty model indicates that Product Characteristics and Perceived Website Quality have a positive effect on the Electronic Willingness among the variables obtained from the exploratory factor analysis. Moreover, it shows that Product Characteristics, Perceived Website Quality, and Electronic Willingness have a statistically significant effect on Electronic Loyalty. This research can be utilized entrepreneurs to insure they develop and improve their websites to build-in customer trust, and by the government agencies who can set a policy for commercial web based trust-building.

Keywords: E-Loyalty, Shopping Online, Product Characteristics, Website Quality, E-Satisfaction

Introduction

The World Wide Web (www) has become an important tool for current trade. Many stores have used the web as a new place of marketing to sell their products and services, create a change in consumer's tastes and consumers' demand. The lifestyle is comfortable. Consumers have a better understanding of technology, and more shops have turned to websites to sell their products. There are services available, there is extensive information and the better price. The following factors encourage customers to buy products on the website. In addition, shopping on the website is also widespread. There are more choices to buy. Consumers can customize their purchase of products and services. There is a cheaper price, delivered immediately, and availability of information. Consumers are involved in buying products. The website has the ability to interact with the website community, and in many countries, shopping on the website does not include sales tax, so electronic commerce is beneficial to consumers (Turban et al. 2001).

Chang et al. (2009) states that since online marketing has grown rapidly over the past several years, electronic marketing activities have received a lot of attention. Many companies create customers' loyalty by improving the quality of electronic services. Chen & Cheng (2009) define that the increased popularity of shopping on the website has led to the emergence of new economic activity. Businesses will succeed in a highly competitive electronic commerce environment. Therefore understanding what motivates consumers is important, because such intentions are the key to survival in a competitive environment in online business. The growth of shopping on the website has become an important thing to understand the factors that have an influence on consumers' intention to actually shop from the website rather than just browsing. Influential factors are of interest to both academics and marketers. Chiou et al. (2009) supports that the success of shopping on the website depends on customers' satisfaction, and other factors which will eventually increase the customers' loyalty and intention. According to Khan & Rizvi (2012), the success of any business depends on the understanding of the behavior of their target customers. For this reason, to find the factor of consumers' goods ordering to build the success of an electronic business has become a necessity for the online stores to understand the behavior of consumers, and the factor to create acceptance.

For the above reasons, the researcher has done this research on the topic of model development of exploratory factor analysis on online shopping in Thailand to develop a model of loyalty that has an effect on shopping on the website of consumers in Thailand, and to set a policy for online shopping development.

Theoretical Background

Technology Acceptant Model: TAM was proposed by Davis (1985) describing about technology acceptance by indicating that intentional behavior determines the use of technology. Zhang & Prybutokl (2003); Wong et al (2014) state that Technology Acceptant Model: TAM has been proven to be successful in predicting and describing the usage acceptance of computer users. TAM is a useful theoretical model to describe technology acceptance, applied to the result of education and supporting the knowledge. TAM describes how the integration of characteristics contributes to the customers' electronic loyalty and electronic satisfaction. Perceiving benefits and ease of use are the most outstanding factors of computer users' technology acceptance. These two dimensions have the component that describes shopping on the Internet.

Consumer behavior model is a study of motivation to make a purchasing decision starting with the stimulus that causes the stimulus demand to pass through the Buyer's black box which is like the black box that the manufacturer or seller cannot estimate. The Buyer's black box will be influenced by the buyer's characteristics, and there will be buyer's response (Philip Kotler, 2003).

Methodology

A mixture of both qualitative and quantitative research was employed to conduct this study. The research methods are as follows:

Qualitative Research: The researcher used a Focus Group interview to confirm a model of exploratory factor analysis on online shopping in Thailand.

Quantitative Research: The researcher collected data using the questionnaire data for the exploratory factor analysis by employing Structural Equation Model: SEM. The analysis result showed the model, role of variables affecting online shopping behavior.

1. Population

The 1,568,398 respondents who used to book or purchase products and services on the internet throughout Thailand were used in this study. (National Statistical Office, 2015).

2. Sample Group

The group of sample is randomly selected through online questionnaires. They are consisted of 400 respondents who used to book or purchase products and services on the website using Taro Yamane's to determine the sample size.

3. Data Collection

Online questionnaires were utilized to collect data. As there were a lot of samples, using online questionnaires saved time and reduced the prices. The first question was that respondents must have previously booked or purchased products and services on the Internet. If they never used to book or purchase them on the Internet, they could not answer the next questions, and they would not be the samples. Then the 400 online questionnaires were distributed to the respondents.

Results

1. Demographic Information

This study was conducted with a total of 400 respondents, 70.75%of the respondents are mostly females, while 41.25% of the respondents are in the age range under 25 years old, Regarding education, 56.25% of the respondents hold the bachelor's degree, while 36.25% are students, and lastly 32.00% of the respondents earn less than / equal 10,000 baht per month.

2. Consumers' Behavioral Information for shopping on the Website.

This study was conducted with a total of 400 respondents. The majority of respondents (65.00%) purchase the Shopping Goods, while 32.75% of the respondents spend 1,000-2,999 baht each time for buying products. 70.25% of them shop once a month, and 38.50% of the respondents shop on the website at 20.00-23.59 p.m.

3. Exploratory Factor Analysis Model: EFA

The purpose of this study is to explore and identify a common component that can describe the relationship of the observed variables. The result shows that it can reduce the number of the observed variables by creating a new variable in the form of a common component.

The 24 observed variables have been used to analyze in this research. The first 15 observed variables are independent variables based on the structural equation model of research framework; namely, Product Type: PT, Product Price: PP, Product Variety: PV, Product Guarantee: PG, Security: SC, Privacy: PR, Usability: UB, Web Design: WD, Perceive Usefulness: PU, Perceive Convenience: PC, Perceive Enjoyment: PE, Perceive Risk: PR, Customer Review: CR, Family: FM, and Celebrity: CB. The second 9 observed variables are dependent variables based on the structural equation model of research framework; namely, Purchase Intention: PI, Attitude toward Website: AWS, Website Experience: WSE, Information: IF, Transaction: TS, Commitment: CM, Repurchase: RP, Word of Mouth: WOM, and Member System: MS.

3.1 Checking the relationship of independent variables before analyzing the structural equation model. By considering the 15 observed variables, the researcher has used Pearson's correlation coefficient measure, by measuring the correlation coefficient of all observed variables. The criteria is that each partner of relationship must not exceed 0.80. If the relationship value is greater than 0.80, it means that each observed variable is related to each other. The analysis result shows that the correlation coefficient of all observed variables is between 0.138-0.092 as shown in Table 1.

Table 1. Pearson's Product - Moment Correlation Coefficient of all observed variables of independent variables

Variable	PT	PP	PV	PG	SC	PRI	UB	WD	PU	PC	PE	PR	CR	FM	CB
PT	1														
PP	0.457**	1													
PV	0.441**	0.53**	1												
PG	0.349**	0.511**	0.469**	1											
SC	0.23**	0.383**	0.306**	0.531**	1										
PRI	0.264**	0.383**	0.286**	0.518**	0.835**	1									
UB	0.342**	0.353**	0.372**	0.438**	0.559**	0.579**	1								
WD	0.312**	0.377**	0.367**	0.461**	0.535**	0.571**	0.696**	1							
PU	0.425**	0.401**	0.366**	0.442**	0.52**	0.525**	0.521**	0.52**	1						
PC	0.335**	0.338**	0.345**	0.382**	0.349**	0.363**	0.475**	0.462**	0.544**	1					
PE	0.279**	0.386**	0.382**	0.466**	0.485**	0.501**	0.462**	0.52**	0.563**	0.475**	1				
PR	0.244**	0.25**	0.233**	0.319**	0.349**	0.361**	0.477**	0.485**	0.444**	0.467**	0.532**	1			
CR	0.15**	0.181**	0.201**	0.208**	0.226**	0.243**	0.261**	0.255**	0.292**	0.26**	0.396**	0.312**	1		
FM	0.138**	0.147**	0.142**	0.26**	0.27**	0.28**	0.245**	0.268**	0.288**	0.295**	0.265**	0.358**	0.293**	1	
CB	0.149**	0.156**	0.092**	0.162**	0.227**	0.233**	0.244**	0.223**	0.232**	0.227**	0.238**	0.329**	0.344**	0.373**	1

The Analysis Result of Kaiser-Mayer Olkin (KMO) shows a KMO value of 0.905, which is greater than 0.5, indicating the appropriateness. This indicates that 90.5% of the whole models can be explained, which is high value, including the Bartlett's Test of Sphericity Chi-Square, which is significant p-value = .000. It can be concluded that to test the appropriateness of the samples, the created model is statistically significant.

In axis rotation, to analyze or set the independent variables into a group of single component based on Varimax method that will test all variables. Each independent variable will have a weight of only one component. (Table 2)

Table 2. Analysis Result of Kaiser & Bartlett's Test of Independent Variables

Kaiser – Mayer Olkin (KMO)		0.905
Bartlett's Test of Sphericity Chi-Square	**Approx. Chi-Square**	2661.156
	Df	105
	Sig.	.000

Source: From Calculating

According to the Analysis Result of Communalities, the Initial shows the value whether or not those variables are good ones compared to other variables. And the Extraction shows the value that whether the variables are good or not compared to the latent factor. From all values, there are no variables inappropriate in this structural model, since the value of each variable is not significantly different. (Table 3)

Table 3. Analysis Result of Communalities of Independent Variables

Variable	**Initial**	**Extraction**
PT	1.000	.596
PP	1.000	.624
PV	1.000	.651
PG	1.000	.550
SC	1.000	.788
PRI	1.000	.801
UB	1.000	.619
WD	1.000	.625
PU	1.000	.572
PC	1.000	.473
PE	1.000	.554
PR	1.000	.531
CR	1.000	.473
FM	1.000	.475
CB	1.000	.532

Source: From Calculating

To consider how many components the model consists of. It can be considered in two parts; namely, Analysis Result of Scree Plot and Analysis Result of Rotated Factor Matrix as follows.

According to the Analysis Result of Scree Plot, the graph shows the value of eigenvalue, and has component number determined by the point where the graph sharply increases, there are 3 Factors. (Figure 1)

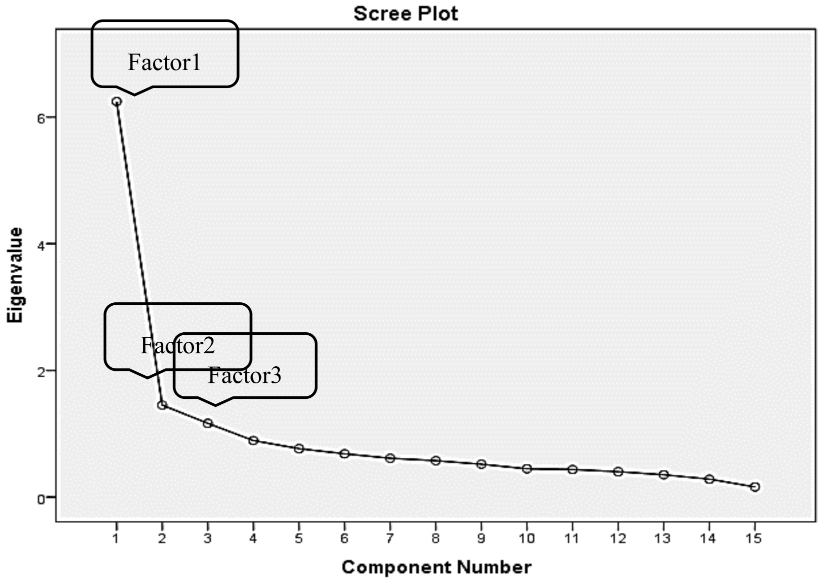

Figure 1. Analysis Result of Scree Plot to Indicate the Component Number of Independent Variables

The Analysis Result of Rotated Factor Matrix is indicated in Table5.The Analysis Result of Rotated Factor Matrix which is the value of axis rotation with Varimax method, three components are shown; namely,1) Product Characteristics, 2) Perceive Website Quality, and 3) Perceive Information. (Table 4)

Table 4. Analysis Result of Rotated Factor Matrix of Independent Variables

Rotated Component Matrix			
	Component		
	1	**2**	**3**
PT	.093	**.755**	.131
PP	.281	**.737**	.053
PV	.190	**.781**	.064
PG	**.537**	.502	.099
SC	**.873**	.119	.109
PRI	**.877**	.121	.132
UB	**.693**	.272	.255
WD	**.694**	.274	.259
PU	**.540**	.412	.333
PC	.358	.409	**.422**
PE	**.518**	.339	.413
PR	.384	.177	**.594**
CR	.090	.144	**.666**
FM	.177	.024	**.666**
CB	.077	.011	**.725**

Source: From Calculating

For this model that consists of these three components, when analyzing the value from the Total Variance Explained, this shows that the cumulative percentage of Initial Eigenvalues is 59.087% which it is the percentage of the sum of cumulative variance in this model.(Table 5)

Table 5. Analysis Result of Total Variance Explained of Independent Variables

Total Variance Explained									
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.245	41.632	41.632	6.245	41.632	41.632	3.784	25.229	25.229
2	1.453	9.688	51.320	1.453	9.688	51.320	2.658	17.719	42.948
3	1.165	7.767	59.087	1.165	7.767	59.087	2.421	16.139	59.087
4	.893	5.956	65.043						
5	.766	5.105	70.147						
6	.684	4.563	74.710						
7	.614	4.095	78.805						
8	.576	3.841	82.646						
9	.520	3.465	86.110						
10	.448	2.985	89.095						
11	.437	2.911	92.007						
12	.402	2.680	94.687						
13	.352	2.349	97.036						
14	.284	1.895	98.931						
15	.160	1.069	100.000						

Source: From Calculating

Confirmatory Factor Analysis of latent variables within the group of dependent variables.

Table 6. Pearson's Product-Moment Correlation Coefficient of All Observed Variables of Dependent Variables.

Variable	PI	AWS	WSE	IF	TS	CM
PI	1.000					
AWS	0.637**	1.000				
WSE	0.646**	0.747**	1.000			
IF	0.543**	0.510**	0.604**	1.000		
TS	0.542**	0.585**	0.674**	0.763**	1.000	
CM	0.469**	0.506**	0.639**	0.691**	0.740**	1.000

Source: From Calculating

3.2 Checking the relationship of dependent variables before analyzing the structural equation model.

The Analysis Result of Kaiser-Mayer Olkin (KMO) shows a KMO value of 0.872, which is greater than 0.5, indicating the appropriateness. This indicates that 87.2% of the whole models can be explained, which is high value, including the Bartlett's Test of Sphericity Chi-Square, which is significant p-value = .000. It can be concluded that to test the appropriateness of the samples, the created model is statistically significant.

In Axis rotation, to analyze or set the dependent variables into a group of single component based on Varimax method that will test all variables. Each dependent variable will have a weight of only one component.
(Table 7)

Table 7. Analysis Result of Kaiser & Bartlett's Test of Dependent Variables

Kaiser – Mayer Olkin (KMO)		**0.872**
Bartlett's Test of Sphericity Chi-Square	Approx. Chi-Square	1583.458
	Df	15
	Sig.	.000

Source: From Calculating

According to the Analysis Result of Communalities, the Initial shows whether or not those variables are good ones compared to other variables. And the Extraction shows the value that whether the variables are good or not compared to the latent factor. From all values, there are no variables inappropriate in this structural model, because the value of each variable is not significantly different. (Table 8)

Table 8. Analysis Result of Communalities of Dependent Variables

Variable	Initial	Extraction
PI	1.000	.587
AWS	1.000	.640
WSE	1.000	.759
IF	1.000	.691
TS	1.000	.761
CM	1.000	.669

To consider how many components the model consists of. It can be considered in two parts; namely, Analysis of Scree Plot and Analysis of Rotated Factor Matrix as follows.

According to the Analysis Result of Scree Plot, the graph shows the value of eigenvalue, and has a component number determined by the point where the graph sharply increases, that is 1 Factor. (Figure 2)

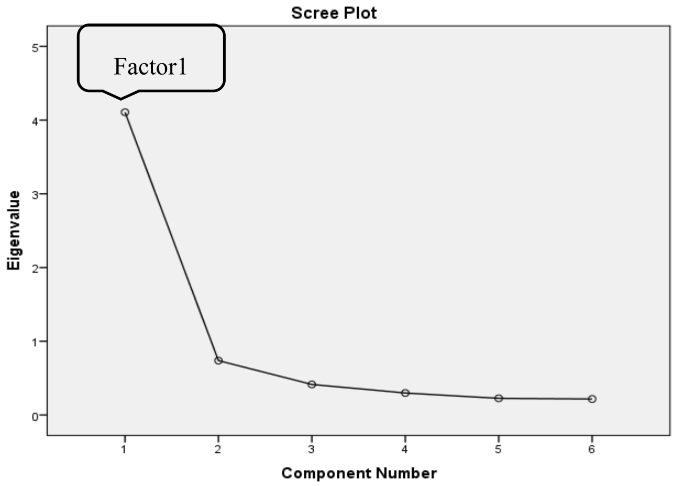

Figure 2. Analysis Result of Scree Plot to Indicate the Component Number of Dependent Variables

For this model that consists of one component, when analyzing the value from the Total Variance Explained as shown in the table, it shows that the cumulative percentage of Initial Eigenvalues is 68.444% which it is the percentage of the sum of cumulative variance in this model. (Table 9)

Table 9. Analysis Result of Total Variance Explained of Dependent Variables

Total Variance Explained						
Component	**Initial Eigenvalues**			**Extraction Sums of Squared Loadings**		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.107	68.444	68.444	4.107	68.444	68.444
2	.738	12.295	80.739			
3	.414	6.902	87.640			
4	.298	4.974	92.615			
5	.226	3.770	96.385			
6	.217	3.615	100.000			

Source: From Calculating

Goodness-of-fit indices and Model Modification

The analysis result of harmony index of model calculated after the researcher adjusted the model. It indicates that the model corresponds to the empirical data. The 6 harmony indexes that have passed the accepted criteria are: index x^2 =589.263, x^2/d.f. = 2.518, RMSEA = 0.062, CFI = 0.916, TLI = 0.901, SRMR = 0.053. (Table 10)

Table 10. Goodness-of-fit indices

Goodness-of-fit measure	Acceptable Values	Value	Result	Value Model Modification	Result
x^2.	Close to0	777.709	Pass	589.263	Not pass
d.f.	-	242		234	
x^2/d.f.	2 <X^2/d.f. ≤ 3	3.214	Not pass	2.518	Pass
RMSEA	0 ≤ RMSEA ≤ 0.08	0.074	Pass	0.062	Pass
CFI	0.90 ≤CFI≤ 1.00	0.874	Not pass	0.916	Pass
TLI	0.90 ≤TLI≤ 1.00	0.856	Not pass	0.901	Pass
SRMR	0 ≤SRMR ≤ 0.08	0.061	Pass	0.053	Pass

Source: Adapted from Hair et al., 2006

Exploratory Factor Analysis Model: EFA provides a model with independent variables and dependent variables which have new components. Furthermore, a new created model is analyzed by the structural equation model there are two steps. They are Confirmatory Factor Analysis: CFA and Path Analysis: PA. The details are as follows.

Confirmatory Factor Analysis: CFA

The Researcher has analyzed the Confirmatory Factor Analysis: CFA to examine the appropriateness and accuracy of the structural equation model by considering the value of Factor Loading, Residual, SE, t-value, and R^2value Estimateto check the variance of the indicator. The analysis result is presented into five parts; namely, Product Characteristics, Perceive Website Quality, Perceive Information Social, Electronic Willingness, and Electronic Loyalty. (Table 11)

Table 11. Confirmatory Factor Analysis: CFA

Construct	Measurement item	Factor loading	Residual	SE	t-value	R^2 value Estimate
Product characteristics						
	PT	0.786	0.381	0.032	24.917	0.619
	PP	0.848	0.282	0.029	29.102	0.718
	PV	0.829	0.312	0.027	31.291	0.688
Perceive Website Quality						
	PG	0.634	0.598	0.032	20.077	0.402
	SC	0.652	0.423	0.032	20.507	0.426
	PRI	0.759	0.423	0.032	23.930	0.577
	UB	0.617	0.619	0.037	16.823	0.381
	WD	0.620	0.615	0.037	16.807	0.385
	PU	0.713	0.491	0.037	26.836	0.509
	PE	0.659	0.565	0.032	20.285	0.435
Perceive Information Social						
	PC	0.646	0.583	0.039	16.606	0.417

Construct	Measurement item	Factor loading	Residual	SE	t-value	R^2 value Estimate
	PR	0.627	0.607	0.042	15.059	0.393
	CR	0.506	0.744	0.048	10.656	0.256
	FM	0.503	0.747	0.047	10.798	0.253
	CB	0.476	0.773	0.050	9.441	0.227
Electronic Willingness						
	CR	0.744	0.446	0.026	28.948	0.554
	FM	0.745	0.446	0.029	26.091	0.554
	CB	0.821	0.327	0.019	42.405	0.673
	IF	0.749	0.440	0.033	22.965	0.560
	TS	0.727	0.471	0.037	19.747	0.529
	CM	0.682	0.534	0.037	18.502	0.466
E-Loyalty						
	RP	0.805	0.352	0.022	36.227	0.648
	WOM	0.813	0.339	0.020	39.941	0.661
	MS	0.764	0.417	0.029	26.756	0.583
Chi-square = 589.263, RMSEA = 0.062, CFI = 0.916, TLI = 0.901, SRMR = 0.053						

Source: From Calculating

Path Analysis

The result of Path Analysis indicates the direct and indirect influence and total influence of variables shown in Table 12 and Figure 3-5.

Table 12. Parameter value of direct and indirect influence and total influence of causal variables and outcome variables after adjusting the model.

causal variable	outcome variable					
	Electronic Willingness			E-Loyalty		
	DE	IE	TE	DE	IE	TE
Product characteristics	-0.264*	-	-0.264*	-0.088	-0.206*	-0.294*
Perceive Website Quality	1.000**	-	1.053**	0.272	0.823**	1.095**
Perceive Information Social	-0.023	-	-0.023	-0.093	-0.018	-0.111
Electronic Willingness	-	-	-	0.781**	-	-

Source: From Calculating

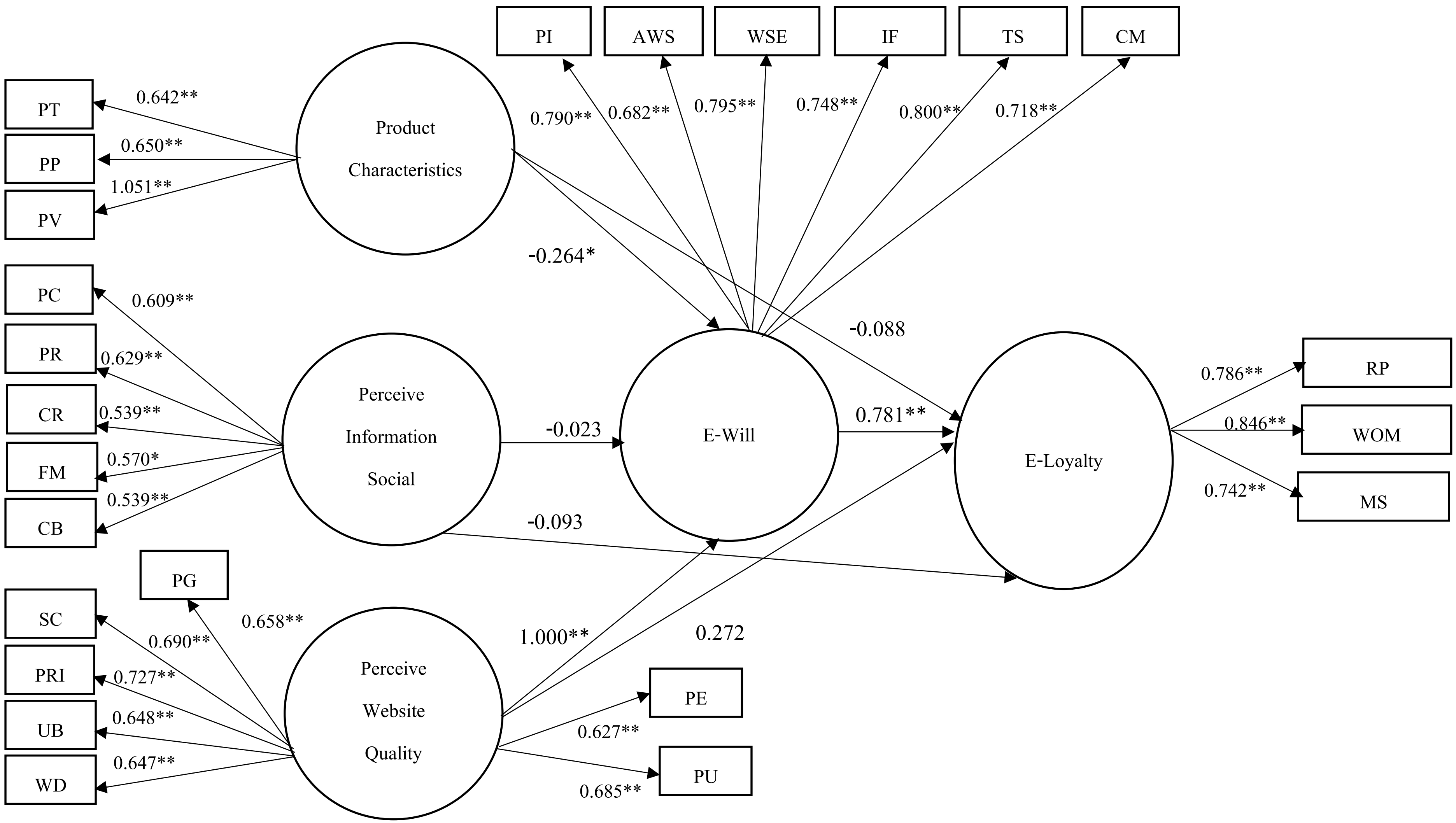

Figure 3. The result of parameter estimation, influence of observed variables and latent variables from confirmatory factor analysis after a model modification.

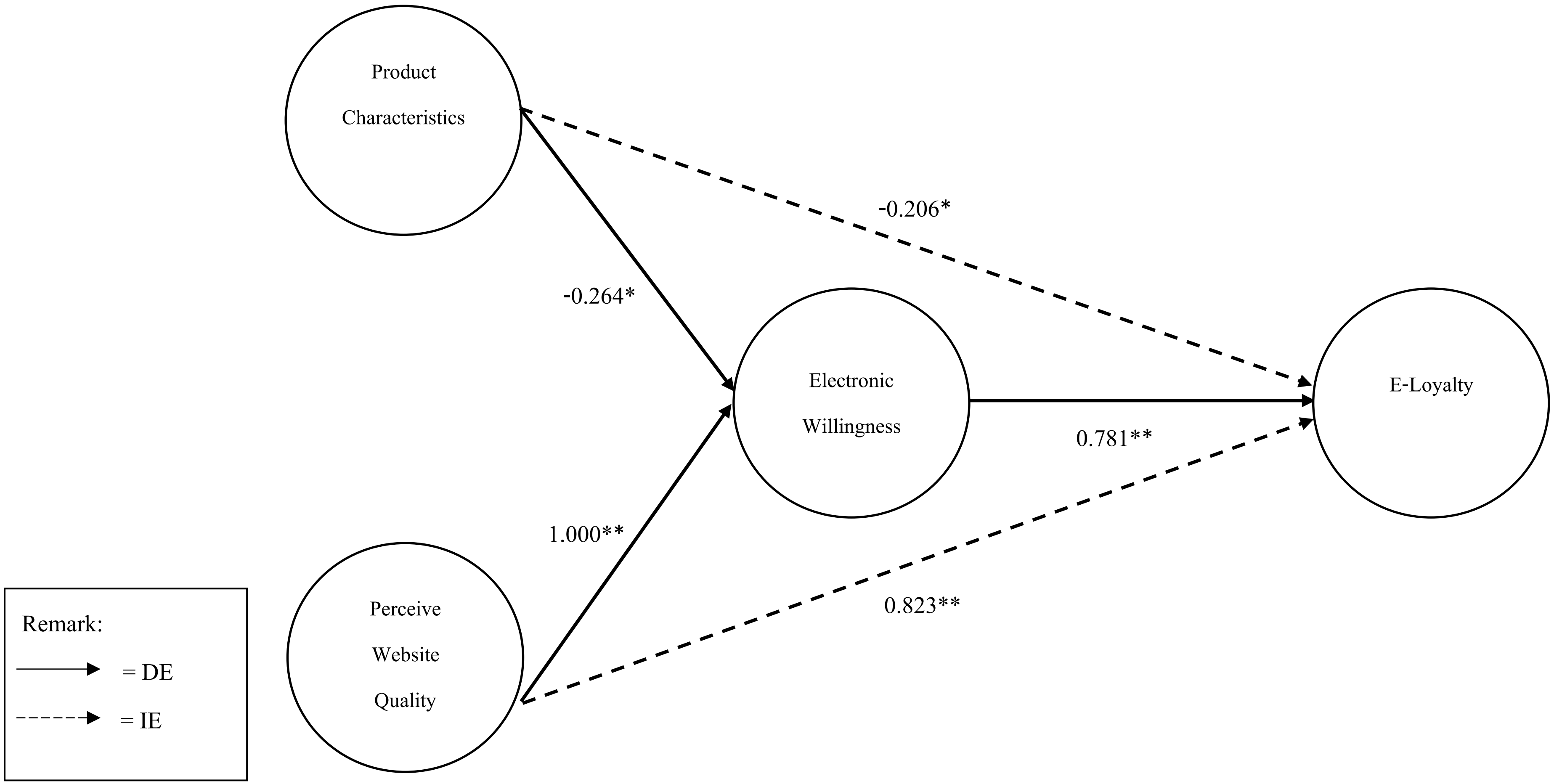

Figure 4. The result of parameter estimation, influence of observed variables and latent variables from confirmatory factor analysis after a model modification.

E-Loyalty Model

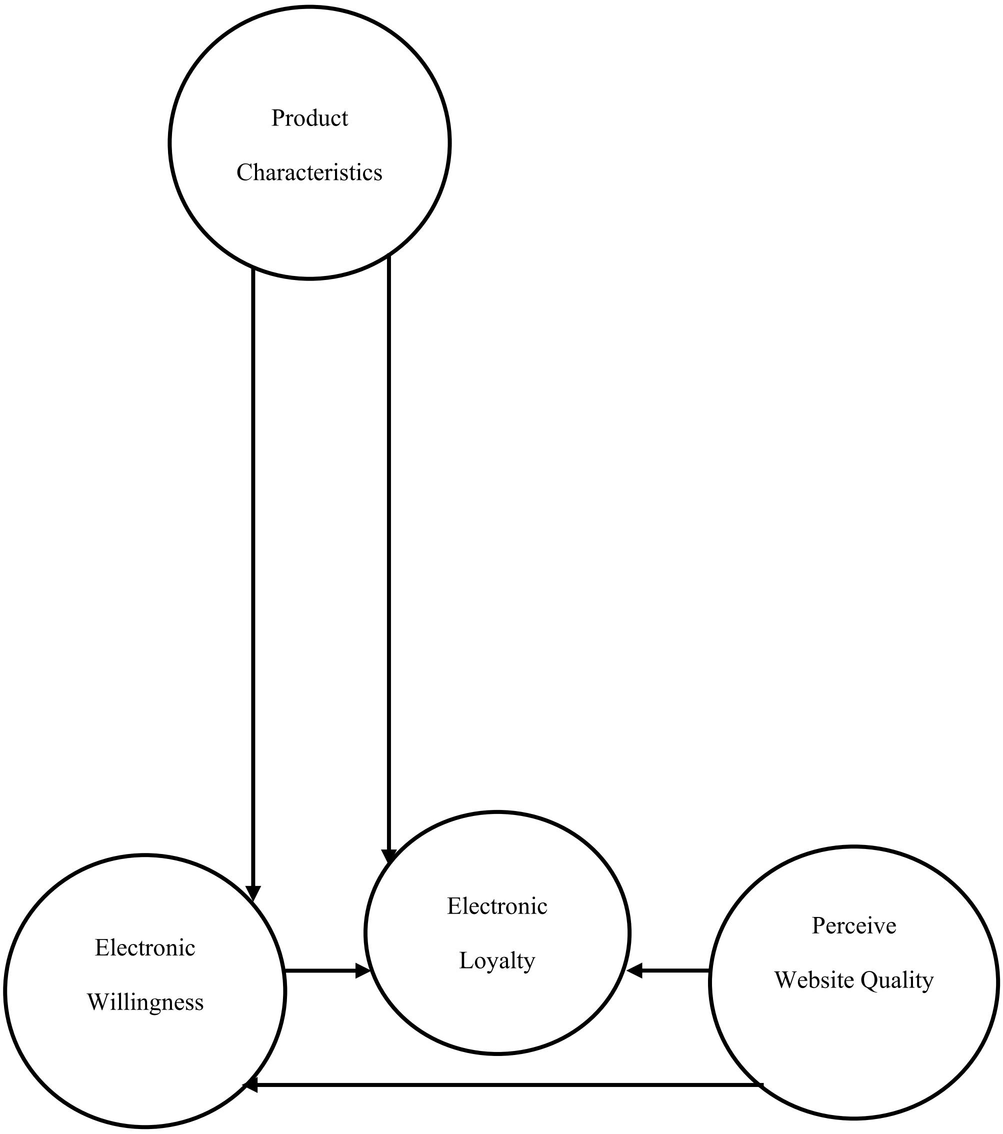

Figure 5. E-Loyalty model

The Result of the Focus Group

The researcher has utilized a new developed model to conduct the subgroup discussion with both the traders selling products on the website and consumers to confirm the developed model. It can be seen that the attendees have agreed and thought that E-Loyalty Model developed by the researcher is acceptable, and it can be used as a model for website shopping in the context of Thai people.

In addition, the attendees have proposed a security system; for instance, Verified by Visa, DBD Verified, Department of Business Development, and One Time Password: OTP. The entrepreneurs should be processed one or the other to help improve the quality of the website to be safe to use, and customers reduce the risk of shopping on the website.

Discussion

Research of model development of exploratory factor analysis on online shopping in Thailand can discuss the results based on the research hypothesis as follows.

(1) Product Characteristics directly affect the Electronic Willingness, and indirectly affect Electronic Loyalty in the opposite direction, as it can be seen that high price of the product affects the Electronic Willingness.

(2) Perceive Website Quality directly affects the Electronic Willingness, and indirectly affects Electronic Loyalty.

(3) Perceive Information Social does not affect the Electronic Willingness and Electronic Loyalty.

(4) Electronic Willingness directly affects Electronic Loyalty.

As a result, for developing an exploratory factor analysis model, the researcher has got a new model called E-Loyalty Model.

Product Characteristics affect to customer behavior according to Janda (2005) state that product characteristics affect the relationship between online experience and satisfaction. Jain (2011) state that some of the product characteristics do influence consumer adoption of e-commerce. In addition Brynjolfsson (2003) state that increased product variety made available through electronic markets can be a significantly larger source of consumer surplus gains. Perceive Website Quality affects to customer behavior according to Chen & Dibb (2010) state that web site interface in consumer online behavior by systematically examining different quality features affect consumer trust. And Wolfinbarger and Gilly, (2001), perceived website quality contains values like the design, reliability and the services provided by the site.

In the same way McKnight et al, (2002a) ; Maghrabi et al. (2011) state that web site quality and good interface design enhance the formation of consumer trust, and if a consumer perceives a vendor website to be of high quality, he or she should trust the vendor competence, integrity, and benevolence Electronic Willingness directly affects Electronic Loyalty according to Muhmin, (2011) In the online context, a positive link between online purchase satisfaction and willingness to continue patronizing online purchasing has been found by R. E. Anderson and Srinivasan (2003) and Hellier and colleagues (2003).

Conclusion

The research result shows the personal information of respondents shopping on the website, most of them are females who are older than 65. In addition, they hold a bachelor's degree, some are students, and they earn less than / equal 10,000 baht per month. With regard to consumers' behavioral information about the website shopping, the majority of respondents purchase the Shopping Goods. They spend 1,000-2,999 baht each time for buying products. The respondents shop on the website once a month, and they shop on the website at 20.00-23.59 p.m. Product Characteristics directly affect the Electronic Willingness, and indirectly affect Electronic Loyalty in the opposite direction. Perceive Website Quality directly affects the Electronic Willingness, and indirectly affects Electronic Loyalty. Lastly, Electronic Willingness directly affects Electronic Loyalty.

Recommendation

1. Contribution

For the Electronic Willingness, the entrepreneurs need to use the product strategy by developing the product characteristics to have product categories and product variety, for example, size of products, color of products and brand of products, to support the need of consumers. Also there should be a strategy to set the price of products to attract the customers by setting the lower price than the shops with storefront, there is a price reduction, free delivery service to encourage the consumers to recognize the value of shopping on the website. In addition, the entrepreneurs must encourage the customers to recognize the quality of the website that it is safe and private; especially, the website design must be beautiful with details of various multi-angle pictures and information of products so that the consumers will be willing to shop on the website.

2. Areas for Further Research

For the next study, moderators should be used in the research, such as gender, age group, type of products purchased, to study the relationship between independent variables and dependent variables that they may change when moderators are included.

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Conspicuous Consumption: Global and National Luxury Fashion Brands Purchase Intention

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Abstract

This research examines the conspicuous consumption of luxury goods by comparing the impact of the so-called “snob” and “bandwagon” effects on both global and national luxury fashion brands. Consumer culture theory was applied to develop the conceptual model in order to investigate self and social influences regarding luxury brand consumption by using self-identity projects and marketplace culture. We found that status seeking was used as the initial drive for luxury good consumption and this was mediated by snob and bandwagon effects. The sample are mostly drawn from Generation Y individuals with high incomes. A second-order factor modelling used in the SEM analysis program, and the overall model demonstrate a good fits with $\chi2/df = 1.748$; GFI = .82; RMSEA = .057; and PCFI = 0.84. The results suggest that both snob and bandwagon consumption are related to global luxury fashion brand consumption. Surprisingly, the bandwagon effect was not seen to be related to national luxury fashion brands. This study extends our knowledge of conspicuous consumption into the area of national luxury fashion brands by illustrating the distinguishing points where national luxury brands combat global luxury fashion brands. The study also points out the importance of individuals’ identity and the perceived value of status in consumer goods purchasing.

Keywords: conspicuous consumption, snob and bandwagon effect, global luxury brands, national luxury brands, purchase intention

Introduction

The global personal luxury goods market, one of the markets that has stayed strong through economic crises with a compound annual growth rate (CAGR) at 6 percent from 1996 to 2017, has grown worldwide to nearly $1.47 trillion in 2017 (Bain & Company, 2017). In addition, Vigneron and Johnson (2004) have pointed out that expansion of the luxury sector has been accelerated by the economic growth in Southeast Asia. Thailand, one of the Southeast Asian countries, is an emerging economy, coupled with an increasing number of middle-income households that provide growing opportunities for luxury product market (Shukla & Purani, 2012). Even with the economic depression during the past years, the luxury market in Thailand grew at the rate of 8 percent to reach $1.6 billion from 2015 to 2016 (Ho & Rekhraj, 2016). In the past, luxury consumption behavior was studied within the theory of conspicuous consumption by using the concept of the concern for status (Grossman & Shapiro, 1988; O'Cass & McEwen, 2004; Kastanakis & Balabanis, 2011; Kastanakis & Balabanis, 2014) as well as the utility perspective (Leibenstein, 1950), but all of these theories refer to luxury brands as a whole, leaning toward the study of global brands.

The study of national brands however was conducted using more the concept of consumer ethnocentrism (Shankarmahesh, 2006; Watson & Wright, 2000; Wang & Chen, 2004). With the rise of national luxury brands in the Thai market and greater consumption of national brands, this paper aims to investigate luxury consumption behavior for a better understanding of the change of such behavior. As prior research rarely includes both global and national brands in the same study, this study discusses the intention to purchase both global and national brands in order to compare the impacts of conspicuous consumption.

Literature Review and Hypothesis Development

Part 1: Luxury purchase intention and consumer culture theory (CCT)

Despite the growing demand for luxury items in both the global and Thai marketplace, only a limited number of studies have investigated and explored the luxury brand market using the consumer culture theory (CCT) (Hung et al., 2011). Theorizing luxury consumption behavior, this paper draws on consumer culture theory within the consumer identity projects and marketplace cultures proposed by Arnould and Thompson (2005). Within consumer identity projects and marketplace culture, it conveys interconnected system frameworks of consumers' scope for conceivable thought, feeling, action, patterns of behavior, as well as interpretations by using the constraints of rules that groups use in the marketplace. It emphasizes how consumers actively rework and transform symbolic encoded meanings in material goods in order to demonstrate their particular personal and social circumstances, which later become their identity and lifestyle goals (Grayson & Martinec, 2004). Within the area of CCT, luxury consumption has been further investigated and illustrated that conspicuous consumption may be caused by the social influences that reflect and accept the individuals' projected images or identities (Hung et al., 2011).

According to previous studies, both self and social influences can affect conspicuous consumption because individuals pursue personal goals through consumer positions that enact and personalize to the marketplace ideals. This study investigates both the effects of self and the external world on conspicuous consumption in order to extend the concepts to the new contexts, especially Thai luxury consumption, which consists of both global and national luxury brands.

Part 2: "Luxury" concepts

The notion of luxury has been defined differently based on the perspectives proposed by many scholars. Some scholars have defined luxury by conceptualizing it based on three value dimensions: the functional, experiential, and interactional symbolic dimensions, where luxury goods are viewed based on occasions, the market segment, and the consumer's subjective individuality (Vickers & Renand, 2003; Berthon, Pitt, Parent & Berthon, 2009). Berthon et al. (2009) have indicated three dimensions of luxury. First, the functional dimension represents the world that views luxury as in what object 'does' not do what it 'represents' so quality and performance are usually used as the primary evaluation. Second, the experiential dimension represents the world based on the subjective taste of individuals, where personal value is found in the brand, and brand-related stimuli can evoke sensations, feelings, cognition, and behavioral responses. Last, the symbolic dimension represents the world in which individuals view luxury as signal value tools, both from the brand and from the signaler to others. Others have stated that luxury is the combination of innovation, culture, quality of craftsmanship, symbols, and high price (Kapferer, 2012); the unification of high quality, expensiveness, and the non-essential that is perceived to be rare, exclusive, prestigious, and authentic (Tynan, McKechnie & Chhuon, 2010); or a mix of exclusivity, status, and quality (Phau & Prendergast, 2000). Phau and Prendergast (2000) have also pointed out that in the new era of luxury study, "new luxury" goods can be defined as having high quality and exhibiting a higher level of taste and aspiration that is not too expensive to be out of reach. Luxury products are also must-have products that signify success and membership in groups because of the perceived value, which is derived from the social interaction in consumer groups that comes from popularity or social approval (Leibenstein, 1950). Even with many arguable definitions of luxury, it cannot be denied that the continuous growth of the luxury market is substantially globally (Shukla & Purani, 2012). Therefore, the study of the intention to purchase luxury items is crucial for the improvement of marketing in both academic and practitioner aspects.

Part 3: Antecedents of "snob" and "bandwagon" luxury consumption

3.1 Status consumption

Within the study of conspicuous consumption, status seeking is one of the crucial areas. Much prior research has investigated the notion of status and conspicuous consumption, as consumers desire to gain status from the consumption of the luxury goods that symbolize that status (O'Cass & McEwen, 2004; Truong, Simmons, McColl & Kitchen, 2008; Han, Nunes & Drèze, 2010; Eastman & Eastman, 2015). Luxury goods confer status, which consumers use as a rank claim in social relationships (Grossman & Shapiro, 1988). As mentioned, both snob and bandwagon effects occur when consumers want to gain status but using different practices. Snobs acquire status by differentiating themselves from others and creating an independent self (Kastanakis & Balabanis, 2014). On the other hand, bandwagons need status from popular luxury goods that carry social recognition (Berger & Ward, 2010). In addition, status goods must be publicly consumed in order to impress others in the status-seeking process (Mason, 1992). A review of the relevant literature led to the following hypotheses:

H1a: Status seeking relates positively to the consumer need to impress others (CNI).

H1b: Status seeking relates positively to the consumer need for uniqueness (CNFU).

H1c: Status seeking relates positively to the snob consumption of luxury brands.

H1d: Status seeking relates positively to the bandwagon consumption of luxury brands.

3.2 Consumer need for uniqueness (CNFU) and snob consumption

According to the original work of Snyder and Fromkin's uniqueness theory in 1977, it was suggested that people try to establish uniqueness or their dissimilarity from others when they perceive greater similarity between themselves and others (Lynn & Harris, 1997). Park, Rabolt, and Sook Jeon (2008) found that consumers' need for uniqueness is positively related to global luxury purchase intention, as in this way purchasers can promote their unique personal identity and social image. Among the prior research on consumption behavior regarding the purchase of luxury goods, some support that consumers enhance their uniqueness with particular purchase intention of luxury fashion items which reflects self, social images and emotional value (Knights & Young, 2007; Rahman, Saleem, Akhtar, Ali & Khan, 2014). Moreover, their uniqueness is established by using luxury brands as they are scarce and exclusive (Zhan & He, 2011). Since uniqueness is relatively important to luxury consumption and can be the antecedent of snob consumption, a review of the relevant literatures led to the following hypothesis:

H2: CNFU is associated positively with the snob consumption of luxury fashion brands.

3.3 Consumers' need to impress others (CNI) and bandwagon consumption

The social interaction of an individual and his/her social context in the external world suggest that material consumption results from vanity, especially regarding the conspicuous consumption of luxury fashion items (Hung et al., 2011). Consumers with vanity as a psychological trait could continue to spend on prestigious products in order to convey success

(El Din & El Sahn, 2013). In terms of social externalities, people tend to purchase similar goods to express their income or success, which (at least partially) is observable and understandable in physical terms (Grilo, Shy & Thisse, 2001).

A review of the relevant literature provides some perspectives that consumers would purchase as brands are popular symbols that transmit some sort of individuals' success to the society. The idea that the consumer needs to impress others has been given less attention in the academic world, while it seems to be positively related to the bandwagon effect through the consumption of popular luxuries (Kastanakis & Balabanis, 2011). Therefore, this study investigates this gap in the study area. The following hypothesis was generated then from prior studies:

H3: CNI is associated positively with the bandwagon consumption of luxury brands.

Part 4: Conspicuous consumption (snob and bandwagon consumption)

Since Veblen's Theory of the Leisure Class published in 1899, conspicuous consumption has played a significant role in luxury purchasing behavior for status, rather than utility, where social aspiration and social approval seem to influence status-related consumption (Mason, 1984). Within the Veblen effects, consumer willingness to pay a premium price for status goods compared to equivalent goods with similar quality and quantity (Bagwell & Bernheim, 1996). In the luxury consumption studies, "conspicuous consumption" has been discussed as one of the most powerful topics for the neoclassical theory within the area (Shukla, 2008). Conspicuous goods are not just any ordinary goods, as they serve social needs such as the desire for uniqueness and conformism (Amaldoss & Jain, 2005), which consumers use to express their personality and emphasize their status through the brands by choosing to purchase rare products (Husic & Cicic, 2009). Not only to display one's individual's wealth, consumers also compare their self to others in reference groups, which in turn, creates consumer satisfaction that is not from utility in use (Shukla, 2008). A person's utility can depend on the absolute amount of spending and the spending amount relative to others, which leads to a consumption pattern that is created by the process of learning and habit formation (Ackley, 1951).

4.1 Snob consumption and bandwagon consumption

By using utility terms, Leibenstein (1950) proposed that the bandwagon and snob consumption effects could be crucial factors that influence conspicuous consumption. The bandwagon effect can refer to conspicuous luxury consumption, where consumers purchase as others also purchase. They gain status from assimilation with reference group and attractiveness to others while the snob effect differently refers to luxury consumption when consumers find that goods are less purchased by others. They find uniqueness and gain status from the contrast (Kastanakis & Balabanis, 2014). Furthermore, the bandwagon effect is associated with the luxury market, as it explains the demand for luxury goods because of their popularity co-created by complex interactions between social groups, both customers and brand communities (Kastanakis & Balabanis, 2011). Thus, the purchasing of luxury goods can be inflicted by mass psychology (Leibenstein, 1950). Leibenstein (1950) stated that "by the bandwagon effect, we refer to the extent to which the demand for a commodity is increased due to the fact that others are also consuming the same commodity" (p. 189). On the other hand, consumers can be influenced by the snob effect in purchasing luxury goods because these goods are owned by very few people and their exclusivity is for those that own them (Kastanakis & Balabanis, 2011). In addition, in snob consumption, the popularity of luxury goods destroys their utility (Kastanakis & Balabanis, 2014).

As luxury goods are used for both the individual's presentation of his or her uniqueness and exclusivity, as well as for social integration, both snob consumption and bandwagon consumption could be seen as the antecedents of luxury brand purchasing intention.

H4a: Snob consumption is related to global luxury brand purchasing intention.

H4b: Snob consumption is related to national luxury brand purchasing intention.

H5a: Bandwagon consumption is related to global luxury brand purchasing intention.

H5b: Bandwagon consumption is related to national luxury brand purchasing intention.

Research Objectives

Based on the many gaps of study in prior research, this paper provides a clearer understanding of luxury consumption and examines the effects of conspicuous consumption to global and national luxury fashion brands purchase intention by using the snob and bandwagon effects as mediating variables.

Conceptual Framework

From the past researches and consolidated knowledge, the conceptual framework is generated for this study, together with hypotheses in Figure 1.

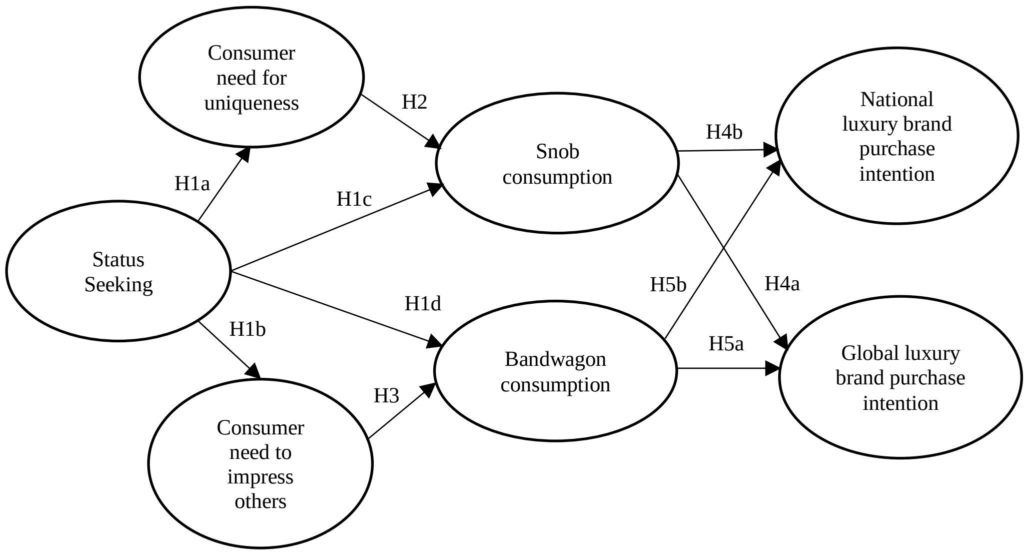

Figure 1. Conceptual framework and hypotheses for study of conspicuous consumption

Research Methodology

Part 1: Research design and data collection

An online survey was used to collect the data for this study, and a web link for the online survey was created. It directed respondents to the questionnaire, which consisted of 3 sections: (1) screening questions, (2) personal information, and (3) attitude questions on the studied variables. Respondents were qualified by two procedures. First, the researchers initially distributed the web link to sample those individuals that used both global and Thai luxury fashion brands and asked them to pass on the questionnaire's link to their friends and acquaintances that actually used both types of luxury fashion brands. In order to ensure that the respondents that have passed on the questionnaire actually met the requirements, screening questions were asked: "Have you ever purchased any global luxury brands?" and "Have you ever purchased any Thai luxury brands?" If the respondents answered "no" to any of the screening questions, they were dropped from the survey. There were 230 respondents that entered the online survey. The samples that used both global brands and Thai brands were somehow difficult to access because Thai luxury fashion brands are new to the luxury market in both national and global scales. Their popularity is small and so are their targeted consumers. The sample reflected precisely those that had experience with the consumption of both global and national luxury fashion brand items. According to Bryant and Yarnold (1995), the ratio of 5 observations for variable was purposed as optimal. This size of 230 respondents met the minimum numbers in analysis to generalize as this study uses 34 variable questions.

The names of global and national fashion luxury brands were provided in the questionnaire in order to help the respondents clearly understand the questions and to be able to recall and evaluate each question based upon the luxury brands that they were familiar with. The lists of brands were created by asking 10 respondents that has shopped for luxury fashion brand items regularly to mention any luxury fashion brands that they were familiar with, as much as they could. The lists are found to be familiar by the respondents. The luxury global brands that were shown, together with the online questionnaire, were Louis Vuitton, Hermès, Gucci, Prada, Burberry, Rolex, Cartier, Christian Dior, Chanel, Ralph Lauren, Hugo Boss, Coach, Micheal Kors, Issey Miyake, Calvin Klein, Marc Jacobs and Bottega Veneta. These brands are top players in the luxury market all around the globe. The national luxury fashion brands provided were Disaya, Flynow, Suvimol, Tu'i, Greyhound, Kloset, Senada, Sretsis, Milin, Vickteerut, Patinya, Issue, Poem, Vatanika, Asava, Kingkan, Nicha, and Soda. These brands are available at high-end department stores in Thailand, such as The Mall Group and Central department stores, where most global luxury brands are located.

In Table 1, the sample demographics and lifestyle behaviors are shown. Most of the individuals in the sample in this study were aged between 20 and 45 years (in the age range of Generation Y). They were the main potential buyers of luxury fashion products. The entire sample was at the higher education level and earned a high income, above the average Thai household income of 26,915 Thai Baht per year in 2015 (National Statistical Office of Thailand, 2015). The sampled individuals were mostly owners of companies or corporate employees that were at middle to high management levels. In addition, they frequently travelled abroad.

Table 1. Sample demographics and lifestyle behavior

	(n=230)	%
Gender		
Male		27.4
Female		72.6
Age		
20 - 25		17.4
26 - 35		65.6
36 - 45		15.7
46 - 50		1.3
Education level		
Bachelor degree		41.3
Master Degree		54.8
Doctoral Degree		3.9
Occupation		
Government officer		2.6
Corporate employee		35.7
Business owner		46.1
Student		7.4
Housewife		1.7
Specialist professional		3.5
Freelance		3.0

	(n=230)	%
Income (Baht)		
≤ 20,000		7.0
20,001 – 50,000		30.4
50,001 – 100,000		31.3
≥ 100,001		31.3
Frequency of travelling aboard per year		
0 -1		27.0
2 - 4		53.9
≥ 5		19.1

Part 2: Measures

The measurement approach for each of the theoretical constructs in our model is described briefly in Table 2, which contains the items for each scale. All of the variable questions were placed on a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

- *Consumer need for uniqueness (CNFU).* This scale describes how consumers exhibit their uniqueness of self and social image by acquiring and displaying distinctive products to others (Ruvio, Shoham & Makovec Brenčič, 2008). The scales originally consisted of 31 items based on Tian, Bearden, and Hunter (2001) and were further developed into 12 items (Ruvio et al., 2008), which consisted of 3 categories: avoidance of similarity (AOS), creative choice (CC), and unpopular choice (UC).
- *Status seeking.* This scale is described as the status consumption that results from internal reasons (self-satisfaction) and/or external reasons (signaling wealth to others) (O'Cass & McEwen, 2004). It consists of 5 items originally from Eastman, Goldsmith, and Flynn (1999).
- *Consumer need to impress others (CNI).* This scale describes the concern of consumers regarding their outward appearance. As a result, they want to pursue better physical appearance in order to increase their social popularity and power (Durvasula, Lysonski & Watson, 2001). This paper uses physical vanity to measure the level of CNI. The scales consist of 2 aspects: physical-concern and physical-view from Durvasula et al. (2001).
- *Snob consumption and bandwagon consumption.* Snob scale describes the consumption that results from the consumer's need for uniqueness while the bandwagon scale describes the consumption that results from social norms (Tsai, Yang & Liu, 2013). The scales in this study were developed based on Tsai et al. (2013), which were originally developed from the theory of consumer demand of Leibenstein (1950).
- *Luxury fashion brand purchase intention (both global and national brands).* These scales indicate the consumers' willingness to buy both global and national luxury fashion brand items. These scales were adapted from the willingness to buy indicators of Dodds, Monroe, and Grewal (1991).

After of the data collection and analyses, the 34 variable questions remained, as some questions were not appropriate to be used in the Thai context, coupled with the confusion of the respondents, who found that some questions were repeated. In sum, CNFU remained with 8 items by using only 2 categories, AOS and CC; status seeking was reduced to 4 items; CNI was reduced to 8 items; snob and bandwagon contained 4 items each; and the intention to purchase global and national brand items contained 3 items each. They are shown in Table 2.

Part 3: Measurement model assessment

A second-order factor model using structural equation modeling (SEM) was executed for the data analysis in this study, as CNFU and CNI consist of 2 factors each.

Table 2. Measurement model and items of each construct

No	Measurements	Factor Loading (Component Matrix)	Reliability Test: Cronbach's Reliability Test	Reliability Test: Scale composite reliability (SCR > 0.7)	Reliability Test: Average variance extracted (AVE.0.5)
Consumer need for uniqueness (adapted from Ruvio et al., 2008)					
Creative choice			0.79	0.80	0.50
1.	I often mix & match my style in such a way that I create a personal image that cannot be duplicated.	0.65			
2.	I often try to find a more interesting version of ordinary products because I enjoy being original.	0.78			
3.	I actively seek to develop my personal uniqueness by buying special products or brands.	0.85			
4.	Having an eye for products that are interesting and unusual assists me in establishing a distinctive image.	0.83			
Avoidance of similarity			0.87	0.88	0.64
5.	When a product I own becomes popular among the general population, I begin to use it less.	0.82			
6.	I often try to avoid products or brands that I know are bought by the general population.	0.87			
7.	As a rule, I dislike products or brands that are customarily bought by everyone.	0.88			
8.	The more commonplace a product or brand is among the general population, the less interested I am in buying it.	0.84			
Status seeking (adapted from Eastman et al., 1999)			0.89	0.90	0.71
9.	I would buy a product just because it has status.	0.88			
10.	I am interested in new products with status.	0.92			
11.	I would pay more for a product if it had status.	0.92			
12.	A product is more valuable to me if it has some elite appeal.	0.77			

Consumer need to impress others (adapted from Durvasula et al., 2001)				
Physical-concern		0.827	0.862	0.620
13. The way I look is extremely important to me.	0.88			
14. I am very concerned about my appearance.	0.90			
15. Looking my best is worth the effort.	0.69			
16. It is important that I always look good.	0.79			
Physical-view		0.89	0.89	0.69
17. People notice how attractive I am.	0.90			
18. My looks are very appealing to others.	0.91			
19. People are envious of my good looks.	0.84			
20. I am a very good-looking individual.	0.85			
Snob Consumption (adapted from Tsai et al., 2013)		0.80	0.80	0.51
21. The luxury products that I would like to purchase/use are worn by a few elite and are not necessarily well-known.	0.75			
22. When products or brands I like become extremely popular, I lose interest in them.	0.82			
23. I avoid luxury products that have already been accepted and purchased by the average customers.	0.88			
24. People rarely wear the brand of luxury products that I would like to purchase/use.	0.72			
Bandwagon Consumption (adapted from Tsai et al., 2013)		0.88	0.87	0.51
25. The luxury products that I purchase are very popular.	0.87			
26. The luxury products that I purchase are worn by many celebrities.	0.83			
27. The luxury products that I purchase are recognized by many people.	0.89			
28. The luxury products that I purchase are fashionable and approved by everyone.	0.85			
Purchasing Luxury Product Intention (Global) (adapted from Dodds et al., 1991)		0.89	0.89	0.56
29. If I were going to purchase a luxury product, I would consider buying a global brand.	0.91			
30. If I were shopping for a luxury brand, the likelihood that I would purchase a global luxury brand is high.	0.92			
31. My willingness to buy this luxury brand would be high if I were shopping for a global luxury brand.	0.91			

Purchasing Luxury Product Intention (Thai) (adapted from Dodds et al., 1991)		0.92	0.92	0.59
32. If I were going to purchase a luxury product, I would consider buying a Thai brand.	0.91			
33. If I were shopping for a luxury brand, the likelihood that I would purchase a Thai luxury brand is high.	0.95			
34. My willingness to buy this luxury brand would be high if I were shopping for a Thai luxury brand.	0.92			

After the careful consideration of the removal of items that had low mean scores, we further analyzed and conducted a confirmatory factor analysis. Both the reliability and validity tests showed good fit for all scales. The Cronbach's alpha values ranged from 0.79 to 0.92 and the composite reliabilities were well above .70, while variance extracted also exceeded the .50 threshold. These reliability and validity tests supported the internal consistency and convergent validity of this study. See Table 2 for these values, and Table 3 provides the correlations of the constructs and their descriptive statistics. The IBM SPSS AMOS version 22 software was used for the SEM analysis.

In table 3, it provides descriptive statistics and correlations of constructs used while table 4 presents all of the hypotheses in this study, the overall model fits, the standardized estimations and results from SEM analysis for supporting the study.

Table 3. Descriptive statistics and correlation matrix

	Mean	S.D.	1	2	3	4	5	6	7	8	9
1. CC	3.48	.78									
2. AOS	3.48	.87	.48**								
3. Status seeking	2.99	.92	.21**	.10							
4. PC	3.72	.71	.33**	.11	.38**						
5. PV	3.28	.76	.30**	.14*	.32**	.61**					
6. Snob	3.08	.74	.38**	.53**	.37**	.29**	.33**				
7. Bandwagon	2.91	.89	.13*	.04	.56**	.350* *	.37**	.28**			
8. GlobalPI	3.55	.89	.09	.08	.26**	.22**	.26**	.28**	.45**		
9. NationalPI	3.05	.77	.06	.10	.17**	.08	.11	.14*	.08	-.06	

Note: CC = Creative choice, AOS = Avoidance of similarity, PC = Physical view, PV = Physical view,
GlobalPI = Global luxury fashion brands purchase intention, NationalPI = National luxury fashion brands purchase intention (□ $p < .05$. □□ $p < .01$.)

Table 4. Hypotheses testing and standardized estimation

Hypotheses & constructs path	Standardized estimation	Sig.	Hypothesis supported
H1a: Status seeking → CNI	.407	***	Yes
H1b: Status seeking → CNFU	.137	.091	No
H1c: Status seeking → snob consumption	.343	***	Yes
H1d: Status seeking → bandwagon consumption	.442	***	Yes
H2: CNFU → snob consumption	.639	***	Yes
H3: CNI → bandwagon consumption	.296	***	Yes
H4a: Snob consumption → global luxury brands purchasing intention	.151	*	Yes
H4b: Snob consumption → national luxury brands purchasing intention	.175	*	Yes
H5a: Bandwagon consumption → global luxury brands purchasing intention	.478	***	Yes
H5b: Bandwagon consumption → national luxury brands purchasing intention	.025	.738	No
Fit statistics			
Chi-square/df			1.75
GFI			0.82
RMSEA			0.05
PCFI			0.84

□ $p < .05$. □□ $p < .01$. *** $p < .001$

Results

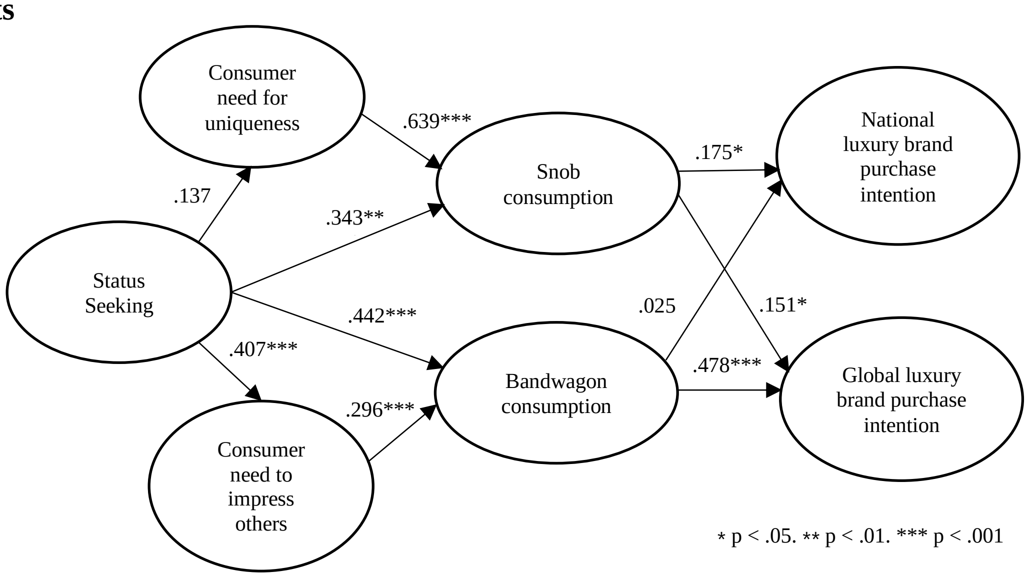

Figure 2. Results for study of conspicuous consumption

The results in Table 4 and Figure 2 show that the overall model exhibited a good fit: $\chi2/df = 1.748$; GFI = .82; RMSEA = .057; PCFI = 0.84. Even though the GFI was below the 0.90 threshold, it was above 0.80, which is an acceptable value as proposed by Baumgartner and Homburg (1996) and Doll, Xia, and Torkzadeh (1994).

The results supported most of the hypotheses, except for H1b and H5b. According to H1b, status-seeking behavior might not be related to consumers that would like to be unique or outstanding. Status seeking effects all CNI, snob and bandwagon consumption variables. The CNFU positively affected snob consumption while CNI was positively related to bandwagon consumption.

Surprisingly, the consumers that chose to purchase national luxury fashion brand items seemed to not be associated with bandwagon consumption. The assimilation to reference group and national luxury fashion brand purchase intention were irrelevant but the snob consumption played some part here. Comparing global and national brands, snob consumption seemed to have a greater effect on the intention to purchase national luxury fashion brand items than global brand items. In the meanwhile, bandwagon consumption was seen to have much more effect on the intention to purchase global luxury fashion brand items than national ones.

Discussion and Conclusion

The globalization and growth of the luxury market domestically and internationally has caused considerable opportunities and challenges. Conducting conspicuous consumption research on both national and global brand purchases intention could contribute to our knowledge of the "national consumer segment" and "individual consumer values toward both global and national luxury brands by comparison."

The tendency of Thai consumers to convey their personality with the acquisition of both global and national luxury fashion brand items elaborates the status-seeking concern on the part of Thai consumers. They collectively share two forms of conspicuous luxury consumption behaviors regarding global brands, snob and bandwagon, while they share only snob consumption behavior towards the purchase of national luxury fashion brand items.

Part 1: Theoretical implications

This study is important regarding theory in several ways. First, it illustrates how people reflect their self-identity by expressing themselves to the external world in which individuals project what society influences as well as their identity based on their own terms. In this study, consumer culture theory, both consumer identity projects and marketplace cultures (Arnould & Thompson, 2005), was investigated in the real luxury market and it was affirmed that both self and society influence the individual's intention to purchase luxury fashion brand items, especially global brands. This finding also validates the research of Hung et al. (2011), where conspicuous consumption was used by individuals to express certain identities that were caused by social influences. On the other hand, the national luxury fashion brand purchase intention did not illustrate social influences, as it only supported the self-identity project. Further study is needed in this area.

Second, the present study contributes to the topic of conspicuous consumption and provides a clearer view of why people consume luxury products of both national and global brands. Thai consumers, especially Generation Y that have a high income, are still seeking status through uniqueness and assimilation, and snob and bandwagon effects, which trigger a higher global luxury product' purchase intention. However, the bandwagon effect still does not exist within the national luxury fashion brand purchase intention in Thailand. This might be caused by the unpopularity of national brands or the shift in the luxury consumption trend. The assimilation to the social influence already exists with global brands, so consumers might find more and more uniqueness from their national brands that they want to narrow themselves to specific group by avoiding purchase of similar goods to the mainstream which is referred as the rise of 'inconspicuous consumption' (Berger & Ward, 2010). These findings open up new perspectives on luxury consumption.

Third, snob and bandwagon consumption patterns were affirmed in the present study. Snob consumption is carried out by consumers that seek status through the expression of their uniqueness by purchasing less popular luxuries, while bandwagon consumption takes place on the part of consumers that purchase luxury products, as they are popular, in order to impress others (Leibenstein, 1950; Kastanakis & Balabanis, 2011; Kastanakis & Balabanis, 2014). In some aspects, status seekers do not view uniqueness as a way to directly create status because uniqueness refers to being different, and this might not be accepted by the mainstream.

Part 2: Managerial implications

The findings of this study have significant implications for practitioners in terms of the development of marketing strategies. Global luxury marketers can continue to develop and serve material products that contain prestigious status images for consumers as in developing countries such as Thailand, and people evidently seek status through materials. For the product extension strategies, some easy-to-use and/or affordably-priced product categories could be provided to the market in order to create higher purchase intention because the bandwagon effect has greater influence than the snob effect in relation to global brands. However, the number of these product categories should not be too great, as global luxury brands should maintain their exclusive character. Even though a new category could create higher purchase intention, the distribution channel should be selective or even an exclusive strategy. In terms of marketing communication, "gaining status from being popular and outstanding" by purchasing global luxury brand items should be emphasized. On the other hand, national luxury marketers should consider communicating uniqueness and being out of the mainstream. Pricing strategies should be high in order to maintain prestige and to communicate high quality. This study illustrates that Thai luxury brand items are not being consumed because of their popularity but contrastingly, because consumers prefer being in the in-group and being different. As this study investigated in part wealthy consumers, it can be stated that they consume global luxury brand items because of their popularity, because they value the acceptance from social as a whole, and because they consume national luxury brands for their uniqueness, in order to differentiate themselves from other social classes.

Part 3: Limitations and future research

This study is not free from limitations. First, the sample might reflect upper-class luxury consumption but it might not generalize the luxury consumption of the whole population in Thailand. Second, the use of luxury fashion brands provides an overall view of luxury consumption, but this cannot be applied to all other luxury product or service categories. Third, a research of this type could be conducted in terms of other aspects, such as culture or consumer demographics, which can also influence luxury consumption behaviors. Despite these limitations, this study provides some new perspectives on conspicuous consumption based on the comparison between global and national luxury brands, and advances marketing knowledge for both academics and practitioners.

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Exploring Similarities and Differences Of Mall Shopping Motives and Patterns Among Chinese and Thai Shoppers.

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Abstract

Prior cross-cultural studies have shown few investigations of mall shopping behavior in non-western contexts. In order to bridge this gap, this study explored shopping motives and patterns in two Eastern cultures – Thailand and China, in a mall setting. Our results indicate that while both Chinese and Thai shoppers are driven to shop at malls for purchase-related reasons, Thai shoppers are more likely to visit shopping malls for fulfilling hedonic needs. In addition, similarities and differences were found in the shopping patterns of the shoppers across two countries. The findings contribute to the existing mall literature by showing that within a larger framework of Asian culture, there do appear to be cultural differences between the two countries, affecting consumer behavior in ways that mall retailers should be aware of. The results are expected to provide practical guidance for international mall retailers.

Keywords: Shopping Motives, Shopping Patterns, Chinese and Thai Shoppers, Mall Shopping Behavior

Introduction

According to a recent report by CBRE, China and Thailand are among the most active markets in the world for constructing and developing shopping malls (Smith, 2017), despite the rapid growth of online retail in both countries. This counter-intuitive phenomenon might be ascribed by two reasons. First, both of Chinese and Thai retail market have indicated positive signs of growth (Smith, 2017; Setboonsarng, 2018). Second, consumers' shopping experience gained from traditional retail stores cannot be fully substituted by online shopping channels. The key drawback of online shopping - lacking of physical experience has pushed many online retailers to extend their offline channels with the expectation to improve customers' overall shopping experience (Shen, Cai & Guo, 2016).

The growth of retail industry in both countries presents new opportunities for Thai retailers to expand their business into international and domestic markets. On one hand, the popularity of bricks-and-clicks shopping has provided Thai retailers new chances to expand their business into Chinese market both online and offline (Setboonsarng, 2018). On the other hand, ranked as the most popular overseas travel and shopping destination for Chinese tourists (China Travel News, 2017; Inside Retail Asia, 2017), Thailand is attracting more and more Chinese shoppers to its local market. According to Tourism Authority of Thailand (TAT), 30% (around 9.5 million) of total inbound travelers are Chinese, and they allocate 41% of their traveling budget to shopping (Tungsirisurp & Athigapanich, 2017).

Given its one-stop nature and attractive image, shopping mall can be one of the most favorable shopping avenues for Chinese tourists. Nonetheless, despite these great opportunities, one of the formidable challenges that Thai retailers face is how to attract and retain Chinese consumers by marketing their retail offerings in the way that highly match consumers' needs and wants. Past experience has proved that simply transplant successful marketing strategies from Thai market to Chinese market can lead to disastrous effect (Inside Retail Asia, 2014). In order to address this issue, it is crucial for Thai retailers to understand *why* and *how* Chinese shoppers are different from their Thai counterparts in their mall shopping behavior. Specifically, the knowledge about the similarities and differences in the shopping motivation among Chinese and Thai consumers may enable Thai mall retailers to adjust the existing mall ambience in a way that is more attractive to Chinese shoppers. By understanding the similarities and differences in the shopping patterns among consumers in both countries, Thai mall retailers might be able to enhance shopping experience of the Chinese shoppers by tailoring products and services that are preferred by them.

Existing retail theories and research have mostly originated from 'Western' cultures (e.g., El Hedhli, Chebat & Sirgy, 2013). Most of the cross-culture consumer shopping behavior research has examined differences between Westerners and Asians (e.g., Schutte & Ciarlante, 1998; Li, Zhou, Nicholls, Zhuang & Kranendonk, 2004). From a Western perspective, it is believed that there are many similarities in consumer behavior within Asian cultural groups, due to similar cultures (Schutte & Ciarlante, 1998). However, differences do exist within Asian cultural groups, which are often not recognized from a Western perspective (Warden, Chen and Caskey, 2005; Cai and Shannon, 2012). In order to bridge this gap, this study aims to explore commonalities and differences in the shopping behaviors among mall shoppers in Eastern cultures. Specifically, the present study seeks to investigate how the mall shopping motives and shopping patterns of Chinese and Thai consumers varies, given the different core cultural values they share. Prior study suggests that the importance of shopping motives lies in their significant influence on consumers' general evaluation of shopping malls (Allard, Babin & Chebat, 2009). In addition to understand *why* consumers shop, mall retailers can gain further insights about *how* consumers shop by investigating their shopping patterns (Li, et al., 2004). Accordingly, this study seeks to answer two research questions: 1) how do Chinese shoppers' mall shopping motives different from their Thai counterparts? 2) what are similarities and differences between the shopping patterns of Chinese and Thai shoppers?

Conceptual Background& Hypotheses

Mall Shopping Motives

Westbrook and Black (1985) propose that motives are "hypothetical and unobservable psychological constructs postulated to explain both the energized and directive aspects of human behavior" (p. 89). Given that motives are "forces instigating behavior to satisfy internal need states" (Westbrook and Black, 1985, p. 89), it is proposed that shopping motives can be defined as "the drivers of behavior that bring consumers to the marketplace to satisfy their internal needs." (Jin and Kim, 2003). Shopping motives are among the most heavily examined in the literature during past decades (Kesari & Atulkar, 2016; Atulkar & Kesari, 2017; Horváth & Adıgüzel, 2018), because understanding consumers' underlying shopping motivations provides retailers significant insights for developing successful market strategy by meeting consumers' needs and wants (Kesari & Atulkar, 2016). It also helps retailers to effectively anticipate customer traffic flows (Roy, 1994). Moreover, shopping centers that provide offerings which match consumers' motives are more likely to attract them as regular patrons (El-Adly & Eid, 2016; Rahman, Wong & Yu, 2016).

Shopping malls were initially conceptualized as a community center where people would converge for shopping, cultural activity, and social interaction (Gruen & Smith, 1960). Nevertheless, today's newer versions of mega-malls have been designed to go beyond these basic expectations and make them places not just centralized shopping alternatives, but places for entertainment and social and recreational activities (Csaba &Askegaard, 1999; Ng, 2003). Prior research indicates that in general, consumers are motivated to shop at a mall for satisfying utilitarian and/or hedonic needs (Kesari & Atulkar, 2016; Atulkar & Kesari, 2017; Das & Varshneya, 2017; Horváth & Adıgüzel, 2018). Mall shoppers who visit the mall for utilitarian benefits tend to be deliberate, task-oriented, efficient, and rational. In other words, they visit the mall for necessity rather than for recreation (Farrag et al., 2010). In contrast, mall shoppers who visit the mall for hedonic benefits tend to value the entertainment and emotional benefits of the shopping (Farrag et al., 2010). They consider shopping a pleasurable activity due to the enjoyment and excitement experienced during a shopping trip (Hirschman, 1982; Schindler, 1989; Arnold & Reynolds, 2003).

The Influence of Chinese and Thai Cultural Values

According to Hofstede (1980), both Chinese and Thai cultures are collectivist in orientation. Collectivist cultures emphasize the roles of people as members of group, as well as the rules and principles concerning social shaming and social sanctions (Hofstede, 1991). In addition, it is suggested that collectivist culture possess qualities or values as prescribed by Confucian principles, including confrontation avoidance, face saving, high power distance, loyalty, family oriented, thrift, filial piety, and respect for authority (Hofstede & Bond, 1988; Triandis, 1995; Nakata & Sivakumar, 1996; Usunier, 1996; Schwartz, 1999; Carolyn, 2001). Traditional Chinese culture includes Confucianism, Taoism, Buddhism, and a host of regional cultures. Among them, Confucianism is considered the most influential. It forms the foundation of the Chinese social and cultural value system (Zhang and Harwood, 2004), and provides the basis for the norms of Chinese interpersonal behavior (Fung, 1952; Pye, 1972; Liu, 1997; Tu, 1998).

In contrast, about 95 per cent of the Thai population is Buddhist, with the Theravada school being dominant. Ethnic Chinese constitute the most significant minority group in Thailand, making up about 15 per cent of the population (CIA World Factbook, 2004). As a result, Buddhism and Confucianism are two schools of thought that coexist and influence Thai culture. However, it is assumed that the impact of Confucianism may be stronger among the Chinese Thai rather than the Ethnic Thai group, whereas Buddhism plays a more important role to influence the majority Ethnic Thais.

A comparison between Chinese and Thai core cultural values indicates that except *mai pen rai*, present oriented and *sanuk* values, the rest of the Thai valuesseem to more or less overlap with the Chinese values. Those three values are specifically shaped by the Buddhist teachings, thus are represented as values unique to Thai society (Ovatsatit, 2007). The tendency of Thais to seek present or immediate gratification has been noted by several scholars (Skinner, 1962; Slagter & Kerbo, 2000). Ethnic Thais learn to enjoy life and to live life in the present and face little pressure to do otherwise. The present oriented value also has been influenced by the Buddhist concept of karma. The value of *mai pen rai* (literally, something doesn't matter) suggests that adverse outcomes will get better eventually, so one should not worry about them, while the value of *sanuk* (literally, fun and joy) reflects that Thais tend to view life as full of fun and joy and not to be taken too seriously, even in the context of work (Warner, 2003).Chetthamrongchai and Davies (2000) propose that hedonic shoppers score relatively high on present orientation, indicating that they are more concerned with what is happening now than in the past or in the future. Taken together, it is suggested that Thai shoppers will be more likely to shop for hedonic reasons.

The review above implies that while there are many similarities between the two cultures, some behavioral differences may be expected due to differing values. Culture can shape consumer behavior and lead to differences between groups. For instance, Chinese shoppers are cautious about spending and are less likely to make purchase during their shopping trip (Li et al., 2004). The Chinese saying "never make a purchase until you have compared three shops" (*Huo Bi San Jia*) reflects the typical searching behavior of Chinese consumers. In addition, China's ruling party over the past four decades has also been extolling the virtue of thriftiness and discouraging a hedonic life style (which is viewed as self-indulgent and wasteful). As a result, it is socially desirable to save money and be a meticulous shopper in China (Wang & Rao, 1995).

Overall, these claims lend additional support to the empirical findings that Chinese mall shoppers are more likely to be utilitarian driven (Tse, Belk & Zhou, 1989; Tse, 1996; Nicholls et al., 2000; Tsang, Zhuang, Li & Zhou, 2003; Li et al., 2004). Babin, Darden and Griffin (1994) assert that utilitarian shoppers tend to shop intentionally and always taking efficiency into account; in contrast, hedonic shoppers tend to behavior less seriously, whichmainly result from their emotional and recreational experience. Therefore, we propose that:

H1a: Chinese mall shoppers will exhibit stronger utilitarian shopping motives than their Thai counterparts.
H1b: Thai mall shoppers will exhibit stronger hedonic shopping motives than their Chinese counterparts.

A further review of literature reveals that utilitarian shoppers tend to view shopping a work/burden rather than fun (Rao & Monroe, 1989; Sherry 1990; Nicholls et al. 2000), and they are more time conscious than recreational shoppers (Bellenger and Korgaonkar, 1980; Wilson & Holman 1984).Therefore, compared with hedonic shoppers, they are less likely to spend relatively long time in the mall and visit malls frequently (Talpade and Haynes, 1997; Tsang et al., 2003; Stoel et al., 2004; Kim, Christiansen, Feinberg and Choi, 2005).Thus:

H2: Chinese mall shoppers will shop less frequently than their Thai counterparts.
H3: Chinese mall shoppers will stay shorter in the mall than their Thai counterparts.

As one of important situational factors, time can influence shopping behavior significantly. Researchers have found that shortage of time can lead to reduction in purchases (Iyer, 1989; Park, Iyer and Smith, 1989). Shoppers who spent more time tend to spend more money and visit more stores in the mall (Nicholls, Roslow and Dublish, 1997). Shoppers in collectivist culture have found prefer go shopping as a group (Nicholls et al., 1997). Those who shop with others tend to visit more stores and do more purchase in the mall (Nicholls et al., 1997).

Dholakia (1999) proposes that one of the benefits to shop with others is to gain shopping enjoyment. Consistent with this notion, it is found that compared with utilitarian shoppers, hedonic shoppers are more likely to shop with companions (Li et al., 2004). Driven by the *sanuk* value, which emphasizes fun and joy, it is expected that Thais will be more likely to shop in a group than Chinese do.

H4: Chinese mall shoppers will visit less stores than their Thai counterparts.
H5: Chinese mall shoppers will spend less money than their Thai counterparts.
H6: Chinese mall shoppers will shop with less companions than their Thai counterparts.

Research Methodology

Data Collection and Sample Characteristics

A self-administered web-based survey with convenience sampling was used to collect the data in both countries. Screening questions are provided in the questionnaire, so the qualified respondents are those who have ever been to a shopping mall, which located in metropolitan city in the past two months and are at least 20 years old. The total number of usable returned questionnaires was 643, with 320 in China, and 323 in Thailand, with a response rate of 50% in each country. After the data editing and cleaning, the final number of questionnaires with no missing values in all variables under analysis was 305 in China, and 308 in Thailand.

The characteristics of the respondents are reported in Table 1. Consistent with previous studies, the respondents in the present study were also dominated by females (Dholakia, Pedersen and Hikmet, 1995; Nicholls et al., 2002). Respondents in both countries were relatively young (20-38 years old), with a high educational background (bachelor degree or higher) and a middle-income level (10,000-30,000 Baht/ 2,00-6,000 Yuan). Overall, a further analysis revealed that compared to Chinese respondents, Thai respondents were older, tend to be single with no children, have higher educational levels and monthly income.

Table 1. Respondent Profile

Characteristic	China	Thailand	Characteristic	China	Thailand
Gender*(%)*			**Education***(%)*		
Male	33.8	28.2	Junior High and below	0.7	0.3
Female	66.2	71.8	High School	5.9	1.0
			Diploma	23.9	2.9
			Bachelor	62.0	52.9
			Master	5.6	41.6
			Phd	2.0	1.3
Age *(%)*			**Occupation***(%)*		
20-26 years old	56.7	31.8	White collar	67.2	64.3
27-38 years old	38.7	52.9	Blue collar	3.9	0.6
39-50 years old	3.9	10.1	Student	19.3	19.2
51-67 years old	0.7	5.2	Private business	4.6	13.6
			Retired	0.3	0.3
			Unemployed	4.6	1.9
Marital Status*(%)*			**Income***(%)*		
Single	65.9	77.3	Under 2,000 Yuan/ 10,000 Baht	31.8	17.2
Married	31.1	21.4	2,000- 4,000 Yuan/ 10,000-20,000 Baht	30.8	23.7
Divorced	0.3	1.0	4,001 – 6,000 Yuan/20,001-30,000 Baht	20.3	15.6
Others	2.6	0.3	6,001 – 80,000 Yuan/30,001-40,000 Baht	6.2	13.6
			80,001 – 10,000 Yuan/40,001-50,000 Baht	6.2	8.8
			10,000 Yuan/50,000 Baht and above	4.6	21.1

Measures

Items to measure shopping motives were modified from the scale developed by Nicholls et al., (2000). It consists of three items to measure utilitarian shopping and seven items to measure hedonic/social shopping. Respondents were asked to indicate the extent to which each item described their shopping motives based on six-point Likert-type scales anchored by not at all descriptive /very descriptive.

Shopping frequency was operationalized by presenting respondents three options: less than once per week, once per week and more than once per week. Time spent in the mall was operationalized by presenting respondents five options that range from 30 minutes to more than

120 minutes. Money spent in the mall was operationalized by presenting respondents four options that range from less than 100 Yuan/ 500 Baht to more than 1000 Yuan/ 5000 Baht. Number of stores visited was operationalized by presenting respondents four options that range from 1 to 3 stores to more than 10 stores. Number of companions to shop with was operationalized by presenting respondents five options that ranged from 0 to 4 and more.

Results& Discussions

Shopping Motives

Table 2. Differences in Shopping Motives between Chinese and Thai Shoppers (n_{China}=305, n_{Thai}=308)

	China (*n*=305) Mean	Thailand (*n*=308) Mean	F Value	Sig.
Utilitarian Motives				
To get ideas for future purchase	<u>4.43</u>	3.56	61.48	0.00
To make a specific purchase	4.37	<u>4.88</u>	27.32	0.00
To shop in a specific store	3.76	<u>4.51</u>	46.85	0.00
Overall Mean	*4.19*	*4.32*	*3.09*	*0.08*
Hedonic Motives				
To hunt for bargains	3.28	4.01	36.23	0.00
To look and browse	<u>4.42</u>	<u>4.52</u>	1.03	0.31
To hangout	4.19	4.22	0.10	0.75
To meet and spend time together with friends	4.09	4.25	1.70	0.19
Appointment with someone	4.08	4.38	6.58	0.01
To eat	3.61	4.42	54.40	0.00
To escape from routine life	3.37	3.37	0.00	0.98
Overall Mean	*3.86*	*4.17*	*16.41*	***0.00***

One-way ANOVA was utilized to compare the differences in shopping motives across two countries. As can be seen from Table 2, in terms of being labeled as utilitarian, inconsistent with our expectation, significant difference was not found between Chinese and Thais (*p*=.08). Thus, H1awas not supported. As expected, Thai respondents were found to show significantly stronger hedonic motives to shop at the malls (*p*=.00), supporting H1b. According to the results, both Chinese and Thais are motivated to shop in a mall mainly for purchase-related reasons. This is consistent with what Roth (1995) suggested in that collectivistic shoppers tend to fulfill functional needs rather than experiential needs.

It was found that Chinese visit a mall for getting ideas for future purchase first (m=4.43), followed by making a specific purchase (m=4.37). Similarly, Thais visited a mall mainly for making a specific purchase (m=4.88), followed by making a purchase in a specific store (m=4.51). Given their more purchase driven motives, it is suggested that compared to Chinese, Thais are more likely to do some shopping plans in advance.

The reason to shop at a specific store may be due to the fact that they are relatively more familiar with the mall and know exactly which stores sell the products they want. In contrast, the more information-driven behavior of Chinese may be due to prudence and risk-averse value shared by Chinese. By having these values in mind, Chinese may compare among shops before they purchase, even if the product is low involvement, therefore, information is necessary for making an appropriate pre-purchase evaluation. Further, it is found that as suggested by literature (e.g., Tse et al., 1989; Tse, 1996; Nicholls et al., 2000; Li et al., 2004), Chinese are more likely to shop for utilitarian reasons alone. One possible explanation may be that hedonic consumption goes hand-in-hand with economic development. Campbell (1987) argues that hedonic shoppers tend to use disposable income to satisfy their ever-growing desires for consumption.

Similarly, positive relationships between economic development and non-utilitarian consumption have been found in Western developed countries and some developed Asian cities (Cheng & Schweitzer, 1996; Tse, Belk, & Zhou, 1989). According to the results of the present study, Thais are found more likely to shop for both utilitarian and hedonic/social reasons. Some possible reasons may be that Thai respondents in the present study have relatively higher income compared to their Chinese counterparts; in addition, they exhibited significant more importance on “an exciting life”, a value that motivates personal fun and enjoyment.

In addition, the early emergence of malls in Thailand and its rapid retailing growth during 1986-1997 may also change the meaning of shopping in Thai shoppers’ minds, therefore, they may behave more like modern shoppers who seek to satisfy diverse needs rather than purchase alone. In contrast, the emergence of shopping malls in China was 20 years behind that in Thailand. Moreover, China is still in its transitional economy, thus Chinese may demand more material goods (Belk & Zhou, 1987; Balan, 1999) than symbolic satisfaction (Belk, 1999), they may still possess a more traditional view of shopping. This may be especially true for those with lower disposable income. Therefore, Chinese are more likely to shop for utilitarian reasons, whereas Thais are more likely to shop for multiple reasons.

It is also interesting to note that although Thai shoppers were found more likely to shop for hedonic reasons compared to their Chinese counterparts, consumers in both countries share some universal hedonic motives to visit the mall, namely to look and browse, hangout and to meet friends. This finding suggests that the notion concerning malls as places for leisure and socializing is forming in China. This notion may be better established in Thailand, given more Thai shoppers visited the mall for making appointments with their friends and dining out.

Shopping Patterns

As indicated in Table 3, Chinese and Thais shop statistically different in their frequency (p=.008). Specially, more Chinese shop less than once per week in the mall than do Thais (56.4% vs. 45.1%). The result is consistent with what we expected that Chinese will shop less frequently than Thais. Therefore, H2 was supported. Contrary to our expectation, the result shown in Table 4 indicates that Chinese and Thais spend similar duration of time in the mall in each trip (p=.850). Thus, H3, which hypothesizes that Chinese will stay shorter in the mall was not supported.

Table 3. How often do you shop at this mall (χ^2=9.671, p=.008)

	China		Thailand	
Frequency	#	%	#	%
< once per week	172	56.4	139	45.1
Once per week	77	25.2	111	36.1
> once per week	56	18.4	58	18.8
Total	305	100	308	100

Table 4. How long do you spend per trip (χ^2=1.366, *p*=.850)

Frequency	China #	China %	Thailand #	Thailand %
1-30 minutes	7	2.3	11	3.6
30-60 minutes	61	20	55	17.9
60-90 minutes	99	32.5	104	33.8
90-120 minutes	72	23.6	70	22.7
More than 120 minutes	66	21.6	68	22.1
Total	305	100	308	100

Table 5 presents the total number of stores visited by each shopper per trip. Chinese and Thais are statistically different in this regard (*p*=.000). Specifically, Chinese tend to visit more stores than Thais do. More than half of Chinese report that they visited at least 7 stores, while more than half of Thais report that they visited 1-6 stores. The result is consistent H4, which suggests that Chinese shoppers will visit more stores than their Thai counterparts.

Table 5. How many stores do you visit per trip (χ^2=63.964, *p*=.000)

Frequency	China #	China %	Thailand #	Thailand %
1-3 stores	44	14.4	89	28.9
4-6 stores	89	29.2	129	41.9
7-9 stores	57	18.7	54	17.5
10 and more stores	115	37.7	36	11.7
Total	305	100	308	100

Unexpectedly, statistical difference was not found on money spend per trip between Chinese and Thais(*p*=.670). As can be seen from Table 6, on average, majority of shoppers across nations spend 100 to 500 Yuan or 500 to 2500 Baht per trip.H5, which proposes that Chinese mall shoppers will spend less money than Thai shoppers, was not supported.

Table 6. How much do you spend at this mall per time (χ^2=1.554, *p*=.670)

Frequency	China #	China %	Thailand #	Thailand %
<100 Yuan / 500 Baht	40	13.1	32	10.4
100-500 Yuan / 500-2500 Baht	209	68.5	217	70.5
500-1000 Yuan / 2500-5000 Baht	49	16.1	49	15.9
>1000 Yuan / 5000 Baht	7	2.3	10	3.2
Total	305	100	308	100

In line with our hypothesis, Thais tend to shop with more companions than their Chinese counterparts do (*p*=.000). As shown in Table 7, over half of Chinese reported that they shop by their own or with one companion, whereas only about 33% of Thais reported the same. Majority of Thais (45.5%) tend to shop with two companions. Therefore, H6was fully supported.

Table 7. How many companions do you shop with per trip (χ^2=1.025, *p*=.000)

	China		Thailand	
Frequency	#	%	#	%
Zero	22	7.2	60	19.5
One	147	48.2	41	13.3
Two	111	36.4	140	45.5
Three	20	6.6	40	13
Four and more	5	1.6	27	8.8
Total	305	100	308	100

Ho, Ong and Lee (1997) found that Asian shoppers in the United States do not differ much in their shopping patterns except for a few situations. This finding, although not directly related to the present study, may help to infer that some universal shopping patterns could be expected between Chinese and Thais. Overall, the result of analysis reveals that their shopping patterns are different in the majority of respects that include shopping frequency, number of stores visited, and number of companions to shop with. Respondents in both countries were only found similar in terms of money and time spent in the mall.

Previous studies propose that hedonic shoppers tend to visit malls more frequently and spend more time in the mall (Bellenger & Korgaonkar, 1980). In contrast, utilitarian shoppers tend visit the malls only when they need to buy something (Fischer and Arnold, 1990), therefore, they spend less time in the mall and are less likely to visit the mall frequently. Accordingly, we should expect less time spent and lower shopping frequency by Chinese in the present study. Unexpectedly, it was found that although Chinese shopped less frequently than Thais did, but they spent same length of time in the mall.

A plausible explanation may be that mall industry is still in its infant stage, the density of malls is relatively lower in China, in addition, majority of newly developed malls are huge in size (Wong et al., 2001), therefore, with limited choices, they are more likely to stay longer in the mall. Similarly, the fact that consumers in both countries share similar amount of expenditure (i.e., around 100-500 Yuan or 500-2500 Baht) per trip should be interpreted with cautions as well. Given that Thai respondents in the present study have comparatively higher income levels, the same amount of spending by Chinese respondents suggested that actually Chinese spent a higher proportion of their monthly income shopping in the mall.

Compared to Thais, Chinese also visited more stores. This is in line with previous finding that Chinese shoppers tended to gather more information before doing any purchase. It is reasonable to assume that the more stores they visit, the more information they will collect. In contrast, as Thai shoppers do more direct purchase, with a product in mind, they are more likely to shop directly in the target stores rather than collecting information in advance. Perhaps due to their bigger family size, together with their stronger needs for socializing, Thais shop with more companions compared with their Chinese counterparts.

Table 8. Summary of Hypotheses and Empirical Support

Hypotheses	Support?
H1a: Chinese mall shoppers will exhibit stronger utilitarian shopping motives than their Thai counterparts.	No
H1b: Thai mall shoppers will exhibit stronger hedonic shopping motives than their Chinese counterparts.	**Yes**
H2: Chinese mall shoppers will shop less frequently than their Thai counterparts.	**Yes**
H3: Chinese mall shoppers will stay shorter in the mall than their Thai counterparts.	No
H4: Chinese mall shoppers will visit less stores than their Thai counterparts.	**Yes**
H5: Chinese mall shoppers will spend less money than their Thai counterparts.	No
H6: Chinese mall shoppers will shop with less companions than their Thai counterparts.	**Yes**

Conclusions

The results of the present study suggest that similarities and differences are co-exist in the mall shopping behavior among Chinese and Thai consumers. Table 8 summaries our findings. The findings may provide important marketing insights for mall managers. First, giventhe increasing homogeneous among shopping malls and more and more sophisticated and diversified consumer needs and wants, mall managers who understand the underlying motives of consumers' mall shopping behavior may gain further insights in positioning a distinctive mall image to retain their existing shoppers and win over new shoppers from their competitors. Second, by focusing on the underlying shopping motives, mall managers will be able to tailor more effective communication strategies to drive consumers' mall patronage. Third, our findings suggest that shopping motive can be used as alternative basis to segment the mall shoppers. Finally, the cross-national evidence of similarities and differences between Chinese and Thai consumers may provide explanations for how shoppers differ cross-nationally, which makes intuitive sense for international mall managers when they determine whether localization or standardization marketing strategies should be developed.

Limitations & Future Research

As with any other research, this study has several limitations. First, our study only focuses on Chinese and Thai consumers in a mall setting. It is not clear if the comparison between China and other Eastern countries, such as Singapore, Malaysia or Japan will generate similar results. Thus, more cross-national comparisons among other Eastern countries should be conducted to enhance the external validity of our results. Second, our sample is somewhat dominated by female respondents, likely due to the nature of the shopping mall. Thus, caution should be taken when generalizing the findings to male consumers. Future study may replicate the study with more balanced gender composition to fully validate the results.

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Factors Affecting the Willingness to Pay for Solar Home Systems: An Empirical Study in Bangkok, Nonthaburi, Pathum Thani, and Samut Prakan Provinces, Thailand

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Abstract

Natural sources of energy such as sunlight, wind, rain, and tides are more environmentally safe than traditional carbon-based energy resources. Recently, many households in Thailand have taken advantage of renewable energy to power electronic devices and appliances in their homes. The solar home energy system (SHS) provides clean, efficient energy for residential applications including home appliances, lighting, electronics and the household's water pump. Critical to the success of encouraging consumers to use SHS for household consumption is to know whether they are willing to pay for one. In this study, the main purpose is to provide a framework to determine the willingness to pay (WTP) for SHS. This paper reviews several literatures regarding the use of mathematical model to determine WTP and factors affecting the WTP. A survey was developed and contains questions about demographics information, environmental awareness toward the use of renewable energy, and SHS. The survey also provides hypnotically situations based on the idea of conserving and using renewable energy at home. Surveys were distributed to residents in Bangkok, Nonthaburi, Pathum Thani, and Samut Prakan. The Contingency Valuation (CV) method was applied to determine the WTP. Binary logistic regression was employed to identify significant factors affecting the WTP for SHS. The results showed that factors that influence willingness to pay are income, energy consumption behavior, prior experience with renewable energy, environmental awareness, and trust.

Keywords: Contingent valuation method, Solar home system, Willingness to pay, Bidding game question, Adoption process, Binary logistic regression, Environmental awareness, Green product.

Introduction

In the 21st Century, electric power becomes majority energy that necessary for daily life. According to the growth of the world's electricity consumption, the per-capita electricity consumption in non-Organization for Economic Co-operation and Development (non-OECD) countries doubles by 2030, rising to almost 2400 kWh per person, but in OECD Europe per capita electricity consumption rises by 24% and OECD North America by 7% (European Environment Agency, 2015). Since the electric power is non-renewable energy, it will eventually become insufficient. According to the REN21 (2016), non-renewable energy; for instance, electric power, fuel, and oil are likely to be replaced by renewable energy. There is significant evidence that, in the future, renewable energy consumption will be increased.

In Thailand, there is a trend of increasing energy consumption. The electricity consumption per capita in Thailand has increased by 20% from 2009 to 2015, from 2,100 kW to 2595 kW per person (World Bank, 2018; Ministry of Energy, 2015). The increasing of electricity consumption in Thailand is a significant indication that leads Thailand toward to utilizing renewable or green energy. Moreover, geographic is favorable as Thailand is located close to the equator. Thailand contains the potential area that receives sufficient amount of sunlight when compared to other countries around Southeast Asia (SEA). The average solar radiation in Thailand is around 18-20 MJ/m2/day or 5.278-5.556 kW/hour/m2/day (Solaris, 2018). By the characteristic of solar energy, wavelengths of 380 nm to 750 nm (violet to red) are enough to dislodge the electrons and create electric current (Solar power is the future, 2018).

Most of the areas in Thailand get the solar energy on an average of 4.7-5.5 kW/hour/m2. This amount is higher than the average amount received in European countries, which get around 3-4 kW/hour/m2 (Bangchak, 2012). In the next few years, Thailand should have more solar power capacity than others in SEA (Jittapong, 2015). According to the policy 2015 to 2036 of the Alternative Energy Development Plan (AEDP), the electricity generation by solar power was 1,298.51 MW in 2015; however, the AEDP has planned to promote the electricity generation by solar power to 6,000 MW by 2036 in order to achieve 20 percent of the net electrical energy demand (Ministry of Energy, 2015). Since 2007, Thai citizens are interesting in the renewable energy because of an incentive policy of buying back of electricity from Thai's government under a special price as Adder (feed-in premium); especially, solar energy entrepreneur gets the lower price of solar panels. This has led to a rapid growth of many new suppliers in Thailand.

In 2013, the buying back promotion of solar rooftop was initiated with special price and is referred to as Feed-in Tariff (FiT) (Ministry of Energy, 2014). Consequently, this has attracted many households to consider an installation of SHS. SHS can be used in both urban and rural areas (Abdullah et al., 2017). The demand of SHS in cities are limited by consumers' awareness, lack of sufficient income to support and maintain an SHS unit at home, lack of technical knowledge and uncertainty in after-sales service. It is important to examine the public acceptance of SHS technology as, inevitably, the SHS will dominate in future electricity generation as indicated by the promotion policy of the Alternative Energy Development Plan (Ministry of Energy, 2015).

However, the assessment of the willingness to pay for SHS in Thailand and the factors affecting its willingness has rarely been done in Thailand. More specifically the purpose of this study is to determine the SHS technology acceptance level in Thailand. The willingness to pay for SHS will be examined and recommendations are discussed and can be served as a guideline for policymakers.

The Area with Solar Power Potential in Thailand

Solar power is known as a clean source for producing electricity. The temperature of the solar panel affects directly to the efficiency of electricity production. If the temperature of the panel rises, the performance will decrease (Bangchak, 2012). Thailand is located in a tropical area which is suitable for using solar power. The northeastern region (southern and northern parts) and the central region of Thailand are the potential area for implementing solar power. Those areas have a potential to be a solar power source since the higher level of solar heat. According to the Ministry of Energy (2018), these combined solar potential areas (around 14.3% of the country) can generate solar power around 19 – 20 MJ/m2/day, and 18 – 19 MJ/m2/day for other 50% of the country.

The Northeastern region is more suitable in the solar farm not for the solar home system. On the other hand, the central region has more number of households than in the northeastern region. In addition, the households' incomes, which is a considered as a factor affecting the willingness to pay for the solar home system, are higher in the central region of Thailand when compared to other regions (Tourism Authority of Thailand, 2018). The number of registered households, density, population, average energy consumption, and average income of the central area is greater than those in the northeastern region. Thereby, this study is focused on the solar potential area in Bangkok, Nonthaburi, Pathum Thani, and Samut Prakan.

Literature Review

Willingness to Pay

Willingness to pay (WTP) refers to the amount of money that a person willing to pay for any specific product or service. WTP is known as a tool for measuring the monetary value of any product or service that a certain group of people willing to pay. Values of WTP provide precise information for measuring tangible and intangible values. This technique originally employed with environmental economics area to estimate the monetary value of environmental issues, healthcare service, quantifying public preferences, and it also support the decision􏰀making process (Pattanayak, Van den Berg, Yang, and Van Houtven, 2006; Piran, Alison, and Emma, 2001). Then, it was applied in many fields including the viability of projects, setting the tariffs, providing policy alternatives, beneficial cost-benefit analysis and examining the effects of socio-economic factors (Gunatilake, Yang, Pattanayak, and Choe, 2007). The measurement of WTP leads to a better price set up for offering the best possible margin for any product or service. Therefore, it leads to the optimization in term of both volumes and margins. Moreover, the understanding of influential factors on WTP can support the rising in sales volume, and adapting to the right price (Gall-Ely, 2009).

The Contingent Valuation Method (CVM)

The Contingent Valuation Method (CVM) is the most widely used method for evaluating WTP for an environmental good or service, public goods, and there are many researchers that use CVM in their study (Xie and Zhao, 2018). The CVM is usually applied in recent years, and it has been developed mainly in the context of environmental valuation (Asian Development Bank, 2013). However, using CVM may lead to exceeding true feelings that resulting in over value of WTP. In addition, respondents may not familiar with the context for articulating the true value that they willing to pay, this problem can be solved by asking them with role play question (Khalid, 2008).

The popular techniques used in this survey are open-ended (OE), close-ended (CE), and bidding game questions. An OE question allows respondents to answer the maximum value of willingness to pay. An CE and bidding game questions are employed to obtain the willingness to pay for SHS at each specific price. If respondents are willing to pay for a given price, the next question will ask if they are willing to pay for at a higher price. The series of questions are continued and stopped when the maximum amount of money respondents are willing is reached (Lopez, 2004). The highest or the lowest price indicates the maximum willingness to pay.

Five Stages of Consumer Adoption Process

The consumer adoption process occurs when customers go through learning about a product and whether becoming a loyal customer by purchasing a product or rejecting all customers interested (Jadoon, 2016). The five steps of the consumer adoption process are a marketing tool. These stages are discussed as:

1. Awareness: it is the stage that a consumer knows about a product but does not have enough information (Wisdom, Horwitz, and Hoagwood, 2014). The producers try to inform and provide knowledge. Customer awareness is important to generate an intention to buy intangible products; for instance, renewable energy. Without customer awareness, it might be more difficult for the customer to understand the relevance of intangible forms of renewable electricity. Awareness also encourages customers to interest and find more information about the product or service (Thiele, Paladino, and Apostol, 2008).

2. Interest/Search for information: it is the phase that a consumer becomes more aware and informed about a product (Jadoon, 2016). A consumer tends to search for more information and examine the substitutes in the market (Wisdom, Horwitz, and Hoagwood, 2014). A consumer will identify the product characteristics, the value that a product delivery to the consumer, and also find about manufacturer (Jadoon, 2016).

3. Evaluation: in this stage, a consumer is looking to evaluate and compare whether a product will deliver any value to him or her (Wisdom, Horwitz, and Hoagwood, 2014). However, a consumer’s evaluation criteria depend on the differences in consumer behavior (Jadoon, 2016). The differences vary from consumer’s need, price sensitivity of consumer, features of the product and the value that a product could deliver (Jadoon, 2016).

4. Trial: a consumer at this stage would experience the product on a trial basis. A consumer determines that a product provides actual benefits that he or she needs (Jadoon, 2016). The trial and the experience of using a product is an important step that affects an adoption or a rejection of a product (Jadoon, 2016).

5. Adoption/Rejection: after a consumer decided to adopt a product or select for an alternative, a product must be accepted and satisfied for consumer’s need (Wisdom, Horwitz, and Hoagwood, 2014; Jadoon, 2016). When adoption exists, a consumer needs for availability, quality, ease, and accessibility of the product (Jadoon, 2016).

Factors Associated with WTP

The investigated factors are divided into two groups which are independent variables and a dependent variable. The independent variables include several factors which are gender, age, education, income, trust, environmental awareness, knowledge, and benefit. The dependent variable includes WTP. The explanation of each variable is summarized in table 1.

Methodology

Data Collection and Questionnaire Design

Two research methods are employed to cover both primary and secondary data source. The first method is documentary research from research published in credential sources such as "National Statistical Office Thailand", "Electricity Generating Authority of Thailand" and "Ministry of Energy" in from journals, articles, previous research works and case-studies related to renewable energy and solar power. The second method is empirical research. It is done by means of a questionnaire survey to people who are able to make a decision in each household. The questionnaire surveys are conducted by households in Bangkok, Nonthaburi, Pathum Thani, and Samut Prakan.

Table 1. The explanation of each variable

Variables	Definition	Source
Gender	The roles and responsibilities of men and women.	UNESCO, 2003
Age	Date of birth relates to a past even.	Settersten and Mayer, 1997
Education Level	Grouping of education programs relates to gradations of learning experiences, as well as the knowledge, skills, and competencies which each program is designed to impart.	UNESCO-UIS, OECD, and EUROSTAT, 2017
Income	All distributive transactions received by a household.	Reich, 1991
Trust	A key to positive interpersonal relationships in various settings.	Mcknight and CHERVANY 1996
Environmental awareness	It is how much customer concern on the environmental issue, and how they can perceive that value from the environment. It also related with knowledge about the environment, attitude, and the willingness to solve environment-related problems.	Sengupta, Das, and Maji, 2010
Benefits	Benefits cover both non-monetary and monetary terms. Therefore, allowances, salaries, social security medical care, housing, cars, etc. are accounted as benefits.	Mirea, Naftanalia, and Mirea, 2012
WTP	WTP is the capacity of the customer to pay for a product or service in monetary term.	Gall-Ely, 2009

Data Collection

According to the official statistics registration systems (2017), the total number of population is 4,796,258. Thus, the population is 2,887,274 in Bangkok, 667,539 in Nonthaburi, 585,814 in Pathum Thani, and 655,631 in Samut Prakan. Taro Yamane formula is employed in this study to calculate the sample size with 95% confidence level. The number of sample sizes from each location depends on the proportion of the population of the sampling area. The questionnaire is divided into five parts. The first part contains the questions about the demographic information. The second part concerns about electricity consumption behavior of each respondent. The third part is based on five-point Likert scale asking about items affecting on SHS; for instance, trust, environmental awareness, benefit, and knowledge. The fourth part focuses on the willingness to pay on SHS. The last part contains questions about the respondent experiences and government policy on renewable energy and alternative energy. The summary and definitions of variables are shown in table 2.

Model Specification
Reliability Test

Reliability is one of a significant concern of a test, survey, observation, or another measuring tool (Heffner, 2018). In the social sciences, the behavior is not easy to predict because people's beliefs or intentions will hinder to understand (Ellen, 2011). In this research, Cronbach’s alpha is applied. It is used to measure an internal consistency and how closely related a set of items are grouped (Joseph and Rosemary, 2003). The value of Cronbach’s alpha is ranging from 0 and 1 (Tavakol and Dennick, 2011). It can be used to interpret for dichotomous questions or Likert scale questions (Glen, 2017). If all items are perfectly reliable, then the coefficient alpha is close to 1 (Joseph and Rosemary, 2003). If the coefficient alpha is below 0.5, it is not acceptable. In contrast, if the result is higher than 0.7 means it is acceptable and if it is beyond 0.9 means excellent (Glen, 2017).

Table 2. Summary of variables and their definitions

Variables	Item(s)
Demographic Information	
Ownership	The owner of respondent house.
Decision Maker	Ability of a respondent to make a decision within the house.
Dwelling Type	Type of a respondent house.
Gender	Gender of a respondent.
Education Level	The highest education level of respondent.
Income	The average of family income of a respondent.
Behavior	
Electric Consumption Behavior	The behavior of respondent on electricity consumption and using of electronic devices.

Variables	**Item(s)**
Factors affecting willingness to pay	
Trust	▪ Trust on performance of SHS. ▪ Trust on SHS manufacturer. ▪ Trust on lifetime of SHS. ▪ Trust on government policy.
Environmental Awareness	▪ Awareness on environmental issue. ▪ Awareness on pollution of coal power plant. ▪ Awareness on renewable energy and alternative energy. ▪ Awareness on long term environmental issue problem solving.
Benefits	▪ Benefit from government policy. ▪ Benefit of earning revenue from selling energy. ▪ Benefit of monthly power bill deduction.
Knowledge	▪ Knowledge about advantages of SHS. ▪ Knowledge about SHS working processes. ▪ Knowledge about basic equipment of SHS. ▪ Knowledge about government buyback policy.
Willingness to Pay (WTP)	
WTP	Whether a consumer is willing to pay for a standard SHS.
Bidding Game	The actual WTP on the standard SHS size.
Maximum WTP	The maximum WTP on the standard SHS size.
Experiences	
Past Experience	Past experience about the renewable and alternative energy.

Binary Logistic Regression Analysis

Binary logistic regression is a statistical method that mostly employs to analyze the relationship of one or more independent variables that determine an outcome. Since the outcome of binary logistic regression consists of two possible outcomes (dichotomous variable), the outcomes are measured as 0 and 1. The meaning of 0 is "not buy, not approve, and failure". While the meaning of 1 is "buy, approve, and success". The ultimate goal of binary logistic regression is to identify the best fit model for describing the relationships between a set of independent variables and dichotomous variables (Schoonjans, 2017; Statistics laerd, 2018). The main objective is to measure if independent variables have any impacts on a dependent variable. In this case, whether a consumer is willing to pay for SHS or not is a dependent variable, and independent variables are gender, age, education, income, trust, environmental awareness, knowledge, and benefit.

In order to compare the fit of one model to one another, likelihood ratio test is employed as a tool for estimating the models. It is necessary to identify the statistically significant difference in the observed variable in the model by removing predictor variables. The formula for the likelihood ratio test statistic is shown in equation (1):

$$lr = -2\log^*[L(m_1)/L(m_2)] = 2ll(m_2) - ll(m_1) \tag{1}$$

The resulting test statistic is distributed chi-squared, with a degree of freedom with degrees of freedom equal to the number of parameters that are constrained (Institute for Digital Research and Education, 2018). Wald test is employed to measure the significant level of explanatory variables in the model. If the null hypothesis is rejected, it means that the variables in question can be removed without any effect on the model fit. In contrast, if the test shows the parameters are not zero, the variables should be included in the model (Glen, 2017). Then odds ratio is used to measure the correlation of particular exposure and determine a risk for a particular outcome. The odds ratio indicates that an outcome will occur given a particular exposure, compared to the odds of the outcome occurring in the absence of that exposure. In addition, the odds ratio also represent the magnitude of various risk factors. If the value of odd ration is 1, exposure does not affect the probability of an outcome. If the ratio is greater than 1, exposure associated with a higher probability of an outcome. When the Odd ratio is less than 1, exposure associated with lower probability of outcome (Szumilas, 2010).

Analysis and Results

Descriptive Statistics

Samples are randomly selected and distributed a questionnaire by mean of both online and paper-based questionnaires. Data from a total of 411 respondents are collected and summarized in table 3. Moreover, table 4 describes general statistical information of the sample group. The majority of respondents are female, and their education level is mainly at a bachelor degree. Furthermore, when asked whether they are willing to pay for a standard SHS, 59.1% of them are not willing to pay more than 80,000 baht (243 out of 411 respondents).

Table 3. General Information

Information		**Frequency (n=411)**	**%**
Ownership	House-owner	24	58.4
	Live with parent	17	41.6
Dwelling type	Detached house	21	52.1
	Townhouse	14	35.8
	Commercial building	4	11.9
	Other		0.2
Gender	Male	13	32.4
	Female	27	67.6
Education level	<=High school	6	14.8
	Diploma	5	13.9
	Bachelor degree	25	62
Average family income	< 30,000 baht (INCOME 1)	7	18.7
	30,000-40,000 baht (INCOME 2)	8	20.7
	40,001-50,000 baht (INCOME 3)	5	13.9
	50,001-60,000 baht (INCOME 4)	7	17.8
	> 60,000 baht (INCOME)	11	29
Willingness to pay	Yes	16	40.9
	No	24	59.1

Factor analysis

Before the binary regression analysis, those 11 questionnaire items are analyzed to validate the compatibility of a questionnaire to WTP of SHS by using the principal component analysis with orthogonal varimax rotation.

Table 4: Result of factor analysis

Factor[a]	Mean	Standard deviation	Factor loading	Variance Explained %
Factor 1: Environmental Awareness (0.821)[b]				24.955
Awareness on environmental issue.	4.20	0.920	0.812	
Awareness on pollution of coal power plant.	3.82	1.015	0.548	
Awareness on renewable energy and alternative energy.	4.09	1.001	0.817	
Awareness on long term environmental issue problem solving.	4.03	1.017	0.756	
Knowledge about SHS working processes.	3.95	0.972	0.732	
Factor 2: Trust (0.662)[b]				17.478
Trust on performance of SHS.	3.61	0.781	0.671	
Trust on SHS manufacturer.	3.50	0.813	0.737	
Trust on lifetime of SHS.	3.44	0.888	0.691	
Trust on government policy.	3.12	1.018	0.606	
Factor 3: Benefits (0.771)[b]				17.464
Benefit from government policy	3.59	0.923	0.797	
Benefit of earning revenue from selling energy.	3.58	0.997	0.816	
Knowledge about government buyback policy.	3.66	0.960	0.686	
TOTAL VARIANCE EXPLAIN				59.897

[a] Principal component factors with iteration: Varimax rotation.
[b] Reliability score (Cronbach's α) for each factor grouping is shown in parentheses.

To perform factor analysis, the statistical tests needed to be performed to identify the suitability of questionnaire data for the further factor analysis. Kaiser-Meyer-Olkin (KMO) test is used to measure sampling adequacy and Bartlett's test of sphericity. KMO is used to indicate the proportion of variance that might be caused by underlying factors, and the outcome of KMO is between 0 and 1, the value at least 0.50 presents the suitable data for factor analysis (Willians, Onsman and Brown, 2012). In this research, KMO is 0.857 which is close to one. Table 4 present the results of factor analysis and their Cronbach's coefficients.

Determinants of WTP

This section presents an econometric model for the dependent variable WTP which run against five independent variables. The independent variables are shown in table 5. The procedure measures the willingness to pay of an individual for Solar Home System by asking respondents whether are they willing to pay or not. The variable WTP is a dichotomous variable which represents the choice made; "1" represent YES (willing to pay) and "0" represent NO (not willing to pay). Logistic regression is selected to test the hypothesis because the dependent variable is dichotomous variable and our independent variables are continuous scale.

The overall result indicates that some of the variables tend to be an important determinant to WTP. The variable INCOME is highly statistically significant at one percent level. By setting INCOME as the Last reference categorical, INCOME (1) and INCOME (2) have a significant difference in the willingness to pay, but INCOME (3) and INCOME (4) are not statistically significant. The turning point is at the edge of INCOME (2). The point shows that families with income at or below INCOME (2) level or at most 39,999 are likely to pay about 22.2% less than the reference income group (60,000 Baht or more). On the other hands, families with their monthly income above INCOME (2) level or more than 40,000 Baht do not have statistically significant difference than the reference income group (60,000 Baht or more). The variable TRUST is highly statistically significant at one percent level. This result shows that each point increase in trust score will increase the odds of paying for a solar home system by almost double.

Table 5. Parameter Estimate for Willingness to Pay Equation

Independent Variables	B	Wald	Exp(B)
INCOME		39.468***	
INCOME (1)	-1.466	16.503***	0.231
INCOME (2)	-1.503	17.998***	0.222
INCOME (3)	-0.006	0.000	0.994
INCOME (4)	0.307	0.881	1.360
ENERGY CONSUMPTION BEHAVIOR	-1.136	19.908 ***	0.321
ENVIRONMENTAL AWARENESS	0.331	7.004***	1.393
TRUST	0.622	20.832***	1.863
BENEFITS	0.201	2.768**	1.223
Constant	3.155	19.724	23.460

Note: *, **, *** indicate statistical significant at the ten, five, and one percent level, respectively.

In addition, the variable ENERGY CONSUMPTION BEHAVIOR is highly statistically significant in a negative direction. A person who has a habit of consuming much energy tends to have a higher chance of paying for SHS about 30 percent higher than a person who trends to consume energy conservatively. Since they consume energy much more than usually household consumption; for instance, they turn on an air condition system at home at all time, they are likely to seek for the alternative way such as installing SHS, to generate electricity at home. The variable ENVIRONMENTAL AWARENESS is highly statistically significant at below one percent level. This result indicates that ENVIRONMENTAL AWARENESS has a highly significant relationship with willingness to pay. Every changing of one point of ENVIRONMENTAL AWARENESS score affects by one and a half of a chance in increasing the willingness to pay. The variable BENEFITS is statistically significant at 5 percent level which indicates that increase the BENEFITS of government policy will increase the willingness to pay for SHS.

Conclusion

This paper examines determinants influencing the willingness to pay for the solar home system in Bangkok, Nonthaburi, Pathum Thani, and Samut Prakan. The results with 70.1% confident prediction rate show that income, energy consumption behavior, environmental awareness, and trust are significantly affecting on the probability of a person's willingness to pay for a solar home system. The results indicate that a person with the entire family income of higher than 40,000 Baht per month is a targeted market group. An increase in family income leads to a higher chance of willingness to pay. Likewise, a person with environmental awareness and trust in a solar home system is likely to pay for a solar home system than those who are not aware of environmental issues and lack of trust in the solar home system; meanwhile people with who have a habit of consuming a high amount of electricity is likely to pay for it.

The results also indicate that approximately 40.9% of respondents are willing to pay for the solar home system and their average of willingness to pay is about 90,000 Baht. We recommend for an increase in trust about the solar home system by creating a reliability of performance, solar home system manufacturer, lifetime, and government policy. Besides, income is also another important factor influenced the willingness to pay. The results show that respondents with higher income are likely to pay for the solar home system. The manufacturer should consider to discount or cutting the cost for lower-income people.

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The Factor Affecting the Decision to Choose Eco-Friendly Products Among Thai Customers in the Bangkok Metropolitan Area

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Abstract

The purpose of this study was to investigate the influences and relationship of factors such as demographics, green awareness and environmental attitudes towards decision of choosing eco-friendly products in Thailand. The reference group is demographically influential on people who live in Bangkok. The total number of the collected questionnaires were 192 males (48%) and 208 females (52%). Majority of the respondents (196 or 49%) are aged between 25 - 34 years old. As for education level, most (281 or 70.3%) bachelor’s degree or equivalent. Finding suggest that income, global warming awareness, eco-friendly product awareness, and environmental attitudes significantly affects the decision to choose eco-friendly products.

Keywords: Eco-friendly product, Global warming, Green Awareness, Environmental Attitudes

Introduction

The issue of the increasing average temperature of the Earth’s atmosphere or what we could call global warming is mainly affected by carbon emissions and other greenhouse gases largely produced from human activities such as deforestation, the burning of fossil fuels, oil, coal, and natural gas to generate electricity, powering our vehicles, heating our homes, which are believed to be the primary cause for global warming. As we release these greenhouse gases, they become overwhelmed in the atmosphere, the heat is trapped and Earth warms up as a response. However, “without greenhouse effect, the Earth would have an average temperature of -18 degrees Celsius and be cover in ice” (Cumming, 2015). The greenhouse effect is a good thing which clearly makes possible for life, but we are now having too much greenhouse gases. According to the Live Science, the average temperature of the Earth has risen from 0.4 to 0.8 degrees Celsius over the past 100 years (Live Science, 2017). Scientists have very high confidence for decades to come that global temperatures will continue to rise.

The Intergovernmental Panel on Climate Change (IPCC), which includes more than 1,300 scientists globally, recently predicted that the Earth’s temperatures could increase between 1.4 and 5.8 degrees Celsius by the year 2100. This will result in rising sea levels from the polar ice caps melting and cause an increase in natural disasters such as storms. Even small changes on earth’s temperature can result in enormous changes in the environment (The Earth Science Communications Team at NASA's Jet Propulsion Laboratory, 2017). Global warming has a very serious impact on people’s health, environment and economy. Climate changes affect sea level to rise, extreme weather, drought in some regions more likely in mid-latitude, flooding, food production, extinction and human health, increased instances of respiratory problems and infectious diseases.

Alternative energy and eco-friendly innovation products are now being created as a way to help mitigate and reduce this global warming issue, decreasing environmental harms. "Most of the threats we face come from the progress we've made in science and technology. We are not going to stop making progress, or reverse it, so we must recognize the dangers and control them. I'm an optimist, and I believe we can." (Hawking, 2016). It is time for everyone to stand up for the environment and for our world. There have been several studies on the green purchasing behavior and green products in many countries particularly in the Western region, however, such studies are still rare in the Asian community.

Moreover, in Thailand, there are no study about how many Thai people are concerned about global warming or how much they know about the topic. This study originated from the need to encourage various people and organizations to start choosing eco-friendly products whenever they can, in order to do this, we need to understand the decision-making process of buying or choosing and why one would choose or not choose certain eco-friendly products. Although this is a very close subject to us, the majority of people are still unclear of the answer. The purpose of this study is to investigate and examine the influence and the relationship of the factors' demographic, green awareness and environmental attitude towards the decision making of choosing eco-friendly products in Thailand.

Objectives

- To investigate and examine the relationship of the factors, demographic, global warming awareness, eco-friendly product awareness and environmental attitude towards the decision making of choosing eco-friendly products of Thai people in Bangkok.
- To learn the acknowledgment and perceiving of Thai people toward eco-friendly products and global warming which has become a very serious issue.
- To understand the market trends, costumers' behavior and perspective towards eco-friendly products of Thai people in Bangkok.

Significance of the Study

The study will provide an in-depth information about factors that affects the decision making of choosing eco-friendly product. This study will give guidance on the market and customer trends so eco-friendly product producers will be able to understand future market demands for eco-friendly products. Moreover, this research also provides useful information on further development of education for mankind in terms of environmental protection and development of new alternatives or innovations that can effectively help with global warming.

Literature Review

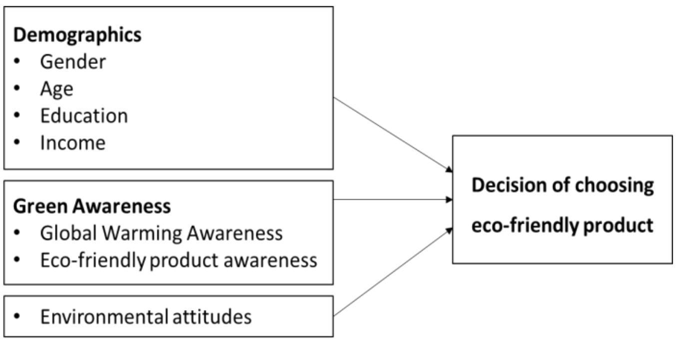

Figure 1. Conceptual framework

Demographic and Green Purchasing

Green behaviors are affected by age, education and income, with results varying from study to study concluding that further research on demographics were needed (Roberts, 1996). Females and males want and need different products (Mitchell & Walsh, 2004). "Gender has an important role in consumer behavior, there are differences between men and women about expectation, wants, needs, lifestyle etc. which reflect their consumption behavior" (Akturan, 2009:66). According to the study among teenagers in Hong Kong, it shows that female teenagers are more environmental concern than male teenagers (Lee, 2009). Moreover, females and males have their own tastes and preferences, females are more likely to purchase green products because they are more environmental concerns compared to male consumers (Rahim, 2017).

Age has an impact on buying products which young people tends to make simpler product purchasing decisions than older people whose purchasing decisions are more complex (Creusen, 2010*)*. Younger consumers are more likely to respond to environmentally friendly products (Chan, 1996).

Consumers with higher education are more knowledgeable about green products and the benefits of green products (Giang & Tran, 2014). However, "Level of education does not show a strong influence on consumers' environmental actions as compared to age, gender or residence" (Freymeyer & Johnson, 2010). Education level is one of the key factor that can affect the green purchasing. With this knowledge, consumers tend to purchase green products more (Kaufmann, Panni, & Orphanidou, 2011). There are a lot of studies shown and found that consumers with higher level of education are more likely to have environmental friendly behaviors.

Income level has a positive relationship with environment sensitivity. Consumers with high incomes are more willing to buy green products compared to consumers with low income (Junaedi, 2012. However, according to the business research (Roberts, 1996), which determined that those that have lower income levels are more likely to perform ecological consumer behaviors. As well as in the replication of the study about green consumer behaviors (Straughan & Roberts, 1999), found that those with lower income levels are more likely to show environmentally friendly behaviors.

H1 The different demographic backgrounds of Thai people in Bangkok has different influences on the decision of choosing eco-friendly products.

Green Awareness

Global warming Awareness

For the global warming awareness, according to the Gallup Polls, in 2007 and 2008 in 127 countries, the report shown that there are about 62% reported realizing about the global warming which means that almost a half of people in the world who have never heard about global warming or did not have an opinion regarding to this issue. In public awareness, the developed countries tend to have higher awareness of global warming than developing countries or less developed countries. In Japan, Finland and United Kingdom, the report shown that almost everyone who has done a survey knows about global warming. In Liberia and Benin, however, there is only 15% and 20% of surveyed people said that they know about it (Pelham, 2009). The record percentages of Americans who concern about global warming and believe it is occurring, as we can see that there is 45% significant increase of American people who worry a great deal about global warming in 2017, while it is only 37% in 2016.

As well as the belief that human activities cause the global warming issue also increases to 68% (Saad, 2017). There are more and more people and so many countries starting to realize about the climate change and global warming, including Thailand. Therefore, The Paris Agreement, the agreement that aims to response to the threat of climate change and global warming issued by strengthening the global to keeping the temperature rising below 2 degrees Celsius and also increasing the ability to adapt to the climate change by developing low greenhouse gas emissions. According to the UNFCC (United Nations Framework Convention on Climate Change, 2017), on the Paris Agreement which now has 170 countries signed the agreement and Thailand is also one of the members. It is obvious that every corner of the world starts to realize about this global warming issue.

Moreover, the previous study shown that there is a significant relationship between environmental knowledge and consumer green behavior (Mostafa, 2009) which mean that the more knowledgeable about the environmental issues of the consumer is the more likely they are willing to purchase the eco-friendly product. Further, it can be concluded that the factor in predicting or having an influence on the consumer buying decision is the environmental knowledge (Aman, Harun, & Hussein, 2012). The global warming is a serious issue and the researcher found that it is quite very interesting and important to know that global warming awareness has any influences or impacts to the decision making of consumers in term of choosing eco-friendly product or not.

Eco-Friendly Product Awareness

Eco-friendly product is recyclable, environmental friendly, non-toxic and sometimes even manufactured by natural and chemical ingredients that do not have negative impact on human being. Literally, eco-friendly products still have an impact to the environment but the impact is very small if we compare to the normal produced products. The awareness of eco-friendly product can influence customer purchasing decision to buy eco-friendly products (Suki, 2013). There are many of customers who have positive and high intention to purchase green products (Ali, Ahmed, & Khan, 2011). In addition, if company offers eco-friendly products at the affordable price and high quality, compared to traditional products to consumers, consumers will have positive intention to purchase and green product purchasing will be high (Rao, Basha, & Kumar, 2011). However, results are consistent in these three studies that customers are willing to pay higher price for eco-labeled eco-friendly product, (Dunlap & Scarce, 1991; Lung, 2010; Loureiro & Lotade, 2005). There is an increased demand for eco-friendly products in Malaysia (Chen & Chai, 2010.

Eco-friendly product is the market leader, there are more customers who buy Eco-friendly product and the demand for that kind of products is increasing all over the world (Wahid, 2011). However, the study shows that people, generally have a lot of concerns and strong desires to do something towards environment but they did not know how they can contribute to or do it (Kumar, Garg, & Makkar, 2012).

H2 Thai people's green awareness in term of global warming awareness and eco-friendly products awareness affects decision of choosing eco-friendly products.

Environmental Attitudes

Environmental attitudes are conceptualized in term of attitudes theory of individual's belief and its affect toward an object (Heberlein, 2012). In consistence with "the collection of beliefs, affect, and behavioral intentions a person holds towards environmentally related activities, issues" (Schultz, Nolan, Cialdini, Goldstein, & Griskevicius, 2007). "Environmental attitude is commonly understood as a cognitive judgment towards the value of environmental protection" (Lee, 2009). The most consistent explanatory factor in predicting the consumers' willingness to pay for eco-friendly products are attitudes (Chyong, Phang, Hasan, & Buncha, 2006). People who have positive attitude towards environment and have high levels of awareness about environmental issues tend to generate more positive environmental intention and behavior, act more environmental friendly and want to buy eco-friendly products than those with the negative attitude (Altinigne & Wührer, 2015). Environmental positive attitude is related to the consumer's consumption behavior (Chekima, Wafa, Igau, & Chekima, 2015). It is likely that consumers who show high levels of environmental attitude make more green purchasing decisions than those that have lower levels.

H3 Environmental attitudes of Thai people is related to the decision of choosing eco-friendly products.

The Decision of Choosing eco-friendly product

The factors that influence people to buy and purchase the eco-friendly products are consumers' environmental concerns, awareness of green product, price and brand image, (Suki, 2013). Moreover, factors that influence green purchasing intention are product price and quality, organization green image, environmental concern and environmental knowledge (Ali & Ahmad, 2012). The factor that influences customers' decision to buy a product design in Malaysia is environmental benefits that can benefit to the customer in term of oneself and cost (Nizam, Mansor, Mukapit, & Yahaya, 2011). There are a lot of factors that possible to affect the customer purchasing decision. According to the individual theory (Sheikh F. Z., Mirza, Aftab, & Asghar, 2014), the study shows that customer likely to pay less attention toward the brand while making a purchase on green products.

Moreover, whether a person is male or female, there is no difference in making a green purchase decision. If the quality is good and the price is affordable, consumer intend to buy and pay more for such products. People are more concerned about the quality with the reasonable price and how well they market their product, informed about the benefits of green products, however, those studies did not mention about the background of customer purchasing or their perspective on choosing green products over non-green. This study proposed a new segmentation approach through an analysis of the effect of global warming awareness on choosing eco-friendly product.

The purpose of this study is to investigate and examine the influence of global warming awareness of Thai people on choosing eco-friendly products. There is no such study in Thailand about the inside story of the criterias that affect on choosing eco-friendly product, do these criterias relate to their knowledge on green awareness of global warming and eco-friendly product and how much those can influence the individual's environmental consciousness and environmental attitudes. In performing this research, the researcher also intended to study and investigate on how much Bangkok population know about eco-friendly products and what could be the reasons or factors behind those behaviors and does global warming awareness has an influence on Thai people's mind toward choosing eco-friendly products.

Methodology

On this research, the researcher has designed the study process accordingly to study on the factors that affect the decision on choosing eco-friendly products of Thai people in Bangkok by uses quantitative research and mainly focuses on the questionnaire research by using convenience sampling method in order to address the research hypothesis and problems. Questionnaire is considered as preferable survey instrument, useful method to investigate and simple to administer for respondents to complete and also for the researcher to analyze.

According to the World Population Review, in 2017, Thailand has an estimated population of 69.1 million. Bangkok has more than 5 million or about 7.38% of the total population (Thailand Population 2017, 2017). According to the Official Statistics Registration

Systems, there are 4,008,062 persons whose age between 15 and 64 years old (Population Age, Bangkok Metropolitan, 2017), which was calculated by using Taro Yamane equation (Yamane, 1973) with 95% confident level. The study sample size is 400 respondents by using non-probability sampling and convenience sampling method to address the research hypothesis and problems from the group age between 15 – 64 years old.

I. Questionnaire Development

The questionnaires are distributed and collected by using Google Docs online questionnaire which respondents are required to sign in to their Google account so that the researcher limit to only 1 response per 1 account. The researcher intends to focus on the group of people who have used the eco-friendly products only, by doing so, the researcher uses the screening questions in order to select the specific group. The questionnaire consists of 4 sections as follow;

Section 1: Demographic questions, gender, age, education, income and screening question.

Section 2: Green Awareness, which has two variables global warming awareness and eco-friendly product awareness, which were adopted and adapted from various sources and measured based on five-point Likert Scale.

Section 3: Environmental attitudes, a scale developed from Lee (2009). "Environmental attitude is commonly understood as a cognitive judgment towards the value of environmental protection" (Lee, 2009). According to the previous study on cognitive and affective, found that cognitive information to be more important than affective (Eagly, Mladinic, & Otto, 1994). Other studies also stated that affective and cognitive information based on varies across attitude objects (Breckler & Wiggins, 1989; Esses, Haddock & Zanna, 1993).

Section 4: Decision of choosing eco-friendly product which was measured based on five-point Likert Scale.

II. Test of research instrument

The researcher using three methods to test the research instrument;

- Content Validity, the researcher tests content validity by using literature review that has adopted and adapted from various sources in order to address the right questions that suit the study purpose, as describe in Table below.
- Construct Validity: The researcher uses Factor analysis to test content validity of the questionnaires. Factor analysis is a statistical process used to identify the factors that can be used to demonstrate relationship among the group of variables that are relevant, which the researcher uses the Oblimin (Oblique) rotations that allow the factors to be correlated between each other as factors are expected to be correlated.
- Test-Retest Reliability: The researcher tests the questionnaire from the sample group of 30 people. The results from this sample group tested by using SPSS to verify the reliability with correlation must not less than 0.7 ,which the test-retest results are as followed:

Test-retest results table

	30 Respondents	400 Respondents
Part 1: All questions	0.927	0.916
Part 2: Green awareness	0.878	0.875
Part 3: Environmental attitude	0.889	0.898

According to the table, from the 30 respondents, part 1: all questions alpha score is 0.927, part 2: the green awareness questions, alpha 0.878 and Part 3: environmental attitude questions, alpha 0.889. Therefore, the researcher carried on the study and start collected for 400 respondents. The test-retest result, Part 1: alpha score is 0.916, Part 2: 0.875 and Part 3: 0.898. As all of the score result are over 0.7 which shows that the questionnaire is reliable.

III. Data Analysis

This study uses SPSS program to analyze variable data and compute for the results. All answers are summarized as descriptive statistic and then the data is put through SPSS to attain the frequency of data. For analyzing the relationship and testing hypothesis between factors, demographic, green awareness, environmental attitudes and decision of choosing eco-friendly products among Thai people who live in Bangkok, this study will use T-test, F-test, Multiple Regression and Pearson Correlation to measure as follow, which the results will be presented in chapter four.

- Descriptive Statistics, are used for describing percentage variables on demography
- Inferential Statistics, are used for hypotheses testing with significance of 0.05

Key Findings

The overall distribution of the respondents in Table 2 shows that majority of the respondents of 400 people (97%) have used the eco-friendly product and 12 people (3%) never used the eco-friendly product before, are female, aged 25 – 34 years, have attained highest education level of Bachelor degree or equivalent, have an income of between 20,000 – 29,999 baht.

Table 2. Summary of Demographics and Screening Question

		Frequency	Percent
Have you ever used eco-friendly products?	Yes	400	97.0
	No	12	3.0
Gender	Male	192	48.0
	Female	208	52.0
Age	24 – 15	128	32.0
	34 – 25	196	49.0
	44 – 35	37	9.2
	54 – 45	28	7.0
	64 - 55	11	2.8
Education	High school or equivalent	28	7.0
	Bachelor's degree or equivalent	281	70.3
	Master's degree	83	20.8
	Doctoral degree	8	2.0

		Frequency	Percent
Income	Less than 10,000 Baht	49	12.3
	10,19 – 000,Baht 999	72	18.0
	20,29 – 000,Baht 999	117	29.3
	30,39 – 000,Baht 999	91	22.8
	40,49 – 000,999 Baht	25	6.3
	50,000 Baht and above	46	11.5

Factor Analysis

The Kaiser-Meyer-Olkin is 0.924, above the commonly recommended value of 0.5. Furthermore, Bartlett's Test of Sphericity is 3364.211 with significant score less than 0.05 which demonstrates a positive correlation between the items. The researcher used the Oblimin (Oblique) rotations as the factors were expected to be correlated.

The results revealed three factors were sufficient to explain the underlying structure of the study which shows that factor 1 consists of 5 items which is labeled as Environmental Attitude, demonstrates high internal consistency.

Factor 2 consists of 5 items of all the awareness that relate to the eco-friendly product, labeled as eco-friendly product awareness which has high consistency.

Factor 3 consists of 5 items which relate to the environmental issue in term of global warming. This factor is identified as global warming awareness, the internal consistency of this is also high.

Hypothesis test results

The hypothesis testing of this study is calculated by using T-test, F-test, Multiple Regression and Pearson Correlation as presented in the following tables and description.

H1 The different demographic backgrounds of Thai people in Bangkok has different influences on the decision of choosing eco-friendly products.

Table 3. The hypothesis tests on differences in decision making of choosing eco-friendly products of the respondents classified by gender.

Description	Mean	S.D.	Score	Sig.
Gender (F-test)			.401	.689
Male (N = 192)	3.45	0.82		
Female (N = 208)	3.41	0.90		
Age (F-test)			1.250	.291
15 - 24 (N = 128)	3.32	0.91		
25 – 34 (N = 196)	3.47	0.80		
35 - 44 (N = 37)	3.40	0.83		
45 - 64 (N = 39)	3.58	1.01		
Education (F-test)			1.252	.287
Other education level (N = 36)	3.44	0.87		
Bachelor's degree or equivalent (N = 281)	3.39	0.88		
Master's degree (N = 83)	3.56	0.79		

Description	Mean	S.D.	Score	Sig.
Income (F-test)			2.867	.015
Less than 10,000 baht (N = 49)	3.26	1.05		
10,000 – 19,900 baht (N = 72)	3.38	0.83		
20,000 – 29,999 baht (N = 117)	3.28	0.83		
30,000 – 39,999 baht (N = 91)	3.68	0.81		
40,000 – 49,999 baht (N = 25)	3.52	0.77		
50,000 baht and above (N = 46)	3.54	0.83		

On the demographic results, genders, age and education, which the factors differential have no positive relationship or have no different to the decision making of choosing eco-friendly product at all. Income levels has a significant score at 0.015 which the income group affect the decision of choosing eco-friendly product the most are group of 30,000 – 39,999 baht, 40,000 – 39,999 baht and 50,000 baht and above, respectively.

H2 Thai people's green awareness in term of global warming awareness and eco-friendly products awareness affects the decision of choosing eco-friendly products.

Table 4. Multiple Regression model on green awareness towards decision making of choosing eco-friendly product.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.313	0.293		4.487	0.000
Global warming awareness	-0.115	0.083	-0.084	-1.399	0.163
Eco-friendly product awareness	-0.682	0.090	-0.455	7.550	0.000
R Square = .160 SEE = .79509 F= 39.024 Sig .000					

The results from the table 4, the analysis of green awareness in term of global warming awareness and eco-friendly product awareness shows a significant relationship towards decision of choosing eco-friendly product, which explains 16% of the variation and significant score at 0.00. The study found that eco-friendly product awareness is significant to the decision of choosing eco-friendly product, p-value is 0.00 while the results of global warming awareness has no significant on decision of choosing eco-friendly product as the value is more than 0.05 (Sig 0.163).

H3 Environmental attitudes of Thai people is related to the decision of choosing eco-friendly products.

Table 5. Pearson correlation analysis of factor affecting the decision making of choosing eco-friendly product.

Environmental attitudes	Correlation level		
	R	**Sig (2-tailed)**	Correlation level
Decision making of choosing eco-friendly products	.254	.000	Low

*Significant at the .05 level

From the table 5, shows that correlation level on decision making of choosing eco-friendly product has positive correlation with the Pearson Correlation between the environmental attitude and decision making of choosing eco-friendly product is 0.254 which means that the changes in each variable has low correlation. Moreover, with the significant level between these two, score at 0.000, with Sig (2-tailed) value is less than 0.05, mean that the two variables are significant no matter the value in one variable are increasing or decreasing.

Table 6. Hypotheses summary table

	Hypotheses	Sig.	Results
H 1.1	The different genders of Thai people in Bangkok has different influences on the decision of choosing eco-friendly products.	.689	Rejected
H 1.2	The different ages of Thai people in Bangkok has different influences on the decision of choosing eco-friendly products.	.291	Rejected
H 1.3	The different education levels of Thai people in Bangkok has different influences on the decision of choosing eco-friendly products.	.287	Rejected
H 1.4	The different income levels of Thai people in Bangkok has different influences on the decision of choosing eco-friendly products.	.015	Accepted
H 2	Thai people's green awareness in term of global warming awareness and eco-friendly products awareness affects the decision of choosing eco-friendly products.	.000	Accepted
H3	Environmental attitudes of Thai people affect the decision of choosing eco-friendly products.	.000	Accepted

In conclusion, from the three main hypotheses and sub-hypotheses, the results from the analysis shown that factors that affect the decision making of choosing eco-friendly product are income, green awareness and environmental attitudes. In addition, there are three factors that do not affect the decision making of choosing eco-friendly products in regard to the demographic. They are gender, ages and education.

Conclusion & Recommendations
Conclusions

According to the data results, this can be concluded that gender, age and education differences have no significant positive relationship with decision making of choosing eco-friendly products but other variables are quite high with significant positive relationship toward the decision making of choosing eco-friendly product. The data shows that the respondents have quite high green awareness in term of global warming and eco-friendly product and very high positive environmental attitude. The data for the decision making of choosing eco-friendly products shows that most of the respondents regularly purchase eco-friendly products. On the demographic results, according to the previous research stated that gender has no significance influence in choosing or purchasing eco-friendly product (shahnaei, 2010; Sheikh F. Z., Mirza, Aftab, & Asghar, 2014) in compliant with the study results with the significant score at 0.689 considered as differential between gender has no difference when making the decision of choosing eco-friendly product.

The results on hypothesis of age and education, significant score at 0.291 and 0.287 respectively, also show no significant relationship toward the decision making of choosing eco-friendly product. However, the results found on age and education were absolutely in contrast with the previous studies, stated that younger consumers are more likely to respond to the eco-friendly product and people with higher education are more aware of eco-friendly product and its benefits which are more likely to have environmental friendly behaviors (Cresusen, 2010; Chan 1996; Kaufmann, Panni, & Orphanidou, 2011).

The differences in income level has a positive relationship when making the decision of choosing eco-friendly product with a significant score at 0.015, which consistent with the previous study. It shows that different in income level has different purchasing decision. The income group that affects the decision of choosing eco-friendly product the most is a group of respondents with income level of 30,000 and above which mean that those with high income tends to buy eco-friendly product more than those with lower income level, so it is consistent with the previous study, as the higher income level were more willing to pay for the eco-friendly products and services (Meyer & Liebe, 2010; Junaedi, 2012). Accordingly, with the study results on green awareness in term of global warming awareness and eco-friendly product awareness from 10 variables, it can be determined that the respondents have quite high green awareness toward global warming and eco-friendly product with the total score of 3.95 out of 5, considered as "agree". According to the results, table 4.17, found that there is significant relationship between green awareness in term of global warming awareness and eco-friendly product awareness and decision of choosing eco-friendly product with significant score of 0.00.

Therefore, the results of the study is consistent with the previous research which found that the green awareness can influence the customer purchasing decision to buy eco-friendly product (sig 0.01), (Suki, 2013). Moreover, on another studies shown that environmental knowledge is a factor that can predict and influence the consumer buying decision (Aman, Harun, & Hussein, 2012) and the study on the Green Consumer In Kuwait found that there is a significant relationship between environmental knowledge and consumer green behavior (Mostafa, 2009). Thus, it can be concluded that the more knowledge about the environmental issues and eco-friendly product of the consumer is the more likely they will purchase the eco-friendly product. On the hypothesis results by using Pearson correlation between the environmental attitude and decision of choosing eco-friendly product shows low positive correlation, with 0.254, and significant at 0.00.

Thus, it means that the changes in each variable has low correlation and the two variables are significant no matter the value in one variable is increasing or decreasing which in contrast with a study on the green purchasing behavior in Thailand. On the graduate student, the researcher found that there is no significant influence between environmental attitude and green purchasing behavior (Arttachariya, 2012), (Sig 0.488). However, attitudes is the most consistent predictor for the environment purchasing behavior (Schlegelmilch, Bohlen, & Diamantopoulos, 1996), while in other former studies, show that those who have positive environmental attitude towards environmental protection are strongly affected by the green purchasing (Tanner & Kast, 2003; Altinigne & Wührer, 2015).

According to more former studies, even those who viewed themselves as environmentalists, they do not change their attitude into greener behavior (Pieters, Bijmolt, Van Raaij, & De Kruijk, 1998). This can be concluded that the possible reason that the study result is inconsistent with the previous research, even when the study that was conducted in Thailand and those studies have tested on different target group. This is because the study results on green purchasing behavior in Thailand only studied on the graduate student. In conclusion, people with positive environmental attitudes toward environmental protection and have high awareness about the environmental issues and eco-friendly product are more likely to have decision making of choosing eco-friendly product. In consistence with the previous study on the effect of environmental attitudes on environmentally conscious behavior which also indicated that people who have positive environmental attitudes and have high levels of knowledge about pollution tends to generate more positive environmental intention and behavior, act more environmental friendly and want to buy green products than those with negative attitudes (Altinigne & Wührer, 2015).

Recommendations of the Study

From the findings, this study provides insights for business and marketers to help them determining their strategies in the following;

- The business should understand the factors that affect the decision of choosing eco-friendly product. Specifically focus on income, green awareness and environmental attitude. The more knowledge about the environmental issues and eco-friendly product of the consumer is, along with their personal environmental attitudes, the more likely they will purchase eco-friendly product.
- In order to attract customers to purchase or choose eco-friendly product, certain factors should be kept in mind as the factors influence the customers purchasing decision.
    - The business should be focusing on how they pricing their eco-friendly product as from the result of the study shows that those who have higher income, buy eco-friendly product more than those with lower income which this also means that the current eco-friendly product available in the market might be a bit too expensive. The business should pricing their product in order that every group of income level is able to afford the eco-friendly product. As in Thailand market, majority of people are middle class income to lower, the population is larger which means the demand of eco-friendly product consumption will be higher if we focus on this group. However, this depends on the business's target customers and the product positioning as well.
    - The business should advertise and promote their eco-friendly product well and should provide clear information enough about its benefits and enhance their consumers' knowledge and understanding about eco-friendly product.

It is very important for the company to start, develop and implement in the greener way or eco-friendly product. Global warming is a very close thing to our life as well as the eco-friendly product or eco-living together with the environmental situation. Nowadays, there will be more and more organizations that will develop eco-friendly innovative technologies. According to SolarCity Inside Energy on customer trends, stated that companies who promote eco-friendly product according to the customer behavior are more sustainable in the market and the eco-friendly products and services will continue to capture greater and greater market share.

Recommendation for future research

In this research, it based the information only on people who use eco-friendly product and live in Bangkok. For the future research, recommendations would be as follow;

- To scope on another group of people, those who have never used the eco-friendly product before and what could be the main reason and factors behind that behavior.\
- The future research can be focused on a specific product or on a specific industry and scope more on the price of the eco-friendly product as the results in this study shows those with high income level tends to buy eco-friendly product more than those with lower income. In addition, scoping down on the price of the product or specific industry will provide more insights information as eco-friendly product in different industry has a very different price.
- To scope on other locations, larger city just like Bangkok such as Chiang Mai, Phuket and Hua Hin, and on how the business should market their product.

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Exploring the link between Environmental, Social and Governance (ESG) disclosure and market value of the firm: evidence from Thai listed companies

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Abstract

This paper explores the way market values the disclosure of non-financial information, namely the environmental, social and governance (ESG) activities of 719 Thai publicly traded corporations. We used the data from the Bloomberg ESG disclosure score as a reference for ESG activities in the valuation model provided by Ohlson (1995) to find the link between non-financial information and market value. Our results show the value relevance of both ESG disclosure used as a dummy variable in the model and ESG score as a continuous variable for the financial market in Thailand. This research contributes to the vast literature on value relevance of non-financial information and the relations between firm value and sustainability performance by showing that the Thai market also responds favorably to ESG disclosure. In more general terms the research supports the efficient market hypothesis (suggested by Fama - 1998).

Keywords: ESG, market value, value-relevance of non-financial information, ESG disclosure

Introduction

ESG, or environmental, social and governance matters are an emerging investment tool widely used by corporations to improve portfolio performance. ESG matters show primarily in the process of corporate engagement, a term used to denote all kinds of activities used by shareholders to promote change at corporations, including the private dialogues and negotiations (Bauer, Clark & Viehs, 2013). And if earlier ESG was seen as an additional practice in the XXI century the evidence has put it directly in the sphere of financial management, as the extant research currently discusses a market interest in such engagements (Fulton, 2012; Eccles & Serafeim, 2011; Hoepner, 2013). The link between Environmental, Social and Governance factors and the value of the firm has been explored before but in alternative contexts which gives the authors an opportunity to apply the concept in the local context and seek the evidence from the local market. The extant research does not provide sufficient evidence as to how domestic market in Thailand reacts to firms' ESG engagements, which is the scope of our research. Therefore we define our research as exploratory and formulate the research question for this study as - What effect does the disclosure of non-financial information such as ESG data have on the market value of the firms in Thailand?

The research is based on the theoretical premise that market values ESG engagements which is in line the large body of literature on intangible determinants of stock prices or extra-financial information (Friedman, 1971; Derwal & Bowen, 2010; Heal, 2005) also consistent with the Fama's efficient market hypothesis (1998). Thus we are dwelling in the positivist domain and using a deductive approach to find the link between ESG engagements and market value of the firm. This research is quantitative and based on secondary data on Thai listed firms collected from the Bloomberg terminal. The study is cross-sectional and utilizes the data from the year 2017.

Literature review

As compared to socially responsible investing, which is an early form of such engagements implying ethical imperatives, ESG is driven by economic imperatives and is also a tool for risk management aimed at capturing the effects of environment, social and corporate governance implications on financial performance, as found in Hoepner (2012) ESG engagements also have substantial risk reduction effects. ESG generally lies in the domain of sustainability and specifically it refers to sustainable investing (SI). Historically the theoretical research framework of sustainable investing draws its beginnings in the 1950s when the notion of Corporate Social Responsibility (CSR) was introduced by Bowen (1953). The economic effects for corporations were later researched in multiple publications (Davies, 1960; Friedman, 1971, Sparkes & Cowton, 2004) but the missionary value of CSR paralleled the economic value in the research. Up to the late 1990s SRI (Socially responsible investing) mostly focused on social, ethical and environmental aspects of corporate behavior.

During the same period the term sustainable development was introduced and the focus shifted to environmental engagement and the role of corporations in preserving the environment. First coined in Brundtland report (1987) the term implied meeting present needs without compromising the ability of future generations to meet their needs. The concept included social welfare, environmental protection, efficient use of resources and economic well-being. UN quickly employed the new concept and it became widely acknowledged. The research followed the same line as with CSR and the sustainability practices started to be regarded as a source of competitive advantage (Lourenço, Branco, Curto, & Eugénio, 2012) with substantial evidence found as to its effect on market performance (Semenova & Hassel, 2016; Fulton, 2012, Bauer, 2010; Dowell, Hart, & Yeung, 2000).

The effect of Corporate Governance first became verbalized by Moscowits in his 1998 report "100 Best Companies to Work For" and subsequently the impact on corporate financial performance (CFP) was found in multiple studies (Becht, Franks, Mayer, & Rossi, 2010; Bauer, 2013; Bebchuk, Cohen, 2015; Gompers, Ishi & Metrick, 2003). The OECD Glossary specifies the corporate governance structure as "...the distribution of rights and responsibilities among the different participants in the organization – such as the board, managers, shareholders and other stakeholders – and lays down the rules and procedures for decision making" (Mercer, 2007). Thus environmental, social and governance factors needed to be encompassed by a single concept, which was introduced later in 2003 by UNEP Financial Initiative forming Asset

Management Working Group to study the financial effects of ESG in securities valuation. The resulting report proved positive changes in shareholder value (UNEP, 2004). Later in 2004 UN launched the Principles for Responsible Investing (OECD, 2007) isolating the term responsible investing and giving an outline of ESG factors in the investment process.The terminological framework of sustainable investing was put together in a popular 2007 report by Mercer corporation, 'The language of responsible investment' (Mercer, 2007) which contains the most up-to-date definition of ESG: the term that has emerged globally to describe the environmental, social and corporate governance issues that investors are considering in the context of corporate behavior.

ESG investing uses the so called best-in-class approach, which draws investors' attention to companies ranking high among their sector in environmental protection, social responsibility and corporate governance issues. The extant literature abounds in proof of ESG oriented investment being rewarded by the market (Luciani, Maga, & Keerativutisest, 2018; Fulton, 2012; Reading & Hart, 1993; Hoepner, 2013). In ESG effects assessment the emphasis is usually placed on the effects of corporate social responsibility, socially responsible investment and ESG practices on either cost of capital, financial performance, or return on investment. There has been research in certain local contexts proving the link between ESG performance and market value (Loh, Thomas & Wang, 2017; Semenova, Hassel & Nilsson, 2016) as well as the inquiries into the value relevance of non-financial reporting in developed (Eccles, Serafeim, 2011) and emerging markets (Claudiu, Spatacean, & Nistor, 2012) all finding compelling evidence of a positive relationship between the variables discussed. This research moves beyond the listed studies and aims at providing an insight into the domestic context of Thailand and the value relevance of non-financial reporting such as ESG for local firms.

Theoretical approach and Methodology

This research provides value for two streams of thought, the first is the market reward of ESG engagements, and the second is the field of market interest in non-financial information. It has been proved by the extant research that financial markets react to all kinds of nonfinancial publicity (Eccles, Krzus, and Serafeim, 2011; Claudiu et al, 2012; Hassel, Nilsson & Nyquist, 2005) which is consistent with the Efficient Market Hypothesis (Fama, 1998; French & Roll, 1986). Our goal is to apply this trend of thought on the evidence from emerging markets, which now attract significant attention of the investors. Therefore the main research question of this research is whether the company's degree of ESG-related performance publicity creates market value in an emerging market, which we chose to be Thailand, a rapidly growing economy of which currently piques the investors' interest.

To answer the research question we have developed two hypotheses. H1 concerns the market value relevance of the fact of ESG reporting. The fact of a firm's disclosure of non-financial information, such as ESG should affect its market value through improvements of its reputation (Beardshell, 2008) and investors' trust and confidence (Eccles, Serafein, 2011). Also the relevance of non-financial data is consistent with the efficient market hypothesis (Fama, 1998) and namely the semi-strong form of it, which means that current market prices incorporate not only historical prices but also all other published information. Therefore H1 states:

Hypothesis 1 (H1): Companies that undertake ESG reporting have higher market values than companies that do not undertake ESG reporting.

The quality of a firm's reporting on its ESG engagements should affect the firm's market value in the same manner that environmental (Derwall, 2005), social (Friedman, 1971), and governance (Kiernan, 2007) factors affect it separately. The main reasons behind such an effect being increased competitiveness (Porter, 1995), social value creation (Davies & Keith, 1960), and lower risk (Bauer & Hann, 2010). Therefore our second hypothesis (H2) states:

Hypothesis 2 (H2). Companies with higher quality of ESG reporting have a higher market value than companies with lower quality ESG reporting

The empirical analysis relies on the **719** corporations listed in the Thailand Stock Exchange for which there is sufficient data (out of the total 779) on selected variables. We use the Bloomberg ESG disclosure score as proxy for ESG performance publicity. In this research, we are using the seminal Ohlson's (1995) model of a firm market value relation to accounting data and other information. Ohlson's valuation model has become a conventional approach in determining value-relevance of financial and non-financial data used in accounting (Hassel, 2005) and finance research (Loh et al, 2017; Lourenco & Eugenio, 2011).

Data and Methodology

Sample size and source of data

The study covers shares listed on the Stock Exchange of Thailand (SET), it excludes delisted and suspended companies. The sample size is 719 companies. Financial data was sourced using Bloomberg Terminal. ESG reporting data was also gathered using Bloomberg Terminal, with individual companies' ESG score being used as a proxy for the quality of ESG reporting. Listed companies publishing information up to the 31st of December 2017 have been taken into account. Companies that do not undertake any ESG reporting are awarded a zero ESG score. The greater the quality of ESG reporting made by the company, the higher the score awarded to the company, with the maximum possible of one hundred.

Bloomberg ESG score covers more than 120 environmental, social and governance indicators including: climate change effect, pollution, renewable energy, supply chain, political contributions, discrimination, diversity, human rights, shareholders' rights etc (Huber & Homstock, 2017). The score is assigned annually based on data collected from company disclosures as well as third-party ratings, the score is a value within the range of 0 to 100.

To test the hypotheses we carried out a weighted lest squares regression where the weighting was the inverse of the square of market value. Here we are using a derivation of the seminal Ohlson's model for market valuation (Ohlson, 1995), the derivation used for measuring the ESG effects was adopted from Loh and Thomas (2017) with our modifications in terms of ESG disclosure variable.

The model (1) is as follows:

$$MVi,t{+}4 = \alpha 0 + \alpha 1BVi,t + \alpha 2EARNi,t + \alpha 3EARNi,t \times NEGi,t + \varepsilon i,t\ , \quad (1)$$

where:

MVi,t+4 is market value four months after financial year-end of company i;

BVi,t is book value of common equity at the year-end of company i;

EARNi,t is earnings before extraordinary items at the year-end of company i;

NEGi,t is a dummy variable equal to 1 if earnings at the year-end of company i are negative in year t and 0 otherwise;

εi,t is the error term

We include book value and earnings (before extraordinary items), because in line with the previous research (Loh et al. 2017; Hassel, 2005; Ohlson, 1995) these variables show a positive relationship with the market value, earnings, on the other hand, can show a negative relationship with the market value, because profit is usually rewarded by the market and loss is usually penalized. As the next step we include the ESG score as a dummy variable to find the link between the ESG disclosure and the market value to accept/reject the hypothesis H1. Our model (2) thus has the following shape:

$$MVi,t+4 = \alpha 0 + \alpha 1BVi,t + \alpha 2EARNi,t + \alpha 3EARNi,t \times NEGi,t + \alpha 4ESGi,t + \varepsilon i,t \,, \quad (2)$$

where:

MVi,t+4 is market value four months after financial year-end of company i;
BVi,t is book value of common equity at the year-end of company i;
EARNi,t is earnings before extraordinary items at the year-end of company i;
NEGi,t is a dummy variable equal to 1 if earnings at the year-end of company i are negative in year t and 0 otherwise;
ESGi,t is a dummy variable equal to 1 if the company i is deemed as communicating ESG for the year covered and 0 if otherwise;
εi,t is the error term

To test the hypothesis 2 (H2) we explore the relationship between the quality of ESG reporting and the market value replacing the dummy variable *ESGi,t* with a continuous variable, the ESG score (between 0 and 100) and produce the following model (3):

$$MVi,t+4 = \alpha 0 + \alpha 1BVi,t + \alpha 2EARNi,t + \alpha 3EARNi,t \times NEGi,t + \alpha 4ESGIi,t + \varepsilon i,t \,, \quad (3)$$

MVi,t+4 is market value four months after financial year-end of company i;
BVi,t is book value of common equity at the year-end of company i;
EARNi,t is earnings before extraordinary items at the year-end of company i;
NEGi,t is a dummy variable equal to 1 if earnings at the year-end of company i are negative in year t and 0 otherwise;

ESGIi,t is the ESG reporting score of the company i;
εi,t is the error term

Assessing the model specification and predicting power we will examine the R^2 for the three models and the p-values for significance, we are expecting to see a significant value of coefficient of determination of more than 0.5, which means that the model can predict 50% of the variance of the dependent variable by the change in independent variables, we expect the value of R^2 to either grow or remain constant for subsequent model specifications. To support that the variation of individual independent variables caused the change in the dependent variable not randomly we will use the significance level of p below 0.05. Thus if the association proves to be statistically significant (p-value below 0.05) we will accept that the association did not happen by chance.

Additionally we will examine the effect of four more independent variables which we set as control variables to test the model fit. The chosen variables are “high total return” (HIGHRi) which is coded as an index and recoded as a dummy variable of a company having either “high” (over 10) or “low” (less than 10) value of total return, with variable set as either “0” for low return or “1” as high return. The third control variable is adopted from Loh et al.

(2017) it is the governmental ownership of the firm's assets (OWNIi), which may have a significant impact on the market value. In emerging markets pubic ownership of a firm's assets may be viewed as the measure of stability and be rewarded by the market (Eni, Mattei & Gupta, 2002). We code government control both as an index number indicating the degree of government ownership (with the maximum value of 100) and recoded as a dummy variable if the share of public ownership is greater than 25%, then the variable is set as "1", and if less than 25% then its set as "0". We will include the two control variables in the model consecutively and run the regression to check if it qualifies for the criteria described above.

Results and Implications

Table 1 summarizes the summary statistics of all variable used in this research describing the central tendency and the dispersion of variables used in the model.

Table 1. Summary statistics of variables

	Mean	**Standard Deviation**	**Minimum**	**Maximum**
EARNi,t	1.51E+09	8.40E+09	-2.79E+09	1.85E+11
EARNi,t*NEGi,t	-5.99E+07	2.71E+08	-2.79E+09	0.00E+00
ESGIi,t	1.542	7.584	0	62.397
BVi,t	1.33E+10	6.04E+10	1.76E+07	1.25E+12
MVi,t+4	2.52E+10	9.75E+10	2.05E+08	1.61E+12
OWNIi,t	2.456	10.139	0	86.096
TRTIi,t	(7.896)	24.947	(66.667)	179.864

The mean ESG score among the companies that undertook some form of ESG reporting was 29.2 out of 100 maximum possible with a range between 0 and 62.4, the ESG values were derived from Bloomberg databases. With a little more than 5% of SET listed companies undertaking some of sustainability report, it would be fair to say that this is not common practice amongst Thai firms. Average ESG scores of just above 29, also indicates that the quality of the sustainability reporting is not very high. Of the 719 firms in the samples, 29 had significant government ownership stakes', in excess of 25%, whilst, the government has some ownership stake in 134 out of theses 719 companies. 115 out of 719 companies' had Total Rates of Return in excess 10%, this represents 16% of the sample.

The correlation between the book value of common and equity and the market value of equity is high (Table 2), the same can be said about the correlation between the earnings before extraordinary items and the market value of equity (0.87). There was also relatively high correlation between sustainability reporting variables. However these correlations do not interfere with our choice of model.

Table 2. Correlation matrix of the variables

	EARNi,t	*NEGi,t*	*NEGi,t*EARNi,t*	*ESGi,t*	*ESGIi,t*	*BVi,t*	*MVi,t+4*
EARNi,t	1	-.105**	.074*	.417**	.528**	.953**	.871**
NEGi,t	-.105**	1	-.460**	-0.066	-0.073	-.084*	-.107**
*NEGi,t*EARNi,t*	.074*	-.460**	1	-0.042	-0.005	0.023	0.039
ESGi,t	.417**	-0.066	-0.042	1	.861**	.402**	.530**
ESGIi,t	.528**	-0.073	-0.005	.861**	1	.490**	.577**
BVi,t	.953**	-.084*	0.023	.402**	.490**	1	.844**
HIGHRi,t	.083*	-.083*	0.058	.083*	0.071	.089*	.082*

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Table 3. Model 1 Regression Results

	Expected Value		
Intercept		2.71E+08	***
BVi.t	(+)	0.26	***
EARNi.t	(+)	5.68	***
EARNi.txNEGi.t	(-)	(6.20)	***
R-squared		0.501	
Adjusted R-squared:		0.498	
F-statistic:		238.8	***
Note: P- Value	'***' P<= 0.01; '*' P<= 0.05		

The results from the baseline regression, regression model 1 are included in the above Table (Table 3). The value of the reported coefficients are in line with their theoretical expected values, namely positive coefficients for firm's book value (BVi,t) and earnings before extraordinary items (EARNi,t) and a negative coefficient value for the negative earnings before extraordinary items variable (EARNi.txNEGi.t). All three coefficients are statistically significant with p scores less than 0.01.

Table 4. Model 2 Regression Results

	Expected Value		
Intercept		2.73E+08	***
BVi.t	(+)	0.26	***
EARNi.t	(+)	5.63	***
EARNi.txNEGi.t	(-)	(6.14)	***
ESGi.t	(+)	4.28E+09	*
R-squared		0.503	
Adjusted R-squared:		0.501	
F-statistic:		180.9	***
Note: P- Value	'***' P<= 0.01; '*' P<= 0.05		

In the model (2) regression, the results of which are included above in Table 4, we added the dummy variable: ESGi,t. This variable was awarded a "1" if the firm undertakes some form of ESG reporting and a "0" if it did not undertake any form of ESG reporting. The expected value of this coefficient was positive in line with the theory discussed above. Our study did find a positive relationship between ESG reporting and corporate market value, the ESGi,t coefficient was positive and statistically significant with a p-value less than 0.05. Moreover such specification of the model allowed to improve the value of R^2, which means that the predicting power of such a model is higher. These results support Hypothesis 1 (H1). As in the model 1 regression, the values of the other coefficients were in line with their expected values and were statistically significant, with p-values less than 0.01.

Table 5. Model 3 Regression Results

	Expected Value		
Intercept		2.74E+08	***
BVi.t	(+)	0.26	***
EARNi.t	(+)	5.60	***
EARNi.txNEGi.t	(-)	(6.11)	***
ESGIi.t	(+)	3.36E+08	*
R-squared		0.505	
Adjusted R-squared:		0.502	
F-statistic:		181.8	***
Note: P- Value	'***' P<= 0.01; '*' P<= 0.05		

Table 5 shows the results of the model (3) regression. In this model the ESGi,t dummy variable was replaced with ESGIi,t variable. The ESGIi,t reflects the quality of the ESG reporting undertaken by the firm. According to the theory, the ESGIi,t coefficient should have a positive value. The results of the regression analysis were in line with the theory, the ESGIi,t did in fact have a positive, statistically significant value ($p < 0.05$). This evidence supports hypothesis 2 (H2). The expected values of the other coefficients were in line with their expected values and were statistically significant with p-values less than 0.01.

Then, we include four control variables into models (2) and (3) consecutively generating models (4), (5), (6), and (7). To model (2) we add two dummy variables separately; firstly we added the dummy variable HIGHRi,t producing model (4), though the variable had a large positive coefficient however the p-value was high (0.6357) which is not a statistically significant association. Next we added the dummy variable OWNi,t to model (2), resulting in model (5); this variable (OWNi,t) also had a large positive coefficient, but the p-value relating to this it was 0.6279 which is not statistically significant. To test model (3) we independently added variables OWNIi,t and TRTIi,t to produce models (6) and (7) respectively. OWNIi,t has a large positive coefficient and a p-value of 0.4161, which is not statistically significant; the variable TRTIi,t had a large negative coefficient and a p-value of 0.647, which is not statistically significant either (Table 6).

Table 6. Regression results including control variables

	Model (4)	Model (5)	Model (6)	Model (7)
Intercept	2.689e+08***	2.722e+08***	2.726e+08***	2.700e+08***
BVi,t	2.618e-01***	2.599e-01***	2.583e-01***	2.605e-01***
EARNi,t	5.616e+00***	5.632e+00***	5.607e+00***	5.503e+00***
*NEGi,t*EARNi,t*	-6.135e+00***	-6.149e+00***	-6.122e+00***	-6.100e+00***
ESGi,t	4.262e+09*	4.289e+09*		
ESGIi,t			3.365e+08*	3.362e+08*
HIGHRi,t	3.169e+07			
OWNi,t		7.922e+07		
HIGHRIi,t				
OWNIi,t			3.301e+06	
TRTIi,t				-3.957e+05
R^2	0.5035	0.5035	0.505	0.5047
Adjusted R^2	0.5	0.5	0.5016	0.5012
F-value	144.6	144.6	145.5	145.3
p-value	<2.2e-16	<2.2e-16	<2.2e-16	<2.2e-16

'***' P<= 0.01; '*' P<= 0.05

The results of testing prove that our models have right specification at the statistically significant level. The control models also reinforce our previous findings regarding the link between ESG reporting and market value.

Therefore, we find compelling evidence of positive relationship between ESG reporting and the firm's market value, based on the above evidence we cannot reject hypotheses H1 and H2.

Conclusions

Publication of non-financial information is increasingly valued by investors in both developed and emerging markets, Thailand being no exception. Our paper supports that the market rewards the ESG publicity of publicly traded companies in Thailand, supported by the evidence from 719 firms. Our study supports the impact of ESG reporting on market value, which means that investors express more interest in equity of firms engaging in transparent reporting of their ESG practices, the reasons for firms undertaking the ESG reporting or refusing to do so might be a topic of a subsequent qualitative research based on interviews with investors.

Our study contributes to the literature in three ways, the first being the school of thought on the market interest of non-financial information confirmed by Hypothesis 1 (H1) which is in line with the Efficient Market Hypothesis and the semi-strong form of the market (French & Roll, 1986; Fama, 1998); the second being the literature on the market relevance of the quality of ESG disclosure, supported by Hypothesis 2 (H2) (Hassel et al., 2010, Loh et al., 2017), and the third being the evidence that investors in emerging markets reward the same information as the ones in developed markets, because our results are consistent with the finding of the relevant literatures on developed markets (Fulton, 2012; Reading & Hart, 1993; Hoepner, 2013).

As the continuation of our research we can propose to take into consideration the industry factor and investigate what industries tend to provide more ESG reporting firms and what the effect of the industry factor in the model might be. Also, the future research can focus on individual effects of environmental, social and governance factors on market value.

Limitations of our research include the inability to run a longitudinal analysis because of the lack of reporting in the years previous to 2015, which is possible to conduct in the future too.

The results of this research are applicable by financial managers in making decisions about ESG reporting.

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Components of entrepreneurial idea Pitch: A Qualitative analysis from an Entrepreneurial classroom

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Abstract

Pitching presentations are important for an entrepreneur’s success. The quality of an entrepreneur’s idea pitch determines whether the business idea being presented is accepted and subsequent financing secured. Previous studies have shown that the success of an idea pitch depends on more than one factor. In this qualitative study on nascent entrepreneurs, 200 idea pitch decks from an entrepreneurial classroom at an International University in Thailand were observed and a summary of success parameters was drawn. Based on the data analysis, this study proposes a four-legged approach for successful pitching presentations: an entrepreneur’s passion, preparedness, narrative, and visual presentation. The study proposed that these factors govern the final investment decision. The results of this study will be helpful to academics and entrepreneurs alike. Students and nascent entrepreneurs will benefit from this knowledge and can apply the principles of a successful pitch deck presentation in obtaining investment.

Keywords: Entrepreneurship, Pitch deck, pitching presentations, passion, knowledge, narratives, visual presentation, Thailand

Introduction

In 2004, Eduardo Saverin was trying to convince backers to invest in his venture. His presentation focused on the numbers that his new venture had achieved in terms of users and growth potential. Today that venture is known as Facebook. The presentation that Eduardo gave to his then potential investors is one of the best-known business idea pitch decks and Facebook has achieved unprecedented success since then. Eduardo’s pitch decks is just one of the many examples of how an ideal pitching presentation leads to a positive funding decision. Previous studies (e.g., Chen, Yao, & Kotha, 2009; Cardon, Sudek, & Mitteness, 2009; Moncrief & Marshall, 2005) suggest that the success of a pitch deck is attributed to more than one parameter. This paper reviews the literature on the many parameters of success for pitch decks and puts forth adequate evidence for the propositions. The next section details the significance of the pitching presentations before pinpointing the factors leading to a successful pitching presentation.

Significance of pitching presentations or idea pitch decks

Entrepreneurial ventures begin with the recognition of a possible business opportunity. Following this, the business idea needs a financially rich and resourceful ecosystem in which to grow. However, just the recognition of a good opportunity is not sufficient to guarantee financing. The focal point of opportunity exploitation is making an effective and efficient implementation possible. This process begins with interaction with the stakeholders (Baron & Markman, 2000, 2003). An idea pitch deck denotes the efforts of an entrepreneur to present the business plan and entice an investor to provide the required resources. Hence, pitch decks represent a critical factor in an entrepreneur's success (Pollock, Rutherford, & Nagy, 2012; Mason & Harrison, 2001). The basic objective of the pitch deck is to seek resources and the support of senior management or potential investors (Howell & Boies, 2004).

Pitching presentations are characterized by high levels of uncertainty (Brooks, Huang, Kearney, Murray, 2014), especially in the case of nascent entrepreneurs, whose claims are not backed by sufficient support from previous financial records or sales figures, unlike older and more established entrepreneurial ventures. In such a case where there is an absence of evidence-based collateral, investors end up relying on the appeal of the investment to inform their decision. The assessment of the appeal is a combined evaluation of the affective, cognitive, and behavioral components of the presenter and the presentation. Considering that initial evaluations lead to the rejection of most business opportunities (Mason & Harrison, 2003), it is important to look at what constitutes the ideal pitching presentation.

Previous studies on pitching presentations or pitch decks have used diverse samples. For instance, Brooks, Huang, Kearney, and Murray (2013), Maxwell, Jeffrey, and Levesque (2011), and Pollack, Rutherford, and Nagy (2012) used the participants from entrepreneurial pitch competitions as respondents. Holt and Macpherson (2010) used the experiences of three entrepreneurs. Cardon, Sudek, Mitteness (2009) used angel investors as samples. Chen, Yao, and Kotha (2009) used students from MBA program as their group of respondents. It is notable that the adult career expectations and intentions begin forming in the teen years (Low, Yoon, Roberts, & Rounds, 2005), however, none of the notable studies have used an undergraduate student group as respondents. The current study fills this gap. Overall, this study combines the cognitive and affective components of persuasion analysis proposed by Chen et al. (2009) and the narrative approach proposed by O'Connor (2004) with the purpose of highlighting the factors that lead to the success of pitching presentations. The current study employed an inductive approach to achieve this objective.

For this study, student presentations were used to map out the factors leading to successful pitching presentations. These student presentations form a part of the entrepreneurship program at the undergraduate level. Entrepreneurial classroom learning includes 'teaching it' and 'teaching about it' (Hindle, 2007, p.107). This vocational education aspect of entrepreneurial education was captured with student presentation from the entrepreneurship program.

This study

The dependent variable

For this study, student presentations were observed and analyzed to map out the factors leading to successful pitching presentations. The dependent variable was the decision to invest assessed on a binary scale of zero (0) for "don't want to invest" and one (1) for "want to invest". The presentations, which received an affirmative response, or (1), were considered successful, and those, which received a (0), were considered unsuccessful.

The method

Data gathered from the observation of the successful pitch deck presentations in an entrepreneurial classroom were analyzed and compared qualitatively for emergent themes in order to uncover recurrent patterns of communication. To obtain a common consent and a generalized view, three experts (entrepreneur-investors) were recruited to act as raters for this study. The use of more than one rater improves the consistency and reliability of the results as well as promoting greater absolute agreement of the analysis (Wynd, Schmidt, & Scharfer, 2016; Richie & Spencer, 2002). The experts had an average of seven years of entrepreneurial experience in five different industries including food and health, consumer durables, services industry, manufacturing, and information technology. They also handled an average of 30M Baht in yearly investments and employed 30-50 people.

The sample

The sample was drawn from the undergraduate students of an international university in Bangkok, Thailand. Two hundred students from three batches (over a period of 3 terms during June 2016 to September 2017) of the entrepreneurship program were invited to join in this project for which participation was voluntary. Those who agreed were asked to design and deliver a pitching presentation for their own business ideas. The presentations were video recorded for the purpose of observation and analysis. The duration of each pitching presentation was 2 minutes. Observations were separated in time to facilitate the detection of possible differences in presentation skills later. Students were informed of the research interest in presentation skills; however, in order to minimize the observer effect, the specific interest in the factors affecting idea pitch presentations was not disclosed until after the observation period. The videos were compiled and assigned to three experts.

The data analysis

The data analysis followed the method of inductive reasoning, "using the known to predict the unknown" (Heit, 2000, p.569). This allows for the textual data (observations and outcomes) to be organized into increasingly refined (premise) categories representing recurring emergent themes to arrive at the conclusion categories. Saturation sampling (when further observations yield minimal or no new information) was achieved through this process. Data triangulation was ensured by comparing the given categories. The preliminary data analysis was conducted in stages as shown in Figure 1.

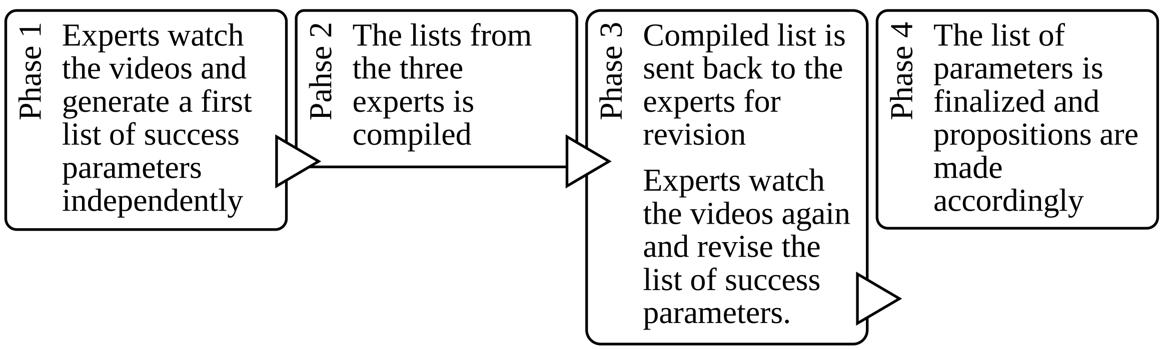

Figure 1. Stages of data analysis

In the first stage, the three experts observed the presentations and suggested the parameters leading to the success of the pitch decks. After their feedback, in the second phase of the analysis, the categories from the independent assessments by the three experts were retrieved and compared. A list of parameters outlined by the three experts was compiled. In the third stage, the compiled list of success parameters was sent back to the expert entrepreneurs. At this stage, the experts were requested to watch the videos again and refine the compiled list of success parameters to generate a final list. This completed the cycle of observation-compilation- comparison-observation-final list refinement. This process was followed until no new information could be found regarding the four proposed relationships. Once the preliminary analyses were complete and a final list of parameters was developed, based on the findings, the propositions were induced for theory building (Glaser, 2002). The comparison of the unsuccessful and successful presentations provides support for the proposed relationships.

Proposed success parameters

I – Passion

Whereas the business idea is the main element of an idea pitch deck, previous studies indicate support for multiple components as additional success parameters in a pitching presentation. In an effort to convince the targeted individuals to invest their money, time, and effort in a new venture, Chen, Yao, and Kotha (2009) stated that passion proves essential. The passion displayed by entrepreneurs has been one of the most frequently observed phenomena of the entrepreneurial process (Smilor, 1997). Especially in the case of nascent entrepreneurs, where those asking for resources cannot give a strong guarantee of returns and therefore have to make a compelling case to the investors, the presence of passion ensures that the entrepreneur is determined to pursue his or her goals. This boosts the confidence of the investors (Zacharakis & Shepherd, 2001). In the words of John. P. Goodman, a private investor and the founder of EC2, the first crucial sign to look for in pitch decks is the passion of the presenter. Passion is one of the main factors in resource allocation decisions made by investors (Chen, Yao, & Kotha, 2009) because it provides the indication of how committed the entrepreneur is (Carden, Sudek, Mitteness, 2009).

Previous studies hypothesized passion as a task specific motivational construct, which helps direct one’s attention, inclination, and actions in a particular way (Chen et al., 2009; Vallerand et al., 2003). It represents an entrepreneur’s deep affective, cognitive and behavioral manifestations of high personal value and is expressed by strong and positive emotions. Passion is associated with the drive and willingness to work long hours (Carden et al., 2009). Passion is observed by the enthusiasm and excitement that the entrepreneur displays while presenting. It is assessed by the tone, eye contact, positive attitude and high energy displayed by the presenter. Chen et al. (2009) listed body movements, rich body language, varied tone and pitch, and the use of hand gestures to assess the behavioral indicators of passion. Based on the previous evidence supporting the parameter, this study proposes that:

Proposition 1: A passionate/enthusiastic presenter is successful in pitching presentations.

Passion - Evidence from the presentations

During the presentations, the presenters used emotions to depict their affective manifestation of passion (Chen et al., 2009) via the use of words and phrases such as, “exciting opportunity” and “this is a great chance”. In addition, the presenters used positive body language, such as smiling, and hand gestures and body movements that showed positivity in order to convince the investors. The observations of the presentations depict that the tone of the successful presenters was very low and soothing, while they also balanced the tone of their voice with slight changes. This group of presenters also placed vocal stress on certain words to express their confirmation with those concepts. For example, a presenter described the unavailability of time for health-conscious people in preparing healthy food by putting the stress on the word "do not". Similarly, a presenter repeated the message on the slide loudly to make sure that everyone understood. For the unsuccessful presenters, the tone did not match the levels of energy expected for a sales pitch, and hence, they could not convey the message effectively. In addition, the unsuccessful presenters showed a lack of passion where they were nervous and spoke incomplete sentences, repeated same words multiple times, used unclear language, or used pauses (e.g., uh.., umm..) multiple times.

The successful presenters also made constant eye contact, depicted a sense of association with the business idea, and expressed this with varied expressions, which matched the slide content. For example, in a slide with junk food, the presenter made a 'pity' face while explaining the negatives of buying cheap food versus the positives of her business idea of "cook it yourself". Similarly, a presenter smiled and pointed at herself when she described a non-made up look while selling a makeup machine. The unsuccessful presenters failed to make any eye contact and/or faced the presentation slides instead of the audience and assessors. The successful presenters depicted passion through their choice of words, such as, "it is my passion"; "I have loved selling since young age"; "I believe that this product"; "I own this idea"; "I found my passion"; "I know this is what I want to do"; "I present a solution" and the like. Alternatively, the unsuccessful presenters did not show any ownership of their business idea and referred to the opportunity they recognized in the third person with the use of words such as, "this product" and "it will". From a comparison of the verbal and non-verbal cues given by the presenters, it is evident that the data support proposition 1. A passionate presenter received an affirmative assessment by the investors.

II – Preparedness

In addition to the passion of the entrepreneur, the investors also paid attention to the extent to which the entrepreneur was prepared for the presentation. This refers to the cognitive preparation of the presenter specifically in terms of the idea, the business plan, and the presentation (Chen et al., 2009; Cardon et al., 2009). Previous studies depicted how knowledge and eloquence about the business idea and the market helps a nascent entrepreneur to gain the trust of the investors (Chen et al., 2009; Carden et al., 2009). Chen et al. referred to the knowledge and preparedness as cognitive manifestation in the assessment of the proposed venture. Chen et al. also stated how the content of the business plan is more important than the presentation itself. Whereas passion has been characterized as an affective component, preparedness is considered cognitive in nature (Chen et al., 2009). Preparedness has been assessed in literature using the knowledge about the subject (the business idea) and the focus displayed by the presenter. In addition, preparedness is displayed when the entrepreneur is proactively prepared for objections or questions and provides the answers in his or her presentation. Based on the findings of previous studies, the study proposes that:

Proposition 2: A knowledgeable and prepared presenter is successful in pitching presentations.

Preparedness/Knowledge - Evidence from the presentations

As alluded to earlier, deep and thorough knowledge and the ability to be ready with answers to probable questions reflect the preparedness of the entrepreneur. Conforming to previous evidence, the data of the current study revealed that successful presenters had the required knowledge of the market and the needs of people of their own age or otherwise.

For example, one of the presenters talked about his business idea for disabled people after comparing the needs of the healthy versus those of handicapped people. Another presenter depicted his eloquence by highlighting the problems with the competitors' products and the comparative strengths of his business idea. A different presenter showed how the market was captured by low calorie food items but did not have a product that brings together all the necessary items and makes it easy to cook. One of the presenters showed how his product was unique, and would benefit even if there were other competitors with similar products. Thus, in all, the successful presenters depicted a rich knowledge of the market, the competitors, and their products and expressed this knowledge through emotional and cognitive appeals, using data and experience as examples. From a comparison of the background information and market knowledge that presenters depicted during their pitching presentations, it is evident that the data supported proposition 2.

III – Narrative

As Weick, Sutcliffe, and Obstfeld (2005) put it, a business is talked into existence. Apart from the passion (as an affective component) and preparedness (as a cognitive component), the presentation narrative (as a behavioral component) is also important for an aspiring entrepreneur. Pitch presentations are one of the most important behaviors that an entrepreneur will enact in the exploitation process (Mason & Harrison, 2001). Chen et al. (2009) opined how the effective presentation of the content is considered equally as important as the content itself. Chen et al. also stated how a pitching presentation is a form of persuasion and attitude change that happens as a result of exposure to the information about the business idea. Investors normally receive many business plans and, hence, their decisions to invest are the result of their assessment of the handy data made available by the presenter. A well-planned and thought-out narrative, with back up answers, is the key to changing the attitudes of the investors and persuading them to invest.

Studies (e.g., Moncrief & Marshall, 2005) show how presentations are the main body of any sales call and ensuring sufficient information is given about the product or service, its attributes, and its selling points. The presentation must also accommodate an opportunity to overcome objections that the presenter might face. A study by Bird & Schjoedt (2009) identified the pitching presentation as a communication or information exchange behavior. Pollok, Rutherford, and Nagy (2012) stated that investors hold true to the basic axiom of investment where they will invest only when the future returns from the new venture are greater than the proposed investment. Normally, new firms and their product or service attributes are opaque and unclear (Rutherford, Buller, & Stebbins, 2009). Pollock et al. (2012) suggested the use of narrative (O'Connor, 2004) to create and relate a story linking to the action and goal of the business plan. During the presentation, the entrepreneur must guide the audience (via communicating, sense making, and sense giving) toward and into the venture (Boje, 1991; Weick, 1995) in order to create a comprehensible identity (O'Connor, 2004). This narrative sense-making includes the presentation as a component of social skills (Baron & Brush, 1999). Bhave (1994) suggested that under the theory of the opportunity process model as an explanation to the narrative, entrepreneurs depict a common sequence in the entrepreneurial process, from opportunity to venture creation. The sequence consists of stages in which nascent entrepreneurs show eagerness to start, explore the opportunity, carry out research to establish the business idea, and remain committed to a physical creation.

Brown, Stacey, and Nandhakumar (2008) stated that narrative sense-making can bring about an attitude change in the investors. The authors stated that sense-making refers to the plausibility and coherence applied towards construction of meaning from data. The operationalization of the narrative sense-making is done in the literature with the help of organized thinking, or with logical and consistent expression of thoughts (Patriotta, 2003).

Other expressions associated with narrative sense-making behaviors are making the unexpected acceptable and therefore manageable (Robinson, 1981), or coherence and adequacy (Feldman et al., 1990. Based on the findings of previous studies, this study proposes that:

Proposition 3: The presenter who has a sense-making narrative is successful in pitching presentations.

Narrative - Evidence from the presentations

The data analysis depicted that successful presenters had a well-constructed storyline to make the audience and assessors realize the need for their product or service. The narratives of the successful candidates depicted organized and coherent thinking. Several of the successful presenters could make the connection between being passionate about their business idea, their knowledge of the market, and the operationalization of the business idea. This depicted consistency in their thinking. One of the successful presenters also mentioned the desired qualities of the workforce, stating that he would recruit in the future, thereby giving an indication of his ability to predict the future needs. Alternatively, the unsuccessful candidates were unable to engage in storytelling, and hence failed at connecting with the audience and assessors. In addition, several unsuccessful candidates started making an argument about their business idea but could not take the argument to a successful conclusion. A comparison of the presentations of the successful and unsuccessful students revealed that the data support proposition 3. A better narrative from the entrepreneurs leads to an affirmative assessment by the investors.

IV - Visual presentation

In addition to the narrative of the presentation, the structure of the visual presentation and the sequence of its delivery are important factors in changing the attitude of the investor. Baron and Markman (2003) and Clark (2008) noted how a better visual presentation by an entrepreneur leads to an increased likelihood of investment. Parker (2001) argued that visual presentations are not just tools, but social instruments that allow the content originator to control the delivery of the message. Unlike language, ideas are multidimensional and visual presentations impart a logical structure to the argument, hence complimenting the language with logic. Entrepreneurship involves rhetorical dimensions that go beyond the usual spoken and textual arguments (Spinuzzi, Nelson, Thompson et al., 2015), and visual presentations that allow the presenter to deliver the scripted narratives directly, without any process loss in the projectile course (Adams, 2006). In other words, visual presentations enhance the ability of the presenter to point at the focus of the presentation with more accuracy, vivacity, and speed.

Regarding the assessment of what may be a good visual presentation; Spinuzzi et al. detailed the structure, claims and evidence, and engagement as the categories that define a better presentation. Maxwell and Levesque (2014) assessed presentations on two criteria: perceptive ability and persuasiveness. Moncrief and Marshall (2005) argued that visual presentations should follow the feature-advantage-benefit (F-A-B) pattern in order to be successful. Previous studies (e.g., Barry & Elmes, 1997; Gabriel, 2004) concurred that scripted narratives follow a sequence in order to provide added sense to the multidimensional idea or plot (adapted from Martens, Jennings, & Jennings, 2007). This sequence begins with the idea definition, followed by clearly defined goals after indicating gaps in the market, and concludes with enabling forces and ways to fill those gaps. Based on the previous studies (e.g., Fiol, 1989; Barry & Elmes, 1997; Gabriel, 2004), this study proposes that:

Proposition 4: The presenter who employs visual presentation as a tool to express his/her business idea and follows the sequence of idea definition, indication of gaps, clearly defined goals, and indication of enabling forces is successful in pitching presentations.

Visual Presentation - Evidence from the presentations

With reference to the fourth proposition regarding the employment of a sequence in PowerPoint presentations, the data analysis found a sequence in the topics covered in all the successful presentations. The sequence included the definition or the description of the opportunity, an indication of the gaps in the market, the available or existing options and problems associated, solution offered in the form of the business idea, followed by the description of the selling point(s), and concluding with the estimate of the cost (absent in some presentations). Some presenters included a problem slide depending on the existing market and the need.

The data analysis showed that successful presenters had a clear sequence of slides in the form of definition, gaps in the current market, and how their business idea filled this gap, leading to the selling points of their business idea. For example, one of the presenters had five slides with one topic each for the introduction to the opportunity, the current market situation and competitors, how his business idea would fill the gap, the selling points of this product, and finally why his business idea is worth investing. This sequence depicted a clarity of thoughts and made it easy for the presenter to convey the message. There were some exceptions where presenters did not employ PowerPoint slides and chose to speak about their business idea by either describing the idea or using the real product sample. For example, one of the successful presenters brought a real helmet to pitch to the investors, and another presenter drew the process diagram in the classroom to explain his idea of producing organic vegetables. One of the other presenters chose to talk about her business idea. Whereas the presenters who brought their real products successfully pitched their ideas and caught the investors' attention, the presenters who drew the process, or only talked about their idea, could not convince the investors.

This analysis provided support for the proposition 4. The presenters who followed the sequence of idea definition, indication of gaps, clearly defined goals, and indication of enabling achieved better responses from the investors in their assessments.

Summary of the results

With the help of relevant examples drawn from the student presentations of an entrepreneurial classroom at the International University in Thailand, this study proposed the parameters for success in pitching presentations, or idea pitch decks, for nascent entrepreneurs. These parameters are (1) the passion of the presenter; (2) their knowledge about the products or services, the competitors, the market, and the business idea; (3) the entrepreneur's narrative; and (4) the organization used in the visual presentation. The findings of the current study will be helpful for both nascent entrepreneurs and students alike. Normally, nascent entrepreneurs find it hard to convince investors about their business idea because of their newness and smallness (Aldrich & Fiol, 1994; Delmar & Shane, 2004). With an appropriate pitch deck, the uncertainty associated with a new venture can be reduced (Pollock et al., 2012).

The current study employed a qualitative approach to explore the factors leading to the success of pitch decks. Future studies can undertake quantitative methods to explore the role of these parameters in the success of pitch decks. Measurement scales such as the one developed by Chen et al. (2009) for measuring the passion and preparedness constructs can be employed to test the hypothesized relationships. Concurrently, it is plausible that other variables such as personality or the gender of the presenter may affect the outcome of the pitch decks. Past research (e.g., Brooks, Huang, Kearney, Murray, 2014) has identified a significant relationship between the appearance of the presenter and the outcomes of pitch decks. In addition, future studies could explore other non-personality factors such as trustworthiness (e.g., Maxwell, Jeffrey, Levesque, 2011) and impression management (Naggy et al., 2012).

Limitations and Future research directions

The current study puts forth a significant contribution after the qualitative analysis of pitching presentations. However, there are some limitations of this study. Firstly, this study was conducted to explore the factors responsible for the success of pitching presentations. Therefore, the findings of this study should be considered as insights and not conclusions. Further studies on similar entrepreneurial classroom projects should be conducted to verify the propositions with more evidence. Secondly, the sample of respondents for the current study consisted of students from the same university. It is plausible that factors such as university culture, facilitator skills, and collaboration between students might have affected the pitch deck presentations. Hence, the generalizability of the findings is questionable. Future studies should replicate the current study findings with diverse samples from different universities. Thirdly in order to obtain a common consent and a generalized view of the pitching presentations, three raters were employed for this study. These experts had entrepreneurial experience. However, it is plausible that a separate set of raters might rate the presentations differently. Hence, future studies with diverse group of raters is warranted. Lastly, the experts watched the videos of the presentations twice before generating the list of parameters (refer to the stages of data analysis for more details).

However, in reality, investors and entrepreneurs often interact with each other on more than one occasions. Therefore, future studies should involve the raters at multiple stages of entrepreneurship courses. The raters will provide the students a better feedback as experienced entrepreneurs.

Conclusion

This study employed a qualitative design to analyze the factors contributing to successful pitching presentations or pitch decks. University students from the entrepreneurship program from Thailand were asked to pitch their business ideas. Employing a qualitative grounded theory approach, four propositions were put forth regarding the passion, preparedness, narration, and structure of the presentation. Evidence from the pitching presentations by the students (presenters) was provided to support the four proposed relationships. In line with the previous studies (e.g., Chen, Yao, & Kotha, 2009; Cardon, Sudek, & Mitteness, 2009; Moncrief & Marshall, 2005), the current study suggests that the success of a pitch deck is attributed to more than one parameter including the passion of the presenter, the knowledge, the narrative, and the organization of the presentation.

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A Study of Maritime Transportation Routes Enforced for Pilotage

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Abstract

This study aimed to develop and improve the pilotage in Thailand to increase efficiency and safety in navigation. The objectives of the study were 1) to study the attitude of pilots in six port areas in Thailand toward maritime transportation are that enforced for pilotage in three aspects: route, port, and personnel aspects, and 2) to compare the pilots' attitude from each port area by using one-way ANOVA, and 3) to study important physical characteristics of each port. Data were collected by using questionnaire that was validated by using the Index of Item – Objective Congruence method. The participants were 62 pilots. Another instrument was in-depth interviews that were completed with 21 participants. The results showed that the pilots agreed most on personnel aspect followed by port and route aspects, respectively. The pilots agreed that working experiences and working hours the most important factor for pilotage. The issues that should be improved the most were 'the consistency between working hours and resting hours of pilots' and 'the adequate number of pilots to the amount of ships receiving the pilotage service'. The results of the comparison among pilots' attitude toward maritime transportation showed that the pilots from six ports had a similar attitude toward the issues in port aspect. However, they had significantly different attitude toward the issues in route and personnel aspects ($p < 0.05$). The results of the physical characteristics of each maritime transportation area showed that the Bangkok port area was the most difficult route for pilotage in Thailand.

Keywords: Pilotage, Pilot, One-way ANOVA

Introduction

World trading depends mostly on maritime transportation. More than 90% of international shipment depends on maritime transportation through ports (Cho & Yang, 2011). In 2017, there were about 50,155 ships shipped through ports all over the world with around 1,847,630,894 Deadweight Tons (UNCTAD, 2017). This number showed that nowadays there are lots of goods ships in international waters and domestic water territories in all regions of the world. Therefore, the effectiveness of maritime shipment is one of the most important factor in supply chain that can make shipment successful. The universal principle for international maritime transportation is that when a ship gets through any country territorial waters, there must be a pilotage officer of the country to pilot that ship to dock in the specific areas such as port or anchor drop point. The pilot, therefore, has the important role in maritime transportation in the area enforced for pilotage. The objectives of pilotage are for safety reason and the effective flow maritime traffic with the consideration to maintain environment and prevent water pollutions (Kraweechat, 1998).

Another objective of pilotage is it can help coordinate the ship who is getting in or out of the port areas to prevent accident (Pattarachai, 2010). The process of pilotage begins with the ship reaches channel front or the waiting point. Then when it is the time for the ship to get into port or dock as the ship owner or the representative had contacted for receiving pilotage service, the pilot will get the motor boat from the pilot station to the ship and pilot the ship to get into the destination port or dock. After the ship finishes transferring all goods, customs formality, immigration, port clearance, and other involving process and it is a time for getting out of the port; the pilot will be responsible for piloting the ship out of the port or dock to the channel front or the waiting point. After they reach the end of pilotage territory, the pilot will get off the ship and took the motor boat back to the pilot station. The ship captain then takes the ship further to the destination.

For Thai Pilotage Law, there are six port areas that require pilotage process consisting of Bangkok Port, Sri Racha including Laem Chabang Ports, Sattahip Commercial Port, Phuket Deep Sea Port, Songkhla Port, and Maptaphut Industrial Port (Marine Department, 2014). Therefore, every time a ship reaches the six areas, it is required to receive pilotage service according to the law and regulation. A ship that does not follow the pilotage law will be announced as guilty. There are some cases that are exceptional especially when it is necessary or avoidable such as when the pilot clearly shows his inability in pilotage the particular ship safely (Sarin, 1987). There were many researchers studied about pilotage officers such as Pattarachai (2010) studied the satisfaction of pilotage officers toward pilot service of Marine Department by focusing on the factors affecting on satisfaction, the comparison between factors affecting on satisfaction, problems, difficulties, and solutions, and studied the service from pilotage office of Marine Department. Main and Chambers (2015) studied "Factors affecting maritime pilots' health and well-being: a systematic review" with the aim to study factors affecting on pilots' health and well-being.

The results found that there were 24 factors consisting of 9 physical factors, 8 mental factors, and 7 workplace factors. All factors involved pilots' effective working in long term. Chauvin, Lardjane, Morel, Clostermann and Langard (2013) studied "Human and organisational factors in maritime accidents: Analysis of collisions at sea using the HFACS" with the aim to study ship crash accidents that were caused by the wrong decision making. The study was divided into various levels: level 1 concerning environment and personal factors, level 2 concerning leadership and safety management, and level 3 concerning the importance of bridge management.

The results showed that captain needs adequate ability of safety management and the ability of coping with emergency incidence. Ulusçu, Ozbaş, Altiok and Or (2009) studied "Risk analysis of the vessel traffic in the strait of Istanbul" with the aim to analyze the risks of the vessel traffic in the strait of Istanbul that was considered the most traffic and the most difficult area for pilotage in the world with more than 55,000 ship get through it every year, and about 20% of the ships loaded dangerous goods. The data were analyzed by using mathematics model that predicts from possibility, incidence, accident, effect, and previous records together with the opinions from experts. The results showed that the density of the traffic and the pilotage ability of the pilot were the two factors that mostly affected on the risks of the vessel traffic in the strait of Istanbul.

Finally, Fang and Hu (2008) studied "Study on risk control of ship pilotage in Shanghai harbor" with the aim to study and investigate accidents involved pilotage in Shanghai during the past 13 years. The data concerning dangerous factors involving pilotage were collected and analyzed to evaluate the risk on pilotage.

The results suggested the measurement for avoiding and controlling the risks of accidents in piloting ship to Shanghai port areas. In addition, Schermerhorn (2000) mentioned that attitude aspect consists of 3 components that are cognitive component, affective component, and behavioral component. The good attitude results in effective working (Veeraporn, 2014). Similar to the results of the study of Hsu (2010) titled "Ports' service attributes for ship navigation safety" who found that the pilotage involvers including marine pilots, VTC regulators, tugboat crews, and linemen need specific occupational profession. Those specific occupational profession together with the good attitude result in pilotage safety. Moreover, pilots have to work on shifts, so their physical and mental health can result in their work. Their tiredness that is the result from their bad health absolutely reduces the effectiveness in their work and further results in pilotage safety (Hetherington et al., 2006).

The researcher's previous study titled "Vessel Traffic Management System in Thailand: Sriracha Port and Map Ta Phut Industrial Port" in 2016 presented the suggestions and recommendations from the pilots for the further study. Additionally, according to the literature review related to pilotage and vessel traffic, they suggested many factors that take effects on pilotage. After data were analyzed and synthesized, it indicated that there are three main factors that take effects on pilotage consisting of factors in maritime route, port, and personnel aspects. This study, therefore, aimed to develop and improve the pilotage in Thailand to increase efficiency and safety in pilotage.

The objective of the study was to study the attitude of pilots in six port areas in Thailand toward maritime transportation that are enforced for pilotage in three aspects consisting of route, port, and personnel aspects. Another objective was to compare the pilots' attitude from each port and to study important physical characteristics of each port. The significances of the study were to develop and improve safety in maritime transportation and to enhance effectiveness of maritime transportation. Moreover, the results of the study were the useful data for other private and government involvers to use for their future development.

Objectives

1. To study the attitude of pilots in six port areas in Thailand toward maritime transportation routes that are enforced for pilots in three aspects: route, port, and personnel aspects

2. To compare the pilots' attitude from each port area by using One-way ANOVA and study important physical characteristics of each route

Methodology

This research aimed to study the attitude of pilots in six port areas toward maritime transportation and compare the pilots' attitude from each port area and study important physical characteristics of each route. The procedure were as follows:

1. Information about the six port areas were retrieved and studied from international and national researches related to maritime transportation. The data were analyzed and used to create questionnaire and in-depth interview.

2. The questionnaire and in-depth interview questions were validated by expert to create the instruments that is consistent. The question framework was checked by expert to find out content validity to raise quality of the instrument and make it appropriate and consistent to the research objectives. The experts were from pilot field in Marine Department. IOC method (Index of Item – Objective Congruence) was used, and the items with 0.5 and higher IOC index were selected.

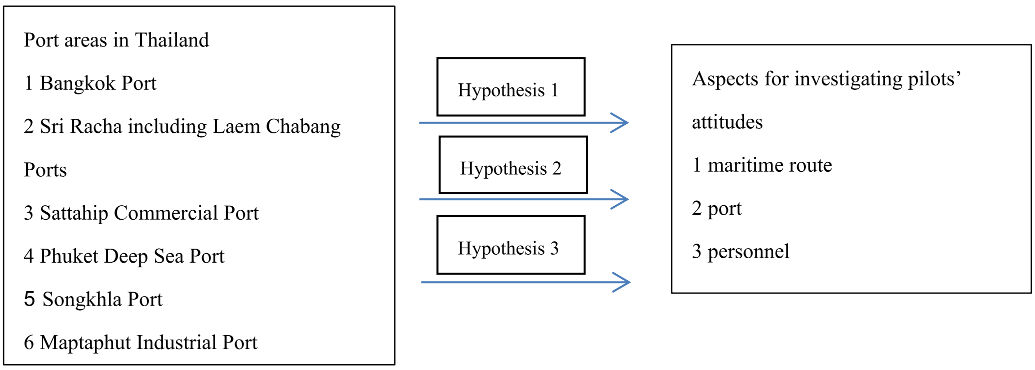
3. Pilots from six port areas answered questionnaire and participated in-depth interview. Data were collected and analyzed.

4. Statistical analyses were used following research methodology to achieve research objectives.

Scope of the study

The scope of the study was the six port areas that were enforced for pilotage in Thailand consisting of 1) Bangkok Port, 2) Sri Racha including Laem Chabang Ports, 3) Sattahip Commercial Port, 4) Phuket Deep Sea Port, 5) Songkhla Port, and 6) Maptaphut Industrial Port. The population of the study were 77 pilots (Marine Department, 2017). The samples of the study were 62 pilots (80.52% out of the whole population) selected by using non-probability sampling selection and convenience sampling method.

Research framework



Research hypotheses

Hypothesis 1

H0 = Different ports areas in Thailand do not have different attitude toward maritime transportation routes aspect

H1 = Different ports areas in Thailand have different attitude toward maritime transportation routes aspect

Hypothesis 2

H0 = Different ports areas in Thailand do not have different attitude toward ports aspect

H1 = Different ports areas in Thailand have different attitude toward ports aspect

Hypothesis 3

H0 = Different ports areas in Thailand do not have different attitude toward personnel aspect

H1 = Different ports areas in Thailand have different attitude toward personnel aspect

Results

This research was conducted on the topic of maritime transportation enforced for pilotage. The subjects were 62 pilots in six port areas in Thailand. The instruments were questionnaire and in-depth interview. The in-depth interview was done with 21 subjects. The statistics used in this research were percentage, mean, standard deviation, and F-test with the significant level at $p \leq 0.05$. The analyses consisted of:

1. Analyze the attitude of pilots in six port areas in Thailand toward maritime transportation in three aspects: route, port, and personnel aspects,

2. Compare the pilots' attitude from each port area in three aspects: route, port, and personnel aspects by using hypothesis testing,

3. Summarize the results of in-depth interview of the pilots in six port areas in Thailand.

Table 1. Number and percentage of pilots in each port area in Thailand

General information	Number	Percentage
1. Bangkok Port	30	48.4
2. Sri Racha including Laem Chabang Ports	15	24.2
3. Sattahip Commercial Port	5	8.1
4. Phuket Deep Sea Port	2	3.2
5. Songkhla Port	5	8.1
6. Maptaphut Industrial Port	5	8.1
Total	62	100

Table 1 shows general information of 62 pilots in six port areas in Thailand that are enforced by the pilotage law. The highest number was of Bangkok port consisting of 30 pilots accounted for 48.4%, and the lowest numbers number was of Phuket Deep Sea Port consisting of 2 pilots accounted for 3.2%.

Table 2. Mean, standard deviation, and the comparison indices of the attitude of pilots in six port areas toward factors in route aspect

factors in route aspect	$\bar{X}$	S.D.	F	P
1. The physical characteristics of the channel is appropriate for the size of the ships get through this route.	3.94	0.86	3.64	0.006**
2. The physical characteristics of the channel is following Nautical Charts of the Hydrographic Department, Royal Thai Navy.	3.89	0.63	1.65	0.162
3. The physical characteristics of the channel is difficult for getting in-out of the port.	2.92	0.94	1.60	0.175
4. The speed and the direction of the wind in the route is the obstacle for getting in-out of the port.	2.79	1.05	8.46	0.000**
5. The speed and the direction of the current in the route is the obstacle for getting in-out of the port.	3.13	0.87	4.65	0.001**

factors in route aspect	$\bar{X}$	S.D.	F	P
6. The height and direction of the wave in the route is the obstacle for getting in-out of the port.	2.69	1.23	17.26	0.000**
7. The visibility in the route is the obstacle for getting in-out of the port.	2.60	1.03	1.59	0.177
8. Some barriers that cannot be seen by eyes (e.g. undersea objects, submerged rocks, sand bar, etc.) in the route are the obstacle for getting in-out of the port.	2.77	1.22	2.93	0.020*
9. Human-made objects (fish trap, coastal fisheries, etc.) are the obstacle for getting in-out of the port.	3.47	1.52	13.15	0.000**
10. Different seasons take effect on getting ship in-out of the port.	3.27	0.91	5.02	0.001**
11. The traffic in the route is crowded.	3.52	1.25	31.92	0.000**
12. The traffic signs in the channel are clear, enough, and not confusing.	3.55	0.88	3.70	0.006**
13. Other kinds of boats (fisheries boats, ferry, etc.) are the obstacle for getting in-out of the port.	3.44	1.53	29.31	0.000**
14. Communication materials and VHF signal system are effective for operation.	3.00	1.14	9.40	0.000**
Grand Total	3.21	0.46		

**significant at $p \leq 0.01$ *significant at $p \leq 0.05$

Table 2 showed that pilots had the attitude toward maritime transportation in route aspect at 3.21 average score (S.D. = 0.46). When considering each individual item, the item 'the visibility in the route is the obstacle for getting in-out of the port' got the lowest score, and the item 'the physical characteristics of the channel is appropriate with the size of the ship get through this route' got the highest score.

Hypothesis 1 Testing

F-test was done by using ANOVA with the significant level at $P \leq 0.05$. The results showed that the opinions toward the item 'the physical characteristics of the channel is following Nautical Charts of the Hydrographic Department, Royal Thai Navy' and the item 'the visibility in the route is the obstacle for getting in-out of the port' got p-value higher than 0.05 that can be inferred the pilots from the six port areas did not have different opinions toward these issues. However, the pilots had significantly different opinions toward other 11 items ($P \leq 0.05$).

Table 3. Mean, standard deviation, and the comparison indices of the attitude of pilots in six port areas toward factors in port aspect

factors in port aspect	$\bar{X}$	S.D.	F	P
1. Support materials such as pintle, cushion, life buoy, portable fire extinguisher, fire hose, etc. are adequate and ready to use.	3.16	0.81	1.15	0.346
2. Tug boat and rope receiving boat are ready when you get to the port.	3.31	0.82	1.58	0.182
3. Tug boat and rope receiving boat help you work more effectively.	3.74	0.78	0.53	0.754
4. The lights around the port front are adequate.	3.37	0.73	1.30	0.279
5. The size of the turnaround area is appropriate.	3.4	0.79	2.30	0.057
6. The traffic controlling around the port front is appropriate.	3.23	0.89	1.90	0.11
7. The management in receiving in and letting ship out of the port is appropriate.	3.26	0.82	0.88	0.503
8. The docks in the port are difficult for docking/leaving appropriately.	2.82	0.82	0.90	0.489
9. The port management takes effect on your work on receiving in and letting ship out of the port.	3.56	0.76	2.08	0.082
10. In overall, the port is ready for receiving in and letting ship out of the port.	3.47	0.78	1.86	0.116
Grand Total	3.33	0.43		

**significant at $p \leq 0.01$ *significant at $p \leq 0.05$

Table 3 showed that pilots had the attitude toward maritime transportation in port aspect at 3.33 average score (S.D. = 0.43). When considering each individual item, the item 'The dock in the port is difficult for docking/leaving appropriately' got the lowest score, and the item 'Tug boat and rope receiving boat help you work more effectively' got the highest score.

Hypothesis 2 Testing

F-test was done by using ANOVA with the significant level at $P \leq 0.05$. The results showed that the opinions toward all items got p-value higher than 0.05 that can be inferred that the pilots from the six port areas did not have different opinions toward these issues.

Table 4. Mean, standard deviation, and the comparison indices of the attitude of pilots in six port areas toward factors in personnel aspect

factors in port aspect	$\bar{X}$	S.D.	F	P
1. Your working hours and resting hours are consistent and appropriate.	2.5	0.95	3.60	0.007*
2. The stress from any situations before work results in pilotage.	3.21	0.89	3.03	0.017*
3. The stress during work results in pilotage.	3.68	0.93	7.29	0.000**
4. The tiredness of previous pilotage results in later pilotage.	3.76	0.9	7.42	0.000**
5. Your eye-sight problems are obstacle for pilotage.	2.63	1.04	2.07	0.083
6. Your health problems (e.g. illness or fever) take effect on pilotage.	2.92	1.11	1.09	0.378
7. The time table of pilot office is flexible and appropriate.	3.48	0.84	1.40	0.24
8. The pilot office that you work for has enough pilots and adequate for the service users.	2.47	0.84	4.26	0.002**
9. The boat for pilot is appropriate and punctual according to the appointment time for getting in-out of the port.	3.68	0.65	3.70	0.006**
10. The knowledge sharing from your senior officers can promote you to work more effectively.	3.98	0.86	1.15	0.346
11. You have the ability to share your knowledge to your junior.	3.87	0.97	0.94	0.464
12. Your accumulate skills and experiences from your working periods can promote you to work more effectively.	4.68	0.51	1.04	0.406
13. The ability to speak third language (local language) to cox officer results in effective pilotage.	3.23	1.15	2.10	0.079
14. The ability to speak third language (local language) to captain results in effective pilotage.	3	1.21	1.46	0.216
15. Goods ships make correct/complete pilotage card.	3.87	0.86	3.46	0.009**
16. Pilotage card helps you work more effectively.	4.08	0.82	3.11	0.015*
17. Performance and effectiveness of ships result in pilotage.	4.39	0.75	0.80	0.556
18. Captain's behavior results in pilotage of the pilot.	4.4	0.64	2.76	0.027**
Grand Total	3.54	0.28		

**significant at $p \leq 0.01$ *significant at $p \leq 0.05$

Table 4 showed that pilots had the attitude toward maritime transportation in personnel aspect at 3.54 average score (S.D. = 0.28). When considering each individual item, the item 'the pilot office that you work for has enough pilots and adequate for the service users' got the lowest score, and the item 'your accumulate skills and experiences from your working periods can promote you to work more effectively' got the highest score.

Hypothesis 3 Testing

F-test was done by using ANOVA with the significant level at $P \leq 0.05$. The results showed that the opinions toward 9 items got p-value higher than 0.05 consisting of the items 'your eye-sight problems are obstacle in pilotage', 'your health problems (e.g. illness or fever) take effect on pilotage', 'the time table of pilot office is flexible and appropriate', 'the knowledge sharing from your senior officers can promote you to work more effectively', 'you have the ability to share your knowledge to your junior', 'your accumulate skills and experiences from your working periods can promote you to work more effectively', 'the ability to speak third language (local language) to cox officer results in effective pilotage', 'the ability to speak third language (local language) to captain results in effective pilotage', and 'performance and effectiveness of ships result in pilotage'. This indicated that the pilots from the six port areas did not have different opinions toward these issues. However, the pilots had significantly different opinions toward other 9 items ($P \leq 0.05$).

Table 5. The summary of in-depth interviews with 21 pilots in six port areas in Thailand

Thai Port Areas	Physical Characteristics/ Dangerous Pilotage Zone	Important Issues
1. Bangkok Port (3 informants)	Phra Pradaeng curve is dangerous because it is sharp and narrow curve. There are also deep and shallow area that cannot be seen by eyes.	Bangkok port is the most difficult area for pilotage because of the crowded traffic, the narrow and shallow channel, the long distance, lots of boats and lighters that are the obstacle for the big ship.
	Bang Hua Suea Slot is difficult for pilotage because there are new ports that make the sea lane narrower.	
	The channel is narrower above Non- see curve. The boats are crowded and are the cause of accidents. The pilotage service for goods ship should be inhibited at night.	

Thai Port Areas	Physical Characteristics/ Dangerous Pilotage Zone	Important Issues
	Sathu Pradit Anchor drop area got lots of foreign goods ships that against the law. The current there is strong. And there is no turnaround point there.	
2. Sri Racha including Laem Chabang Ports (2 informants)	The channel is wide and standard.	The wind is strong in monsoon season.
	Siam Sea port has too narrow dock that causes difficulties in docking. The wind and current are strong that makes it difficult to control ship.	There are crowded ships in the anchor area.
	Sichang Island port get strong current and wave. There was limited space for anchor drop, but there are lots of goods ships there.	While waiting for pilotage boat, there is sometimes goods transferring; therefore, the area for anchor drop that has win-screen is needed.
3. Sattahip Commercial Port (5 informants)	Sattahip Commercial Port is natural channel that makes it more difficult for pilotage than other manmade channels.	When the ships are passing, the smaller ship or the ship that is not in the routine route must stop. Therefore, good communication method between the two ships is needed.
	Sattahip Commercial port area is open sea that causes strong current and result in the unclear position of float light leading to the channel front. This problem results in the decision not to pilot the ships in-out of port area at night.	Most of the ships got in Sattahip Commercial port areas are navy ships and medium size ships that make pilotage in this area easier than other areas with big ships.
4. Phuket Deep Sea Port (2 informants)	The port get strong wind and current that are influenced by South-west Monsoon, Indian Ocean.	Pilotage ship through this area must take really careful because it is open sea that causes fluctuating strong wind and current. Piloting ships in-out of the area must really be careful.
	The current is really strong, so the pilot must take really carful of it.	There are lots of coastal fisheries and small boats there. And the fisheries boats also use the same channel for their traffic similar to goods ships that cause the obstacle in pilotage in this area.

Thai Port Areas	Physical Characteristics/ Dangerous Pilotage Zone	Important Issues
	The visibility is limited especially in monsoon seasons, so the pilot must take really carful of it.	There are lots of manmade objects there (e.g. fish trap, fisheries,etc that are obstacle for pilotage.
	There is a dangerous point on the east side of Tapaoyai Island where east cardinal mark is located. Therefore, pilotage ship through this area must take really careful because the sea is shallow, and also the area is open sea that causes fluctuating strong wind and current.	
5. Songkhla Port (4 informants)	The current gets influenced by Sonkhla Lake so the pilot must take really carful of the strong current.	Wind and current become stronger during August to January. It is raining during East-north monsoon and South-west Monsoon Seasons.
	The visibility is limited especially in monsoon seasons, so the pilot must take really carful of it.	Pilotage is done by day not at night because of the more comfortability.
	There is a difficult pilotage point at the front to Songkhla deep sea port because the current there always changes.	There are lots of coastal fisheries and small boats. And the fisheries boats also use the same channel for their traffic similar to goods ships that cause the obstacle in pilotage in this area.
6. Maptaphut Industrial Port (5 informants)	Current is stronger and takes more effect than wind.	Different types of ships result in pilotage. There are different types of ships such as goods ships or oil and petrochemical ships that are also different in the difficulty of pilotage.
	The ships use right lane. There is a red light to show signal for other ships passing, and the ship on the side that the red light is shown must stop. However, the light is not clear and makes confusion sometimes.	The different weight load results in the different pilotage. The heavy load causes the ships difficult to control. However, if it is too light load, it is also difficult to control as well because the light load causes the ship float high and reduces the visibility.

Thai Port Areas	Physical Characteristics/ Dangerous Pilotage Zone	Important Issues
	90% of the ship are oil and petrochemical products ships including natural gases and coal that are categorized as dangerous goods.	The size of ships results in pilotage. The bigger ships are more difficult to pilot than the smaller ones.
	Other goods ships are also big ships. Therefore, pilots who works in this area need experiences and expertise to make sure that the pilotage is safe and assure the ship owner and also the entrepreneur for the safety.	

Conclusions

This research studied the attitude of pilots in six port areas in Thailand toward maritime transportation that are enforced for pilotage in three aspects: route, port, and personnel aspects, and compared the pilots' attitude from each port area and study important physical characteristics of each route. The results showed that the pilots rated personnel aspect the highest because pilot is responsible to make decision to pilot ships safely in the channel without any accidents or dangers. The pilots considered the 'accumulate skills and experiences from their working periods' as the most important issue for promoting their work more effectively. The issue that should be improved the most was 'the consistency between working hours and resting hours of pilot' and 'the adequate pilots to the amount of ships receiving the pilotage service'.

This results can be inferred that their working hours and their resting time were not appropriate, and there were inadequate pilots for the ships receiving the pilotage service. The results of the hypotheses testing of the pilots' attitudes in three aspects (i.e. route, port, and personnel aspects) showed that pilots in the six port areas had the similar attitudes toward port aspect in all issues. That can be inferred that the six ports had the same standard. (Infrastructure, equipment, equipment used in docking of ships, as well as operations in docking.) However, the pilots got the significantly different towards the route and personnel aspects.

The results of in-depth interview with 21 pilots in six port areas showed the physical characteristics of the ports that Bangkok port is the most difficult area for pilotage because of the crowded traffic, the narrow and shallow channel, the long distance, lots of boats and lighters that are the obstacle for the big ships. Sri Racha including Laem Chabang ports area got the problems of strong current and wave around Sichang Island. Moreover, there was limited space for anchor drop, but there were lots of goods ships there. Sattahip Commercial port area was open sea that caused strong current and resulted in the unclear position of float light leading to the channel front. This problem results in the decision not to pilot ships in-out port area at night. However, most of the ships got in Sattahip Commercial port areas were navy ships and medium size ships that made pilotage in this area easier than other areas with big ships.

Phuket Deep Sea port got a dangerous point on the east side of Tapaoyai Island where there east cardinal mark is located. Therefore, pilotage ship through this area must take really careful because the sea is shallow, and also the area is open sea that caused fluctuating strong wind and current. Songkhla port had the difficult pilotage point at the front to Songkhla deep sea port because the current there always changes. Moreover, the pilotage there was difficult because of other obstacles such as tidal waves, coastal fisheries, fisheries boats, and small boats in the area. The fisheries boats also used the same channel for their traffic similar to goods ships that cause the obstacle in pilotage in this area. Finally, Maptaphut Industrial Port got 90% of oil and petrochemical products ships including natural gases and coal that were categorized as dangerous goods. Other goods ships were also big ships. Therefore, pilots who works in this area need experiences and expertise to make sure that the pilotage is safe and assure the ship owner and also the entrepreneur.

The results of the study showed that the physical characteristics of the six port areas in Thailand were different (e.g. characteristics of channel, current direction, and wind direction). Therefore, Pilot Bureau, Marine Department, Ministry of Transport who is directly responsible for pilotage should continuously provide pilot training in each port area to prevent any accidents or damages that might be occurred. The pilots who have got much experiences and have been responsible for piloting for long working period with high potential in pilotage should be transferred to Bangkok Port because it is the most difficult area for pilotage in Thailand. The factors that caused the difficulty included crowded vessel traffic, narrow channel, long distance, and the working hours of pilots that were not consistent to resting hours. Additionally, there are inadequate pilots to the amount of vessels receiving the pilotage service nowadays, and the numbers of vessels tend to increase in the future. Marine Department should coordinate with other involvers to train more pilots for vessel pilotage in order to solve the insufficiency problems that occurs nowadays.

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Changes in Labor Specialization in Successful Turnarounds: The Case of ASEAN Chinese Small and Medium Enterprises

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Abstract

Research on organizational decline and turnaround strategies have mainly focused on large multinational organizations in the Western context. Much of Western literature celebrates the notion that in face of an external threat, an organization shifts its focus to internal efficiency. Current strategic theory promotes the creation of heterogeneous assets and capabilities. The history of economic enterprise testified to the benefits of specialization of labor in achieving cost efficiency. This paper investigates organizational responses to the decline among Chinese small and medium sized enterprises (SMEs) in the Association of South East Asian Nations (ASEAN), comprising ten Southeast Asian states. Data were collected from senior management and internal change managers from 20 such organizations that have undergone turnarounds in the period 2011-2014. The objective was to investigate management perceptions of the appropriateness of the turnaround strategy with increasing specialization and the division of labor during organizational recovery from the decline. SME management is expected to increase specialization in order to ensure organization survival. Findings revealed that the management has instead lowered specialization and boosted flexibility during the recovery process. Various cultural values are found to have major impact on Chinese SME decision-making in turnaround situations. The findings provided insights to key guiding principles for overseas Chinese business practices. Cultural implications for management are also discussed.

Keywords: Turnaround strategies, assets specialization, division of labor, ASEAN SMEs, overseas Chinese business practices

Introduction

With economic uncertainty and slowdown in the Chinese economy, business activities in Asia have fallen dramatically with many organizations struggling to cope. Turnaround activity is expected to increase across the region. In global business today, it is crucial to develop strategic skill set to do business across societies. Evidence gathered shows that the utility of the predominantly Western model of firm turnaround has limits in Asia. A knowledge gap exists in the turnaround literature (Boyacigiller & Adler, 1991; Bruton *et. al.*, 2003). The author believes that this empirical study of turnaround strategy with specific reference to organizations in ASEAN is an important field for research in Asia. SMEs have been in the spotlight in Asia with the dramatic changes in East Asia's trade structures associated with a massive intra-industry division of labor (Lim & Kumura, 2010; Wignaraja, 2012). SMEs account for the vast majority of establishments and are seen as having significant potential to contribute to regional development through participation in global value chains.

However, most current turnaround strategies are developed from studies on large multinational organizations. SMEs encounter significantly different business landscapes and challenges relative to large organizations. This study specifically targets the investigations of turnaround strategies adopted by SMEs in their Asian context. The findings enhance understanding of business practices with this important economic sector of many regional economies and contributes to the existing theory for Asia business management. Every society has its own cultural themes which substantially impact how that culture does business. Differences in management conventions in different cultures result in different arrays of strategic alternatives and different evaluations of strategic options (Seymen, 2006; Cox & Blake, 1991). Overseas Chinese businesses have a dominating influence across Asia and this empirical study focuses on overseas Chinese SMEs which contributes significantly to the understanding on how overseas Chinese cultural values influence organizational turnaround process and decision-making.

There are few empirical studies on labor specialization in turnaround situations (Trahms *et al.*, 2013). Scholars focused on alignment and competitive dynamics (Porter, 1985), transaction costs and game theory (Williamson, 1985) or capabilities (Teece, 2007). This paper studies changes in labor specialization, and their significance on ASEAN Chinese SMEs' turnaround performance. The findings from the study contribute to the knowledge base of turnaround strategy among Asian Chinese SMEs. The paper begins with an overview of organizational decline, labor specialization and turnaround strategies with specific reference to SME operations. It then introduces the study focus of division of labor and labor specialization in turnaround situations. Six conceptual elements and six propositions derived from various literatures are proposed for the study, followed by the chosen methodological approach and sampling design. Findings are first presented systematically for each proposition. The paper ends with a discussion on cultural implications for turnaround decision-making with closing thoughts.

An Overview of Organizational Decline

The empirical understanding of turnaround and organizational decline are deemed inadequate by many (Trahms *et al*., 2013). No consensus is found in the literature as to what organizational decline is, what the main drivers are or its ramifications (Cameron *et al.*, 1988; Weitzel & Jonsson, 1989; D'Aveni, 1989; Zammuto & Cameron, 1985). However, there is agreement that the process begins with a failure to anticipate, recognize, avoid, neutralize and adapt to external or internal pressures resulting in loss of organizational control that threaten the long-term survival of the organization. In some cases, the final stage is organizational demise. In some, substantial organization and business changes towards a turnaround is carried out until a new balance and repositioning in the environment is achieved (Cameron & Whetten, 1983; Hambrick & Schecter, 1983; Whetten, 1987; Pearce & Robbins, 1993).

Compounding the difficulty of the analysis, there is also disagreement on when an organization is terminated. It could be the organization's mortality, exit or death (Swaminathan, 1996), organizational collapse (Argenti, 1976), bankruptcy (Laitinen, 1993) or decline (Chowdhury & Lang, 1993). Lacking a common definition of failure and termination makes it difficult to start to classify and find causal relationships between actions and performance. For the purpose of this paper, the definition of the termination of an organization is not relevant, as the author is investigating what organizations do in turnaround situations. Cameron, Kim and Whetten's definition of organization decline as 'a condition in which a substantial, absolute decrease in an organization's resource based occurs over a specified period of time' is followed (1987: 224).

The author distinguishes organizational decline as an involuntary, unintended resource decrease that affects an organization from organizational downsizing which is an intentional workforce reduction engineered by managers (Freeman & Cameron, 1993). Organizational decline is more prevalent today and failing organizations negatively affect lives. Bambra *et al.* (2007) found restructuring having adverse effect on the physiological and psychological health of employees. Dougherty & Bowman (1995) noted there are hidden costs of organizational problems such as disruption to local communities. Studies of organizational turnaround and recovery have appeared on the research agenda since late 1970s, focusing mainly on management strategies (Bibeault, 1982; Hofer, 1980; Pearce & Robbins, 1993; Stopford & Baden-Fuller, 1990) and more recently on leadership characteristics and cultural impact (Carmeli & Sheaffer, 2009; Bruton *et al.*, 2003). However, as noted by Trahms *et al.* (2013), research on organizational decline and turnaround remains empirically and theoretically fragmented.

Labor Specialization and Turnaround Management

Adam Smith (1776) posits that the greatest improvements in the productive power of labor lie in the division of labor. According to Smith, the division of labor creates specialized knowledge of a particular task, which makes laborers engaged in the task more dexterously and therefore are more productive. Division of labor also maximizes labor time with focusing on isolated task which leads to innovation in the methods and tools employed in the task. Smith's concept of economic growth, rooted in the increasing division of labor, allowed Victorian factories to grow throughout the nineteenth century. The development of reaping the benefits from specialization of labor was facilitated through the rise of Taylorian organizations. Since then, the generally accepted theory of competitive advantage was to create and deploy a more intensive and dense division of labor.

Then, in the 1990s, with team organization, production flexibility, decentralization of decision-making, greater emphasis on customer responsiveness and changing nature of work, many researchers began to question the need for labor specialization with the growing versatility of workers and the increasing complementarities among tasks (Migrom & Roberts, 1990; Homstrom & Migrom, 1991; Hammer & Champy, 1993; Wikstrom & Norman, 1994). However in the new knowledge era of recent years, with the rise of knowledge work and communications technology in recent years, Malone *et al* (2011) envision in the new knowledge era, the potential quality, speed and cost advantages of 'hyper-specialization' would guarantee the model of labor specialization to become more widespread. Bylund (2011, 2013, 2014) further suggests that an organization is an artificially dense collection of specialized assets in different density and configuration from its competition.

Turnaround managers are often hired to stem the organizations' decline (Apri, 1999; Slatter *et al.*, 2006; Zimmerman, 2002). In turnaround situations, managers are expected to create a novel division of labor, enabled by specialized assets and engage in resource orchestration that is to effectively structure, bundle and leverage firm resources to save the organization from permanent decline (Sirmon *et al.*, 2010). Bylund (2011) argues that organizations exist to implement the imagined future of the manager. The manager has a vision of a novel division of labor and machines that is more efficient than the competition. He/she applies leadership to lower the costs of coordination of the specialized resources to implement his/her vision. He/she uses experimentation to create the knowledge to reconfigure the organization-specific assets, which are inherently unique, unpriced and mutually specialized (Bylund, 2014). Bylund (2013) posits that by creating deeper specialization, and in a different density and configuration than the organizations' competition, turnaround managers would be able to save their organizations from decline.

In more simplistic terms, turnaround managers are to change the division of labor and specialization to synchronize with the organization's movement. The benefits of reconfiguration and synchronization have been confirmed empirically. Kim and Mahoney (2008) have tested changes in specialized assets and how they benefited performance. Morrow *et al* (2007) have found that turnarounds see the best results when they reconfigure valuable and rare organizational resources. On the other hand, managers often face scarce and dwindling organizational and environmental resources amidst increased stakeholder conflicts during turnaround situations. Managers of declining organizations also have limited time and information when analysing and effecting change (Ndofor *et al*., 2013). Managerial decisions in difficult times have accounted for the majority of variance in organization performance (Adner & Helfat, 2003).

Turnaround Strategies: Reduction, Reconfiguration and Innovation

There are many studies on strategic management of organizational turnarounds (Schendel *et al.*, 1976; Hofer, 1980; Hambrick & Schecter, 1983; O'Neill, 1986; Pearce & Robbins, 1993; Bibeault, 1982). The main issue behind these various research is why asset and labor reduction are normally the main step in turnaround process? Pearce and Robbins (1993) postulate that organization resource slack is needed and cost reduction preserves what remains. Reduction brings flexibility to the organization when resources are converted to cash. The researchers' unique contribution to literature is an acknowledgement of the complexity of organizational decline and the development of an analytical method for classifying cause of decline, severity and strategies that are congruent.

Barker and Mone (1994) challenge the postulate of Pearce and Robbins (1993) and argue that reducing assets or costs in an absolute sense does not always mean that efficiencies are gained or that a stabilized core of operations is achieved. They further argue that *how* organizations retrench is also important. The process of implementation may be as important as the choice of strategy. In addition, they note that *what* is retrenched is also important, e.g. it may be foolish to sell off an organization's most productive assets. Barker and Mone (1994) strongly suggest that strategies which require retrenchment may be misleading, as the gains from reduction may not necessarily outweigh the costs of that reduction. Academic debates between the researchers revealed that a fundamental assessment has been challenged. Perhaps asset reduction is not always the answer, and sometimes reconfiguration is more effective.

Trahms *et al*. (2013) have more recently written a comprehensive review of the empirical literature of organizational decline and turnarounds. In their review, they have classified four main areas of ongoing research: the cause of the decline, response factors, organization's actions and outcomes. Alexander *et al.* (1989) examined the effects of leadership instability in the health care sector and their findings indicated declining organizations experienced more instability in the CEO position over time than stable organizations. Carmeli and Sheaffer (2009) found that leadership risk-aversion and self-centeredness are significantly related to organizational decline and intensified organizational downsizing.

Hoffi-Hofstetter and Manheim (1999)'s study of 252 managers in Israeli enterprises proposes that individual coping resources and organizational patterns explain the responses of mid-level managers to organizational recovery to decline. There is a body of literature suggesting that organizational decline has an inhibiting effect on adaptation. One of the influential contribution to this school of thoughts is Staw's 'threat-rigidity' model (Staw *et al.*, 1981). The researchers argued that threat leads organizations to restrict information processing, centralized control and conserve resources. These responses increase rigidity and reduce organization's capacity to adapt to environmental change.

Other theoretical and empirical work in the organizational decline and resource scarcity literatures is consistent with the effects predicted by Staw (Cameron *et al*., 1987; D' Aunno & Sutton, 1992; D' Aveni, 1989). As compelling as the argument put forward for organizational decline as an inhibitor of adaptation, there is also a body or research which suggests organizational decline may function as a stimulus for adaptation. Miles and Cameron (1982) described a number of strategic adaptations that firms made to meet declining demand and external threat in the tobacco industry.

Mckinsey (1984) showed that sales declines were correlated with adaptation behaviours. Cummings *et al.* (1984) explore the case for trans-organizational systems where organizations with disparate goals combine resources to manage organizational decline. More recently, Latham and Braun (2014) considered four scenarios that can unfold when organizations either innovate or respond rigidly to organizational decline. They introduced the concept of flexible versus inflexible innovation which influences the success probability of an innovative response to decline.

It is interesting to note that Trahms *et al.* (2013) have often cited well regarded research studies with conflicting empirical results. For example, they have cited Ndofor *et al.* (2013) found a strong effect of CEO succession on turnaround performance for declining organizations in a growth industry. In contrast, Winn (1997) found organizations that have successfully turned around from asset productivity decline did not replace their top management, whereas organizations that failed to turn around from asset productivity decline did replace management 21.5% of the time.

Trahms *et al.* (2013) noted several times in their paper that there is little empirical evidence in the field of asset orchestration in turnarounds. More importantly, the review highlights the fact that most of the decline and turnaround research studies have been phenomenon based, with less theoretical development within and integration across the components of the decline and turnaround process.

Understanding Organizational Decline in SMEs

SMEs benefit society in many ways. SMEs harbor vast innovation potential, create the majority of jobs in many nations and are a cause of wage growth (Hoffman *et al.*, 1998; Malchow-Møller *et al.*, 2011; Storey, 1994). Intuitively, the fact that little is known about their decline and turnarounds is a major concern for economic development efforts. Watson (2003) reported that only 50% of small businesses are still trading after the first three years. More recent US data, researched by Statistics Brain Research Institute, recorded that 44% of start-up businesses failed by the third year. Increasing their survival rate by a better understanding of turnarounds in their context will bring enormous benefits to the society at large.

There is a lack of agreement on what causes organizational decline in SMEs. The lack of consensus indicates a lack of theoretical understanding and empirical evidence when it comes to reviving poor performance. There is no conclusive theory that explains the high failure rate of small organizations or how to turn them around. Empirical research has found that the mortality rates of organizations decline increases with size (Hannan & Freeman, 1989; Sutton, 1997). Ropega (2011) argues that small businesses simply do not have the support of resources that larger organizations typically possess. These organizations also have difficulty sourcing financial support from banking institutions.

Bradley *et al.*, (2011) found that credit, equity and organizational slack are integral to turnaround success. However, it is not clear why slack assists survival, as organizations with more cash to burn just take longer to terminate. Moreover, if it is the case that large organizations have advantages, why are there small organizations at all? Since the literature cannot fully explain the dynamics of small organizations and their success rate, the author of this paper may infer that the theory of the organization and competitive advantage are incomplete. The confounding nature of SME decline and turnarounds has led researchers to look for setup and operational differences in SMEs in regards to their turnarounds and decline. Organizational characteristics are found to be important for SMEs in turnaround situations. For example, organization size has been found to influence risk taking during organizational decline, with smaller organizations reducing risk and larger organizations increasing risk (Audia & Greve, 2006). The composition of the board of directors has also been found to be important to the success of the turnaround process.

Daily and Dalton (1993, 1994, 1995) found that boards of successfully reorganized organizations were composed of approximately 65% outside directors, while organizations that ended in failure had boards composed mostly of insiders. There is, however, no research findings on causal reasons. Small organizations are often run by owners or family members, they do not normally have outside directors and, hence, may be impacted by the board contingency. There is a lack of understanding of what organization action and contingencies affect turnaround success (Greve, 2011; Trahms *et al*., 2013). For example, large organizations seem to suffer from their own inertia, which limits the scope of their response, and a misalignment between capabilities and market needs (Cyert & March, 1963; Penrose, 1959; Teece, 2007).

In addition, blundered management may lead to organizational decline in both small and large organizations. For instance, inaction or actions that use resources ineffectively (Schendel *et al*., 1976), reducing research & development investments indiscriminately (Johnson, 1996) or targeting acquisitions that lack complementarities (Hitt *et al*., 2001), can all lead to decline. However, such research studies specifically on SMEs are not found.

Research Framework

This paper aims to explore changes in specialization in turnaround situations with overseas Chinese SMEs, and their effect on performance in a turnaround context. There is no existing research framework for detecting changes in specialization and the division of labor in a turnaround context. There is also no agreement on how the division of labor is measured (Bylund, 2014). The author has constructed a conceptual framework of six elements from literature, assumptions of which are discussed in the following subsections. The six elements correspond with the 6 propositions summarized in Table 1.

Table 1. The Six Propositions for Research Study

#	Propositions
P1	The turnaround manager increases the coordination costs in an organization in the turnaround process. Costs of coordination are impacted by principal–agent problems, hold-up problems, market efficiency and enforcement of control.
P2	a) A turnaround manager increases worker specialization, as defined by a narrowing of the scope of task-specific activities, in the turnaround process. b) A turnaround manager increases machine specialization, as defined by a narrowing of the scope of machine task specific activities
P3	The turnaround manager increases the roundaboutness of the internal operations of the organization, as defined by extending separate and distinct steps of production inside the organization, which splits the division of labor and capital into smaller pieces.

#	**Propositions**
P4	Turnaround managers increase clarity and precision in the division of labor and capital. Clarity is defined by having precise job descriptions, task specifications, organization reporting and process flows with increased formal and information-dense communication to coordinate specialized labor and capital.
P5	a) Turnaround managers increase operational knowledge in the organization. This is defined as knowledge about financial performance and knowledge about operational results. b) Turnaround managers increase financial knowledge in the organization. This knowledge is expressed by the creation and/or increased accuracy of financial statements, and/or the increased ability to forecast financial implications of operational actions.
P6	Turnaround managers make changes to the organization after they have a vision of a production process that does not yet exist.

P1 Costs of Coordination

Most jobs consist of bundles of tasks, rather than just one specialized task. Bundling occurs when tasks are complementaries, i.e. when it is productive for a worker to perform both tasks. The presence of task complementarities has important implications for the division of labor. According to Becker and Murphy (1992), one of the main drivers for division of labor is the costs of coordinating specialized workers who perform complementary tasks. As coordination costs fall, costs of specialization decrease (Bylund, 2014). Becker and Murphy noted that specialization increases until it is balanced with higher costs. Thus, the limit to the division of labor in an organization is the costs of coordination. Becker and Murphy listed four key sources of coordination costs:

a) *Principal–agent problems:* The general problem of motivating employees to act on behalf of another is called the principal–agent problem. The principal–agent problem arises when a principal hires an agent to perform tasks on his/her behalf (Polutnik, 2015). There are three types of agency costs: monitoring costs, bonding costs, and the residual loss of a principal (Jensen & Meckling, 1976). *Monitoring costs* occur when the principal employs resources to observe the efforts of the agent or creates incentives. *Bonding costs* are incurred in order for a principal to guarantee performance of an agent. *Residual loss of principal* involves the destruction of economic value from the agent's self-interested behavior. Structuring employees and managerial incentives is one of the ways in which owners of an organization minimize the residual loss (Polutnik, 2015).

b) *Hold-up problems:* An asset is specialized if it has high value when used in specific application, but does not provide much value in alternative uses. A problem with such investments is that it leaves the organization vulnerable to the whims of its specialized employees and suppliers. This is known as a 'hold-up problem' (Williamson, 1985). Milgrom and Roberts (1998) have explored the changes in the efficiency of alternative mechanisms for minimizing the risk of being exploited by one's exchange partner. Kreps (1990) notes that culture can be used to enforce expected behaviours in a corporation for economic exchange.

c) *Market efficiency:* Market efficiency is about creating the ability to transact with customers more easily (Jensen & Meckling, 1976). This may include integrated marketing communications and culturing brand awareness.

d) *Enforcement of controls:* Employee actions have cost implications. Corrections that are necessary to improve the quality of agent and principal actions in their relationship are all costs (Mitnick, 2004).

P2 Specialization of Labor and Machines

Specialization is a narrowing of scope and increased repetitiveness of an activity (Bylund, 2013). Narrowing the scope of activity usually brings more productivity (Becker & Murphy, 1992). Similarly, increases in machine specialization raise productivity and intensify productivity in the division of labor (Barney, 1991; Foss & Ishikawa, 2007). A great deal of earlier research studies have emphasized the adverse social-psychological effects on workers due to extreme functional specialization (Shepard, 1970; Aldag & Brief, 1975; Traveggia & Hedley, 1976; Lefkowitz & Brigando, 1980). However, there are also recent developments which suggest a reversal in the historical trend toward increasing specialization (Yuill, 2011; Malone *et al*., 2011).

As Smith (1776) argued that social division of labor is limited by the extent of the market so that the benefits of specialization to an individual are determined largely by the existing social division of labor in the economy. Other researchers extended that into a synergetic argument that the extent of the market also depends upon the level of social division of labor. Thus, the presence of increasing returns to scale leads to specialization and further social division of labor. In turn, a high level of social division of labor leads to increasing economies of specialization that form further incentives to specialize and deepen the social division of labor (Stigler, 1951; Yang, 2003; Cheng & Yang 2004)

P3 Roundaboutness

Roundaboutness describes the stages of production. Roundaboutness should increase if turnaround managers increase specialization, and decrease if they decrease specialization. The extension of the production process is theoretically more efficient due to the fact that it employs more specialist machines and labor at lower coordination costs (Böhm-Bawerk, 1922; Buechner, 1989). Longer production processes use more capital, creating higher capital to labor ratios and generating more output (Horwitz, 2003). Bylund (2013) also argues that it is the specialization of machines that gives roundaboutness higher productivity.

P4 Clarity in the Division of Labor

Becker and Murphy (1992) note that efficient economies have a more finely etched division of labor. What is true of the economy may be true of the organization. Efficient organizations may have a more finely etched division of labor supported by high intensity information flow – formal and precise, expensive to produce but less subjective to interpretation error (Michaels, 2007). The less intensive communication in an organization becomes, the more likely generalization and independence has increased (Bylund, 2014).

P5 Increase of Knowledge

Becker and Murphy (1992) advocate that the main drivers of the division of labor are costs of coordinating specialized workers and the availability of knowledge. Costs of coordination is already considered earlier in P1 discussions. The availability of knowledge is discussed here. Becker and Murphy argue that while size of the market is a factor in determining division of labor, so is knowledge. Without knowledge, there cannot be additional specialization, no matter what is the size of the market. Turnaround managers generated knowledge including efficiency, control of wastage, customer demands, product feature, service design, profit and loss, and activity-based costing. However, it is unknown if that knowledge is used to extend the division of labor in the organization. Financial and operational knowledge is chosen for this study as management is expected to have competencies for these key fundamental areas in turnaround situations.

P6 Vision before Action

Leadership during a turnaround is different from 'business as usual' leadership. Bylund (2011, 2014) posits that managers create novel production processes by imagination and leadership. Turnaround managers are visionary leaders that create novel specialization and configurations of assets to restructure the organizations for profitable growth.

Method

The study does not just adopt a deductive approach to collect facts to confirm or deny theory (Saunders *et al*., 2009). It purposefully targets qualitative data to better understand the *how* and *why* of a subject and to elaborate where shorter, quantitative-based questions may leave important information out (Yin, 2011):

- The variables (e.g. the division of labor and specialization) are the actions and interpretations of people.
- The specialization and the division of labor may not be convertible to numerical values, for analysis.
- The study will examine real-life phenomena under real-world conditions.
  The entire population of turnarounds is not known, because informal arrangements are often made (Richards, 1998). The data is confidential. Therefore, an adequate sample size cannot be generated to prove statistical significance.

Turnarounds are generally defined by their financial performance (Audia & Greve, 2006; Barker *et al*,, 2001; Greve, 2011; Ndofor *et al*., 2013; Wan & Yiu, 2009; Wiseman & Bromiley, 1991). Specifically, a return (or an attempt to return) to profitability after a decline of 20% on return on equity (ROE) and return on assets (ROA) for two consecutive years, is the threshold for an organization to be considered a turnaround (Morrow *et al.*, 2007). These are the most common measure of business performance in the literature (Trahms *et al*., 2013).

Following Morrow *et al*. (2007), only SME organizations whose ROE and ROA have fallen by at least 20% for two consecutive years before turnaround interventions and have since returned to profitability are selected for participation in the study. The other qualifying criterion is that the organization must be owned or managed by overseas Chinese.

Sampling Design

Samples were taken from internal clientele lists 2014 in three consultancy organizations specializing in SME development in the ASEAN region. 32 clients who have undergone successful turnarounds in the period 2011-2014 were selected. Consents were first obtained from these clients by the consultancy organizations for the disclosure of the clients' names and basic information to the author. The author then contacted all the selected clients to explain the purpose of the research study and obtain further consent to conduct the study with the clients. 20 clients agreed to participate in the study with the signing of confidentiality agreements. Table 2 depicts brief profile of the 20 SME organizations, all of which have returned to profitability with varying degrees of success, basing on ROE and ROA performance observed one year after completion of turnaround. The success measurements are compiled by the consultancy organizations and shared with the author. As turnaround interventions are sensitive and success rates have implications on the reputation of the consultancy organizations, no information were released on unsuccessful turnaround projects. Likewise, information on the seriousness of initial decline with the 20 clients was not shared as it fell under the terms of confidentiality agreements signed with the clients. However, the research on the varying degrees of success with the participating organizations would still provide good discussions.

Table 2. Profile of the 20 SME Firms

Case #	**Industry Sector**	**Life Cycle**	**Decline Cause**	**Turn-around Result***	**Case #**	**Industry Sector**	**Life Cycle**	**Decline Cause**	**Turn-around Result***
1	Retailing	Decline	Mismanagement	HF	11	Construction	Decline	Succession	FG
2	Agriculture	Mature	Outdated	HF	12	Logistics	Mature	Outdated	SS
3	Construction	Mature	Mismanagement	HF	13	E&E	Mature	Succession	SS
4	E&E	Mature	Lost key markets	SS	14	Agriculture	Decline	Outdated	HF
5	Logistics	Mature	Outdated	HF	15	Chemical	Mature	Loss of key man	FG
6	Mining	Decline	Loss of Key man	FG	16	Motor Vehicle	Mature	Competitions	HF
7	Agriculture	Mature	Outdated	HF	17	Import/ Export	Mature	Mismanagement	SS
8	Retailing	Growth	Working Capital	HF	18	Agriculture	Mature	Outdated	SS
9	Import/ Export	Growth	Working Capital	HF	19	Retailing	Growth	Mismanagement	HF
10	Construction	Mature	Outdated	HF	20	Engineering	Decline	Succession	FG

Source: Sharing by 3 consultancy organizations

Note: Result observed 1 year after completion of turnaround exercises*
HF (High Flyer): Improved Performance with ROE and ROA increased by more than 10%
SS (Shining Star): Improved Performance with ROE and ROA increased by 5%- 10%
FG (Future Gem): Improved Performance with ROE and ROA increased by less than 5%

Data Collection and Confidentiality

Senior management and internal change (turnaround) managers in each of the 20 SME organizations were interviewed face to face during the period September 2015 to June 2017. The organizations had all undergone attempted turnarounds in the years 2011–2014. The research was carried out with a semi-structured questionnaire, designed to principally capture both oral and written data to test the six propositions and also to explore cultural implications in managerial decision-making. Lists of interview questions were first submitted to management of the SME organizations well ahead of interview days. Two participants from each organization were then chosen by the management for the research interviews. The one-to-one interviews took two to three hours per participant. The questionnaire begins with a section on context, followed by 33 closed questions with response alternatives using Likert-type scale for comparability of answers. The closed questions are derived from the turnaround literature and focus on capturing data for the six propositions.

There are also open-ended questions to prompt participants to elaborate on details and expound on the reasons for their answers to each proposition's enquiry. The questionnaire ends with another three open-ended questions to explore cultural and other salient issues in the context of overseas Chinese SME organizations. The notes made of each interview were sent back to the participants for confirmation. These were necessary steps to build trust and rectify any misquoting. Observations were also made during site visits to the organizations to support findings from the interviews. Under the confidentiality agreement, the identity of the organizations and participants is of paramount concern and are protected.

Findings

Findings from Closed Questions

The research follows an inductive approach for qualitative data analysis. A summary of findings from closed questions is first presented for the 6 propositions before the discussions of qualitative findings for each proposition in turn.

Answers to the 33 closed questions are categorized by propositions. Each proposition is made up of 5-6 Likert items. A 6-point Likert-type scale is used to measure respondents' agreement on the Likert items. The mean score of each organization for every proposition is recorded. Next, the mean score of the 20 organizations for every proposition is computed. This is then converted into average percentage of organizations in agreement with each of the propositions, as presented in Table 3.

Table 3. Research Propositions and Average Percentage of Firms in Agreement

#	Propositions	Average Percentage of Firms in Agreement
P1	Increase coordination costs	32%
P2	Increase labor and machine specialization	27%
P3	Increase roundaboutness	24%
P4	Increase clarity and more finely etched division of labor	42%
P5	Increase operational and financial knowledge	86%
P6	Increase vision before action activities	95%

Findings from Open-ended Questions

Up to 2 open-ended questions are asked for each proposition, to allow managers to elaborate on their answers to the closed questions about the proposition. The major themes are discussed under the relevant proposition below.

- *Proposition 1:*
  The turnaround manager increases the coordination costs in an organization in the turnaround process. Costs of coordination are impacted by principal–agent problems, hold-up problems, market efficiency and enforcement of control.

(Firms in agreement: 32%)

The interview found that reduced coordination costs in all 20 organizations post turnaround for all four cost categories: principal–agent problems, hold-up problems, market efficiency and enforcement of control. A key emergent finding was that a significant additional budget was allocated to principal–agency relationship during the turnaround process. It was deemed a critical activity to stabilize the organizations and hence it was considered an investment instead of expenditure. As one manager said, 'the key enablers of business success for small operations like ours is the invaluable relationships we have with our suppliers, customers and employees. It is our redeeming quality. In time of crisis, we stick together as one-united-front'. The positive knock-on effect was a reduction in hold-up problems, improved market efficiency and a reduced need for control, bringing about a reduction in overall coordination costs in unity of purpose.

Support for Proposition 1:
The qualitative findings and average percentage of firms in agreement at 32% do not support this proposition.

- *Proposition 2a:*
  A turnaround manager increases worker specialization, as defined by a narrowing of the scope of task-specific activities, in the turnaround process.
- *Proposition 2b:*
  A turnaround manager increases machine specialization, as defined by a narrowing of the scope of machine task specific activities.

(Firms in agreement: 27%)

Contrary to theory, SME management did not increase the division of labor in turnaround situation. In fact, in some of the organizations, there has been a reduction in the division of labor post turnaround. There was increased trust and communication during the turnaround period contributing to effective coordination efforts. Management and staff were united with common goals to confront externally driven changes. Multi-tasking and team-working under visionary leadership were found to have made major contributions to recovery.

Most managers responded that they increased work flexibility post turnaround, while at the same time, expanding the job scope undertaken by each individual employee. Managers explained that, during the turnaround, they restructured processes and consolidated activities to create new value-added task lists for employees. 'We need to orchestrate strengths and everybody is expected to multi-task during turbulent times with one united goal: to emerge stronger'. They built flexibility between tasks through teamwork. Activities were regrouped into meaningful whole jobs. Employees were empowered through job enrichment exercises. Most of the managers commented that it was necessary for them to push operational decision-making downward to focus on strategic matters in turnaround situations. This arrangement resulted in teams often becoming self-directed and, in turn, energized to weather the storm together.

All managers had major concerns about labor specialization with a narrowing scope of activities. Many spoke of the risk that specialized labor could bring to the organization, including exploitation, hold-up problems and not being able to adequately staff specialized positions on a sustainable basis. Labor specialization was also seen as a drain on cash. More importantly, the managers believed that labor specialization would create a path dependency for the next stage of growth for the organization. In their views, while stabilizing the organization, a turnaround manager should not restrict options for a new CEO to run SME operations. As one manager commented, 'we are small organizations and hence, our structure must be dynamic in nature like an amoeba without a constant structure. We do not have the luxury to have rigid boundaries'. None of the managers increased specialized capital in the organizations, by purchasing or building specialized machines/plants. Instead, managers deliberately attempted to decrease specialized assets in the organizations. New capital investments were evaluated based on flexibility of applications. Existing capital equipment was adapted to increase flexibility between kinds of orders and order sizes.

To promote operation productivity, the managers introduced process innovations to reduce redundancy and idle time. To most managers, seeking novel specialized capital equipment to build competitive advantage was perceived to be a non-sustainable strategy. The focus for these managers was to just meet or slightly exceed industry standards. The real competitive advantage was perceived to be with investing in social assets and processes to bond with stakeholders. To counter the constraints of physical resources in the small organizations, they worked with value chain partners to reduce lead times and cycle times, to enable higher overall capacity and lower inventories for the whole supply chain, while maintaining greater quality overall and offering better value to customers. 'The bonding through common interests is far more rewarding and effective for our small operations'.

Support for Proposition 2a and 2b:
The qualitative findings and the average percentage of firms in agreement at 27% do not support this proposition.

- *Proposition 3:*
  The turnaround manager increases the roundaboutness of the internal operations of the organization, as defined by extending separate and distinct steps of production inside the organization, which splits the division of labor and capital into smaller pieces.
  (Firms in agreement: 24%)

This proposition indirectly tests specialization. Based on literature reviews, had the managers increased specialization in labor and capital (Proposition 2), it would have lengthened production processes, due to the creation of steps for specialized labor, and/or the use of more specialist machines. The alternative would be to replace production chains with new, more powerful plant equipment that could do multiple steps at once. However, the author has made neither of these observations at the participating SME organizations. Managers expressly stated that they did not seek to build specialized capital equipment/plants and the majority spoke poorly of specialized labor and the risks to future development that it could bring.

The author, however, observed and confirmed with the managers that the production processes were streamlined and layouts rearranged for more efficient operational control by employees. Cellular layouts were found in many of these organizations post turnaround, which were in line with the intervention strategies designed to encourage labor flexibility in a self-directed team environment to use labor more efficiently. Managers again promulgated the superior importance of managerial capabilities in optimizing resources rather than resource ownership as a manager elaborated, 'We do not have the luxury of owning white elephants in our operations.' Another manager argued, 'it is what managers do with their resources that is critical for success. Activity is the central focus of advantage.'

Support for Proposition 3:
The qualitative findings and the average percentage of firm in agreement at 24% do not support this proposition.

- *Proposition 4:*
  Turnaround managers increase clarity and precision in the division of labor and capital. Clarity is defined by having precise job descriptions, task specifications, organization reporting and process flows with increased formal and information-dense communication to coordinate specialized labor and capital.

(Firms in agreement: 42%)

This proposition indirectly tests changes in the division of labor, by gauging the changes in communication content and process in the organization. Most of the managers reported that they spent significant time explaining to employees the organization's critical position during turnaround. They also expended effort in communicating the need to restructure jobs with refining tasks, grouping activities into whole jobs, and clarifying reporting accountability, responsibilities and goals. They ensured comprehension of mission, key activities and their critical importance in the organizations during the difficult times. On reflection post turnaround, most managers firmly attributed the success of the process to effective communication for buy-in.

It is clear that for participating SME organizations, clarity and precision was not for labor or capital specialization. Communication of purpose and clarity were necessary for alignment of goals between management and employees. Precise job descriptions, reporting structure, process clarity and increased formal information flows were to promote the superior coordination needed for increased labor flexibility and responsiveness. In order to reduce lead time and cycle time, there was a need for effective coordination among internal and external parties for the organizations. A manager further emphasized, 'Communication is the glue that holds everybody together but it is the depth of trust that decides the stickiness' which is aligned with findings for proposition 1.

Support for Proposition 4:
The average percentage of firms in agreement at 42% suggests a higher support for this proposition but the qualitative findings have provided a rich picture of the context for support.

- *Proposition 5a:*
  Turnaround managers increase operational knowledge in the organization. This is defined as knowledge about financial performance and knowledge about operational results.
- *Proposition 5b:*
  Turnaround managers increase financial knowledge in the organization. This knowledge is expressed by the creation and/or increased accuracy of financial statements, and/or the increased ability to forecast financial implications of operational actions.

(Firms in agreement: 86%)

These propositions indirectly test specialization by ascertaining whether turnaround managers generate additional knowledge, which enables an increase in the division of labor within the organization. All managers reported that their first priority was to get an accurate financial picture of the organizations during turnaround. Post turnaround, most of the managers continued with the practice of generating timely cash flow statements. They also learned the importance of creating accurate forecasts. All spoke positively about the need for managerial knowledge in finance and the implications of acquiring such knowledge in not only managing financial performance but also running effective operations in the SME organizations.

In operations, almost all managers said knowledge had also dramatically increased. They learned new concepts and tools to design, operate and improve operation systems for getting work done more efficiently and effectively. This operational knowledge was used in conjunction with financial knowledge acquired to improve overall organization performance by deciding on business activities that were not economically productive.

Support for Proposition 5a and 5b:
There is a strong support for this proposition with average percentage of firms in agreement at 86%. This is in alignment with interview findings from managers: 'I have learned a lot more about how to keep the ship on course and keep my staff focused, in those difficult times". "You get through it, and then you will realize that you're a much better leader and effective business person, because of what you have done through." However, interviews also revealed an important finding that the increase in knowledge was not specifically applied to increasing the division of labor in the organizations.

- *Proposition 6:*
  Turnaround managers make changes to the organization after they have a vision of a production process that does not yet exist.

(Firms in agreement: 95%)

All managers spoke of the urgent need to act on organizational changes in a turnaround situation without the luxury of time for thorough analysis and systematic decision-making. Most of the managers mentioned that decisions were made based mainly on experiences and intuition from running SME operations. As one manager said, 'During such situations, it is not so much about whether the decision is right or wrong; it is the best decision in view of the available information at the point in time.'

The common feedback was that employees expect managers to lead the organizations out of difficult times with visions of a better future. As another manager said, 'People tend to believe what they can see. As a change leader in an SME setting where resources are scarce, it is about visualizing what changes could be made and must be made in the situation and then selling the vision to the employees. It is about making them see what you believe in.' All managers understood that 'believing is seeing' as their mission to lead in turnaround situations. As one manager puts it: 'When people can be shown the path to the light at the end of the tunnel, a miracle takes over with trust and focus.' Another manager added: 'People should not be told to work together; they need to know why they work together. You cannot instruct emotions'. It highlighted the need for a moral cause to act.

Support for Proposition 6:
Both qualitative findings and the average percentage of firms are in agreement at 95% suggest a strong support for this proposition.

Discussions on Cultural Implications for Turnaround Decision-making

In recent turbulent times, many business operations in the Asian region experienced major economic downturn and financial distress. Western turnaround strategies were adopted and generalized across all business settings by consultants and managers to restructure and turnaround organizations. The concern has been what elements of the Western turnaround model are applicable in Asia and to what degree? Various research studies on organization turnaround in Asia have uncovered that generalization of Western approaches to the Asian environment is limited (Bruton *et al*., 2001; Bruton & Rubanki, 1997; Gowen & Tallos, 2002). Backman (1999) warned that imposing Western standards of turnaround strategies in Asian settings could lead to a further deterioration of performance for many organizations, arguing that Western measures are inappropriate in Asian context. There are basic economic and cultural factors that influence business competitiveness in different cultural and national settings (LaVan & Murphy, 2007)

Overseas Chinese businesses have a dominating influence across South-east Asia and the cultural characteristics are found to be homogeneous independent of country borders (Backman, 1995; Bruton *et al*., 2001). The history of overseas Chinese emigration, though full of hardship and challenges, has been one of tremendous economic success. Faced with an often hostile environment of insecurity, mistrust, discrimination, displacement and violence, the overseas Chinese' mentality was to ensure survival and fuel success. Entrepreneurship and wealth creation became essential (Ho, 2005). Even though they are a small minority in their adopted countries, the overseas Chinese control a disproportionate share of these countries' national trade and control a large percentage of wealth in the ASEAN region. An abstract of 2003 economic reports by Andersen Consulting and the Economist Intelligence Unit is shown in Table 4 for selected ASEAN countries clearly illustrates the dominance of the overseas Chinese networks in the regional economies.

Table 4. Market Dominance of the Overseas Chinese Businesses in Selected ASEAN countries

Country	Chinese Share of Population (%)	Chinese share of Market Capital (%)
Indonesia	2.5-3.0	73
The Philippines	2	50-60
Singapore	77	81
Thailand	10	81
Malaysia	27	69

Source: Abstract from 2003 Economic Reports by Andersen Consulting and the Economist Intelligence Unit

The findings for the 6 propositions of increasing specialization and division of labor reveal that SME managerial practices run counter to developed Western strategic theories. The last three open-ended questions of the research instrument aim to investigate key contextual differences between Western and ASEAN businesses. Five guiding principles surfaced from the in-depth discussions with the SME managers on cultural implications and salient issues with overseas Chinese business practices in turnaround situations. These guiding principles provide a rich understanding to the findings for the various propositions and they are summarized in the following subsections.

(a) Life-Raft Values

The overseas Chinese operate with a 'minority mentality' stemming from the uncertainty of their status in the adopted countries. John Kao (1993) found a set of 'life-raft values' with overseas Chinese entrepreneurs which, include thrift, hard work, irrational levels of savings, obedience to patriarchal authority, trust only family and investments in tangible goods based on kinship. With the life-raft values, overseas Chinese are exceptionally adaptable in turnaround situations. As a manager said, ‘we are like chameleons; we adapt and have survived harsh economic realities in history’. Another manager responded, ‘the importance is we have our people’s support. That is liquid gold and, together, we can ride any storm’. In P1, the lowering of the coordination costs in the SMEs was found to have no relationship with specialization of labor. The reduction was brought about by the heightened unity of stakeholders, driven by common goals and the higher purpose of wanting to confront difficulties as a ‘unit’ in challenging times. Solid principal–agency relationship is the key to success in surmounting external threats.

(b) Confucian Principles

Confucian principles advocate that one should treat others as one would like to be treated (Hofstede & Bond, 1988). ‘No one wants to operate like a machine with a narrowly defined job scope. Everybody should have an opportunity to acquire skills and grow’, said a manager. P2a on increased labor specialization is clearly not a practice. It also explains the lack of detailed job specifications in most SME operations. A key characteristic of working in SME settings is that everybody is multi-tasking with a wide scope of activities, allowing maximum labor flexibility. Turnaround situations offer an opportunity for employees to demonstrate their commitment to the organization and capability for growth. The Confucius teaching that one is not primarily an individual, but a member of a family who drives comrade’s spirit in turnaround situations, as most SMEs are familial settings.

P2b on increased machine specialization is also not a practice as that is not seen as a wise decision by most SME managers who value social assets more than physical assets. The decision to be bolted down by capital specialization without assurance of returns is not aligned with the life-raft values of investments not on abstract principles but affiliations. It also counters the principle to ‘keep your bags packed at all times’. Similarly, the decision to increase steps and lengthened production chains did not make sense to the managers (P3). Managers perceived that making such specialization decisions would only increase uncertainties and instil fear among employees. As one manager put it, ‘Humans are smart and are capable of very complex thought and analysis. Dehumanizing works is when all the good qualities of being human are ignored. I think it is dehumanizing to create work like that.’

Instead, managers have innovated processes to reduce redundancy which in turn promotes productivity. The Western turnaround models have largely suggested retrenchment during turnarounds although a solely retrenchment-driven turnaround is not postulated. More recent literature is full of scholarly recommendations to managers to not downsize labor or eliminate resources and keep what is absolutely necessary. Many researchers discussed the negative effects of retrenchment on internal morale and stakeholder support in Western settings (Morrow *et al*., 2007; Sirmon *et al*., 2011). For the overseas Chinese SMEs, retrenchment is seen as breaking the psychological contract with employees as it is a Confucian principle that the senior owes the junior partner in any social relationship, protection and consideration (Liu, 2010; Chen & Farh, 2010).

Bruton *et al.* (2001) have also found that retrenchment cannot be implemented by many South-east Asian organizations as they face social and ethical restraints. In general, for most SMEs in the region, there is no high dependency on capital markets, and hence the managers value the long-term retention of organizational competencies more, which are concentrated mainly in the knowledge of the employees and the interpersonal relationships with all key internal and external stakeholders. It is not uncommon for families to chip in, suppliers to extend further credit, customers to pay upfront and employees to forgo pay in order to help out an organization with short-term liquidity problems.

Closely aligned with the five basic relationships in Confucianism (Fan, 2000), there are three levels of relationships with overseas Chinese: family members (*jiaren*), non-family members with whom one shares a significant connection (*shuren*) and strangers (*shengren*). Meaningful and sustainable relationships with employees, external consultants and other stakeholders are maintained at the *shuren* level. Without establishing *shuren* ties, trust rarely exists in commercial relationships with overseas Chinese. Managers emphasized that in the Chinese business context, relationships are social capital and an organization's valuable assets, especially in difficult times.

Hence, turnaround consultants for SME operations are expected to contract on a contingency basis in turnaround situations. 'What is the point of having a relationship with someone who will not stick around in times of need?' as one manager commented. The levels of trust that the Chinese have in most people reflects the expectation that favors will be returned (Hermann-Pillath, 2010).

(c) 'Guanxi' and 'Renqing'

The close-knit Chinese SME community is grounded on tight *guanxi*, a word that has no direct English translation. The conventional translation 'connections' touches only one aspect of the meaning. *Guanxi* is more specifically about connections that are grounded on trust and defined by reciprocity and mutual obligation. With its focus on relationships and shared history, *guanxi* is a manifestation of the Confucian principle of respect for the past, a value that many overseas Chinese cherish (Ho, 2006). In times of adversity, as in turnarounds, the depth of *guanxi* is put to the test with employees and other stakeholders.

In the case of the SMEs, *guanxi* has led stakeholders to show solidarity with the troubled organization, increasing commitment even when the financial ratios suggest withdrawing support. This concurs with findings that guanxi is a relational exchange where deeds are a reciprocal obligation (Wang 2007; Kriz & Keating 2010). Those who have shown commitment and support in difficult times will be rewarded with *renqing* obligations. *Renqing* obligations weave networks of relationships through reciprocal offerings of favours, creating mutual indebtedness that continues indefinitely (Wang 2005). It is precisely the nonspecific nature of the time frame that makes *renqing* obligations so binding and *guanxi* networks so enduring and pervasive. The *renqing* obligations are the best barrier to entry to protect external consultants, suppliers and customers who have earned trust in times of adversity as in turnaround situations.

(d) Guidance of 'Bingfa'

Studies have identified distinctive leadership styles among Chinese leaders that reflect the Chinese cultural framework (Tsui *et al*., 2004; June *et al*., 2015). In addition to the influence of Confucianism, the guidance of *bingfa* has also shaped the overseas Chinese leadership practices in the 20 SMEs. Various previous studies have supported the findings (Chen, 1995; Chu, 1990; Foo & Grinyer, 1995; Ho, 2006; Wee *et al*., 1999). The Chinese word *bing* can be translated as soldier, and *fa*, as skill or law. While *bingfa* can be translated as a term to mean military strategy or art of war, it is better understood as strategic thinking. Chinese military strategy was mostly developed during the Warring States period in China between 500–220 BC. The most complete treatise is Sun Tzu's *Art of War*, written in 400 BC.

The *Art of War* was one of the most influential books on strategy ever written and its application remains pervasive and relevant, influencing business practices in China, Japan, South Korea and reaching across the Asia with the Chinese diaspora (Foo & Grinyer, 1995). The SME managers spoke passionately about how their decision-making was guided by the five fundamental factors of Sun Tzu's *Art of War*: the moral law, heaven, earth, command and doctrine. The moral law factor is what causes people to be in total accord with their leader, so that they will follow him/her in times of war, life and unto death without fear for their lives and undaunted by any peril. It addresses the moral cause of a battle, thereby creating a unity of purpose among the leaders and those they lead. P4 responses reveal managers' emphasis on the need for clarity and effective communication of the 'moral cause' during turnaround situations for goals alignment and to obtain buy-in for changes. 'Believing is seeing. In difficult times, we need our people to believe us. They will then be able to see the future through our eyes'.

(e) Embracing Paradox and a Holistic Perspective of Time

Venerating Confucian principles on the virtues of working hard, acquiring skills and education as one's tasks in life, makes the turnaround experiences for the managers meaningful and fruitful when they have increased both operational and financial knowledge (P5a & P5b). Another Confucian-based philosophical orientation that has a pervasive impact on the 20 Chinese SMEs is to exchange an 'either/or' framework for a paradoxical 'and/and' framework, in which opposites are interdependent rather than mutually exclusive (Chen, 2002; Fang, 2012). A Confucian teaching is translated as: 'the extreme of yin is yang, and the extreme of yang is yin: the combination of one yin and one yang is the way of nature and the seed of change.' The SME managers see opposites containing within them the seed of the other, together forming a dynamic unity. Crisis appears not as an insurmountable problem but as an aspect of transformation, demonstrating how paradoxical thinking can lead to opportune action.

Zhì, translated as knowing, understanding, free from doubts and wisdom, is one of the Confucius cardinal virtues possessed by a superior person (Xu, 2011). Leaders are expected to be visionary and wise to recognize changing circumstances: the working of the 'heaven-natural forces' and 'earth-terrain', which in a modern context, can be taken to mean external and internal influences (P6). The SME managers spoke openly about the factors of command and doctrine for leadership style in turnaround situations. In Sun Tzu's battleground, leaders have the virtues of wisdom, sincerity, benevolence, courage and strictness. Similarly, managers in turnaround situations are expected not to be hesitant in making decisions to seize opportunity, organize and discipline for the achievement of change goals. Without these qualities, the managers would not gain the respect and support of the employees to implement difficult changes. The support and unity of purpose were perceived by the SME managers to be the pivotal strengths in turnarounds with overseas Chinese SMEs.

Another crucial element of the Chinese philosophical worldview shared by the SME managers is the holistic view of time. This longer-term time perspective allows events to be contextualized into a greater whole and emphasizes connections instead of isolated moments. Contrasting that with most Western culture whereby the flow of events must follow a schedule, timing and planning must remain open-ended and adaptable, especially because relationships have their own unpredictable requirements, which must be attended to as they arise. This is even more pronounced in turnaround situations as revealed in the findings for the various propositions in this study.

The SME managers view that the ability to combine patience with speed is one of the greatest strengths of overseas Chinese businesses. A Chinese saying shared by a manager: 'one must run as fast as a rabbit, but be as patient as a turtle.' This combination has allowed many overseas Chinese businesses to quickly recognize and capitalize on opportunities that surfaced in the wake of financial and economic crises. The holistic view of time has allowed the overseas Chinese SMEs to take a healthy perspective on the crisis and to see the event not in linear terms as an 'end-of-the-line' catastrophe, but as an inevitable part of a revolving cycle. At the same time, their patient perspective did not translate into resignation or complacency. Instead, the managers applied paradoxical thinking to generate short-term strategies to quickly seize any opportunity that surfaced in the crisis. As a manager shared, 'Our *qianbianwanhua* ability (to be in constant permutation) has kept us focused on the silver lining of the horizon in times of trial'

Closing Thoughts

This study looked at a limited research scope on labor specialization with overseas Chinese SMEs in the ASEAN region and found decision variables need to be understood in the organizations' context. The orthodox explanation of the turnaround strategy does not fit the actions taken by the SME managers. The findings from the study support the need to re-examine Western turnaround concepts for the ASEAN context, as the ASEAN environment is proven to be distinctive different from that in the West. The study also explored cultural implications on the decision-making process of Chinese SME turnarounds. It supports Hill (2006)'s findings that the longevity of Confucian influences throughout Chinese culture is a major factor in China's resistance to Western management practices.

The study has also shown that testing propositions is insufficient; there is a need to gain insights and construct explanations with such social studies. An emergent finding from the study revealed that organization decline and the subsequent recognition of the need for turnaround with most of the 20 SMEs has taken a long time, in some of the cases over a decade. Turnaround situations cause a loss of face and, to the Chinese that is more than just a person's reputation. *Face* is compared to the bark of a tree; without the bark, the tree dies (Yeung & Tung, 1996). Turnaround brings shame to the business owners and the family members. The other reasons for a slow recognition of decline are due to a relatively non-transparent governance system within Chinese business networks, characterized by cross shareholdings and the *guanxi* support, which allow the troubled organization to explore additional available resources whereas in a Western setting, tolerance levels would have been reached. With a persistent denial of the urgency to act, performance deterioration is usually more serious when Chinese SME management finally initiates turnaround activities.

Research studies have also found managers in collectivist societies indecisive and such attitude could further contribute to the delay. The procrastination often impacts the success rate of interventions. Hambrick (1985), Backman (1999), Bruton et al. (2001) and Ho (2007) support the study's findings. With the establishment of the ASEAN Economic Community (AEC) and given recent trends towards economic integration, Chinese SMEs are expected to experience more restructuring and turnaround activities moving forward. In view of limited applicability of Western turnaround concepts to ASEAN context, there exists a knowledge gap in the turnaround literature. There is a need for empirical studies to address this knowledge gaps to better understand the turnaround process in the ASEAN perspectives and to comprehend what important cultural implications and concerns there are on decision-making by regional SME management. The contextual in-depth understanding of cultures is paramount for the development of relevant strategic content and recommendations to address turnaround situations for SMEs in the ASEAN region.

Limitation of the Study Approach

The multiple case study method is selected for this study as the most appropriate investigation approach. First, the research is exploratory in nature with a goal to establish the incidence and prevalence of specialization and changes in the division of labor. Second, there is limited available data and no central collection of SME turnaround information; hence, there cannot be a full quantitative analysis. Third, any available numeric data and official documents are often unreliable. Fourth, all turnaround contexts are unique and non-reproducible; hence there cannot be a controlled experiment. Fifth, the comparative case study is recommended when the topic is broad and highly complex, when there is not a lot of theory available, and when context is very important (Dul & Hak, 2008). Sixth, evidence from multiple cases is more compelling. The multiple case study method is accepted in the turnaround literature (Borch & Brastad, 2003; Cater & Schwab, 2008; Masurel & Montfort, 2006).

Multiple case study research has also been advocated in wider business research, which overlaps with turnarounds (Dul & Hak, 2008; Handcock & Algozzine, 2006; Keegan, 2009). Moreover, it was also recognized as a valid research strategy in marketing (Bonoma, 1985), operations management (McCutcheon & Meredith, 1993), management information systems (Benbasat *et al*., 1987) and strategy (Mintzberg, 1979).

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Farmer's Adoption Intention towards Eco-Innovation in Thailand

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Abstract

There are multiple benefits to eco-innovation. As well as helping to improve sustainability and economic competitiveness at the organizational level through strategy it also has a positive impact on the supply chain. There has been a trend over the past decades for both public and private sectors to promote eco-products rather than chemical products but an enormous number of hazardous chemicals are being used in the agricultural sector. Organic herbicides or fertilizers are alternative products, providing high economic value as well as being environmentally friendly. Unfortunately, there are some invisible barriers in the agricultural sector in Thailand to the adoption and engagement of organic or eco-innovative products.

The primary objective of this research was to examine how eco-innovation can be widely adopted by major consumers in the agricultural sector in Thailand. The research results indicate that innovation characteristics play an important role in designing the marketing strategy for crossing the chasm of innovation (suggested by Rogers, (2003). Moreover, three other moderating variables were found to significantly affect the relationship between perceived innovation characteristics and consumer adoption intention. In the analysis, the influence of perceived innovation characteristics was found to weaken when consumers have a high value-belief- norm (supporting current practice or resistance to change), including the bandwagon effect (waiting until more people take up the change) and the effect of government policy on the products (making it easier or cheaper to use). This research explores an alternative way to break through the barriers to adoption and enhance the engagement of organic products in the agricultural sector of Thailand.

Keywords: Perceived innovation characteristics; Value-beliefs-norm theory; Bandwagon effect; Government policy; Consumers' adoption intention; Eco-Innovative Product

Introduction

Thailand, food and agriculture are core industries that not only contribute to a certain percentage of GDP but also provide a traditional way of living for Thai people. The export figures for raw agricultural products outweigh those of value-added agricultural products (OAE, 2018). Thai agriculture sector which mainly composed by economic crop and livestock is maximize to 6.25% of agriculture GDP that made Thailand is one of the top exporters of food and agricultural products in 2018, it has recently been experiencing a decline in selling price index when compare to 2017 (OAE, 2018). There could be due several reasons for this, such as amount of product to market, limitations in new technological advances such as yard management, seedlings, and the use of inorganic pesticides and herbicides result in low quality production as well as price bargaining power. There is a chance that these products are exceeding the maximum residue limit, contributing to import barriers to foreign countries and the social trend of not accepting inorganic agricultural products.

In Thailand, an enormous number of hazardous chemicals are being used in the agricultural sector. Thailand imported approximately 4,653,060 tons of various chemical fertilizers, valued at about 56,709 million baht in 2015, of which 149,546 tons or about 19,326 million baht were chemical pesticides and herbicides (Agricultural Economics 2015). The statistics represent the heavy consumption of chemical agricultural products by the Thai population.

To tackle with mentioned situation, several supportive policy from Ministry of Agriculture in various related arena such as learning center for efficiency agriculture production, big plantation promotion system, proactiveness model of agriculture area management, the development of standardize agriculture production, new theory of agriculture under the philosophy of sufficiency economy, young smart farmer project are launched to sector. Moreover, there has been a trend for both public and private sectors to promote eco-products instead of chemical. Organic agricultural innovation are promoted in order to reduce production cost and leverage agriculture into standard and efficient productivity (OAE, 2018)

By focusing on organic, eco-technology development, new technology could be employed in the agricultural sectors. The Thai government has realized that science and technology innovation in agriculture is essential for ensuring sustainable competitive capability. In ensuring sustainability, eco-innovation might play an important role by eliminating toxicity and chemical residue during the process.

The objective of eco-innovation is to find a more effective and sustainable way of using natural resources in order to lessen the impact on the environment. Accordingly, in today's growing market, businesses must respond favorably to eco-innovation to mitigate resource scarcity, environmental degradation and safe production. So switching from chemical to organic products is a challenging task but extremely valuable.

There are multiple benefits to eco-innovation. As well as helping to improve sustainability, economic competitiveness and performance at the organizational level through strategic development, it also has a positive impact on the supply chain. It operates by all those involved in the value chain incorporating life cycle thinking and sustainability into their business strategy. Eco-innovation requires the coordinated adaptation of processes, goods and services, market approach and organizational framework in order to create new attitudes in response to environmental issues in order to convince farmer switch from conventional agriculture into organic agriculture (Jiumpanyarach, 2017).

Thus, eco-products are a highly economic alternative for the future, since they represent a large portion of the total market share. Unfortunately, there are some invisible barriers to the adoption and engagement of organic fertilizers and other eco-innovation products used in the agricultural sector in Thailand. For Thai farmer, Familiarity to chemical fertilizer, slow active, promotion program and relative advantage are main reasons of rejection to organic fertilizer. (Nualkaew, 2016) In conformity to Nualkaew (2016), there are attitude factors related to adoption of eco-innovation. Government promotion on new knowledge, strategic policy, and change leader are mentioned. Particularly, technical issue such as product compatibility and less complexity are also important effect toward adoption of eco-innovation (B.A.E.R, 2008)

Thus, this research mainly aim to analyses the correlation between perceived innovation characteristics and Thai farmers' adoption intention as consumers' adoption intention towards eco-innovation and how it can be designed to fit the requirements of potential adopters. Moreover, to test the moderating role of physiological factors in the relationship between perceived innovation characteristics and consumers' adoption intention towards eco-innovative products for the economic crops in the agricultural sector in Thailand. The contribution and outcome of this research have strategic implications for manufacturers in the design and fit of the perceived innovation characteristics influencing the consumers' adoption intention. The ideal product will have the ability to meet the exact needs of the consumer.

The results of this research indicate that perceived innovation characteristics continue to impact strongly on the intention of a consumers to adopt agricultural eco-products. However, this relationship can be moderated by increasing the effects of the value-belief-norm, bandwagon, and government policy. This shows that physiological and marketing factors should be considered as well as perceived innovation characteristics during the product development and planning process.

Literature Review

Eco-innovation

The development of sustainable innovation is receiving increasing recognition both socially and politically, with eco-innovation coming under the umbrella of green marketing. More and more emphasis is being placed on the environmental concerns in innovation as, in an attempt to be socially responsible, firms are starting to appreciate the ramifications of their actions (Díaz-García, González-Moreno, & Sáez-Martínez, 2015). There are various definitions of eco-innovation. Hemmelskamp (2000) mentions that eco-innovation is intended to avert or mitigate the environmental impact of human activities, repair the harm already inflicted or identify and investigate environmental issues. Similarly, eco-innovation may also comprise new or adapted processes, practices, systems, and products beneficial to the environment, thereby enhancing its sustainability (Oltra & Saint Jean, 2009). Moreover, it improves environmental performance (Carrillo-Hermosilla, del Río, & Könnölä, 2010). This research, therefore, defines eco-innovation as an innovative material that contributes its properties, preference instead of chemical product, or values to enhance or promote environmentally friendly and sustainable products.

Consumers' Adoption Intention

Analysis of new product adoption behaviour by consumers could benefit organizations by target audience identification product placement, and strategy design (Wang, Dou, & Zhou, 2008). For this reason, the adoption of new products by consumers is the subject of much market research attention since buyers are fundamental to innovation expansion (Im, Bayus, & Mason, 2003). According to Rogers (2003), innovation adoption behaviour can be defined as the extent to which individuals possessing similar traits adopt a new product or innovation, categorized as early adopters, later adopters, and non-adopters. However, there is another middle state before consumer adoption, namely the intention to adopt or consumer adoption intention. When consumers are making a buying decision, the two important behavioral science responses are stimulation and the black box concept. There is also a using intention/purchase intention formed between evaluation of alternatives and purchase decision (Koubaa, 2008). This supports the statement by Fishbein (1975) in that purchase intention is an important factor in the prediction of consumer behaviour. In this study, the researchers focus on how perceived innovative characteristics influence farmer's adoption intention as the consumer's adoption intention in their role as a buyer and user of eco-innovation products in their agriculture activities.

Socio-demographic Characteristics

Several pieces of research have examined certain variables to explain adopter insight, particularly concerning early adopter characteristics. Although the socio-demographic variables involved in innovation may be interesting for segmentation purposes, they tend to demonstrate little effect on adoption (Rogers, 2003). The aforementioned research indicates that socio-demographics are influential, since they have the potential to either drive or hinder the adoption of eco-innovation by consumers. However, such influence depends to a certain extent on the framework and kind of innovation involved. In addition, there are some more interesting variables that might have an indirect influence on the relationship between innovation characteristics and adoption of the eco-innovative product. From the reviews, value-belief-norm theory, government policy, and bandwagon diffusion theory are considered to explain the adoption by consumers of eco-innovative products. Thus in this research, socio-demographic characteristics are applied as control variables.

Perceived Innovation Characteristics

The identification of successful innovation characteristics is instrumental in the design of a marketing strategy for an innovative product to cross the chasm of innovation (Rogers, 2003). Characteristics influencing the consumer adoption of eco-innovation could promote the use of eco-innovative products. It offers the opportunity to recognize good performance and sustainable advantage during implementation of their utilization. Intimate involvement in the eco-innovativeness concept is a way to identify the perception of consumers towards the innovation and its characteristics. Perceived innovation characteristics involve concerned assumption, whereby the attitude of potential adopters towards innovation are identified by certain components (Jansson, 2011). These comprise relative advantage, compatibility, complexity, trialability, and observability.

Relative advantage. Consumers, especially potential adopters, consider the advantages and disadvantages of a product according to its basic value (Kapoor, Dwivedi, & Williams, 2014). Whereas Rogers (2003) considers relative advantage as the extent to which an innovation is perceived to be superior to the original idea. The greater the innovation's perceived relative advantage, the faster its rate of adoption, as particularly evidenced by information technology innovations (Agarwal & Prasad, 1997).

Compatibility. New products or innovations should fit with consumer lifestyles, rather than conforming to their preference track in order to make them appealing for adoption (Rogers, 2003). Moreover, Claudy, Michelsen, and O'Driscoll (2011) state that compatibility is positively associated with the consumer's willingness to pay.

Complexity is perceived as the degree of difficulty involved when using a new product or innovation (Rogers, 2003). Reduction in complexity is very important for the user's adoption because if products are complicated their adoption will definitely be slower or rejected (Chou, Chen, & Wang, 2012). Thus it can be said that complexity may be less important than relative advantage or compatibility for some innovations, whereas for those expected to be used by a major market segment, complexity is likely to a substantial barrier to adoption.

Trialability. New innovations or products that can be distributed for trial beforehand are likely to experience more rapid adoption than those less easy to try out, especially household products (Claudy et al., 2011). Thus an innovation designed to be easily tried out will result in a faster rate of consumer adoption.

Observability has been defined as the extent to which an innovation, or its resulting adoption, is visible to others or already in use by the target market and influencers (Kapoor et al., 2014).

Related to Perceived Innovation Characteristics, In Thailand the previous field research in rubber yard reveal that, the mixed of organic and chemical fertilizers enhance higher girth in comparison with only chemical fertilizers. Moreover, only chemical fertilizer resulted in higher rubber yield but lower quality of latex and absolute dry rubber tissue quantity (Songlek, 2016). These are the example advantages characteristics of organic or eco-innovation, but the mentioned investigation are only reveal in academically arena or limited concerned stakeholder. To accelerate diffusion of eco-innovation, perceived innovation characteristics should be implemented as a key strategic marketing factor. Thus the first hypothesis concerning eco-innovation adoption has been developed.

$H_{1:}$ Perceived innovation characteristics are positively associated with the consumer's adoption intention.

Value-belief-norm Theory

Various studies have focused on the differing values of individual consumers and their behavior regarding early adoption (Daghfous, Petrof, & Pons, 1999). Consumer values can be defined as being perceptively rather than objectively driven by externalities (Corfman, Lehmann, & Narayanan, 1991). Consequently, in the analysis of consumer adoption, attitudes and values are crucial and should be carefully considered when reaching a conclusion. Values, beliefs, and norms have a causal relationship with environmentally significant behaviour (Stern, 2000). This research, therefore, employs the value-beliefs-norm theory to explain the influence of pro-environmental values on behaviour (Dietz, Stern, & Guagnano, 1998). Meanwhile, in Thailand there are evidence about investigating the changes in farmers' lifestyles and value after completion of the Sufficiency Economy Training Program which aim building better farmer quality of life and wealthy. The result revealed the positive change among farmer especially the significant reduction of chemical fertilize and herbicide for their plantation (Sangsuriyajan, 2010). Thus the second hypothesis concerns the adoption of eco-innovation.

$H_{2:}$ The value-belief-norm moderates the relationship between perceived innovation characteristics and consumers' adoption intention towards eco-innovative products.

Bandwagon Effect Theory

Since the 'bandwagon' effect on consumer choice was recognized by (Leibenstein, 1950), there has been a considerable amount of recent literature on the analysis of consumer choice among conflicting brands under positive network externalities (see David and Greenstein (1990) for literature survey articles). However, it can be argued that when analyzing the beneficial effects of a greater number of consumers favoring a particular brand, consumers do not necessarily place greater value on it when purchasing a comparable or indistinguishable brand. This is because an extensive analysis of the benefits requires the development of a model in which consumer tastes are taken into account and disseminated rather than assumed. In the model exhibited by Abrahamson and Rosenkopf (1993), the bandwagon effect takes place at the institutional level.

Two types of bandwagon pressures were found to encourage simulation: institutional, arising from social acceptance, and competitive arising from the risk of reduced competitive advantage. It can therefore be argued that an organization will tend to adopt an innovation due to the fear of lost legitimacy and stakeholder support, and to retain competitive advantage, even if it may not be profitable to do so (Abrahamson & Rosenkopf, 1993);(Pennings & Harianto, 1992); (Wade, 1995). In Thailand, bandwagon effect also has been found in rubber sector that is the most important economic crop in Southern region, the farmers seem rather select fertilizers by highly recommendation from their neighbor than academically adoption (Onthong, 2013). The third hypothesis, therefore, concerns the adoption of eco-innovation.

$H_{3:}$ The bandwagon effect moderates the relationship between perceived innovation characteristics and the consumer's adoption intention towards eco-innovative products.

Government Policy

It is recognized that government policy plays a role in promoting and enhancing the adoption of innovation. Chung (2013) mentions that government organizations have a strong influence on external stakeholder capability regarding the undertaking of consistent and appropriate research, technology development, and innovation policies, including adoption promotion. In relation to Europe, greater regional public action is required to promote the transmission of knowledge than that necessary to control the disproportionate dissemination of externalities seemingly responsible for reducing the incentive of the private sector towards innovation (Autant-Bernard, Fadairo, & Massard, 2013). In the agricultural sector, government policy plays a role in national research, technology, development, and innovation, providing an analytical framework for consistent and appropriate RTDI policies to promote innovation system development. In Thailand, the previous research show that lack of the government role in research supporting and funding for organic fertilizers are decelerate adoption of organic fertilizer. Moreover, not enough trainings for the extension of various knowledge about organic agriculture innovation application are concerned factor influence rate of organic agriculture innovation adoption (Somsrisai, 2009). So in emphasizing innovation diffusion, the researchers believe that policies should be put in place to influence innovation adoption. Thus, the fourth hypothesis concerning eco-innovation adoption has been developed.

H_4: Government policy moderates the relationship between perceived innovation characteristics and the consumer's adoption intention towards eco-innovative products.

Research Theoretical Framework

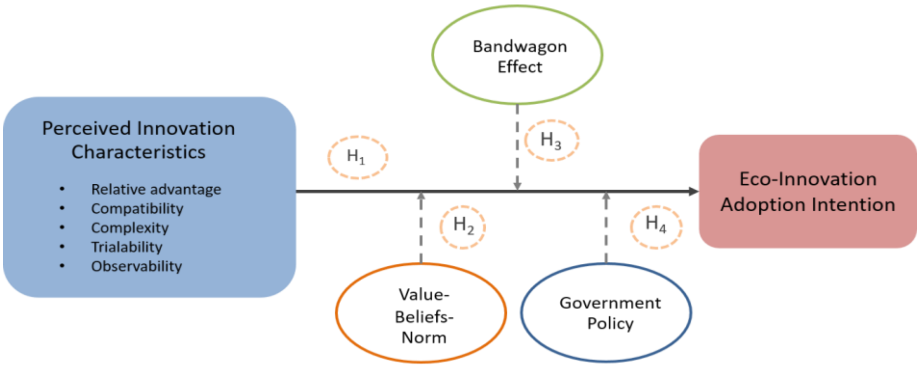

Figure 1. Theoretical Research Framework

Methodology

Quantitative research methodology is used in this research for the collection, analysis and integration of experiments and surveys, with close-ended questions to measure attitude (rating scales) and behaviour. This type of data is statistically analysed by collecting the scores from the questionnaires to answer the research questions or for testing the hypotheses.

Research Design and Data Collection

In order to understand the attitude of respondents towards the adoption of eco-innovative products in the agricultural sector, the quantitative research method is adopted. Descriptive research provides further insight into previous studies with the inclusion of possible moderating variables affecting the relationship between influencing factors and adoption intention.

A self-administered survey is used to collect data through a list of qualifying stakeholders in the agricultural sector via local office of the Department of Agriculture.

Population, Sample Design, and Sample Size

In this research, populations are focus on potential economic crop planters who are encouraged to join together to produce quality goods and focusing on key export products, with the objective of increasing productivity, producing quality goods, reducing loss and chemical residue during the manufacturing process, and promoting sustainable competitiveness.

Multi-stage sampling is employed in this research. During the primary stage, sample members can be identified in the important economic crops as rubber, oil palm, rice and fruit and vegetable. In the second stage, to achieve a substantial group, the number of respondent samples are selected by convenience sampling in each type of economic crops relevant to potential respondents as consumers of innovative eco-products. G*Power is a free power analysis program for a variety of statistical tests including the domain of correlation and regression analyses (Faul, Erdfelder, Buchner, & Lang, 2009). So this research employed G*Power to estimate the sample size by $F^2 = 0.15$ (medium) α err prob = 0.05 number of predictors = 10. Therefore, the total respondent of 172 is estimated sample size as a country overview.

Research Instrument

Questionnaire Design. A structured questionnaire was designed to collect data from respondents in order to achieve the objectives. A five-point Likert scale was adopted for the questionnaire with a range of options from 'strongly disagree' to 'strongly agree', and 'moderately disagree' and 'moderately agree', with 'neutral' for the middle scale. This questionnaire consisted of five parts and 31 statements, 26 of which have been used previously by other researchers (Jansson, 2011; Jansson, Marell, & Nordlund, 2011). Some of the variables in the five statements developed for this study were selected from the perceived innovative characteristics. Convenience sampling was used for sample selection in this study. The respondents are farmers operating in rice, rubber, fruit & vegetable and oil palm agriculture in overall region of Thailand.

Variables and Measures

Independent Variables. Perceived innovation characteristics are the independent variables in this study. Perception and attitude are measured using a five-point rating scale to ascertain agreement with the 16 statements adapted from Jansson (2011).

Dependent Variable. Adoption intention is the dependent variable. Statements in the questionnaire include: "I am interested in agricultural innovative organic products", "I am interested in using agricultural innovative organic products", "I am reducing my use of chemical herbicides and fertilizers and would not mind changing to agricultural innovative organic herbicides and fertilizers'", "I will suggest other people use agricultural innovative organic products", and "I am aware of a better quality of life when using agricultural innovative organic products". Answers to the questions were measured using a five-point scale of agreement (H.-J. Lee & Yun, 2015).

Moderating Variables. The value-belief-norm is the first moderating variable, consisting of three minor components (Jansson et al., 2011). Six statements are used, and a five-point rating scale applied to measure agreement. The second moderating variable is the bandwagon effect. The three questions are designed on the basis of the bandwagon effect theory

(J. Y. Lee & Chan, 2003) applying a five-point scale rating measurement. Finally, the moderating variable of government policy is applied, consisting of three questions (Chung, 2013).

Control Variables. In this research, the respondents' socio-demographics such as gender, age, education, income, recipient of government funding, and government advisers are measured as control variables (Rogers, 2003). The respondents' socio-demographics are measured using a nominal scale but not taken into account in hypothesis testing.

Validity and Reliability

In this research, the quality of data collected is measured for reliability and validity, with the implementation of SPSS to assess the measurement properties. To assess the construct validity of a test factor analysis is applied with the scale accuracy technique adopted for reducing the set of observable variables. The Cronbach's alpha coefficient is used to measure reliability in this research with values ranging value from 0 to 1, and a value of 0.60 is acceptable, while 0.80 or higher indicates greater reliability. The specific scale items for the variables are listed in Table 1.

Table 1. Scale items, item loading, and reliability of relative advantage

Item Scale	Item Loading	Reliability(α)
Relative advantage	4	0.828
Compatibility	3	0.793
Complexity	3	0.714
Trialability	3	0.781
Observability	3	0.767
Value-belief-norm	6	0.821
Bandwagon effect	3	0.771
Government policy	3	0.754
Consumer's adoption intention	5	0.784

To confirm its validity, the questionnaire was distributed to specialized personnel using questions arising from the literature review, for their consideration of content validity according to the mean content-related evidence. Content-related evidence indicated the level of testing or that the questions contained in the questionnaire are covered by the required sample behavioral boundaries selected for measurement (Anastasi, 1982). The index of item-objective congruence (IOC) was considered by one specialist in the field, and two academics using the formula:

$$IOC = \frac{\sum R}{N}$$

Where R means the opinion of a specialist in which +1 = sure of consistency, 0 not sure of consistency and -1 sure of inconsistency. The specialists were satisfied with the questions listed in the questionnaire.

Method of Analysis

Hierarchical regression analysis was conducted in order to test the hypotheses. Firstly, perceived innovation characteristics and consumers' adoption intention are introduced into regression as the main research variables to measure the relationship between two variables following hypothesis 1 and analyze its independent variable sub-domains. Secondly, the value-belief-norm is set as the first moderator for analyzing hypothesis 2. Thirdly, the bandwagon effect is used as the second moderator in hypothesis 2. Finally, government policy is entered as the last moderator for analyzing hypothesis 4. The moderated regression analysis technique is implemented to test whether the relationship between perceived innovation characteristics and consumers' adoption intention is moderated by the value-belief-norm, bandwagon effect, and government policy.

Research Findings

In this research a survey is used for data collection through questionnaires interviews in the agricultural areas in overall regions of Thailand. The total of 179 samples consists of both men and women in agriculture. The SPSS is employed to analyze the raw data through descriptive statistics, correlation analysis, reliability analysis, and regression analysis, with the results divided into two parts as follows.

Part 1: Demographics

Part 2: Research Analysis and Hypothesis Testing

Part 1: Demographics

Demographic Findings. The demographic characteristics of the respondents consist of gender, age, education, educational major, job level, and personal income.

Table 2. Demographic Characteristics of Respondents (n=179)

Characteristics		Frequency	Percentage
Gender	Male	58	32.4
	Female	121	67.6
Age	21–25	12	6.7
	26–30	4	2.2
	31–35	51	28.5
	36–40	7	3.9
	41–45	1	0.6
	Older than 45	104	58.1
Education	Primary	32	17.9
	Secondary	25	14.0
	Bachelor degree	87	48.6
	Higher than bachelor degree	35	19.6
Income/year	Less than 20,000	32	17.9
	20,001–35,000	37	20.7
	35,001–50,000	23	12.8
	50,001–65,000	17	9.5
	65,001–80,000	19	10.6
	More than 80,000	51	28.5
Type of Agriculture	Rice	43*	14.8
	Rubber	168*	57.7
	Oil palm	63*	21.6
	Fruit and vegetables	17*	5.8

*type of agriculture can be repeatable in one farmer

According to Table 2, most respondents are female at 67.6%, while 32.4% of respondents are male. The majority of the respondents are aged 45 years or older (58.1%), followed by those aged between 31–35 and 21–25 at 28.5% and 6.7%, respectively. Only 3.9 % of respondents are aged between 36–40. As to education, 48.8% of respondents have a bachelor's degree, 19% hold a master's degree or higher level of education with 14% completing secondary school.

The highest percentage of personal income is found in the group earning more than 80,000 baht at 28.5%, whereas respondents with an income of between 50,001–65,000 baht per year are in the lowest percentage group at 9.5%. Of the remaining respondents, 17.9% have a personal income of 20,000 baht or less, 20.7% earn 20,001–35,000 baht, 12.8% earn 35,001–50,000, and 10.6% earn 65,001–80,000. Lastly, regarding agricultural type, 57.7% of respondents operate in rubber and the remainder operating in oil palm and rice at 21.6% and 14.8%, respectively with 5.8% growing fruit and vegetables.

Part 2: Research Analysis and Hypothesis Testing

This study employs descriptive statistics for explaining consumer's attitude then regression analysis for testing hypotheses H1, H2, H3, and H4. These hypotheses are formulated to clarify the relationship between perceived innovation characteristics, value-belief-norm, bandwagon effect, and government policy and the consumers' adoption intention towards agricultural innovative products.

Table 3. Results of descriptive analysis for consumer's attitude

Factor	Mean	SD.
Independent Variables		
Relative Advantage	4.61	0.577
Compatibility	4.78	0.415
Complexity	4.53	0.733
Trialability	4.22	0.883
Observability	4.82	0.385
Moderating Variables		
Value Belief Norm	4.71	0.504
Bandwagon Effect	4.31	0.583
Government Policy	4.82	0.389
Dependent Variable		
Adoption Intention	4.60	0.471

Table 3 the descriptive statistics reveal the attitude of economic crops farmer toward operational variables in the research. Highest score among independent variable is Observability at 4.82 then followed by Compatibility at 4.53 and lowest score is Traiability at 4.22. The strongest attitude toward moderating variables is 4.82 which is Government policy. Then last but not least Adoption intention as a dependent variable is mostly high score at 4.60.

Table 4. Results of hierarchical regression analysis for consumers' adoption intention

Variables	Model 1	H1 Model 2	H2 Model 3VBN	H3 Model 4: BWE	H4 Model 5: GP
Step 1: Control					
Gender	0.482	0.000*	0.373	0.001*	0.001*
Age	0.567	0.389	0.009*	0.000*	0.000*
Education	0.000*	0.000*	0.002*	0.262	0.324
Income	0.151	0.137	0.841	0.016**	0.050
Government funding recipient	0.085	0.001*	0.000*	0.063	0.000*
Government adviser	0.083	0.000*	0.009*	0.001*	0.076
Step2: Independent variable					
Relative advantage		0.000*			
Compatibility		0.000*			
Complexity		0.000*			
Trialability		0.000*			
Observability		0.003*			
Step 3: Moderator					
Value-belief-norm			0.001		
Bandwagon effect				0.000	
Government policy					0.000
Step 4: Interaction terms					
RA x VBN			0.029**		
Complexity x VBN			0.000*		
Compatibility x VBN			0.000*		
Trialability x VBN			0.000*		
Observability x VBN			0.078		
RA x BWE				0.139	
Complexity x BWE				0.000*	
Compatibility x BWE				0.005*	
Trialability x BWE				0.000*	
Observability x BWE				0.029**	
RA x GP					0.000*
Complexity x GP					0.000*
Compatibility x GP					0.000*
Trialability x GP					0.000*
Observability x GP					0.056
R^2	0.244	0.680	0.750	0.760	0.683
Adjust R^2	0.218	0.671	0.743	0.753	0.673
F-Statistic	9.261	73.482	104.059	109.445	74.409

Notes: *, ** Significant at 1% and 5% confidence level, respectively

Study 1

Study 1 investigates the importance of perceived innovation characteristics associated with consumers' adoption intention, with the results tested as hypothesis 1. According to Table 3, the regression model 2 shows that the characteristics of perceived innovation namely relative advantage, compatibility, complexity, trialability, and observability are significant at a 95% confidence level.

This means that the respondents are likely to adopt eco-innovative products when recognizing their highly positive innovation characteristics. These results are similar to those of Jansson (2011), who demonstrated that perceived innovation characteristics and consumers' adoption intention have a positive relationship.

It can be concluded that to enhance the diffusion gradient of eco-innovative products, perceived innovation characteristics should be implemented during the design process. Apart from these, there are three more variables to be considered, namely value-belief-norm, bandwagon effect, and government policy. These moderating variables are studied in the next section to investigate the relationship between perceived innovation characteristics and consumers' adoption intention.

Study 2

This study investigates the moderating effect of value-belief-norm factors in the relationship between perceived innovation characteristics and consumers' adoption intention.

In Table 4, the regression shows significant interaction between perceived innovation characteristics and value-belief-norm in consumers' adoption intention.

Overall, a 95% confidence level is indicated for relative advantage, compatibility, complexity, and trialability ($p = 0.029$, 0.000, 0.000, and 0.000, respectively), with observability being insignificant ($p = 0.078$). Observability alone is not affected by the value-belief-norm.

The value-belief-norm heavily influences the relationship between perceived innovation characteristics (excluding observability) and consumers' adoption intention. Observability represents product availability in the market—less experience of the product on the market results in less adoption. Thus, it is strongly recommended that value-belief-norm factors are included in market development and product adoption strategies.

Study 3

In study 3 the bandwagon effect is adopted as the second moderating variable. The bandwagon effect is a psychological phenomenon whereby individuals do something primarily because others are doing it, regardless of their own beliefs.

According to the regression model, interaction between perceived innovation characteristics and the bandwagon effect in consumers' adoption intention are significant at a 95% confidence level ($p = 0.139$, 0.000, 0.005, 0.000, and 0.029, respectively). However, relative advantage alone is insignificant ($p = 0.139$).

The bandwagon effect influences the relationship between perceived innovation characteristics and consumers' adoption intention. It can be said that consumers are less likely to be interested in the perceived innovation characteristics (excluding relative advantage) when they experience a strong bandwagon effect towards the product. However, the bandwagon effect is not influenced by relative advantage. Relative advantage concerning the product is still an important factor as can be explained by the researchers.

Study 4

Study 4 investigates the influence of interaction between perceived innovation characteristics, and government policy towards consumers' adoption intention. The results indicate a 95% confidence level for relative advantage, compatibility, complexity, and trialability ($p = 0.000$, 0.000, 0.000, and 0.000, respectively), and insignificance for observability ($p = 0.056$). Observability alone is not affected by government policy.

Perceived innovation characteristics should be designed in accordance with current product-related government policy. It is strongly recommended that government policy factors are included in market development and product adoption strategies since compliance with government policy can enhance the level of product adoption intention. However, government policy does not influence observability. In particular, product availability or results from its use are very important.

Discussion and Concluding Remark

In discussion, Thai farmers as an eco-innovative product consumers are aware of perceived innovation characteristics and have a positive perception of them which affects their adoption intention (Kapoor et al., 2014). The more positive the perceived innovation characteristics, the more likely they will buy the products (Rogers, 2003). However, the positive effect of perceived innovation characteristics in the research findings can be weakened by other factors as the value-belief-norm, bandwagon effect, and government policy. The most powerful moderating factor here is the bandwagon effect since it has the highest coefficient score for sub-variable relative advantage (0.139).

From the findings, it can be concluded that the effect of the value-belief-norm, bandwagon effect, and government policy have a greater impact on the awareness of consumers towards the perceived innovation characteristics of their adoption intention, or in other words, consumers are less likely to be interested in perceived innovation characteristics when experiencing greater impact from the value-belief-norm, bandwagon effect, and government policy. This research contributes to the understanding of factors motivating consumers to buy products with positively perceived innovation characteristics since these affect their adoption intention towards eco-innovative agricultural products in Thailand. The researchers suggest that the physiological factors related to a product such as the value-belief-norm, bandwagon effect, and government policy can moderate the relationship between perceived innovation characteristics and consumers' adoption intention.

Meanwhile, it is hypothesized that perceived innovation characteristics significantly influence consumers' adoption intention. However, such significance is reduced when consumers are influenced by a strong value-belief-norm, the bandwagon effect, and government policy. The findings indicate that these three variables affect the relationship between perceived innovation characteristics and consumers' adoption intention towards products. In particular, this research provides better understanding regarding the factors influencing consumers' adoption intention, as well as contributing academically and strategically to private sector development and the commercialization of organic innovation product alternatives for use in agriculture.

When taking a deeper look to each variable interaction, statistics show that eco-innovative product tend to be widely adopted by major consumer when revealed strategic variable will be optimize implemented by manufacturing company as a spring board to cross a chasm of product adoption (Jansson, 2011) together with supporting by government as a system integrator who propel the possibility in very single action in order to promote rather adoption of eco-innovation among Thai agriculture. This research is expected to contribute towards greater economic value for stakeholders in the agricultural sector, opening a new chapter in the development of this sector in Thailand and other countries worldwide.

Implications for Researchers

Previous research on perceived innovation characteristics tends to include relative advantages, compatibility, complexity, trialability, and observability. However, as mentioned by Jansson et al. (2011) and J. Y. Lee and Chan (2003), the relative multidimensional effect of perceived innovation characteristics influence product adoption intention with differing levels of value-belief-norm and bandwagon effect. Meanwhile, Chung (2013) also states that the impact of government policy is more important when products are perceived according to their characteristics. The results of this current study indicate that the value-belief-norm, bandwagon effect, and government policy moderate the relationship between perceived innovation characteristics and consumers' adoption intention. Thus, it is recommended that researchers in this area include the value-belief-norm, bandwagon effect, and government policy as moderating variables when considering the relationship between perceived innovation characteristics and consumers' adoption intention.

Implications for Practitioners

The research findings have strategic implications for manufacturers wishing to design a model with positively perceived innovation characteristics to influence consumers' adoption intention. The results of this research indicate that perceived innovation characteristics still have a strong positive impact on Thai consumers' adoption intention towards agricultural eco-products. However, this relationship is also influenced by the value-belief-norm, bandwagon effect, and government policy.

To take advantage of perceived innovation characteristics in product design and gain greater consumer confidence, manufacturers should recognize the four influential components, namely relative advantage, compatibility, trialability, and observability, while simultaneously focusing on introducing less complex products. However, in this study, this type of product sometimes has an indirect effect on moderating the relationship of perceived innovation characteristics and consumers' adoption intention. Manufacturers need to be aware of these variables in order to implement the correct strategy, save resources, and design an appropriate product. In studying the value-belief-norm, manufacturers should be aware of incorrect values for existing related products which might affect new products to ensure consumer confidence. For the bandwagon effect, manufacturers and stores must listen to customers' views and implement their strategy accordingly when launching the product. Last but not least, as indicated by this research, government policy should also be taken into account since consumers are likely to be more willing to purchase products which are in agreement with government policy. In following these practical steps, manufacturers can design products by deploying the regulations and policies of their respective country.

Limitation

The limitations of this research relate to data collection and the length of time required for completion of the questionnaires. This issue was exacerbated by the level of cognition of some respondents, resulting in the number of questionnaires just meeting the minimum sample size requirements and not equally distribute to all economic crops of Thailand that cause of cannot discuss the result in each single type of crop.

Future Research

Since this research focuses only on perceived innovation characteristics and consumers' adoption intention, it is not absolutely conclusive that the consumer will adopt and use the product. In order to make the research more general and provide greater understanding of eco-innovative products in the agricultural sector, future research should expand into the adoption phase. This would enable the design and fit of a potential model for eco-innovative product adoption in the agricultural sector in Thailand to be thoroughly tested. Moreover, future research might expand to interesting single type of economic crop where some unique interesting issue might be investigated. Last but not least, this research employed socio-demographic factors as a control variable but not objective of research. Thus Socio-Demographic variables are also recommended for further study in the future research

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Fair-Value Accounting and Financial Statement Analysis in Thai Insurance Companies

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Abstract

Historical cost basis has been a fundamental tenet of accounting for assets and liabilities in many countries. Historical costs are normally perceived as more reliable. On the other hand, fair value accounting provides more relevant information to the stakeholders like shareholders, prospective investors and creditors. As more and more countries are harmonizing their Accounting standards with that of International Financial Reporting Standards (IFRS) prepared by IASB, the use of fair value accounting is gaining popularity. This paper addresses whether a change from historical cost to the fair value method affects financial statement analysis. Data Envelopment Analysis (DEA) has been performed, on key financial statement items. Then, the results based on fair-value have been compared with that of the historical cost basis for ten (10) Thai insurance Companies (Public Companies Limited). The findings report the change in efficiency scores of these Thai insurance companies and whether the relative efficiency to each other altered when they shift from historical cost to the fair value basis.

Keywords: Fair value accounting, historical cost, DEA, financial statement analysis, Thai insurance Companies

Introduction

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date or an estimated value when it is difficult to determine the current price (IASB, 2013). Fair value estimates of investment securities provide significant explanatory power beyond that provided by historical costs. Strikingly, historical costs provide no significant explanatory power incremental to fair values (Barth, 1994). The two defining characteristics of financial reporting are ‘reliability’ and ‘relevance’. Fair value accounting provides relevant information to investors and stakeholders as compared with the historical cost basis that provides reliable information. The views of many accounting practitioners and scholars have changed from ‘reliability’ to ‘relevance’ of financial reporting to the stakeholders and users, in the past few decades.

Preparing the financial statements with fair value accounting will change the accounting numbers compared to their preparation by using the historical costs. This might also have an effect on the financial statement analysis. A change from historical cost to the fair value accounting (in accordance with the IFRS), will therefore, alter the analysts and stakeholders decision making towards the companies, whose financial information is being compared. Rodríguez-Pérez *et al*. (2011) conducted research on Spanish insurance companies and advocated that the numbers on the face of the financial statements changed considerably on restating the financial statements on fair-value and observed that the magnitude of these changes varies between companies and classes of assets. Information on the fair value of financial investments had higher explanatory power of market-to-book ratios over and above the information already contained in historical costs, although it only accounted for a modest portion of the variation (Eccher *et all*., 1996). However, only in a few cases does a change in the valuation basis lead to a relevant change in Data Envelopment Analysis (DEA) scores (Rodríguez-Pérez *et al*., 2011). Most of the studies done in the past have been unable to answer specifically whether the purported informational benefits of fair-value accounting can actually alter the users' decisions like whether to invest in a company or not. This paper explores whether change from the historical cost to fair value accounting will have a significant impact on the face of the financial statements in the Thai insurance companies. The study also addresses the degree to which the company's efficiency and profitability will be altered. This study will be undertaken by using the DEA model for the analysis of financial statements of Thai insurance companies.

This paper addresses whether a change from historical cost to the fair value affects the financial statement analysis and the extent to which the efficiency of a Thai insurance company changes as reflected through the financial statements. The point here is to analyze whether fair value accounting instead of the historical costs, will lead users to position a company different from its competitors. For this purpose, a non-parametric, linear programming based technique that turns any number of variables into one overall score, relative to best in class observations has been used. Specifically, DEA analysis has been performed on financial statement items commonly used in a DuPont analysis like asset-turnover and profit margin ratios and the results of fair value have been contrasted with the historical cost for the same sample of Thai insurance companies. Some authors in the management-science and operations-research like Thanassoulis *et al*. (1996), Berger and Humphrey (1997), and Feroz *et al*. (2003), have suggested that DEA might be superior to traditional financial ratios analysis or at least complement it. The study will help the financial statement analysts and preparers in understanding the value of financial items & relevance of fair values better and the investors in making sound financial decisions based on the analysis of financial statements. This study will also contribute towards the relevance of use of DEA analysis for financial statement analysis to the academia and analysts.

Literature Review

Financial Statement Analysis

Financial statements include the Statement of profit or loss and other comprehensive income, Statement of financial position, Statement of changes in equity, Statement of cash flows of a company and Notes to financial Statements. Financial analysis is an essential instrument for assessing the financial position of enterprises (Kulchev, 2017). Kulchev (2017) advocates that the key areas of financial analysis include revenue, business performance, turnover, profitability, inventory and capital structure, liquidity and indebtedness. Financial statement analysis is important for the users of financial information of a company like shareholders in analyzing the financial health and for the managers to take operating, financing and investing decisions.

Fair Value and historical costs

Fair value accounting is the practice of accounting that values certain assets and liabilities at their current market value. Theoretically, fair value accounting seeks to capture and report the present value of future cash flows associated with an asset or a liability. Businesses and market participants should understand this measure to represent "the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date." (SFAS No. 157 FASB, par. 5). According to Rahmawati (2006), HCA (Historical cost accounting) basis entails that most assets and liabilities should be measured and reported at their acquisition price (historical price).

The relevance of historical cost based financial statements has been subject to debate and controversy among the practitioners, scholars and the accountants across the globe. There has been a movement to shift from the historical costs to the fair value accounting, particularly in the past two decades or so. Barth (1994) advocated that the fair value estimates of the investment securities provided more explanatory power than that provided by the historical costs. FVA (Fair value accounting) is more useful and reliable during the stable market condition than during the period of financial markets' turmoil (Menicucci & Paolucci, 2017).

There are other studies which investigate the motivations for the companies to revalue. Missonier-Piera (2007) suggests that in Switzerland, the companies that revalue assets are the ones which are more indebted companies and have less opportunities of investment. His study concludes that revaluations improve the perception of international stakeholders on the financial health of a company and thereby improves its borrowing capacity. Many studies have been done to compare the fair value accounting with the historical costs to know which one is better for the companies and the stakeholders. Hitz (2007) found that comparative analysis of fair value accounting with historical accounting yielded mixed results. His findings indicate that the decision relevance of **fair value** measurement can be justified from both perspectives, measurement and information, yet the conceptual case is not strong. Fair value accounting and historical cost should be used in tandem to get rid of disadvantages of both these methods (Ari & Yilmaz, 2015).

DEA Analysis

Data envelopment analysis (DEA) is a linear programming based technique for measuring the relative performance of organizational units where the presence of multiple inputs and outputs makes comparisons difficult. Data Envelopment Analysis (DEA) is a non-parametric, linear-programming-based technique that turns any number of variables into one overall score, relative to best-in-class observations (Rodríguez-Pérez *et al*., 2011).

DEA analysis has not been used extensively for the purpose of financial statement analysis, although the trend is growing. Halkos and Salamouris (2004) suggested that data envelopment analysis can be used as either an alternative or complement to ratio analysis for the evaluation of an organization's performance. A major advantage of the DEA approach is that it clearly identifies the factors contributing to the performance of company over its competitors (Malhotra & Malhotra, 2008).

In the insurance sector, the research on financial analysis using the DEA approach is scarce. Chhikara and Rani (2012) applied the DEA technique to measure the technical efficiency, overall technical efficiency and scale efficiency of life insurance companies in India and were able to suggest the best and inefficient insurers based on the efficiency scores. Mostly, the research in has been directed towards two areas. The first one is how the insurance companies maintain solvency and achieve a sound financial position. The other concerns the efficiency in which that use the inputs in the process of generating outputs. Wanke and Barros (2016) used the two stage DEA-data mining approach and suggested that efficiency is affected by different type of insurance and regions. Sinha (2016) developed a robust performance indicator using a smoothened bootstrap data envelopment analysis. He found that, while ownership has a significant impact on efficiency, the same cannot be said about solvency.

Research Hypothesis

Specifically, this research focuses on two main issues. The first is the extent to which restating the financial statements i.e. the use of the fair value instead of historical costs will impact the financial statements. The second is whether the conclusions drawn from financial statements analysis will be different when the fair value basis is used.

H1: There are significant changes in numbers when the financial statements of Thai insurance companies are restated on fair value basis.
H2: The conclusions drawn from financial statements analysis will be different when the fair value basis is used.

Further, two sub-hypothesis for hypothesis 2 have been formulated:
H2:1 When a Thai insurance company changes from historical cost to fair value, its efficiency changes.
H2:2 When all the insurance companies in an industry change from historical cost to fair value, then a company's efficiency relative to each other changes.

Methodology

Sample and data collection

The annual reports of a sample of ten Thai insurance public companies limited were obtained. These companies were considered as all the financial information needed could be obtained from their annual reports including the fair values of some of the assets, in order to test the hypothesis and analyze the findings. This research is based on the secondary data which is the annual reports/financial statements of the insurance companies. This information was obtained from the websites of these companies. The Securities and Exchange Commission Thailand (SEC) and the Stock Exchange of Thailand (SET)websites were used to gather financial information. The main reason for selecting the insurance companies is that they have a high proportion of tangible and financial investments on their balance sheets which are likely to show considerable differences in fair value and historical cost measures.

Therefore, the financial statement analysis using these two different bases will be clearly observed. The information of revenues and expenses was collected from the balance sheet and statements of income of these companies based on historical cost. The fair values and historical cost information of a) available-for-sale investments b) other investments were also extracted from the notes to the financial statements. Thus, there were two sets of data obtained for some of these items, the set based on historical cost and for the same set of items based on fair values. This helped in analyzing and testing hypothesis 1 and 2.

Measures

a. The asset-turnover and profit margin ratios were focused upon to obtain a summary measure for the conclusions drawn from analysis of financial statements based on fair value drawn from the analysis of two sets of financial statements. Data envelopment analysis (DEA) was then used to simulate the process of mapping the multiple financial statement items related to these ratios into a one-dimensional score.

b. The financial statement items were compared based on historical cost with that of fair value in order to study Hypothesis 1. For that, standard deviation was used.

c. In order to contrast hypothesis 2.1, a pair-wise comparison was performed of the DEA scores of historical costs and fair value obtained in Step b.

d. The two sets of DEA scores were co-related and checked whether the differences in scores were statistically significant. It was also determined if the ranking of the insurance companies changed if the DEA based fair value scores were used, to evaluate hypothesis

DEA Analysis

DEA software DEAP and SPSS software were used in undertaking the research and testing the hypothesis. SPSS software has been used in finding the measures like Standard

Deviation. DEA converts multiple input and output measures for a set of decision making units into a single comprehensive measure of efficiency (Rodríguez-Pérez *et al*., 2011). It was used intesting hypothesis H2.1 and H2.2. It is a powerful tool of analyzing the efficiency. The framework has been adopted from multiple- input, multiple-output production functions and has been applied in many industries. In DEA model used in this study, the input variables consisted of three, namely total expense, available-for-sale investments and other financial investments and one output, namely the total revenues. The reason for taking these inputs is that they are the major resources which generate the total revenues of the company.

In an insurance company, the assets viz. the financial investments like the available-for-sale investments form a major chunk of its assets. So, they have been taken as inputs. Please refer to the table below:

Table 1. Input and Output Variables used in DEA models

Total expense	Total revenues
Available for sale securities	
Other financial Investments	

An example of simple DEA with one input and output is explained by the diagram below:

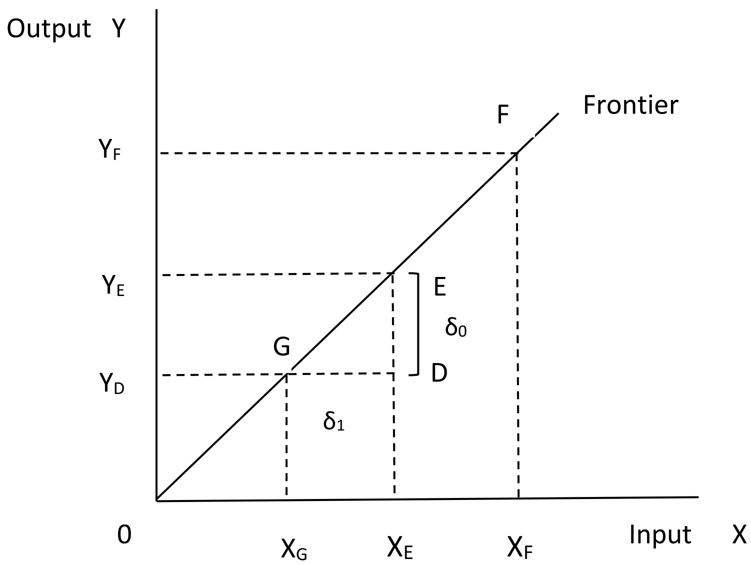

Figure 1. DEA Analysis

The points E and F represent the most efficient firms among a set of observations. This curve from 0 and connecting E and F is called the efficiency frontier as it shows the interpolation of the most efficient combinations of input and output. Firm D is inefficient because its input is more (X_E) and output less (Y_D), compared to the firms on the efficient frontier.

For it to be efficient, there are two ways:

1. Firm D should improve its output by δ_0

$$\alpha = \frac{Y_E/X_E}{Y_D/X_E} > 1$$

Here α represents the factor by which Firm D's output should be increased so that it becomes fully efficient. This approach is called the output-oriented approach because it focuses on improving the output.

OR

2. Firm D should decrease its input by δ_1

$$\beta = \frac{Y_D/X_G}{Y_D/X_E} > 1$$

Here β represents the factor by which Firm D's input should be decreased so that it becomes fully efficient. This approach is called the input-oriented approach because it focuses on decreasing the input and maximizing efficiency.

An output oriented approach and constant returns-to-scale has been assumed. The mathematical equation mentioned below was originally derived in Charnes *et al.*, (1978) and is generally referred to as the "CCR ratio form of DEA". Let us assume that there are S decision making units (DMUs) to be investigated, each uses *m* inputs to produce n outputs.

Also, let DMU_k, $(1<k<S)$ uses a combination of *m* inputs, denoted by $X_k = \{X_{k1}, X_{k2}, \ldots, X_{km}\}$ to produce *n* outputs, denoted by $Y_k = \{Y_{k1}, Y_{k2}, \ldots, Y_{kn}\}$. The relative efficiency, E_k for DMU_k is defined as

$$E_k = \frac{\sum_{j=1}^{n} h_j Y_{kj}}{\sum_{i=1}^{m} c_i X_{ki}} \qquad k = 1,2, \ldots\ldots, S \tag{1}$$

where the weights c_i represents the price (i.e. the value or shadow cost) of one unit of input X_{ki}, $1 \le i \le m$, $\forall\ k = 1, 2, \ldots, S$, and h_j represents the price (or the value of the contribution) of one unit of output Y_{kj}, $1 \le j \le n$,

According to Mohamad & Said (2011), ir $\forall\ k = 1,2, \ldots\ldots\ldots, S$ e of the firm gets better, there should be possible improvements in the levels of outputs. This leads to an equivalent dual output-oriented DEA model which is given by:

maximize Ω_0

subject to

$$-X_{0i} + \sum_{k=1}^{S} X_{ki}\lambda_k \le 0, \quad i = 1,2\ldots\ldots\ldots, n \tag{2}$$

$$-Y_{0j}\Omega_0 + \sum_{k=1}^{S} Y_{kj}\lambda_k \ge 0, \quad j = 1,2\ldots, m,$$

$$\lambda_k \ge 0, \quad k = 1,2\ldots\ldots, S, \tag{3}$$

Ω_0 unconstrained.

The above model is the output-oriented model under constant return to scale, CRS.

Results

The following information have been taken from the financial statements, annual reports and notes of Thai insurance companies for the one year ended on 31st December 2016. This data pertains to ten (10) insurance companies (Public Limited Company) in Thailand.
PCL means Public Company Limited. All figures in **Baht '000**

Firms/Insurance Companies	Decision making units (DMUs)/Insurance Companies	Revenues	Expenses	Available-for-sale investments - Amortised Cost	Available-for-sale investments - Fair Value	Other investments - Cost	Other Investments - Fair value
1	Bangkok Insurance PCL	13,457,776	10,635,882	9,554,845	37,139,029	687,173	1,422,347
2	Bangkok Life Assurance PCL	55,482,436	49,384,265	57,335,352	65,314,232	135,389	155,100
3	Krungthai-AXA Life insurance PCL	62,570,439	56,213,790	178,569,910	186,609,603	6,065,408	6,835,310
4	Thaire Life Assurance PCL	2,054,364	1,668,366	714,368	719,919	73,299	73,299
5	FWD Life Insurance PCL	23,666,617	23,111,845	71,460,825	77,130,975	9,124,000	10,050,000
6	Sri Ayudhya General Insurance PCL	2,270,414	2,152,181	382,002	385,407	121	550
7	The Navakij Insurance PCL	2,906,708	2,835,367	2,103,886	2,260,006	86,881	285,273
8	The Thai Insurance PCL	1,682,042	1,634,952	777,072	768,758	8,100	40,200
9	Muang Thai Insurance PCL	8,930,966	8,145,730	6,916,896	6,848,100	56,100	95,000
10	Thaivivat Insurance PCL	2,847,136	2,821,745	1,851,597	1,967,182	271,693	255,051

From the data above, it is clear that the hypothesis 1 is accepted because there are significant changes in numbers when the financial statements of insurance companies are restated on fair value basis. Available-for-sale investments and other investments show a significant change when in numbers when they are restated from historical cost to the fair value basis. The mean, median and standard deviation of the same also suggest significant change in numbers on restatement. The reason for this is that the current market value of these investments is different from their historical cost. To a financial analyst, it will seem obvious as normally the fair values of financial investments depend on how well the economy and the stock markets of the country are performing. Having said that, the real data has been brought out to substantiate this hypothesis.

Statistics

The skewness and Kurtosis of all the descriptives like revenues, expenses are not near to zero. So, the data is not normally distributed. Further, the Kolmogorov-Smirnov test also indicated that for all the variables mentioned above, the significance is close to zero or zero. This suggests that the data is not normally distributed. So, it makes sense to do further analysis by using a non-parametric technique like the DEA.

Input and Output variables used in DEA Models **(in Baht '000)**

	Revenues (Output variable)	Expenses (Input variable)	Available-for-sale investments - Amortised Cost (Input variable)	Available-for-sale investments - Fair Value Cost (Input variable)	Other investments – Cost (Input variable)	Other Investments - Fair value (Input variable)
Mean	17,586,890	15,860,412	32,966,675	37,914,321	1,650,816	1,921,213
Median	5,918,837	5,490,549	4,510,391	4,554,053	111,135	205,076
Std. Deviation	22,973,695	20,610,114	57,311,470	59,721,355	3,220,854	3,543,742
Minimum	1,682,042	1,634,952	382,002	385,407	121	550
Maximum	62,570,439	56,213,790	178,569,910	186,609,603	9,124,000	10,050,000
Kolmogorov-Smirnov (Sig.)	.002	.002	.000	.001	.000	.000

Historical cost basis

The ten insurance companies are called Decision making units (DMUs) in DEA analysis. On undertaking the DEA analysis, with revenue as the output and expenses, available-for-sale investments - amortised Cost & other investments at cost as inputs, the DEA efficiency came out as follows:

DEA efficiency (historical cost)

firm	te (technical efficiency)
1	1.000
2	1.000
3	0.880
4	1.000
5	0.809

firm	te (technical efficiency)
6	1.000
7	0.857
8	0.943
9	0.979
10	0.809
mean	0.928

From the above (previous page), it is clear that following is the ranking of insurance companies based on historical cost.

Ranking of insurance companies

1	Bangkok Insurance PCL
1	Bangkok Life Assurance PCL
1	Thaire Life Assurance PCL
1	Sri Ayudhya General Insurance PCL
5	Muang Thai Insurance PCL
6	The Thai Insurance PCL
7	Krungthai-AXA Life insurance PCL
8	The Navakij Insurance PCL
9	FWD Life Insurance PCL
9	Thaivivat Insurance PCL

Fair value basis

On undertaking the DEA analysis, with revenue as the output and expenses, available-for-sale investments – fair value & other investments at fair value as inputs, the DEA efficiency came out as follows:

DEA efficiency (fair value)

firm	te
1	1.000
2	1.000
3	0.883
4	1.000
5	0.810
6	1.000
7	0.830
8	0.886
9	0.969
10	0.817
mean 0.920	

From the above, it is clear that following is the ranking of insurance Companies based on Fair Value:

Ranking of insurance companies

1	Bangkok Insurance PCL
1	Bangkok Life Assurance PCL
1	Thaire Life Assurance PCL
1	Sri Ayudhya General Insurance PCL
5	Muang Thai Insurance PCL
6	The Thai Insurance PCL
7	Krungthai-AXA Life insurance PCL
8	The Navakij Insurance PCL
9	Thaivivat Insurance PCL
10	FWD Life Insurance PCL

The sub-hypothesis of hypothesis 2, H2:1 was that 'when a Thai insurance company changes from historical cost to fair value, its efficiency changes.' Looking at the above results, it can be said that for some of the insurance companies, the efficiency does not change while for some it does change, when they change from historical cost to fair value basis. For instance, the firms 1 and 2 i.e. Bangkok Insurance PCL and Bangkok Life Assurance PCL, the efficiency is 1, when they change from historical cost to fair value basis. But for insurance companies, The Navakij Insurance PCL, The Thai Insurance PCL and Muang Thai Insurance PCL, the efficiency gets less when they shift from historical cost to fair value basis. Overall, we can say that the hypothesis holds true for some companies, in that the efficiency changes on shifting to fair value basis.

Sub-hypothesis of hypothesis 2, H2:2 was that 'when all the insurance companies in an industry change from historical cost to fair value, the company's efficiency relative to each other changes.' Looking at the above results, it can be firmly said that this hypothesis is rejected. As is seen clearly from the above DEA analysis of information, the companies' relative efficiency to each other does not change at all, except for FWD Life insurance PLC and Thaivivat PLC. Even for FWD Life insurance PLC and Thaivivat PLC, there is a marginal change in rankings as under historical cost they were ranked at number nine (both) whereas under the fair value basis analysis based on DEA, their respective ranks have changed marginally to number ten and nine respectively.

Conclusion and Recommendations

The financial statements have been prepared on a historical cost basis except where otherwise disclosed in the Notes to the financial statements. In all the companies that have been studied for the purpose of research here, the available-for-sale investments have been measured at fair value by all the Thai insurance companies. They have also mentioned historical cost and fair value numbers for some of the investments in the Notes to the financial statements. The Thai Financial Reporting Standards issued by the Federation of Accounting Professions have been harmonized to a great extent with that of the International Financial Reporting Standards (IFRS) prepared by the IASB. It is quite clear from the DEA analysis of DMUs (Decision making units/insurance companies) undertaken that the efficiency of insurance companies relative to each other did not change when all of them shifted from historical cost to the fair value based on the variables considered.

That is, there is unlikely to be any change in the rankings based on either of these basis and therefore difficult for investors and other stakeholders to make investment and other decisions. Although, an (individual) insurance company's efficiency might change when it shifts from historical basis to fair value basis. This adds to the debate for analysts and academia as to the relevance and utility of fair values vs historical values in decision-making contexts. Although, it can be affirmed that the fair values of some significant assets are different from the historical costs, the relative efficiency of the companies does not change much when shifting from one method to another based on the findings.

Thus, the investor will find the efficiency rankings of either of the basis to be almost the same. Other researches similar to this also have not been able to bring out any clear findings in this context and are often contradictory. In future, some more input variables like premises and equipment can be added to bring out better results as it comprises a major chunk of assets. This time this could not be done because the fair values of it were not mentioned in insurance companies' annual reports. In order to get the fair values of Premises and Equipment, probably in future the insurance companies headquarters can be visited and information solicited from them. In future, the study can use DEA analysis by considering financial statements of the latest three years instead on just one, in order to generate better results and optimize the business cycle.

Limitations

As pointed out above, this research can include some other assets like premises and equipment in the input variables. This research takes into account only ten insurance companies. This number could be increased when undertaking future research as there are twenty four Insurance companies (Public Company Limited) in Thailand. Initially, the intention was to include twelve insurance companies, but some of the insurance companies financial statements in English could not be found. This research takes into account only the insurance companies which generally have high amount of financial investments. Such research should also be undertaken in other industries like Oil and Gas, manufacturing etc. which can come out with interesting results.

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Factors Affecting Employees' Motivation to Use E-training in the Manufacturing Sector in Thailand

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Abstract

The manufacturing sector, inclusive of agricultural processing, beverages, electric appliances, computers and parts, furniture, plastics, and automotive parts have greatly contributed to the growth of national income. The sector creates jobs and income for the country and contributes to a highly skilled and educated labor force. However, the recent shift in manufacturing firms moving up the value chain and expanding their capabilities to produce greater value-added products, has generated the need to further improve the effectiveness of employees. E-training is an alternative training approach to traditional classroom-style training, and many large firms have begun implementing this electronic training for their employees. This research studied the current implementation of E-training in manufacturing firms and identified significant factors affecting the employees' intention to use E-training. Both primary and secondary data were gathered to identify potential factors. Data were collected randomly by means of self- administrative questionnaire. Questionnaires from 400 employees in manufacturing firms was collected and analyzed by using factor analysis and multiple regression. The result indicates that there are seven significant factors that influence the adoption of e-learning by manufacturing organizations: Trust, Reward, Ease of use, Social norm, Attitude, Virtual learning, and Education level.

Keywords: E-training, human resource management, manufacturing industry in Thailand

Introduction

Proficiency of people within the organization is one of the significant keys of firm development. This is because high proficiency of employee can lead to positive outcomes and affect a firm's productivity and profitability (Imran, 2013). A proper training with necessary information and skill sets can assist employees to bring out more potential to accomplish their work. Effective and well-performed employees can induce the organization to reach its global competitive market and impact on growth and profitability (Kananurak, 2011). Lifelong learning and workforce productivity are known as the important components to support a business strategy in an increasingly changing market. Therefore, E-learning is proven to be an excellent way to accomplish effectiveness.

Today there are so many organizations who adopt E-learning methods to reform their performances. Moreover, E-learning is instructional media that pass on knowledge via an electronic device including computer and internet such as computer-assisted instruction, web-based instruction, online learning (Jeerapattannatorn, 2016). It is also referred to as E-training. E-learning is one of the interesting technology tools. This study is aimed to identify the influential factors the effect the intention of the employees to adopt E-training in the context of manufacturing industry in Thailand.

According to The Stock Exchange of Thailand (2015), industries in Thailand can be divided into eight important categories including Agro & Food Industry, Consumer Products, Financials, Industrials, Property & Construction, Resource, Services, and Technology. Gross Domestic Product (GDP) of Thailand in the year 2016 is 406.84 billion US dollars. The proportion of GDP in the three sectors is 8.9%, 35.9% and 55.3% for agricultural, industrial and service sectors respectively (Central Intelligence Agency, 2016). Although GDP in the service sector is greater than the manufacturing industry, this project emphasizes assessing the opportunity of implementing E-training in the manufacturing industry. Skilled workers are important inputs for this industry, and they are needed to be trained to improve their productivity constantly. In addition, E-training has been implementing widespread in the service industry; for instance, transportation companies, airlines companies, educational and hotel businesses.

The manufacturing industry generates the GDP to Thailand economy for about one-third of the total GDP. In addition, the employed person in the manufacturing industry is accounted for 16.61 percent of total amount of employed person (The Office of Permanent Secretary Ministry of Labour, 2016). The manufacturing industry is certainly a significant contributor to the overall of Thailand's economic growth. Since the majority of the manufactured products are exported to other countries, it is a source of national income each year. In summary, a successful implementation of E-training in this industry will lead to a substantial improvement on the workforce in the industry. The research is aimed to study the opportunity of E-training in the manufacturing industry and identify significant factors affecting the intention of using E-training.

Literature Review and Hypotheses Development

Theoretical Foundation

Human Resource Management (HRM)

Human resource management is known as the effective management of people in the organization. Since it is directly related to the human, it involves in every management decision and actions that significantly influence the relationship between employees and the organizations. Training and employees development area is one of the major areas of human resource management. The main purpose of training is to improve the skills of the employees, in order to maximize the efficiency and effectiveness of their employees (Mitiku, Argaw, and Bayissa, 2015)." According to Kim et al. (2016), developed countries have shown the spread of technology, which increased the demand for high-skilled workers. Many organizations have realized the importance of training.

Employee Motivation

Motivation is a tangible and an intangible thing that human resource or organization use to encourage their employees to increase productivities by satisfying employee's goals. As a business owner, revenue and productivity needed to be optimized. Hence, you have to motivate employees to work as efficiently as possible (Jacoby, 2014). One of the most effective motivation ideas is "training" because it helps employees learn specific knowledge and skills. Employee training is also a key factor in employee motivation. Therefore, employee motivation also related to the future opportunities of the employees to get promoted and grow in the career path, which are integrated as the employee's happiness and satisfaction (Heathfield, 2017).

Theory

"The theory of reasoned actions is a theory that focuses on a person's intention to behave a certain way" (Lezin, 2003). An intention is the probability that a person will behave in a particular way and in a particular situation; it is the primary factor of behavior. This theory considers the person's attitude and how that attitude affects behavior, as well as the norms that may have a significant impact on the attitude. According to Lezin (2003), attitude towards behavior is influenced by the behavior of two related factors which are beliefs about the consequences of their behavior and the evaluation of the potential outcome. Similarly, norms are the results of our perceptions of the beliefs of the relevant people that influence our life including parents, friends, and colleagues. According to Fang et al. (2017), norms are influenced by individual behaviors by external social factors. Therefore, attitudes and norms can be a critical factor in motivating the employee's interest in E-training.

Research Framework

To successfully implement E-training technology in a manufacturing firm, acceptance of using this technology as a part of training is significant. Therefore, the following are potential factors that motivate employees to use E-training technology.

Age is a significantly important factor in training participation. According to Meyer (2011), the firms with older employees have less probability to employ and use new technologies when comparing to those firms with younger employees. Ben-Porath (1967) explained that older workers seem to have less training participation because of the reduction in the need for further education (Fritsche, 2012). Therefore, age is a significant factor that affecting the willingness of an employee to train E-training.

Education level is related to any prior schooling that has been successfully completed. Educational level includes all the educational background such as high school diplomas, college degrees, credit from online courses, and vocational programs. According to Fritsche (2012), the employees with higher education level influence on the ability of the employees to acquiring new skills and knowledge. Therefore, it leads to a higher chance to perform an efficient manner and success in training participation.

Trust is a powerful motivational tool for a leader, and it is one of the top factors that influence employee’s motivation to achieve (Llopis, 2012). Due to De Meo, E-learning class formation will benefit only when the needs of the learners are fulfilled. For instance, trust among people supports and motivates the classmates to participate in the activities (Pasquale et.al, 2017). In addition, trust is a significant component for achieving the project (Lennerholt, 2006).

Ease of use refers to the easiness of using instruction and the flexibility of location and time to use. The review of Alkali & Mansor’s study showed that employee perceptions of ease of use significantly affect the intention of the people to use an information system (Alkali and Mansor, 2016). The easiness and flexibility can allow anyone to participate in the training at any time, anywhere, and any device (Scott, 2017). Moreover, it can accommodate the needs of participants who have varied hours of learning as well as who have difficulty to attend a regular class (Bhatia, 2011).

Work experience is a period of placement that employee spends working in the workplace in order to get insights into a particular type of job (Department for Education and Skills, 2002). According to Fritsche (2012), longer employees have worked, the more experience they acquired, this leads to a reduction of desirable engagement in the training. However, Ford et al. (1993) found that an individual gains greater experience in the job, they began to value training more highly. Therefore, work experience affects an employee’s intention to use E-training.

Reward is the benefits that workers receive from their jobs (Jehanzeb et al., 2012). Referred to reward motivation conducted by Pappas, one of the most powerful ways to motivate employees in E-training is to offer them rewards (Pappas, 2014). An employee like to feel a sense of accomplishment. For this reason, many E-training companies are now using certification online training courses to fuel motivation and engagement (Pappas, 2017).

Social norm refers to Clark et al. (2018), "social norms are informal rules derived from social systems that prescribe what behavior is expected, allowed, or permitted in particular circumstances". There are three major reasons of the individuals to follow a rule. The first reason is they perceive that majority of people follow the rule. The second reason is that other people expect the rule to be followed. The third reason is to recognize benefits from following the rule or social consequences of being perceived as deviating from the rule. According to Hernandez et al. (2011), when one finds that people around him or her use an E-learning and perceive some value, the willingness to use E-learning of the individuals will be increased.

Attitude refers to Jain (2014), "attitudes are held with respect to some aspect of the individual's world, such as another person, a physical object, a behavior, or a policy". Attitude represents the ways that a person responds to the surrounding environment. According to Liaw et al. (2007), individual's attitudes affect the usage and adoption of information. Additionally, based on Francis et al. (2015) point of view, learner's attitudes directly contribute to the learning outcomes. Good attitudes positively influence the effective, motivation, and application of the learning. Therefore, the effective of E-training is partially depended on the learning attitudes rather than the higher level of technological advancement. The positive individuals' attitudes on E-learning lead to the higher chance of the intention to use it.

Research Methods

Sample Selection and Data Collection Procedure

The population consists of employees in the manufacturing industry. The sample consists of one group which is current employees in the manufacturing industry. This refers to those who have directly involved in manufacturing industry or been in charge of management authorities. The sampling technique used is a random sampling. For data collection processes in this study, two techniques are employed.

The first technique is secondary research, the documentary research from the credible sources including literature surveys, journals, articles, previous research works, and case studies related to factors affecting intention to use E-training.

The second is the empirical survey research. Surveys are done by means of a questionnaire survey to employees who currently work in the manufacturing industry. More than 500 sets of questionnaires were distributed by both postal mail and e-mail to manufacturing firms in every parts of Thailand. The total of 400 sets of the valid questionnaire was collected.

The questionnaire consists of three parts. It starts with open-ended questions and multiple choices about general information of respondents including age, gender, and education level, type of manufacturing industries, job department, job position, work experience, and income as shown in figure 1. The second part consists of open-ended questions and multiple choices about E-learning experience, E-training experience, the frequency of use and intention to use E-training. In the third part is based on 20 questions in 6 different categories as indicated in table 1. Each respondent has to identify his or her level of intention toward E-training. The five-point Likert scale is applied where 1 refers to extremely disagree and 5 refers to extremely agree with the statement in each item. All categories of questions seek to identify the factors affecting employees' intention to use E-training.

Part 1: General Information

1. Age.........Years	Gender: ( ) Male	( ) Female	
2. Educational level:	( ) Below High School	( ) High school or higher	
( ) Diploma or Equivalent	( ) Bachelor	( ) Master or higher	
3. Type of Manufacturing Industry Business:	( ) Housewares and Office equipment	( ) Agriculture	( ) Media and Publication
( ) Food and Beverage	( ) Personal care and Medical supplies	( ) Packing	( ) Electronics part
( ) Industrial supplies and machine	( ) Paper and Printing supplies	( ) Automotive	( ) Energy
( ) Petrochemical and Chemicals	( ) Building Material	() other specify	
4. Your Current Department:	( ) Secretary	( ) Document Officer	( ) Quality check
( ) Marketing/Sales	( ) Accountant/Audit	( ) Engineer	( ) Finance
( ) Maintenance	( ) Human Resource	( ) IT	( ) Consultant
( ) Customer Relation	( ) Production	( ) Purchasing	( ) Design
( ) other specify..			
5. Your Current Position:	( ) Operator	( ) Staff	( ) Supervisor
( ) Manager assistant/Deputy Manager	( ) Manager	( ) other specify...	

Figure 1. Questions of Demographic and General Information of Respondents

Model Specification

Reliability Test

A key indicator of the quality of measuring instrument is the reliability of the measures**.** Reliability test is used to evaluate the consistency of measurement and internal consistency (Mohamad, Sulaiman and Sern et al., 2015). Cronbach's alpha is one of the well-known methods for estimating internal consistency reliability (Leontitsis and Pagge, 2007). The result of Cronbach's alpha is ranging from 0.00 to 1.00. The higher value of coefficients indicates the higher levels of reliability. According to Carole and Almut (2008), the acceptable range of Cronbach's alpha is ranging between 0.70 and 0.90.

Table 1. Examples of questions in part 3

Categories	Items	Categories	Items
Ease of use	1. Procedure and instruction 2. Flexibility on study and location 3. Flexible time 4. Requirement of IT staff	Virtual learning environment	1. Media Quality 2. Counsel with expert 3. Knowledge Assessment
Trust	1. Secure system 2. Personal information security 3. Content accuracy	Rewards	1. Position Promotion 2. Bonus 3. Career Development Opportunity
Social norms	1. Henchman Influence 2. Colleague Influence 3. Field Colleague	Attitude	1. Learning Achievement 2. Knowledge Advantage 3. Knowledge application

Factor Analysis

Factor analysis is a technique that used to reduce the number of variables of factors**.** It is utilized for grouping data or grouping variables that are correlated in the same group (Taherdoost, Sahibuddin, and Jalaliyoon, 2014). Kaiser-Meyer-Olkin (KMO) is employed to measure sampling adequacy and Bartlett's test of sphericity. KMO is used to indicate the proportion of variance that might be caused by underlying factors. The result of KMO index is raging from 0 to 1, the data are suitable with the KMO index is at least 0.5 (Williams, Onsman and Brown, 2010).

Multiple Regression Analysis

Multiple regression is employed to measure the relationships of multiple independent variables with a dependent variable. After the relationships were identified, the information of the independent variable can be used to explain why things are the way they are (Higgins, 2015). Therefore, multiple regression is appropriate for analyzing the data in this research.

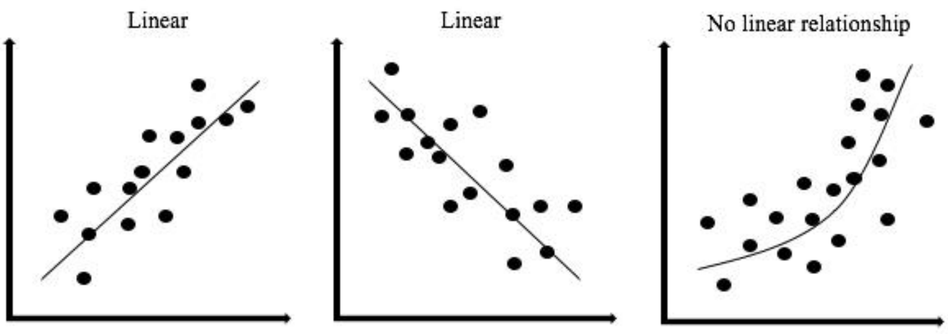
$$\text{Multiple regression } \hat{Y} = b_0 + b_1(x_1) + b_2(x_2) + b_3(x_3) + \ldots + b_k(x_k) \qquad \textit{(eq. 1)}$$

In order to validate the result of multiple regression, these following assumptions are required to check that the data can be analyzed by multiple regression.

Assumption 1: Independent of observation or residuals are used to check the result by using the Durbin-Watson statistic.

Durbin Watson (DW) is an investigation that the residuals are independent. Durbin-Watson tested independent variable to find autocorrelation in a variable. Durbin-Watson statistic ranging from 0 to 4, the range 1.5 to 2.5 means independence. It is indicating that there is no correlation among the residuals. If the resulting value is less than 1.5 and more than 2.5, it indicates a problem with autocorrelation in multiple regression analysis (Khon Kaen University, 2018).

Assumption 2: The relationship between dependent and independent variable is linear relationship**.** In order to measure the linear relationship, the scatter plot and partial regression plot is employed in SPSS Statistics program. If the results of scatterplots and partial regression plots show the linear relationship, they are appropriate to use the linear regression.



Source : Laerd Statistics (2015)

Figure 2.

Assumption 3: Homoscedasticity describes the different level of variance of errors across the independent variables. This means that errors are spread out consistently between the variables. Heteroscedasticity occurs when the data have a variance of errors is different at different values of the independent variable (Osborne, J., Waters, E., 2002).

Assumption 4: No multicollinearity in the data. Multicollinearity is the situation that two or more explanatory variables are correlated. Therefore, it is difficult to distinguish and explains the shared variance. In some cases, these multicollinearity variables are representing the same factor (National Center for Research Methods, 2011). They have multiple methods to check the multicollinearity in the dataset including the correlation matrix and Variance Inflation Factor (VIF).

Correlation matrix: This matrix is computed among independent variables by Pearson’s bivariate correlation, the correlation matrix is acceptable when the correlation coefficients less than 80 (Statistics Solution, 2018).

Variance Inflation Factor (VIF): Multiple regression model uses VIFs for detecting collinearity among predictors. High VIFs reflects increasing of estimated regression coefficient due to collinearity among predictor variables. In a model, its presence can adversely affect regression results. The VIFs measure the enlargement of a variance of a regression coefficient in the model due to the multicollinearity (Murray et al., 2012). If the result of VIF is equal to 1 it means there is no multicollinearity, if it greater than 1 it can be assumed that some variables are correlated. VIF ranging from 5 to 10 means they have a high level of correlation. According to Akinwande, Dikko, and Samson (2015), VIF value more than 10 means the regression coefficients are poorly because of the multicollinearity.

Assumption 5: There should not have significant outliers, high leverage points or highly influential points. Those terms are used to present unusual data set in the observations that should not occur when performing that multiple regression (Laerd Statistics, 2015).

Outliers detection is needed by using Casewise Diagnostics and Studentized Deleted Residuals. If Standardized Residual in Casewise Diagnostics table is greater than +3 standard deviations, it can consider as an outlier (Laerd Statistics, 2015).

Assumption 6: The distribution of the data should be a normal distribution. The non-normally distributed variable leads to the misrepresentation of the relationship and significance tests. Two methods to test for the normal distribution assumption are histogram with a superimposed normal curve and P-P Plot or Normal Q-Q Plot of the studentized residuals (Laerd Statistics, 2015)

Results

Sample Characteristics

Summary of descriptive statistic is summarized in table 2. Of these 400 questionnaires, 44 of them are considered as outlier so only 356 questionnaires are analyzed due to outlier assumption. Most of them are female and they are in the position at least two months. The result found that 59.75% of 400 respondents are bachelor's degree and 64.5% is female employees. There are 78.25% of all respondents are interested in E-training although some of them have never used E-training before. Also, 51.5% of them are in the staff member position. In addition, the majority of them are in the age between 20-30 years old or 35.25%.

Table 2. Respondent profiles

Variable	Frequency (%)	Variable	Frequency (%)
Age		Job position	
20-30	141 (35.25%)	Operation	25 (6.25%)
30-40	135 (33.75%)	Staff member/Employee	206 (51.5%)
40-50	93 (23.25%)	Supervisor	88 (22%)
50 up	31 (7.75%)	Assistant Manager	33 (8.25%)
Gender		Manager or higher	48 (12%)
Male	142 (35.5%)		
Female	258 (64.5%)	Position duration (years)	
Education level		0-5	174 (43.5%)
Below high school	42 (10.5%)	5-10	113 (28.25%)
High school or equivalent	29 (7.25%)	10-15	42 (10.5%)
		15-20	35 (8.75%)
Diploma or equivalent	43 (10.75%)	20 up	36 (9%)
Bachelor	239 (59.75%)		
Master or higher	47 (11.75%)		
Interested to use E-training			
Not interested			
Interested	86 (21.5%)		
	313 (78.25%)		

Factor Analysis

Principal Component Analysis (PCA) with orthogonal varimax rotation is employed to identify the structure of 19 questionnaire items related to employees' intention toward E-training. KMO is 0.932 which is close to 1. The Bartlett's Test of Sphericity indicates that variables are unrelated and therefore unsuitable for structure detection. The significance level indicates by p-value, factor analysis to be suitable when p-value < 0.05 (Williams et al., 2010). On Bartlett's test of Sphericity, the approximation of Chi-square and the significance is 5,228.002 from 171 df, and 0.000, respectively. According to the results, correlations between items are sufficiently large. Table 3 presents the results of factor analysis and their Cronbach's coefficients.

Table 3. Results of factor analysis

Factor [a] (0.947) [b]	**Mean**	**Standard deviation**	**Factor loading**	**Variance Explained %**
Factor 1: Trust (0.822) [b]				14.019
Secure system	3.6685	0.80995	0.7570	
Personal information security	3.5590	0.90345	0.7580	
Content accuracy	3.7079	0.76842	0.6370	
Requirement of IT staff	3.8174	0.90869	0.5350	
Factor 2: Reward (0.898) [b]				13.781
Position promotion	3.9775	0.79757	0.8260	
Bonus	3.8483	0.88780	0.8620	
Career development opportunity	3.8202	0.87612	0.7570	
Factor 3: Ease of use (0.864) [b]				13.419
Procedure and instruction	3.9607	0.76811	0.6560	
Flexibility on study and location	4.0084	0.78179	0.8230	
Flexible time	4.0758	0.76720	0.8230	
Factor 4: Social norm (0.898) [b]				13.143
Henchman influence	3.4326	0.91833	0.7230	
Colleague influence	3.5730	0.86089	0.8070	
Field colleague	3.6011	0.89970	0.8050	
Factor 5: Attitude (0.887) [b]				12.938
Learning achievement	3.8933	0.80131	0.7870	
Knowledge advantage	3.8539	0.80911	0.7460	
Knowledge application	3.9607	0.79691	0.7430	
Factor 6: Virtual learning (0.879) [b]				10.807
Media quality	3.9860	0.77810	0.6580	
Counsel with expert	3.9551	0.79661	0.7630	
Knowledge assessment	3.8567	0.80087	0.6960	
TOTAL VARIANCE EXPLAINED				**78.106**

[a] Principal component factors with iteration**:** Varimax rotation

[b] Reliability score **(**Cronbach's α **)** for each factor grouping is shown in parentheses**.**

Multiple Regression Analysis

The table 4 shows the results of the multiple regressions. In addition, the adjusted R^2 is 0.691. 69.1% of the variation of employees' intention toward E-training is explained by the regression equation. Refer to assumption 1, the Durbin-Watson statistic is ranging from 0 to 4, the acceptable range (no correlation between residuals) is 1.5 to 2.5. Since DW value in this analysis is equal to 1.820, there was the independence of residuals. According to assumption 4, all VIF values are lower than 5 and approaching 1. It indicates that there is no collinearity found between independent variable.

Table 4. Collinearity statistics and regression result of factors affecting intention to use E-training

Multiple Regression Analysis	Unstandardized Coefficients	Standardized Coefficients	*t*	VIF
(Constant)	3.805		31.141***	
Factor 1: Trust	.162	.223	7.463***	1.032
Factor 2: Reward	.168	.235	7.823***	1.042
Factor 3: Ease of use	.222	.302	9.629***	1.135
Factor 4: Social norm	.145	.204	6.882***	1.009
Factor 5: Attitude	.413	.567	18.921***	1.035
Factor 6: Virtual learning	.176	.238	7.934***	1.036
Education Level	.049	.076	2.272**	1.281
Age	-.003	-0.045	-1.192	1.613
Position Duration	0	0.049	1.319	1.619

Cronbach's Alpha = 0.947 DW = 1.820 Adjusted R-squared = 0.691 F = 89.405***
*p < 0.10, **p < 0.05, and ***p < 0.01

Normal probability plot is a graphical technique which evaluates whether the data set is approximately normally distributed or not (NIST/SEMATECH, 2012). Figure 3 and figure 4 show the results of normal P-P Plot and normal Q-Q Plot of standardized residuals. The dataset in both plots are relying on the regression line. Therefore, the normality distribution assumption is met.

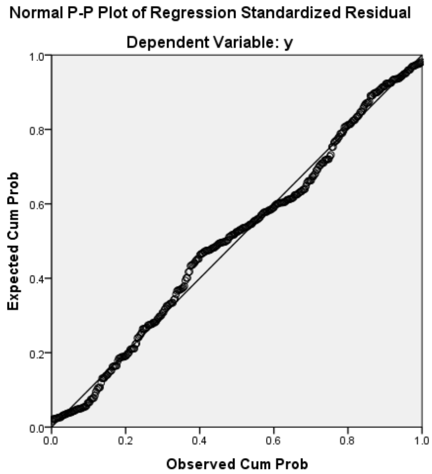


Figure 3

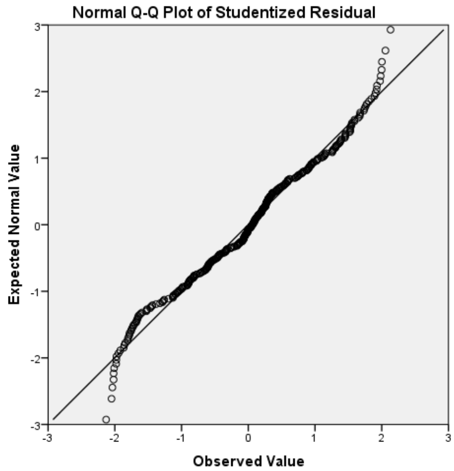


Figure 4

The figures below show the relationship between dependent variable and each of independent variables which are trust, reward, ease of use, social norm, attitude, virtual learning and education level, respectively. The results are likely to be linear thus, the linear relationship between the dependent variable and independent variables are met. Moreover, refer to homoscedasticity of residuals assumption that the residuals are equal for all values of the predicted dependent variable. The figures below indicate that there was homoscedasticity, as assessed by visual inspection of a plot of studentized residuals versus unstandardized predicted values. (Laerd Statistics, 2015)

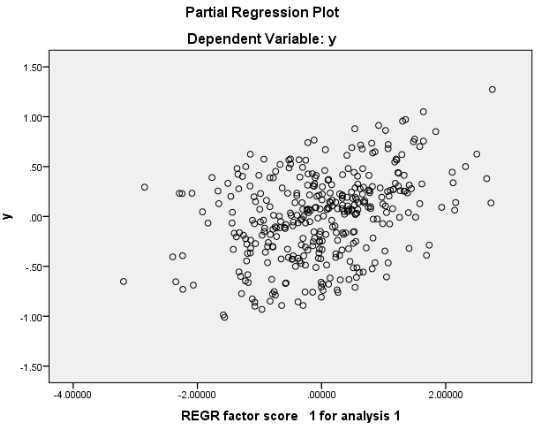


Figure 5.1

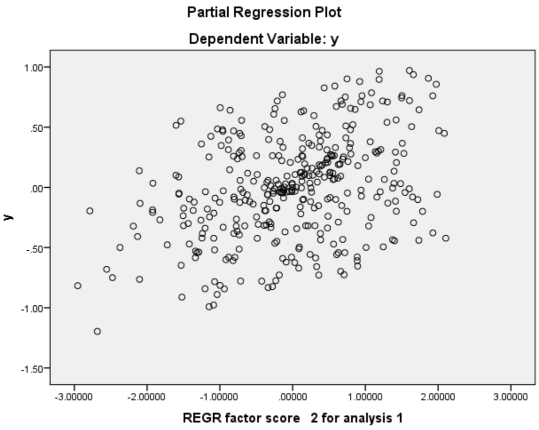


Figure 5.2

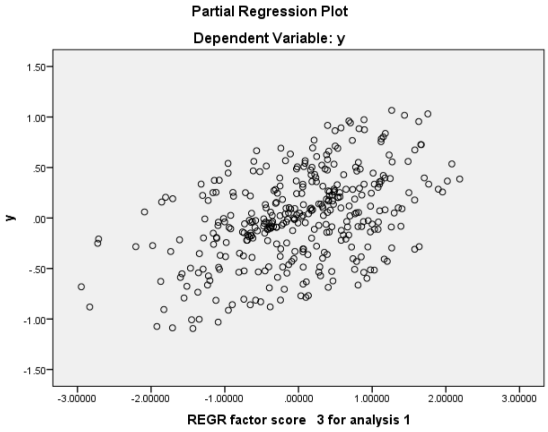


Figure 5.3

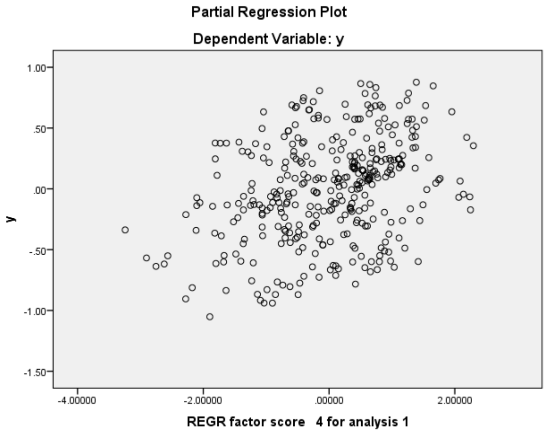


Figure 5.4

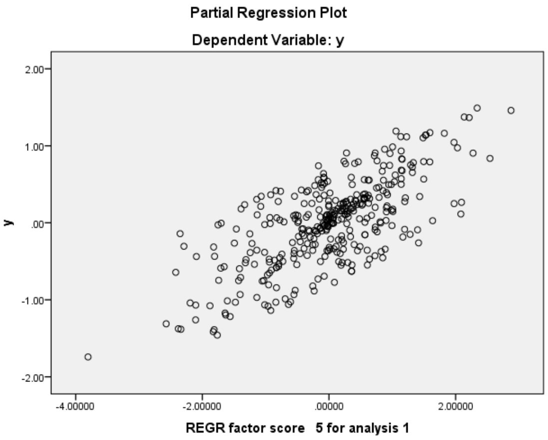


Figure 5.5

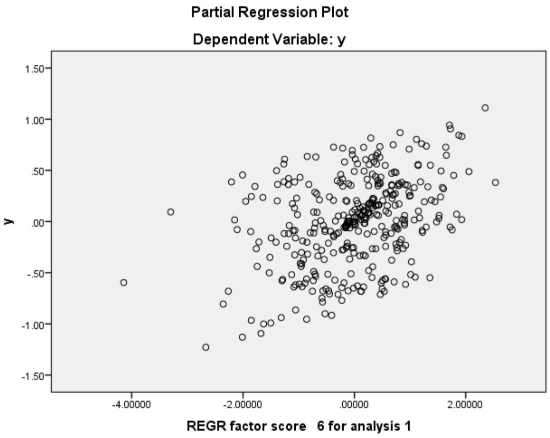


Figure 5.6

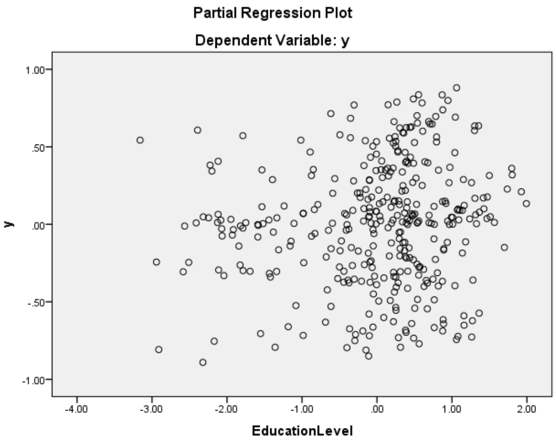


Figure 5.7

One of the major reasons for running a multiple regression is predicting the dependent variable given a set of values for the independent variable. In this study, trust, reward, ease of use, social norm, attitude and virtual learning are used to predict employees' intention toward E-training. The regression equation is

Predicted *Y* = 3.805 - (0.162 x Trust) - (0.168 x Reward) - (0.222 x Ease of use) - (0.145 x Social norm) - (0.413 x Attitude) - (0.176 x Virtual learning)

Discussion and Conclusions

This study has pointed out the items that explain the employees' intention toward E-training. As the multiple regression suggested, the significant factors that affect employees' intention are trust, reward, ease of use, social norm, attitude, virtual learning, and education level. The results show the most influential factor affecting employees' intention toward E-training is the attitude. The positive attitude of users toward using E-training system can certainly motivate them to adopt it. The positive attitude that influences intention includes learning achievement, a knowledge advantage, and knowledge application. The second significant factor is ease of use, which is referred to its ability to let any users use its easily and flexibly at any location and any time. As shown in Alkali & Mansor (2016) studied that easiness and flexibility can let employees participate in training from anywhere, anytime, and any devices. The third significant factor is virtual learning. Features that influence the intention to use such E-training service include media quality, counsel with expert, knowledge assessment. The fourth significant factor is the reward.

To reward an employee by giving the benefit to them such as promoting or giving them an opportunity to work abroad is one of the incentives that lead to an adoption of E-training. Employees or users of E-training can be encouraged by allowing them to have a chance to earn some rewards within an organization; the reward does not have to be in monetary. A non-monetary includes a chance to promote within an organization. Furthermore, the fifth significant factor is trust. Users demand service providers or company keep their information private and secure. If users can trust an E-training system and can be ensured about their personal information, they are likely to adopt the E-training as one method of training. The sixth significant factor is the social norm. Influence from surrounding people, for instance, friend-friend or boss-henchman is one of the incentives as well. For instance, human resource can organize an event to encourage their employees to use E-training by inviting people who have attended E-training to share their experiences.

The last significant factor is education level. This factor shows that higher level of education is more likely to adopt E-training as part of their training, which is same as the results studied from Fritsche (2012) found that a higher level of educational background of the employees influences on the capability of acquiring new skills and knowledge and hence increase the probability of successful training.

Implication and Recommendation

Thailand is a developing country and currently being Thailand 4.0 that support the development of the important industries in Thailand through the value-added and advanced technologies (BOI, 2017). Nowadays, there are many organizations bring advanced technology to develop their organization proficiency. The manufacturing industry is highly involved with the technological operation and always develops new techniques for improving their efficiency. Therefore, training is important for an organization to develop their employee’s skills to compete with competitors.

There are many labors in Thailand but they are still needed to improve technological skills. The traditional training may not give enough effectiveness. On the other hand, E-training will give more flexibility than traditional training as it can be performed. Thus, the manufacturing industry should seriously implement E-training however, the changes from traditional training to E-training may lead to resistance from users who familiar with the traditional one. From this study, it shows the decrease tendency of a number of resistant people as well as the increasing tendency of people intention to adopt E-training. In the table of regression result of factors affecting intention to use E-training (Table4) shows the standardized coefficient to analyze factor to motivate intention to adopt E-training. The first factor is the attitude. Leading user by contributing good attitude from the use of E-training. People usually do something better when they have a positive attitude toward them rather than doing with a negative attitude.

The second factor is ease of use. Providing a procedure and instruction for the user as well as let users manage the time of E-training participation by themselves. The third factor is virtual learning. Due to people are not familiar with virtual learning, so there are some resistant in adopt E-learning system. If virtual learning such as 3D and group discussion can be created, it will reduce resistant of people and have the intention to use E-learning. The fourth factor is the reward. This can create by promoting or giving the opportunity to work abroad. This can lead people to have more intention to use E-training. The fifth factor is trust. To build trust with users, this would require a protocol or security system that is reliable from the use of E-training. The last factor is the social norm. Surrounding people is one of incentive in user’s intention to use E-training. Due to the communicating extensively, most people usually like to go with the flow of other’s trend by looking at their success. In terms of education level, people who have a higher level of education have the intention to adopt more than the lower one. One of the reason is about the advance in technology. People in high educational level are usually easy to learn something new due to their basic knowledge. Therefore, this must have the IT staff to help the user to use E-training system.

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Determinants of a Customer's Willingness to Pay (WTP) for Green Hotels: An Empirical Study of Generation Y in the Bangkok Metropolitan Area

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Abstract

As attention to environmental responsibility is increasing, the number of travelers interested in environmental sustainability in the hotel industry is also rising. According to Official Statistics Registration Systems, Generation Y (Gen Y) is currently one of the largest groups in Thailand, accounting for 30.36 percent of the total population. This generation is known to have strong opinions about green issues and civic-mindedness. This research is focused on determining significant factors affecting the WTP for environmentally friendly hotels or green hotels by Gen Y. Factors influencing use of environmental friendly hotels are derived and evaluated. The descriptive results show that approximately 55.7 percent of respondents are willing to pay for green hotels, the average price that they are willingness to pay for it is about 2,019 Baht per on standard room per night [AN1*]. A binary logistic regression was applied to determine the probability of being willing to pay for green hotels. The result of binary logistic regression analysis indicated that the age range within Gen Y, purchase experience, customer loyalty, monthly income, attitude, and green behaviors affect the probability of a person's willingness to pay for green hotels.

Keywords: Binary logistic regression, Green Hotels in Thailand, Willingness to Pay

Introduction

Environmental preservation has becoming a global trend, and it significantly influences in any parts of the business (Aschemann-Witzel & Zielke, 2017; Walker, Di Sisto, & McBain, 2008), including foods industry (Rödiger, Plaßmann, & Hamm, 2016), agriculture products (Díaz, Pleite, Paz, & Garcı´a, 2012), and tourism (Huang, Lin, Lai, & Lin, 2014). In Thailand, tourism is an important sector that supports the economic and business development. Although the increase of travellers in certain areas or overtourism in Thailand may lead to an increase in national income, it also creates the negative effect to the environment (Zhong, Deng, Song, & Ding, P. 2011). Since the hotel is a key stakeholder in tourism, environmental friendly hotels or green hotel became one of the alternatives for the tourists. Customers tend to concern on the environmental impact from hotel industry (Han, 2015) (Huang et al., 2014). Environmental issues are significantly influence on consumers purchasing behaviours (Boemi, Irulegi, & Santamouris, 2016). However, green product or service is usually incurring the premium price. Customer making a decision based on perceived value including quality, price, and styles (Saleem, Ghafar, Ibrahim, Yousuf, & Ahmed, 2015).

*[AN1] is the amount for an environmentally friendly hotel room for the night or the amount they are willing to pay above a competitor's price.

The younger customers tend to have the higher level of environmental awareness (Tansakul, 2018). To be more specific, Generation *Y* (Gen *Y*) consumers are strongly concern on the environmental issues more than other generation groups (Fang & Lam, 2016). Gen *Y* are people born between 1980 and 1995 or and 2000 (Main, 2017). According to Karavasilis, Nerantzaki, Pantelidis, Paschaloudis, and Vrana (2015), the majority Gen *Y* (around 77 percent) are categorized themselves as environmental friendly customers. Hence, this research is emphasized to study of Gen *Y*'s consumers about their willingness to pay for green hotels, and identify factor affecting the probability of their willingness to pay. The empirical study targeted the Gen *Y* consumers in Bangkok and metropolitan areas of Thailand. The research consists of six sectors; it starts with an introduction that briefly explains the overview and objective of this paper. Then the second section presents the conceptual framework to conduct the research, the willingness to pay (WTP) and the contingent valuation method (CVM) concepts are discussed in this section. Next section focuses on literature review from the field of environmental, customer adoption process (CAP), and questionnaire development. The fourth section shows the methodology including data collection and binary regression analysis. The fifth shows empirical results and research findings. The summary of the research and conclusion are presented in the last section.

Conceptual Framework

WTP is a well-known method to evaluate the price of goods or services that customer wants to pay. WTP usually employ in environmental preservation research, for example, WTP for drop-off recycling (Tiller, Jakus, & Park, 1997), water and sanitation services (Fujita, Fujii, Furukawa, & Ogawa, 2005), environmentally friendly products (Skuras & Vakrou, 2002) (Solomon & Johnson, 2009). In addition, Chia-Jung and Pei-Chun (2013) identify the determinants of tourists' choice of green hotel attributes. However, WTP is affected by various factors, including income, education, and knowledge about the product (Skuras & Vakrou, 2002) (Díaz et al., 2012), and motivations of psychological and emotional (Mei, Wai, & Ahamad, 2016). Many research concluded that the consumers have a willingness to pay more on green products or service (Haytko & Matulich, 2008) (Khedkar & Patil, 2015) (Biswas & Roy, 2015), but they are not extremely zealous to pay a high price without an appropriate reason (Khedkar & Patil, 2015).

Therefore, the benefit of good/service in term health and reduced environmental degradation influence on the willingness of the customer to pay for the additional costs (Liu, Anderson, & Cruz, 2012). In order to estimate the WTP, Contingent Valuation Method (CVM) is the method that many researchers widely used to estimate the WTP (Samdin, 2008). CVM was first used to determine the highest possible bid of alternative facility available to the public by Davis in 1963 (Hoyos & Mariel, 2010). CVM is employed in many environmental research to determine a WTP, for instance, it is applied in determining willingness to pay for a geopark visit in HK (Cheung & Jim, 2013), biomass ethanol (Solomon & Johnson, 2009), and national park in Malaysia (Samdin, 2008).

In addition, the study of Cho, Yen, Bowker, and Newman (2008) states that there are some public preferences that uses willingness to pay (WTP) analyses. In Thailand, there are some research papers, using the CVM method in order to determine a WTP. According to Sakulrattanapornchai (2013), CVM is used to determine the willingness to pay for flood prevention and the economic worthiness of the construction of a reinforced concrete dam in Khlong Thawi Watthana. Moreover, it is used to investigate the willingness to pay and factors affecting of pricing for a condominium nearby future mass rapid transit project (Smaksman, 2014). In summary, CVM is a suitable tool for evaluating the value of environmental related goods and services.

Literature Review

Based on the theory of the adoption process, that indicates the behavior of consumers as they purchase new products and services (Sharma & Singh, 2011). According to Bhatia (2011), the customer adoption process (CAP) is a mental process of the customer since the first knowing new thing such as innovation and technology till the final adoption of that good or service. Moreover, it states that consumers go through in learning about a new product or service, trying it, and deciding whether to purchase it again (Lovell, 2015). CAP is a constant marketing tool, which has different stages to get it completed. These stages of such process applying to green hotel services are discussed as follow:

The first stage of CAP is to introduce a product/service in the market and create awareness for the product or services. The companies usually use many interesting ways to engage the consumers in this phase of product marketing (Jaideep, 2017). The companies can select the way to engage customers based on behavior and lifestyle of their target customers. According to the previous research, customer's behavior and lifestyle are significantly influenced by various factors including attitudes, belief, and environmental concern (Huang et al., 2014).

Once, the consumer becomes interested in a new product, service, and innovation, they collect more information. They are likely to spend time and energy for finding more information and knowledge about product/service and answer on how it can contribute to their life (Bhatia, 2011). They are many sources of information that the customer may acquire including different elements from the internal customer psychology to the external information from the product/service, friends, family, and online sources (Albro, 2013). The interactions of customers and provides also been a concern in CAP.

In the second stage, a consumer is then moving to evaluate whether or not to believe that this product or service will satisfy their needs (Jaideep, 2017). In this stage the consumer measure both pros and cons with respect to the cost of the product/service (Zkjadoon, 2016). The next stage is the trial basis which is an important stage as it determines the satisfaction of product/service (Zkjadoon, 2016; Jaideep, 2017). Past purchasing experience or perceived experience of consuming environmentally products or services in the past is an important factor that influences the probability of willing to pay for green hotels. The frequency of consuming or using environmentally friendly products and services are part of past purchasing experience. Customer experience combines all the aspects product/service that customer can perceive from the initial stage to the final stage of the product/service. (Albro, 2013). The consumer's past purchasing experience influence on the future decision of the customer (Dawei & Mengdi, 2016).

Furthermore, if the trial process gives satisfactory results, finally the consumer decides to adopt or buy the product/service (Jaideep, 2017) (Bhatia, 2011). Attitude can support the customer's decision making. According to Suki and Suki (2015), customer attitude is the feeling or emotion and it influences on the customer behavior. The summary of the variables in every stage of CAP that influences on the WTP of the customer is shown in table 1.

Table1. The explanation of each variable

Variables	Description
1. Age	Age refers to the measure of time in years. In this research, open-ended question was employed in the questionnaire. Respondents are asked to fill their age measured in years.
2. Behavior	Behaviour is the individual decisions and actions based on his or her available resources (time, money, and effort) to satisfy his or her needs.
3. Attitude and Awareness	Attitude and awareness are related to perception and behavior of each customer on the specific topic. It is related to the overall evaluation of a buying decision.
4. Past Purchasing Experience	It does involve every process of customer purchasing processes.

Methodology

Data collection

Gen *Y* tends to consider the environment because the environment issue was becoming a norm in the society that they born and grew up (Rogers, 2013). Therefore, the WTP for environmental friendly product/service is particularly increase in Gen *Y* population (Rogers, 2013). According to Official Statistics Registration Systems (2017), Gen *Y* is currently one of the largest generational groups in Thailand, 30.36 percent of total population. With their environmental intentions toward green practice, a strong opinion about green issues and their civic-minded, Gen *Y* is expected to be a target of observation in this primary research. Taro Yamane formula with 95% confidence level is employed to calculate the sample size of this empirical study (Singam & Nonthapot, 2016).

The questionnaire consists of 4 parts, including open-ended questions, check-list questions, five-point Likert scale, and bidding game. The first part of the questionnaire is the demographic information shown in figure 1. The second section contains questions about general environmental attitudes that influence respondents to use green hotels. The questions are answered based on a 5-point Likert Scale ranging from "extremely agree" to "extremely disagree". The third section consists of multiple choice questions. They are hypothetical questions related to green behavior and each respondent chooses the best choice that fit his or her behavior in each hypothetical scenario. The last section is about a bidding scenario where respondents indicate their willingness to pay for green hotels. The summary of each variable used in the analysis is indicated in table 2.

Table 2. Description of variables used in analysis

Variables	Description
Age	Open-ended question for each respondent's age in years (Gen Y ranges from 17-37 years old)
Monthly Income (Thai baht/month)	The respondent's monthly income: □ Income (1): At most 15,000 Baht □ Income (2): From 15,001 to 25,000 Bath □ Income (3): From 25,001 to 35,000 Baht □ Income (4): From 35,001 to 45,000 Baht □ Income (5): From 45,001 to 55,000 Baht □ Income (6): More than 55,000 บาท
Past experience with Environmental friendly products and services	0 if no experience and 1 otherwise
Frequency of use or receive Environmental friendly products and services	Open-ended question, where respondents are asked to indicate the number of experience they had in the past
Attitude Score	The degree (five-point Likert scale) to which respondents' agree with each statement related to environmental attitude: • Attitude 1: Environmental friendly hotels initiative • Attitude 2: Environmental responsibility • Attitude 3: Reuse, reduce and recycle implementation • Attitude 4: Environmental friendly products utilization
Green Behavior	The degree to which respondents' feeling contributed to the environment 4 if extremely green, 3 if green, 2 if neutral, 1 if slightly green • Green behavior while stay at a hotel ▪ Electricity utilization when stay at a hotel ▪ Towel utilization when stay at a hotel • Green behavior on regular basis ▪ Waste and garbage recycling behavior ▪ Plastic bags used and reused behavior ▪ Participations of environmental friendly activities
WTP	The maximum amount a customer is willing to pay for one night in a standard room at a green hotel measure in Thai Baht.
Willingness	Dichotomous variable: 0 if not willing to pay and 1 otherwise

Section 1 Demographic Information and Decision-Making Behavior in Consuming Hotel Services

Please mark ✓ in □ for information that is true to you (Please select only one)

1. Are you between **17 and 37**? □ Yes (Please specify) _______ years old □ No
2. What is your usual **travel characteristic**?
   □ One-day trip □ Stay overnight
3. Who do you usually travel with? (Please select only one)
   □ Alone □ Travel with friends □ Travel with family □ Travel with lover
4. How many time do you stay overnight at hotel **per year**? ___________time(s) per year
5. If you go to other provinces and you have to stay at environmental friendly (Green) hotel for one night, what is your willingness to pay for standard room? ______________________ baht per night
6. Gender: □ Male □ Female
7. Education Level: □ High school or Vocational certificate
   □ Associate's Degree or Vocational Diploma
   □ Bachelor's Degree
   □ Master's Degree or above
8. Income (per month): □ Less than 15,000 Baht □ 15,001-25,000 Baht □ 25,001-35,000 Baht
   □ 35,001-45,000 Baht □ 45,001-55,000 Baht □ Over 55,000 Baht

Figure 1. Example of Demographic Information Questionnaire

Model Specification: Binary Regression Analysis

Binomial logistic regression or logistic regression is applied in this research to indicate the probability that an observed variable belongs into one of two categories. In general, one of the two levels of the response is considered the level of interest (Walsh, 2016). The dependent of the logistic model in this research is based on whether a customer is willing to pay for a green hotel. Independent variables included demographic information – age, income, past experience with environmentally friendly products or services, attitude and behavior. Age and frequency of past experience are continuous variables. Past experience is a dichotomous variable, while attitude and behavior are scores based on Likert scale

The likelihood ratio test is performed by estimating two models and comparing the fit of one model to another. According to McGee (2002), it is one of the best ways to measure diagnostic accuracy. Then the Wald test or Wald Chi-Squared Test was employed to test the parameters. According to KyngaÈs and Rissanen (2001), the Wald test is significant and variables should be included in the model only when the variables are zero. If not the explanatory variables should be removed from the tested model. Then all the significant variables are included in the final model (Díaz et al., 2012). An odds ratio (ORs) is employed in this research to measure the associated level of exposure and the outcome. Table 3 shows the definition of the value of ORs.

Table. 3 Value of ORs

Value of ORs	Definition
ORs = 1	No impact from exposure to odds of the outcome
ORs > 1	Exposure associated with higher odds of the outcome
ORs < 1	Exposure associated with lower odds of the outcome

Results

Sample Characteristics

A total of 422 respondents are randomly distributed by both online and paper-based questionnaire. Table 4 reports the descriptive statistics of our sample group. The majority of respondents are female, accounted for 63.3 percent of total respondents. Most of respondents have earned at least a bachelor degree, accounted for more than 90 percent of all respondents. Moreover, 36.5 percent of respondents have income in the range from 15,001 and 25,000 Baht. About one-third of respondents earn their monthly income from 25,001 to 45,000 Baht. In addition, about 80.3 percent out of total respondents say that they never experience about any environmental friendly products or services. In addition, summary of attitude scores (5-point Likert scale) and average behavioral scores (4 level) are summarized in Table 5. In addition, respondents who are willing to pay for green hotels are willing to pay on average 2,019 Baht per one night stay, which is lower than the average charging price of currently registered as green hotels in Thailand.

Table 4. Respondent profiles (Demographics)

Determinants	Frequency (*n*=422)	Percentage (%)
Gender		
Male	155	36.7
Female	267	63.3
Education		
High school or Vocational certificate	8	1.8
Associate's Degree or Vocational Diploma	18	4.3
Bachelor's Degree	313	74.2
Master's Degree or above	83	19.7
Income		
Less than 15,000 Baht	75	17.8
15,001 - 25,000 Baht	154	36.5
25,001 - 35,000 Baht	94	22.3
35,001 - 45,000 Baht	49	11.6
45,001-55,000 Baht	28	6.6
Over 55,000 Baht	22	5.2
Travel With		
Alone	21	5
With friends	179	42.4
With family	144	34.1
With lover	78	18.5
Past experience with environmental friendly products or services		
Yes	83	19.7
No (Never)	339	80.3

Table 5. Average attitude and behavioral scores

Items	Mean	Std. Deviation	Min	Max
Attitude (1): Environmental friendly hotels initiative	4.14	0.747	2	5
Attitude (2): Environmental responsibility	4.72	0.485	3	5
Attitude (3): Reuse, reduce, and recycle implementation	4.40	0.671	3	5
Attitude (4): Environmental friendly products utilization	4.17	0.733	2	5
Green behavior while staying at a hotel	2.94	1.030	1	4
Green behavior on regular basis	2.74	0.998	1	4

Binary Regression Analysis Model

The relationships of demographic variables, past purchasing experience and its frequency, attitude scores, and green behavior scores toward willingness to pay were explored. Age and incomes are two demographic parameters that are significant. Other demographic variable do not contribute to the probability of the willingness to pay for green hotel. Since income are categorical, divided into six different level from low to high as previously indicated in the earlier section. Income (6) is used as a reference group for this logistic regression. Other income groups (1) – (5) are each test to determine if there is any significant different than the reference income group (6).

The results of binary logistic regression analysis first produced output that includes only intercept, which is referred to as block 0 output. Given the base rate of the two decisions (235/422 = 55.7 percent decided not to pay for a green hotel and 44.3 percent decided to pay for it), and no other variables, the best strategy is to predict the odd of not willing to pay; then the prediction ability would be 55.7 percent correct. In addition, the predicted odds in block 0 model is 0.796, meaning the predicted odds of deciding to pay for a green hotel is 0.796. Since 187 respondents are willing to pay for it and 235 otherwise, the observed odds are 187/235 = 0.796.

After that block 1 output is observed as predictor variables are added to the model. Omnibus Tests of Model Coefficients provides a Chi-Square of 130.665. The -2 Log Likelihood statistic is 448.890; it measures how poorly the model predicts the decisions. The smaller the statistic value the better the model. In this case, adding all variables in table 6 reduced the -2 Log Likelihood statistic by 130.665, indicating that the independent variables significantly predicted the outcome variable, the willingness to pay for green hotels. The output provided by SPSS gives the Exp (B) or the odds ratio predicted by the model. Table 6 shows the logistic regression coefficients, Wald test statistic, and odds ratios for each of the predictor variables. For Wald statistic test, all variables are statistically significant due to these variables are not zero. Monthly income is a highly significant with the highest Wald statistic value.

Table 6. Result of Data Analysis

Independent Variables	B	Wald	Exp (B)
Age	-0.108	9.801***	0.897
Past purchasing experience	0.312	10.098***	1.366
Frequency of past experience	0.453	9.48***	1.573
Monthly Income		53.13***	
• Monthly Income (1)	-2.727	15.182***	0.065
• Monthly Income (2)	-2.967	21.826***	0.051
• Monthly Income (3)	-2.589	17.627***	0.075
• Monthly Income (4)	-0.53	0.69	0.588
• Monthly Income (5)	0.361	0.213	0.645
Attitude (1)	0.534	10.484***	1.705
Attitude (2)	0.807	8.86***	2.241
Green behavior on regular basis	-0.385	9.821***	0.681
Green behavior while stay at a hotel	0.267	3.732*	1.306
Constant	-2.527	2.363	0.08

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$,

The classification table 7 shows 67.4 percent of correctly classifying respondents where the decision of willing to pay is observed. Also, 80.9 percent of correctly classifying respondents where the predicted event was not observed. Overall the success rate of predictions is 74.9 percent. Recall that it was only 55.7 percent for the model without any predictor variables (intercept model or block 0).

Table 7. Classification table

		Predicted		
		Decision		Percentage Correct
		No Pay	Pay	
Decision	No Pay	190	45	80.9
	Yes	61	126	67.4
Overall Percentage				74.9

Conclusion and Recommendation

Monthly income is highly significant factor influencing the probability of willing to pay for green hotels. Observe that income groups (4) and (5) are not statistically different than the reference income group (6). Meanwhile income groups (1), (2) and (3) are all significantly different than the reference income group (6) with negative coefficients. This implies negative relationship among income groups (1) – (3) (or income of at least 35,000 Baht) and the odds of willing to pay. Nevertheless, the respondents with income of at least 35,001 Baht (Income groups (4) – (6)) do influence the odds of willing to pay in the same positive direction as one unit increase in the income, the odds of willing to pay for green hotels increases about 6%. Hence, the targeted group for people who would decide to pay for green hotels are those who earn more than 35,000 Baht (Income group (4) – (6)).

Age has a strong relationship with the probability of WTP, and the results recorded the odds ratio of age to be 0.897. This indicates that within the age between 17 and 37 years old, the younger respondents are likely to pay more than older ones. In addition, past purchasing experience and its frequency positively influence the odds of paying for green hotels. Customers with prior experiences of using or consuming environmental friendly products or services are willing to pay for green hotels 1.366 times more than customers with no prior experience. Hence, it is important for business owners of green hotels to attract their prospect clients to try to use and experience the service of staying at green hotels.

Observe that only attitude (1) and (2) have significant positive relationship with the probability of WTP. Attitude (1) and (2) measured green moral level of respondents based on five point Likert scale. With an increment of one point, people with green attitude toward the green hotels and environmental responsibility are more likely to pay for green hotels, 1.705 and 2.241 times respectively. Similarly, respondents who practice green behavior while staying at any hotel; for instance, conserving electricity by turning it off regularly when leave a room or reusing the same towel during a period of stay, are likely to pay for green hotel 1.306 times more than respondent with less green behavior.

However, it is interesting to see a negative relationship between respondents who practice green behavior on regular basis and the odds of WTP. On regular basis; for instance, recycling their garbage, reusing plastic bags, and participating in environmental friendly activities, people who are in these categories are 6.81 percent less likely to pay for green hotels. These people routinely practice green activities; they have an awareness on the environmental issues and would do things to reduce any environmental problems. Any activities they do on regular basis have contributed positively on the surrounding environment. They are likely to decide not to pay any premium for staying at green hotels as they have other alternative ways to show their love and care for the environment. In the other hands, people who may not often practice green behaviors are likely to decide to pay for green hotels as they find an opportunity to show their concern toward the environment while staying at green hotels.

Hence, the targeted customer group for green hotels is likely to be consumers who are aware of some environmental issues, have positive attitude, occasionally practice green behavior. Because sustainability is now a critical issue in Thailand, environmental awareness becomes an essential thing that everyone should be conscious. In order to reduce waste and maintain sustainability, environmental and green attitude are the essential things that should be concerned. Encouraging people to have more environmental responsibility is highly recommended in order to prevent and protect the sustainability of our environment.

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The Model of Service Quality at Na Yai Arm Sub-District Administrative Organization, Na Yai Arm District, Chantaburi Province, Thailand.

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Abstract

The objectives of this study were: 1) to analyze the model of service quality at Na Yai Arm Sub-district Administrative Organization, Na Yai Arm District, Chanthaburi Province empirical data, and; 2) to study the effect on administration using the concept of good governance of service quality in the Na Yai Arm Sub-district Administrative Organization, Na Yai Arm District, Chanthaburi Province. The population consisted of 2,946 heads of households who were registered in Na Yai Arm Sub-District Administrative Organization. Using a stratified random sampling technique, 352 participants comprised the sample group, while these participants from each village were randomly selected by simple random sampling. Questionnaire was used as the research instrument in this study. A Structural Equation Model Analysis was used for inspecting the concordance of the developed model with the empirical data and for studying the direct effect of administration following the concept of good governance on service quality at Na Yai Arm Sub-district Administration Organization, Na Yai Arm District, Chanthaburi Province. The findings were as follows:

1. The analysis result showed that the model of service quality fit with the empirical data
2. The result of the analysis also showed that good governance affected service quality at Na Yai Arm Sub-district Administrative Organization.

Keywords: Good Governance, Service Quality, Sub-District Administrative Organization

Introduction

Because Thailand experienced a severe economic crisis in 1997, the concept of good governance was implemented in the government sector for effective administration. The causes of the crisis were the lack of mechanism efficiency, and serious corruption in the government sector. Both political and state official parties were responsible for this problem; therefore, the Office of the Prime Minister launched the 2542 B.E. Good Governance Regulation. It can be considered the first fundamental step of the new government sector administration system. Until the present, good governance, includingthe rule of law, ethics, transparency, participation, accountability, and cost-effectiveness, has played an important role in upgrading services in the government and private sectors and especially in local government organizations because the new management of the government sector puts emphasis on people service and requires the government sector to consider the people as its customers (Hood, 1991; Christina M. Blumel, 2001). Service quality is associated with delivering value to people by creating satisfaction (Bryland and Curry, 2001).

Service quality is the total of products' or services' characteristics which are able to significantly enhance satisfaction. Therefore, service quality is important for every organization: it is the driver of performance in an organization (Buttle, 1996). Moreover, service quality is suggested as an important indicator of sustainable competitive advantage (Moore, 1987; Lewis, 1989). The five dimensions of service quality (Parasuraman, Zeithaml and Berry, 1988) including tangibles, reliability, responsiveness, assurance, and empathy are factors affecting service receivers' satisfaction, and they focus more on the service giver (Lovelock, 2000) which results in service receivers'satisfaction levels. Furthermore, Buzzle & Gale (1987, p. 111) proved that service quality is what customers perceived from service quality concordance with Parasuraman, Zeithaml & Berry (1988) defined quality of service as the satisfaction from the expectation of service.

Moreover, McColl-Kennedy (2003, p. 81) states that service quality referred to the outcome of a customer's evaluation process that meets the expectations. Besides, Zeithaml, Bitner & Gremler (2006) stated that quality of service was the evaluation of the service provided by customer that results in superior service or higher in service provider. In conclustion, quality of service was the service that can meet the needs of the customers as expected or the service meets the needs beyond the expectations of them. Na Yai Arm Sub-district Administration Organization is a government organization which puts emphasis on service quality and applying the concept of good governance to its service with a hope to improve its performance. The application of good governance could result in its service quality improving which could have an impact on people's satisfaction.

With the aforesaid reasons, it was interesting to prove whether the concept of good governance applied in the administration of the organization affected its service quality. Followed to good governance implementation or good administration service, the belief was based on the principle good governance could result in its service quality concept. If government agencies were able to manage according to good governance, the service can meet the needs of the people and result in the development of the community (Pannarai Tiemtan, 2007, p. 107; Sirikanya Sermsurum, 2010, p. 86 ; Anchalee Pongsanit, 2558, p. 86; Ying Luo, 2013, abstracts) ; in addition, service quality improvement was another focus of this study because good service quality could result in the capability of the organization in positively giving service to receivers of different needs (Good Governance, 2013).

According to the statement mentioned above, the researcher would like to analyze and investigate the concordance of model of service quality at Na Yai Arm Sub-district Administration Organization, Na Yai Arm District, Chanthaburi Province with the empirical data and to study the effect of administration following the concept of good governance on service quality at Na Yai Arm Sub-district Administration Organization, Na Yai Arm District, Chanthaburi Province. Once the factors affecting service quality were discovered, development guidelines would be also accurately developed and followed effectively to most satisfy the people.

Objectives of the Research

1. to analyze and investigate the concordance of model of service quality at Na Yai Arm Sub-district Administration Organization, Na Yai Arm District, Chanthaburi Province with the empirical data.

2. to study the effect of administration following the concept of good governance on service quality at Na Yai Arm Sub-district Administration Organization, Na Yai Arm District, Chanthaburi Province.

Hypotheses

1. The developed model of service quality of Na Yai Arm Sub-district Administrative Organization fit with the empirical data.
2. Factor administration with good governance affected service quality.

Theory/ Conceptual Framework

The conceptual framework consisted of Good Governance theory (Good governance, 2013) and Service Quality theory (Parasuraman, Zeithaml and Berry, 1988; Pongsatean Luengalongkot, 2014) For the effect of administration following the concept of good governance on service quality at Na Yai Arm Sub-district Administration Organization, Na Yai Arm District, Chanthaburi Province. The literature review to support this concept were consisted of Pannarai Tiemtan (2007, p. 107) studied on the development of competency in organization management by having a good governance system and found that good governance effected in good quality of service. Sirikanya Sermsurum (2010, p. 86) examined the trend analysis of sub-district administration organizations in accordance with good governance principles.

The administration of Nong Kham and Khlong Muang subdistrict showed that the administration of the good governance had a great impact on the quality of administration. Anchalee Pongsanit (2558, p. 86) observed the management of royal decree on the principles and methods of good governance in 2003 at local administrative organizations in Kau District, Lampang Province found that the good governance effected the quality of service. Ying Luo (2013, abstracts) studied on division and good governance service: influencing of public service quality on the impact of quality control - based on the empirical analysis of large Chinese data was found that the good governance effected in the quality of service.

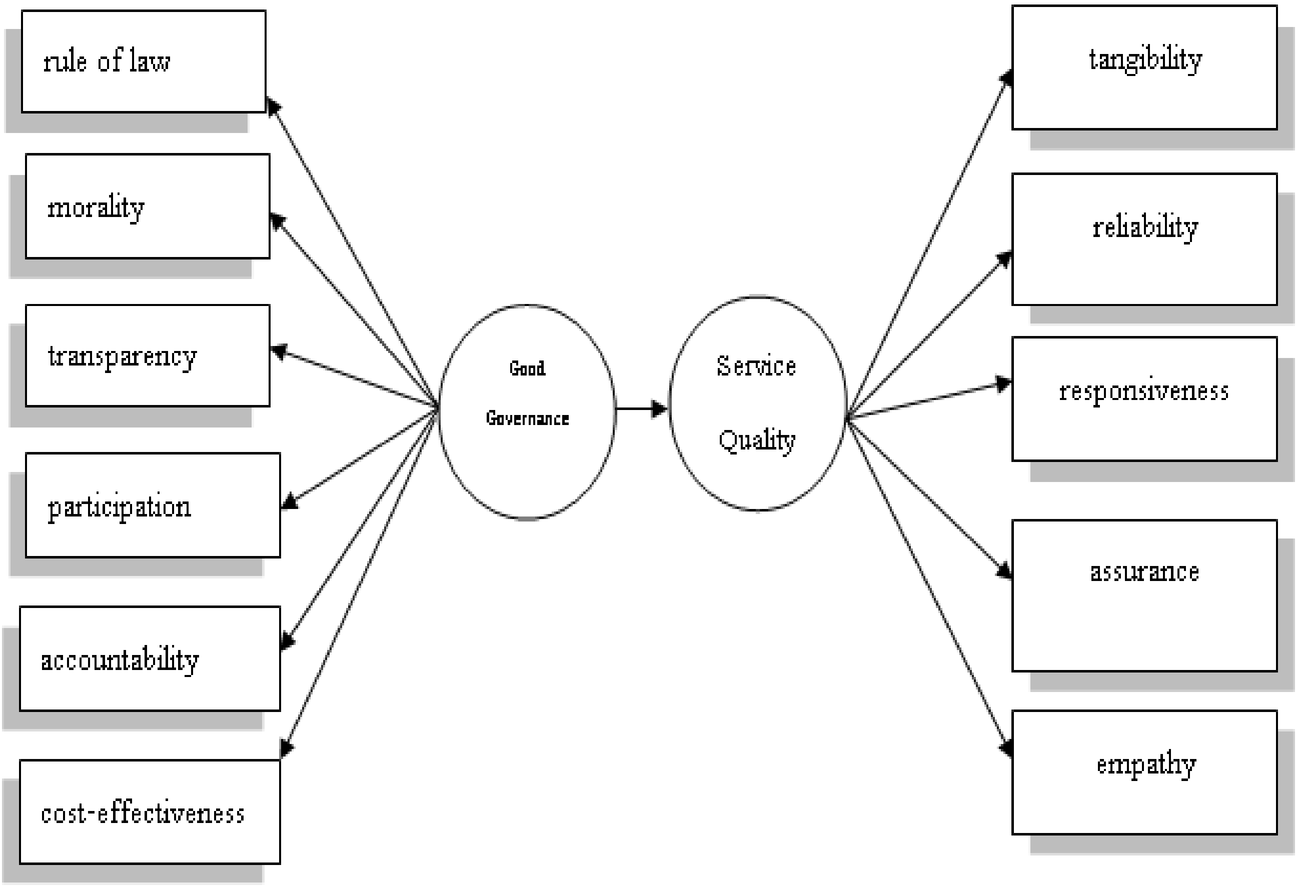

Figure 1. Conceptual framework model

Methodology and Sample

The population was 2,946 heads of households who were registered in Na Yai Arm Sub-District Administrative Organization. The sample size was calculated by Taro Yamane's formula (Taro Yamane, 1973) with a confidence level of 95% and defined using Hair, Black, Babin, and Anderson (Hair, Black, Babin, and Anderson, 2010, p. 102). There were 352 participants used as a sample group who were selected using stratified random sampling technique, while participants from each village were randomly selected by simple random sampling (Chaleamphol Srihong, 1999).

Instruments

A questionnaire was used as the research instrument in this study.
Methods of Data Analysis

1. Quantitative data collected from the research questionnaire was analyzed by SPSS (Statistical Package for the Social Sciences) using percentage, means, and standard deviation.

2. The statistics used for data analysis were Structural Equation Model Analysis using a Mathematical software package for inspecting the consistency of the developed model with the empirical data and for exploring the direct effect of administration following on the concept of good governance on service quality at Na Yai Arm Sub-district Administration Organization, Na Yai Arm District, Chanthaburi Province (Muthén, L. K., and Muthén, B.O., 2012).

Measurement scales**.** For measurement of question item in the questionnaire were used to be Independent and dependent variable. Both of Independent and dependent variable were interval scale.

Results

The research result were showed as followed

1. The analysis showed that the developed model of service quality of Na Yai Arm Sub-district Administrative Organization fit with the empirical data with Chi-square χ^2 = 43.332, df = 30, P-value = 0.054, TLI = 0.993, RMSEA = 0.036, SRMR – 0.015, CFI = 0.996 and χ^2/df= 1.444.

2. The result of the analysis also showed that factor administration following the concept of good governance had an effect on service quality at Na Yai Arm Sub-district Administration Organization, Na Yai Arm District, Chanthaburi Province with the value of direct effect = 0.839 at a statistical significance of 0.01 as shown in detail in Table 1:

Table 1. Size of direct, indirect, and total effects

Variables	Effect		
	Total Effect	Direct Effect	Indirect Effect
	TE	DE	IE
Structural Equation Model of GG Latent Variable			
SQ	0.839	0.839	-

Discussions

The research discussion were showed as followed

1. The analysis showed that the developed model of service quality of Na Yai Arm Sub-district Administrative Organization fit with the empirical data with Chi-square χ^2 = 43.332, df = 30, P-value = 0.054, TLI = 0.993, RMSEA = 0.036, SRMR – 0.015, CFI = 0.996 and χ^2/df= 1.444. The analysis result also showed that a model of service quality at Na Yai Arm Sub-district Administrative Organization was comprised of all principles of good governance, and the order of good governance principles from the highest-rated to the lowest-rated principles found here began with transparency, participation, accountability, morality, rule of law, and cost-effectiveness. The order of service quality dimensions from the highest-rated to the lowest-rated dimensions began with responsiveness, empathy, assurance, tangibles, and reliability (Chavalit Sala, 2013)

2. The result of the analysis also showed that factor administration following the concept of good governance had an effect on service quality at Na Yai Arm Sub-district Administration Organization, Na Yai Arm District, Chanthaburi Province with the value of direct effect = 0.839 at a statistical significance of 0.01. The research result was in accordance with the finding of a study by Rochana Phumala (2010) entitled *“Service quality of Sam Pra Ya Sub-District Administrative Organization, Cha-Am district, Phetchaburi province”* where administration with good governance affected service quality. The research proposed that administration with good governance would be admirable when it was performed with transparency and people in the community were allowed to participate in the administration process. The administrators possessed accountability and were concerned with ethics, the rule of law, and cost-effectiveness when performing their functions (Crosby, P. B., 1979). The

research result also was in accordance with the finding of a study by Pannarai Tiemtan (2007, p. 107) who studied on the development of competency in organization management by having a good governance system and found that good governance effected in good quality of service; Sirikanya Sermsurum (2010, p. 86) examined the trend analysis of sub-district administration organizations in accordance with good governance principles.

The administration of Nong Kham and Khlong Muang subdistrict showed that the administration of the good governance had a great impact on the quality of administration; Anchalee Pongsanit (2558, p. 86) observed the management of royal decree on the principles and methods of good governance in 2003 at local administrative organizations in Kau District, Lampang Province found that the good governance effected the quality of service;Ying Luo (2013, abstracts) studied on division and good governance service: influencing of public service quality on the impact of quality control - based on the empirical analysis of large Chinese data was found that the good governance effected in the quality of service.

The effect between good governance and service quality was because Na Yai Arm Sub-District Administrative Organization has been implementing and reforming according to good governance principles consisting of transparency, participation, accountability, morality, rule of law, and cost-effectiveness. These are closely related to public service and it is very responsive to the community's demands for public services with sufficient quantity and good quality. Good governance is able to provide good public service. Therefore, implementing and improving the quality of public services is the main agenda of the Na Yai Arm Sub-District Administrative Organization in order to provide satisfaction to the public.

Furthermore, Na Yai Am Sub-District Administration Organization has implemented a good governance system in order to achieve a good quality of service. The elements of good governance are as follows:

Rule of law: Na Yai Arm Sub-District Administrative Organization protects the rights and freedoms for people equally. In addition, regulations are used as a guideline to work for all people.

Morality: Na Yai Am Sub-District Administration Office is protected for making mistake in professional standard and ethics, especially in the issue and conduct of professional ethics.

Transparency: Na Yai Am sub-district administration organization considers transparency in four sub-principles: transparency of structure, transparency of people, transparency of penalties, and transparency of disclosure.

Participatory: Na Yai Arm Administration Organization sets procedures for government officials, citizens and other stakeholders to have the opportunity to participate in order to acknowledge, learn, understand, share ideas, solve problems, think of ways to solve problems, and participate in the decision-making process for development.

Accountability: Na Yai Arm Sub-District Administration Organization displays responsibility for the performance of staff and their work results according to goal setting, including consciousness of public problem responsibilities.

Cost-effectiveness: Na Yai Arm Sub-District Administration Organization limits management functions and the use of human resources for the highest benefit to the community by saving on staff and materials.

As mentioned above, when implementing good corporate governance practices, the result is that the management image that people expect is fulfilled. Therefore, it is concluded that the administration of good governance has an impact on the quality of administration. (Nimphanich, 2007; Walaiporn Loganit and Pongsatean Luengalongkot, 2017) Good Corporate Governance has recognized and trusted the community, that good governance or good administration service can sustain the demand. The faith and trust of the people brought the benefits of the people. Na Yai Arm Sub-District Administration Organization must take into account the quality of public service provision and the satisfaction of the public or service recipient, mission, responsibility, and agency.

The concept of good government administration affected the quality of public services of the local administration. In conclusion, quality of service was the service that can meet the needs of the customers as expected or the service meets the needs beyond the expectations of them. From this analysis, we found that the elements of governance that are the most heavily weighted are derived from transparency, participation, morality, rule of law and cost-effectiveness. In addition, good governance practices have resulted in improved service quality.

If the local government administration wants to achieve quality and the satisfaction of the people, it should give priority to the management of good governance. The integrative implementation of good governance would result in effectiveness of service quality and responsibility; eventually, it leads to people's satisfaction towards service quality of the administrative organization.

Recommendations for Research

1. Recommendations for application

The findings showed that administration with good governance affected service quality at Na Yai Arm Sub-district, Na Yai Arm District, Chanthaburi Province; hence, a policy to promote and improve administration with good governance should be initiated.

2. Recommendations for further research

2.1 A similar pattern of study should be replicated in doing research work in different sub- districts, and the findings from different studies should be compared to see the similarities or differences.

2.2 A study of factors affecting service quality at Na Yai Arm Sub-district Administrative Organization should be conducted by qualitative research, so that in-depth data could be revealed and the findings applied to improving service quality at the organization.

2.3 The research result showed that the model of service quality fit into the empirical data. Also, it was proved that model was convinently able to apply at Na Yai Arm Sub-district, Chanthaburi Province. For further research, this model would be able to use for other area significantly and experimently.

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Managing and Utilizing Mass Media as a Communication Tool During a Crisis: A Case of Tham Luang Cave Rescue Operation in Mae Sai, Chiang Rai

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Abstract

This research aimed to explain how media were handled and utilized at Tham Luang Cave where twelve boys and a football coach were trapped in the flooded cave complex and examined how local media in different areas created trust in the news coverage. Research results revealed that media coverage of the almost 20 days of non-stop rescue operations involving 10,000 individuals, 100s government agencies, over 100 divers, 1,000 reporters, and more than 10 nationalities of experts, presented an enormous challenge to coordinate all the spokespeople and insure that reliable information was disseminated. Three main tasks the rescue team used to handle and utilize media wisely and effectively that led to success were: 1) media management, 2) social media utilization, and 3) communication after the crisis. The successful operation created an unbelievable social movement as online people from all over the world used social media to express their interest in, pray for, and praise the victims and the rescue team, and made Tham Luang a now famous tourist attraction.

Keywords: Media, Communication, Crisis Communication, Tham Luang Cave

Introduction

Mass media are major communication channels used to reach to majority of people, large group of audiences, or public. They refer to a collection of various types of media include media technologies broadcasting in forms of traditionally and electronically methods. Mass media, as a kind of communicating platform, cover newspapers, magazines, radio, television, film, and the Internet. Digital media owned by mass media organizations, such as social media sites, websites, internet-bases radio and television are also a part of mass media. In today's world of information and rapid change of new technology, most major mass communication organizations use both regular or traditional and internet-based media platforms to transmit their message to the public. The media is powerful (Karen Hurt: 2016: Online), it could be able to affect organizations in either positive or negative ways. People in information era associate with other by using electronic device as a method of communication. As we all are living in the world of rapid change of innovation and modern communication technology that social media becomes our close friend influencing on our day-to-day life. We spend many hours a day surfing on internet, which the number of hours of consuming social media is surprisingly increasing (Evan Azano, 2017: online). Crisis such as natural disaster, terrorist, a sudden downturn economy, or disease spreading, is a situation, incident, event, disaster, or disagreement happened unexpectedly and immediately that requires urgent and difficult decision making within a short time. Without handling it properly and professionally, crisis may become worse and affecting on an individual, groups, community, or the whole society (Wikipedia, 2018: online). The terms of ‘quick’ and ‘quickly’ are commonly used when describing an effective crisis response (Coombs, 2015). Jennifer Miller (2016: Online) explained that the media calls a crisis “breaking news” and crises are like unexpected gifted form the news god. Crisis that leads to disaster, which involves a large group of people, trends to call a public attention. Yuan Wang and Chuqing Dong (2017: online), stated that crisis communication was one of the areas strongly influenced by the development of social media.

Today, mass media are considered as one of the most important means of communication (Fateme Ghassabi, Firoozeh Zare-Farashbandi, 2015: Online). The mass media include newspapers, radio and television have the power to make or break a business (Zerman, 1995: Online). They have become inseparable part of any social situation (Fateme Ghassabi, Firoozeh Zare-Farashbandi, 2015: Online).

Since we are living in a media world where media becomes a part of our life, everything happens in a different part of the world can be seen and known worldwide within minute. It seems the world becomes smaller by the advancement of high technology. Evan Azano (2017: Online), summarized numbers of hours of people associating with internet. He pointed out that teenagers take longer hours of working on internet. They take up to nine hours a day while the other age groups spent almost two hours or 116 minutes a day. He also compared number of hours in a lifetime people spent on popular social media. Surprisingly, people spent 1 year and 10 months on YouTube, 1 year and 7 months on Facebook, and 8 months on Instagram. From this phenomenon, we can see that most people in the information era are familiar with new technology, advanced innovation, and especially social media as a part of our life. This is why crisis, when happens, is affecting people globally (Coombs, 2014).

Crisis occurred recently at Tham Luang Cave, Mae Sai District; Chiang Rai Province attracted public attention worldwide. The successful rescue operation had made a Cave well known as one of the most challenging and interesting tourist attractions in Northern Thailand. The tough operation of searching 12 boys and a football coach of Moo Pa or Wild Boar team whom were trapped in a flooded and complex cave for 10 days was almost impossible. Victims finding mission was hard and tough but the rescue mission after finding all of them alive was supreme harder. However, the almost impossible mission turned to be an incredible but possible operation because of the effective management strategies of the operation team led by former Chiang Rai Governor; Mr. Narongsak Osotthanakorn.

Statement of the Problem

Crisis may become worse or may lead to disaster if without a proper and quick respond. Effective communication among an operation team and with the public and the stakeholders will also help sending useful information together with ongoing situations. Mass media include social media can be great tools to guide the operation team to do the right way at the right time and encourage everyone to take proper action during a crisis.

This study will focus on how well mass media were handling and utilizing during a rescue operation and how reporters in newsrooms worked to make sure their news were reliable.

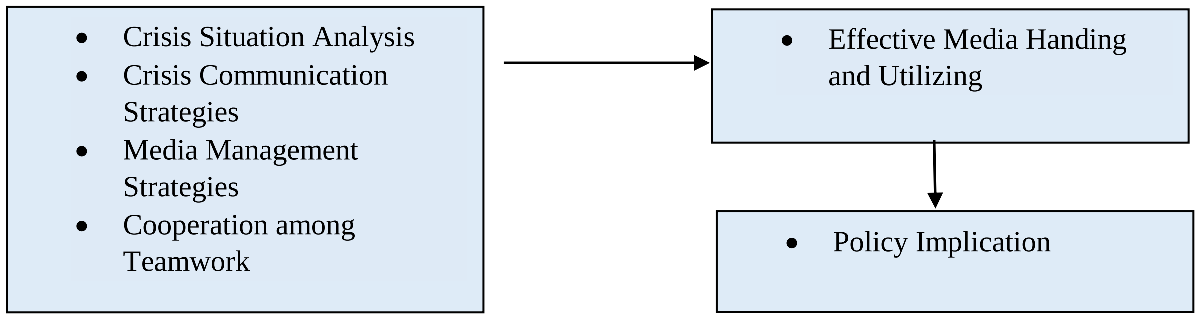
Research Objectives

This research aimed to: 1) explain how media were handling and utilizing at Tham Luang Cave where twelve boys and a football coach were trapped in the flooded and complex cave and 2) examine how local media in different areas checked and reported this breaking news trustworthy.

Conceptual Framework

The conceptual framework of this research was focused on four independent variables that were presumed to lead to effective media handling and utilizing.

Independent Variables **Dependent Variables**



Scope of the Research

1) This research is limited to study and explain how media were handling and utilizing at Tham Luang Cave where twelve boys and a football coach were trapped in the flooded cave. The media cover local and international media outlets who were at on site reporting news of the rescue operation.
2) Local media mentioned in this study focuses on president of radio broadcasting club, Phetchaburi Province, radio station directors and managers in Phetchaburi and Prachuab Khirikhun Provinces who followed ongoing situation and reported news of Tham Luang Cave Rescue from their stations during the rescue operation.

Literature Review

Communication and communication theory

As we know, communication is a process; it is a process of sending and receiving information. There are two types of communication: verbal and nonverbal. Effective communication encourages a response or feedback from receiver. Shannon; an American Mathematician and Weaver, a scientist, explained the model of communication since 1948. They summarized that the communication model composed of sender, encoder, channel, and decoder. In their point of view, sender is a person who creates and sends message via selected channel. Encoder or transmitter could be machine or equipment sender chooses to use to transform message into signal or the other forms before sending. Channel is the medium such as e-mail, letter, chat, etc. that sender chooses to use to communicate or send message. Decoder or receiver is a machine used to transform signal or the other code into message or person translates signal into message.

Communication theory was first mention in 1980 by S.F. Scudder who wrote on his book that "all living things being exist and communicate" but the way to communicate might be different. They may use their sound, language, breath, action, reaction, movement, color transformation, physical change, gesture, etc. to communicate with each other. Different kinds of living things may communicate in different way. For instance, babies may communicate with their mothers by crying when they are hungry or get wet but when they are grown up, they can speak or communicate with their mothers by using understandable languages. Military may use more of nonverbal communication, body language or signal to communicate with their team than other human beings. Farm corps communicate their needs with farmers by using colors. Brown rice seeds in paddy fields mean it is time for harvesting but the green ones mean they are too young to be harvested. However, brown leaves on rose bushes do not mean harvesting time but this incident indicates a time for gardeners to water and take good care of those plants. Also with animals, they communicate with each other or their owners by using sound, gesture, color transmission, movement, etc.

In summary, according to Shannon and Weaver, the communication model composes of sender who creates or sends message, encoder, channel, and decoder or receiver, which means machine to convert message or person who receives and translate message.

Crisis Communication

Before going to crisis communication definition, we need to clarify what is crisis. Coombs (2015) mentioned that numbers of practitioners and academic persons frequently uses this term but the meaning of the word crisis itself is very broad. It covers any unpredictable but not unexpected event. It refers to a dangerous time or unwanted incidents occurs at the organization, or at any place, that needs a quick and effective solution. Collins Dictionary explained crisis is a crucial stage or a turning point in the course of something, especially in a sequence of events or a disease. Crisis can harm organization image or reputation. Without a proper and quick response, crisis can become worse and may lead to disaster. During crisis, organization should appoint communication experts to deal with troubles and unwanted issues professionally to help protecting organization's reputation.

Gonzalez-Herrero and Pratt (2009) summarized three stages to manage a crisis: 1) diagnosis of crisis, 2) planning, and 3) adjusting to changes. At the first stage of diagnosis of crisis, organization leaders and managers should determine and analyze crisis-warning signals and prepare employees to face it with caution, courage, and determination. Any warning alarm sign happens at that period must be taken into consideration and requires proper action.

At the second stage or the planning stage, the crisis management team must response to the crisis right away. The team needs to communicate with employees and stakeholders to prevent chaos or to cool down the employees. The crisis management team must take proper action immediately and effectively. It is necessary to communicate with employees about ongoing situation and solution. The adjusting to changes stage helps organization to perform effectively after crisis, staffs and administrators are required to adjust themselves suit to changes or new situation. The organization will learn and analyze causes that created crisis that no mistakes should be repeated. In addition, the organization should apply new plan or strategies to prevent crisis in the future.

Crisis communication is a strategy or plan that organization uses during crisis or emergency. It covers the way organization communicates with its staffs, stakeholders, and the public. Crisis communication helps protecting organization reputation as well as maintaining good image. Actually, the goal of crisis communication is trying to reduce the damage a crisis affects an organization and its stakeholder (Coombs, 2015).

Media Management

Media covers traditional news outlets, social media or any platforms of media used to send news and entertainments to public or a large group of people. During a crisis, an effective communication and a good relation building with media is very important. Crisis communication team must pay attention to the role of the editor or the publisher in major newspapers or major channels (Albaran, 2006). Organization should never be rude in social media (Coombs, 2015) at the same time; the crisis plan should include social media editor to their team. This would help social media receive reliable news and to create positive attitude among teamwork.

Research Methodology

This study used mixed methodology. Research results were from two main sources; documentary research and qualitative research method.

Population and Samples

This study applied a purposive random sampling approach for a qualitative method. The population of this study were 7 popular media press in Phetchaburi and Prachuab Khirikhun Provinces who reported news of Tham Luang Cave Rescue via their media sources at their newsrooms during the rescue operation mission in Chiang Rai. The population were the president of radio broadcasting club Phetchaburi, radio station directors and managers, and radio programmers.

Research Tools

Documentary research: This part the researcher used news, articles, and other media presenting data, information, and story about the rescue operation at Tham Luang Cave in Mae Sai, Chiang Rai.

Qualitative research method: Data were gather by using in-depth interviews. Key informants were the president of radio broadcasting of Phetchaburi, the directors, managers, and programmers from 5 radio stations, who followed ongoing situations of the rescue operation at almost 24 hours a day and updated news progress or reported breaking news from their newsrooms until the rescue operation was complete. They were asked to talk about their work experience in media, how they did fact checking, which news outlet they used to verify and in their point of views, how media should be managed during a crisis.

Research Finding

1) **Media Management during the Crisis**

From documentary research, it revealed that during the first few days of an operation, it involved only local media. Nevertheless, as the rescue mission seemed to be harder than expectation because of the high level of muddy water, the length and complex cave itself, and the lack of diving experts. The crisis operation team used oversea calls asking for help from international experts, this two-way communication made British diver experts flew directly to Bangkok and connected to Mae Sai to start their diving operation within a short time. Online people started posting and sharing news and concerns after international experts, Thai Navy SEAL team and other government units joined this mission. The incident became the public concerns since the majority of crisis victims were young country boys, and the mission involved more than 10 nationals of experts who joined the rescue team.

This massive operation involved 10,000 people, 100s government agencies, over 100 divers, more than 10 nationalities of experts and professionals, 900 police officers, and 2,000 soldiers (Wikipedia, 2018: online). Numbers of machines and equipment such as helicopters, ambulance, water pumping, electricity generators, and facilities were moved to support the operation. Tham Luang, at the crisis time, was not only full with wild water and the rescue team but almost 1,000 reporters were also there to work around the clock in order to be the ‘first and fast’ news agency to report this breaking news.

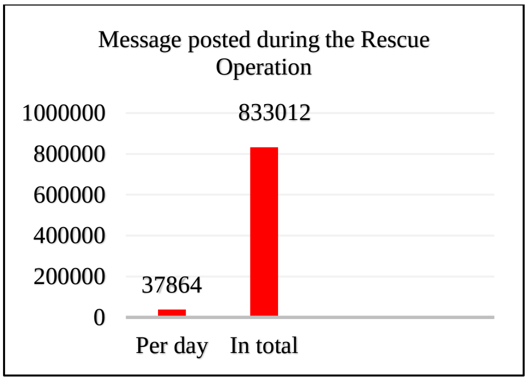
For a communication approach to support the mission, Mr. Narongsak Osotthanakorn, head of the rescue operation team, made a clear announcement to staffs and officers to do the operation eagerly and accurately. He encouraged his tirelessly working team to think all missing young boys and coach were like their own sons. Strategies applied to help support the team and to manage a vast amount of 1,000 reporters were as follows:

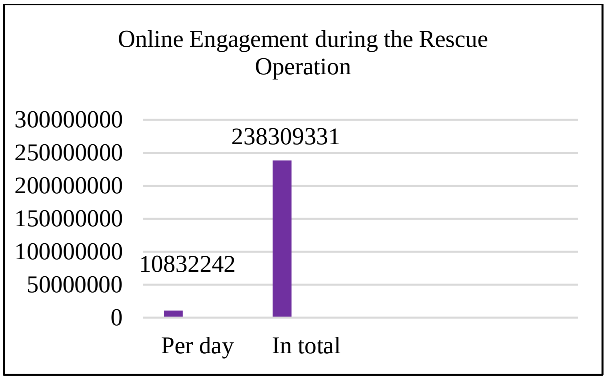
1) Set up spokesperson team that only authorized persons can deliver message to the press.
2) Press registration process. All reporters were required to register and wore name tag showing their name and organization at all time while entering the working zone.
3) Set up press zoning area for press to work. This zoning area helped the rescue team work smoothly.
4) Set up press dealing team to deal with reporters and to monitor news broadcasted worldwide.
5) Set up schedule for press release and interview session at least twice a day; in the morning before starting the mission and in the evening after the mission of each day ended.
6) Set up press statement team to provide accurate news and information and to make sure everyone received the right message.

2) Social Media Utilizing during the Crisis

The rescue operation simply grabbed public attention because the crisis victims were young boys, the operation seemed to be impossible, and it involved a large group of international experts. Thai Nave SEAL used their Facebook Page to reveal their daily mission and online people started using social media to show their concerns; especially to 13 boys and a football coach and the rescue team. It was interesting to see numbers of messages posted were at 37,864 per day and 833,012 in total. Numbers of engagements were at 10,832,242 per day and 238, 309,331 in total. Table below showed numbers of messages and engagements during the operation.

Messages and Engagements Posted via Social Media during the Rescue Operation

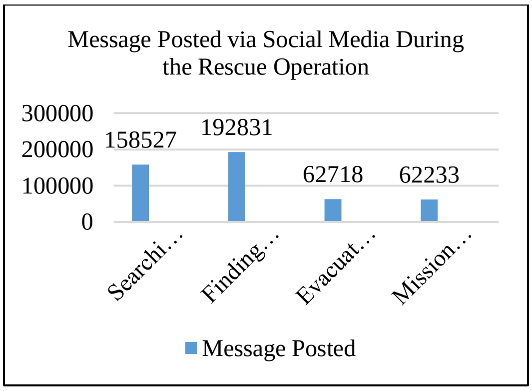


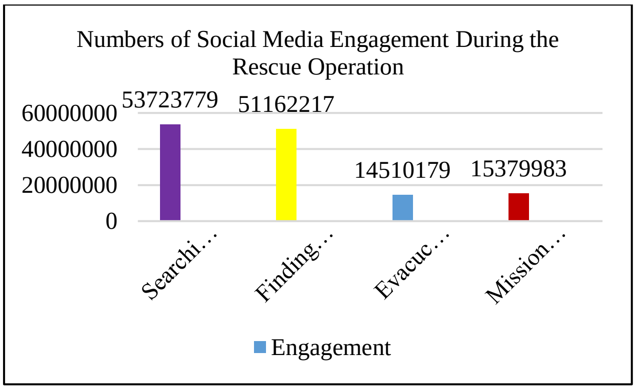


Data from https://positioningmag.com/1179326

To see clearly picture, table below presented a summary of social media used during each period of the rescue operation.

Message posted via social media during the rescue operation





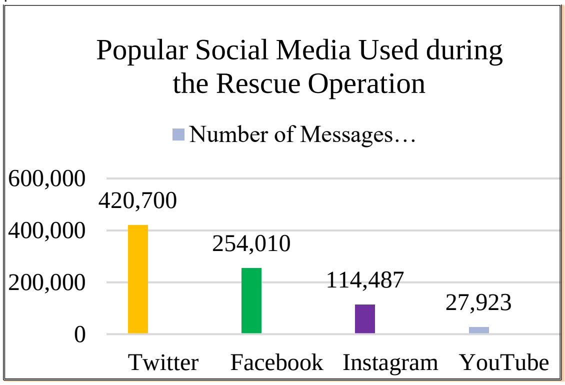
Data from https://positioningmag.com/1179326

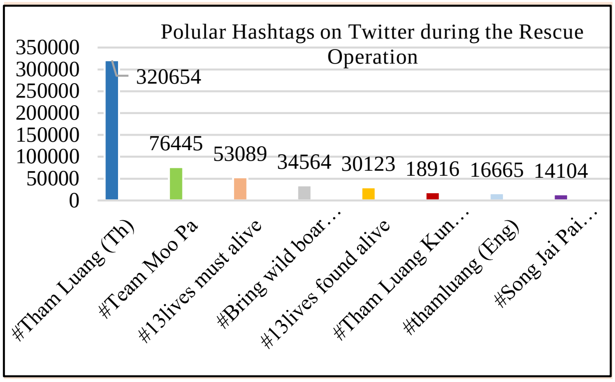
During the **searching Period** (June 25-27, 2018), the first few days after international divers arrived, online people started sharing message, praying, and praising the rescue team, which 158,527 messages with 53,723,779 engagements were posted. **The finding period began on** July 2, when two British divers; John Volanthen and Richard Stanton, found the group alive on an elevate rocked about 4 kilometers from the cave mouth (Wikipedia.com, 2018: Online). Online people posted 192,831 messages and #13 lives found alive hashtag was posted with 51,162,217 engagements. **The evacuating period** was from July 8, 2018 after the first four boys were rescued from the cave. At this period, online world was celebrating on the incredible success. Numbers of 62,718 messages were posted with 14,510,179 engagements.

The last session or the mission completion period was on July 10, 2018), when all 13 missing boys and a coach were out of the cave safely and the rescue operation ended. On this day, 62,233 messages with 15,379, 983 engagements were posted. Most were thank you messages to the rescue team for their hard work and vigorous efforts together with messages of condolence for Sam; ex-Navy Seal, who lost his life in this operation.

As to look at popular social media platforms online people used and hashtags posted during an almost 20 days of a tough operation, Twitter was on the top rank, followed by Facebook and Instagram. People twitted up to 420,700 messages during the operation and the most popular hashtag online people twitted was # Tham Luang in Thai language. Table below showed popular social media used and popular hashtags searched during the rescue operation.

Popular Social Media Used during the Rescue Operation





Data from https://positioningmag.com/1179326

3. Communication after the Crisis

The happy-ending rescue operation was complete in the evening of July 10, 2018, when the last ‘Moo Pa’ was rescued out of the cave. Later on the crisis operation Team and government agencies, such as Ministry of Foreign Affairs and Ministry of Sport and Tourism, that were in charge of the mission, used both regular and online media platforms to thank all parties both domestic and international who were parts of the success operation. Vietnam breaking news on 23 July 2018 reported of the Thai government plan for organizing a thank-you event for all involved in the Tham Luang Cave rescue operation. The thank-you party, under the title “United as One”, will be held in front of Dusit Palace in Bangkok. Participants are more than 10,000 Thais who took part in the operation, representatives of foundations and the wife of ex-Navy Seal Saman Kunan, who lost his life during the mission. International rescuers, members of both Thai and foreign media and members of the Thai public who took a supporting role will also be invited.

4) How Local Media Make People Trust and Rely on News

From in-depth interviews with seven reporters from local media based far away from Chiang Rai Province, research results revealed that all of these reporters worked in this field between 8-20 years. Their past experience involved with reporting and broadcasting numbers of crisis or important incidents that threatened people. As human beings, their feelings were mostly like the other Thai people who wanted to hear good news, wanted to see all football team were rescued safely. But as experienced news reporters to work in newsroom and expected news from the other sources, they knew they could not rely on only one source of news outlet or fluid rumors spreading via social media unless they checked with reliable sources.

For 'Moo Pa' breaking news, the local press followed ongoing news at their newsrooms at almost 24 hours a day to keep them updated and to pray for 'Moo Pa' together with people almost around the world. Mainly they used NBT and other government news outlets as their reliable sources to summarize news reported to their listeners. All reported news with relief when the rescue mission was completed that they boys and coach were hospitalized for a special treatment.

During the rescue operation, there were many sources of news broadcasted both traditional and online platforms. Some could be trusted but some could not. Local reporters did fact checking more than three time, mostly checked with government news agencies and reliable major news outlets before reporting news. They said 'first and fast' may not work, they recommended to spend few minutes to do double or triple fact checking from trusted sources or to make sure of news before releasing.

Summary

Mass media are important tools for any organization when dealing with crisis. They help sending out clear message, providing useful information, and making everyone aware of ongoing situation but it is necessary to use them wisely and effectively. The almost impossible mission to rescue 13 boys and a football coach at Tham Luang involved 10,000 individuals, 100s government agencies, over 100 divers, more than 10 nationalities of experts and about 1,000 reporters. Without effective communication strategies and media management, this tough mission was hard to succeed. Social media used during the rescue operation created new phenomenon of a social movement as online people from all over the world used social media to express, pray, and praise for victims; the strangers they wanted to meet, and to the Rescue Team. In-depth interviews with local media who followed ongoing situations at almost 24 hours a day at their newsroom found that local media did more than triple fact checking on ongoing news and checked with reliable sources, mostly from NBT or other major news outlets before reporting.

Discussion

Crisis is an incident that may shift to major disaster if it fails to handle properly. The media is powerful (Karen Hurt: 2016: Online), it could be able to affect organizations in either positive or negative ways. Too much media attention, without effective management, may create another crisis. The crisis operation team must continue their missions as their job is to manage the crisis, identify victims, reach out to them and communicate with key audiences and news media (Jennifer Miller, 2016: online). During crisis the term of 'quick' and 'quickly' were commonly used when describing an effective crisis response (Coombs, 2015). The crisis management team must take proper action immediately and effectively.

Organization needs to set up an operation team to deal with media and treat them as friends not enemies. Communication during a crisis is not for a heart-fainted person (Jane Jordan-Meier, 2016: Online). The message, presented by a well-trained spokesperson, should be clear and straightforward. The spokesperson should understand how media work and how to handle them in a proper friendly way. Organization should never be rude in social media (Coombs, 2015). Social media should be parts of crisis team. This would help social media receive reliable news and to create positive attitude among teamwork.

In summary, the successful rescue operation team of Tham Luang was based on four important parts: crisis situation analysis, crisis communication strategies, media management strategies, and effective cooperation among teamwork. The incident also created policy implication about warning signs, cave exploring safety rules and regulations for caves in Thailand. The successful operation that involved people all over the world makes Tham Luang a famous touring attraction.

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Book Review:
Christopher Hill and Rozilini M. Fernandez-Chung. HIGHER EDUCATION IN THE ASIAN CENTURY: THE EUROPEAN LEGACY AND THE FUTURE OF TRANSNATIONAL EDUCATION IN THE ASEAN REGION, ROUTLEDGE, 2017. 172 PP., ISBN: 978-1-315-73637-2 (EBK)

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As goes the education in a country, particularly higher education, so too goes the success of many factors that affect life there: the economy, level of technology, societal issues, individual and collective prosperity and a country's move toward internationalization. *Higher education in the Asian century: The European legacy and the future of transnational education in the ASEAN region* explores the history of the member nations of ASEAN. The legacy of educational progress is derived from their colonial experience and foreign ties and the effects that these relationships may have had on each country. Specifically, the book examines how a tool of higher education, Transnational Education (TNE), the movement of programs of study, students and teachers across international borders, has been and is being used in each country involved in attempts to attain governmental, societal, and higher education-related goals.

The editors are Christopher Hill, an Associate Professor and Director of the Doctoral Training Center, British University, Dubai. Hill is a member of several international HE associations, has published widely and has worked extensively in the field of TNE. His co-editor, Rozilini M. Fernandez-Chung is the Vice President for Quality Assurance at HELP University, Malaysia and in that role provides policy formulation, process support advice and quality assurance activities. She has served in roles that resulted in the development of the Malaysian Qualifications Framework, its codes of practice and program standards and guidelines. Together, the book's two editors, solicited papers from "informed experts" in which pairs, and in one case three of these experts provided a country-based case-study discussion forming the eight chapters of the book. ASEAN countries examined include Malaysia, Cambodia, Indonesia, Thailand, Singapore, Vietnam, the Philippines and Myanmar.

The authors of the chapters bring to bear excellent credentials and many years in higher education (HE), HE administration, TNE, banking, consulting and government to provide a highly informative and compelling scholarly work. Though the book is a bit dry, as scholarly works are apt to be, each chapter provides the reader with a vivid picture of what has transpired over hundreds of years and how it has shaped and continues to shape the country and its higher educational system. At the onset, the editors state that it is not the intention of the book to suggest answers to future problems for the countries examined, but rather to provide insights into past performance and how this led to the current circumstance in each country. Key in this exploration is a starting point of colonization by European countries for all but one of the nations examined (Thailand) and how this European-Asian connection resulted in legacies of educational systems, administration, language and religion that still affects those countries' HE today.

This legacy in HE is extremely important, according to the authors in that HE is considered a factor that has possibly the highest impact on a nation, its society, its politics and its economy. This, therefore, makes HE a major policy issue for these countries and a source for national development and reputation building. The authors suggest that TNE, through which students from lesser developed countries can obtain access to HE from more developed countries, can serve as a major tool to improve the level of education and even the educational systems in those countries. Several ways in which this happens are described by the various authors. TNE's role can be as straight-forward as students leaving their Asian countries to attend universities in Europe, the US or Australia; something that has been happening in most of these countries for many years. While many students are sent by their parents, scholarships are often provided to deserving Asian students by HE institutions in both Asian and western countries. A variety of more complex arrangements have also developed over time. In some cases, dual degrees are offered in which students attend HE institutions in their home country and then travel to another country to receive additional coursework in a partner institution thereby earning a dual degree from the two universities. Foreign universities have also developed partnerships with governments and universities in Asian countries allowing them to set up programs or branches in those countries under the auspices of the local bodies.

Therefore, using the context of imperial colonialism, higher education and transnational education, the authors of each chapter provide a nation-specific conversation that delivers an account of perceptions and reality that have shaped and continue to shape the development in south-east Asia. These discussions run from macro concepts of national politics and policy to micro issues of syllabi and student assessment. They depict countries such as Cambodia, Vietnam and Myanmar, that due to their turbulent pasts, have struggled and are struggling to develop the infrastructure and human capital necessary to successfully provide some measure of HE for their citizens. While other chapters examine those nations that have advanced to setting their sights on becoming, such as the Philippines, or actually having become recognized as regional educational hubs focused on attracting international students as is the case in Singapore and Malaysia.

In each chapter, the authors make a strong case for how European colonialism, for most of these countries, or ties to other countries as was the case with Vietnam and Russia, hampered or helped that nation in its development and structuring of their HE and, therefore, affected that country's society as a whole. Each chapter did a good job of what was the goal of the whole book, to provide insights into the past performance of the country discussed leading to the current situation and the activities in those countries today. The book concludes with a "Summary" provided by the editors in which they restate the assumptions upon which the book is based. They talk about the rapid growth and transformation that is taking place in Asia and in the countries of the ASEAN Economic Community and how this might affect TNE in the region in light of the rise of China. Highlights from each chapter are then extracted and discussed separately for each nation. The Summary concludes with a discussion of projects such as EU SHARE, ASEAN integration and the building of EU-ASEAN university partnerships and the effect that these programs may have on TNE for the countries discussed.

However, in keeping with one aim of the book to "not be prescriptive," the editors missed an opportunity to examine these excellent discussions *across* the ASEAN countries. A perspective of viewing TNE across nations could be used to suggest insights as to factors that could (or should) be used by ASEAN member nations. The ASEAN Economic Community, could use TNE as a tool to achieve the economic, technological, societal and prosperity goals of each member nations, the HE institutions in those nations and for the entire ASEAN region. Drawing from what was learned in Indonesia and Singapore, ASEAN politics and policy could be used to jumpstart HE programs throughout the region by benchmarking selected aspects of excellent institutions: their structures, programs, quality assurance and assessment policies and activities, and forms of governance as was done in Singapore and Malaysia.

Knowledge transfer of this type could do much to improve existing HE institutions and address quality deficiencies that exist in countries such as Vietnam, Cambodia and Myanmar. Governmental HE reform recommendations could be developed and disseminated throughout the Community modeled on those countries that have shown outstanding records of support by government toward HE. ASEAN countries that have enjoyed successful TNE with European and other western partners have also benefited due to a populace in which ma ny spoke English, often an artifact of their colonization. Member nations could be encouraged to require a strong English language component in primary and secondary education as a means of preparation for TNE with foreign HE partner institutions. In short, while it was not the purpose of the book, the authors have provided much information that could be used to better prepare ASEAN countries to utilize transnational education to continue and even enhance current trends in educational improvement, economic growth and further steps toward internationalization.

Guideline for Authors

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    a. Appear at the end of the manuscript body
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