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SPU SRIPATUM UNIVERSITY

UNIVERSITY of GREENWICH

LINCOLN UNIVERSITY Te Whare Wānaka O Aoraki

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Welcome Address from President, Sripatum University

Welcome to the sixth volume of International Journal of Management, Business, and Economics (IJMBE). IJMBE is dedicated to increasing the depth of the subject across business disciplines with the ultimate aim of expanding knowledge of the subject. The IJMBE is a thrice peer-reviewed journal published by Graduate College of Management, Sripatum University; University of Greenwich; and Lincoln University.

In retrospect, Sripatum University, one of the oldest and most prestigious private universities in Thailand, was established in 1970 by Dr. Sook Pookayaporn by the name " Sripatum College." The name "Sripatum" meaning "Source of Knowledge Blooming like a Lotus" was conferred on the college by Her Royal Highness the Princess Mother. In 1987, the college was promoted to university status by the Ministry of University Affairs, and has since been known as Sripatum University. The university's main goal is to create well-rounded students who can develop themselves to their chosen fields of study and to instill the students with correct attitudes towards education so that they are enthusiastic in their pursuit of knowledge and self-development.

To strive to be among the best, this first issue of the IJMBE is therefore instrumental for the most important academic growths to extend a high quality tradition in the education field to the world. The journal welcomes the submission of manuscripts that meet the general criteria of significance and scientific excellence, and will publish original articles in basic and applied research, case studies, critical reviews, surveys, opinions, commentaries and essays. It is hoped that this first issue will set a new benchmark in terms of academic publications. Through the support of our Editorial and Advisory Boards, I hope this journal could provide academic articles of the highest quality to all readers.

Dr. Rutchaneeporn Pookayaporn Phukkamarn
President, Sripatum University

Welcome Address from Dean, Sripatum University

It is appropriate to celebrate the continuity of an exciting and esteemed journal. The IJMBE will serve and provide a forum for exchange of ideas among business executives and academicians concerned with Management, Business, and Economics issues. With the rapid evolution of corporate business from international to global in recent years, general business has been one of the areas of greatest added complexity and concern for corporate managers. The IJMBE will be an academic journal combining academic inquiry and informed business practices. It will publish empirical, analytical, review, and survey articles, as well as case studies related to all areas of Management, Business, and Economics. A sentiment often expressed by practitioners is that academic research in general may not be addressing the most relevant questions in the real world.

It is fair to say that the IJMBE will publish high-quality applied-research papers. Nevertheless, studies that test important theoretical works and shed additional light on the issue with some business implications will also be solicited. Each submitted paper has been reviewed by several members of the IJMBE international editorial board and external referees. On the basis, we would like to thank all of them for their support with review process of submitted papers.

I cordially invite papers with theoretical research/conceptual work or applied research/applications on topics related to research, practice, and teaching in all subject areas of Management, Business, and Economics, or related subjects. I welcome paper submissions on the basis that the material has not been published elsewhere. The ultimate goal is to develop a journal that will appeal to both management and business practitioners. I expect the IJMBE to be an outstanding international forum for the exchange of ideas and results, and provide a baseline of further progress in the aforementioned areas.

Assoc. Prof. Dr. Vichit U-on
Dean, Graduate College of Management
Sripatum University

The Editors

Editor-In-Chief

Dr. Ungul Laptaned is an Assistant Professor in the Graduate College of Management, Sripatum University. He graduated with a Ph.D. in 2003 from the University of Nottingham, United Kingdom in the field of Manufacturing Engineering and Operations Management. Ungul has published over 60 proceedings and journal papers; for instances, Industrial Engineering Network, Asia Pacific Industrial Engineering and Management, International Association of Science and Technology for Development, Operations and Supply Chain Management, Intelligent Manufacturing System, Business and Information, etc. He served as a program chair and a steering committee for several domestic and international conferences. He was a journal editor of International Journal of Logistics and Transport, and Thai Researchers' Consortium of Value Chain Management and Logistics Journal, and has consulted for several public organizations and industrial firms on logistics and supply chain management such as Thailand Research Fund, Phitsanulok Province, Public Warehouse Organization, Amatanakorn Industrial Estate, Wyncoast Industrial Park, Iron and Steel Institute of Thailand, Chacheongsao Province, JWD Infologistics Co., Ltd., Kerry Distribution (Thailand) Co., Ltd., TKL Logistics and Supply Chain Co., Ltd., and Ministry of Transport (Thailand).

Associate Editor

Dr. Ioannis Manikas holds a Bachelor in Agriculture and a Master of Science in the field of logistics from Cranfield University. He holds a PhD from the Department of Agricultural Economics in AUTH and his primary interest includes supply chain management, logistics and agribusiness management. Dr Manikas has conducted research for projects regarding supply chain modelling, development of IT solutions for agrifood supply chain management and traceability both in Greece and the UK. He has a wide experience in the elaboration of research proposals under FP6, FP7, and Eurostars-Eureka funding mechanisms; lifelong learning oriented programmes such as Leonardo; and Interregional development programmes such as Interreg III and Interreg IV. His work as a self employed project manager and consultant in the agrifood sector includes the design and development of regional operational programmes; analysis of regional needs and respective development policies focused on rural and food production; definition of funding areas and financing resources; definition of strategic goals for regional development and formulation of respective performance monitoring systems; and assessment (ex-ante, on-going, ex-post) of the implementation of EC and national funding mechanisms in national and regional levels.

Guest Editor

Dr. Gilbert Nartea is an Associate Professor in the Waikato Management School, University of Waikato, New Zealand. Dr. Nartea graduated a Master's Degree from New England and a Ph.D. from Illinois, USA. He is a senior lecturer in Finance. His teaching interests are in the area of investments, futures and options, and finance, futures and options. The area of research interests area asset pricing, investment management, decision-analysis and risk management, and microfinance and poverty alleviation. He has published several papers in such journals as of Property Investment and Finance, International Journal of Managerial Finance, Asian Journal of Business and Accounting, Australian Journal of Agricultural and Resource Economics, Pacific Rim Property Research Journal, Review of Applied Economics, Review of Development Cooperation, American Journal of Agricultural Economics, and Journal of the American Society of Farm Managers and Rural Appraisers.

Foreword

Welcome to the 1st issue of the 6th volume of International Journal of Management, Business, and Economics (IJMBE), the Editors received a number of papers from different countries such as Cambodia, China, Germany, Myanmar, Thailand, and Vietnam. The received papers encompassed many areas of marketing, banking, economics, insurance and risk management, industrial and operation management, strategic management, and international and global business management. After the review process, a total of ten manuscripts were selected for publication.

The first paper is examined by *Bunne Chann*. Their paper is entitled "*Designing Warehouse Layout of LCL to Improve Time Efficiency and Space Utilization: The Case of Sonic Interfreight Co., Ltd."*. This research study investigated design warehouse layout of LCL to improve time efficiency and space utilization. The objective of research is to study the warehouse layout to storage product, to optimize the layout of company's warehouse case study, and to increase the storage area more. In the day when there are many products to storage in the warehouse.

The second article is authored by *Kakada Kuy and Zhe Ji*, and named as *"Linker: The New Implementation of the Sharing Economy in the Last-Mile Delivery of E-Fulfillment"*. The purposes of this thesis are to summary the current problems in the Last-Mile Delivery, and explore the possible solutions, a delivery model with sharing economy application called *Linker*, to improve the Last-Mile Delivery circumstances. This is based on the reasonability of the sharing economy.

The third article is authored by *Khanh Quynh Anh Bui and Thao Vy Le*, and is entitled "*Blockchain Technology in Logistics and Supply Chain Management*". The objective of this thesis is to introduce Blockchain and analyze the potentials and challenges that it brings to supply chain management of various industries. A case study has also been conducted to clarify the positive influence that Blockchain has on logistics and supply chain management.

In the fourth article, entitled "*Factors Affecting the Students and the Parents' Adaptation towards the Electronic Payment System, For the Tuition Fees Of Thai Business Administration Technological College via Smartphones*", is written by *Lisi Lui*. The objective of this research is to study about the factors affecting the adaptation, by the parents and students, of paying the tuition fees by Electronic Payment System via smartphones.

In the fifth article, entitled *"Cross-Border E-commerce Research of Chinese SMEs*" conducted by *Liu Han Sheng*. This paper analyzes the opportunities and challenges of SMEs' cross-border e-commerce and proposes relatively relevant measures. The author mentioned about the cross-border e-commerce is a huge development opportunity for SMEs, bringing many favorable conditions, but at the same time there are new problems and challenges.

The sixth article is conducted by *Panot Asawachai*, and is entitled "*Management and Conservation of Historic Site for Cultural Heritage Tourism"*. This research study aimed to review (1) the heritage values and cultural significance of the scriptures library at Wat Rakhang Khosittaram Woramahavihara, and (2) the potential for cultural heritage tourism.

Article number seven is written by *Praphan Chaikidurajai*, and is entitled "*The Impact of Compensation on Task Performance of Employees in Electrical, Electronics and Telecommunications Industry Group in Thailand*". This purpose of this research was to study about the impact of compensation on task performance of employees in electricity, electric and telecommunication industry group in Thailand. The research methodology is a survey research by using questionnaire to collect data.

The eight article is conducted by *Sumalee Namuang*, and is entitled "*Causal Model of Brand Loyalty for Fitness Business in Bangkok*". The objective of this study were on 1) to study the influence of factors influencing brand loyalty in the fitness business in Bangkok 2) to study the influence of brand loyalty on fitness brands in Bangkok 3) to develop a causal model for brand loyalty in the fitness business in Bangkok.

Article number nine is entitled "*Political Management and Economic Policy Reform: The Case of Thailand*", and is examined by *Sukunya Thipha*. This article analyzes the economic policy reform experience of Thailand during the 2018 in three policy areas, exchange rate, trade, and agriculture. The model proposes that government officials have to make policy reforms politically feasible if the reforms are to succeed.

Last but not the least, the article entitled "*Factors Influencing Behavioural Intention of Airline Passengers Towards Myanmar National Airlines*" is examined by *Thomas E. Fernandez and Kyaw Nyunt Wai*. In this paper the authors conducted a research about airline passengers' intentional behaviour towards Myanmar National Airlines (MNA), the biggest airline in the Republic of the Union of Myanmar.

It is hoped that you will enjoy reading these articles and that they will generate responses and discussions that will help advance our knowledge of the field of Management, Business, and Economics. The Editors and the Editorial Board of the IJMBE would like to welcome your future submissions to make this journal your forum for sharing ideas and research work with all interested parties.

Ungul Laptaned
Editor-In-Chief

Ioannis Manikas
Associate Editor

Gilbert Nartea
Guest Editor

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by

Bunne Chann
E-mail:

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by

Bunne Chann

E-mail:

Abstract

As a part of supply chain warehouse has been played a major role in the flow of cargo across the globe. Moreover, good warehouse management is important to company because effective warehouse will help company to reduce operation time and labor cost. As the case of Sonic Interfreight Co., Ltd who provides the service of LCL ocean freight, the problem is in the process of unloading/loading, space utility, and putting away process. To optimize warehouse time efficiency and space utilization, researchers conducted the study by identifying the operation and warehouse layout, studying the layout of warehouse appropriate for the activities to increase the efficiency of work, and studying to improving the positioning of storage product, layout of warehouse. To reduce the operating time and time to drive forklift into picking product. Researchers collect data by interview employee in office work related document in warehouse and employee work in warehouse, as well as secondary data all of last year. Moreover, identifying by work place observation before analysis of the data obtained from the study and find defect by showing the empirical calculation and find correct solutions. As the result researchers found problems such as lack of space for the demand, cross path, and using loading ramp. After analysis collected data to point out the significant problem. Researchers also suggest some solutions, install pallet rack with two option1 and option2 which in create the capacity of warehouse 463 pallets and 103 pallets respectively, new warehouse layout with two doors, and Build loading dock which reduce the time 32.68 seconds per loading or approximately 6 hours per month. As the result, company can defy the problem that their warehouse is facing which some of the problem are difficult see without research study and data analysis. Furthermore, it is not only benefit to company that is in the case in the case study but also other related business can also consider as the typical problem that most of LCL warehouses have.

Keywords: LCL, Loading Ramp, Warehouse, and Space Utilization

1. Introduction

Nowadays, more and more cargo is being transported across the globe. In order to facilitate the flow of cargo, supply chain has been created and developed remarkably. As a part of supply chain warehouse has played a major role in the flow.

Good warehouse management is important to company because it will help company to reduce operation time and labor cost (Manhattan Associates, 2017).

As the case of Sonic Interfreight Co., Ltd who provides the service of LCL ocean freight, there are two warehouses in the operation. One is the free zone warehouse that provides the service of keeping imported product and delivers for customers, and another one is the warehouse for LCL operation (Freight Filte, 2013).

1.1 Problem of Company's LCL Warehouse Found in First Observation

According to researchers conducted first observation visiting the company in January, In the case of Sonic Interfreight Co., Ltd, the problem is in the process of unloading/loading, space utility, and putting away process. Researchers will describe the problem in more detail in Chapter 4. According to warehouse & distribution management uploaded by Professor Nattapon Kessakorn, normally there are five processes in the simple warehouse, and they are receiving, put away, and storage, as well as picking, and shipping process. On the other hand, for cross-docking warehouse there are less process, receiving, shorting and shipping.

Before going deeper in the problem, more detail of activity in each operation will be explained. Firstly, receiving operation, this is the first operation of the warehouse. It consists of two main activities, unloading and inspection. Similarly, the shipping operation also consist of loading activity. Inefficient loading and unloading performance cause time consuming and product damage, and the cause of inefficiency is the warehouse floor level. When the level of the warehouse floor is equal to the ground floor, there have to be loading ramp to support.

In the Sonic Interfreight Co., Ltd case, the warehouse for LCL service use bulk/block stacking storage type. Block stacking is storage product on the pallet and put the pallet on warehouse floor. Stacked 2-3 layers depending on the strength of the packaging.

The problem was nature of the LCL is different type of goods, so the product cannot be put on the others. That causes the wasting of space in warehouse. Another problem is putting away causes the congestion and inflow order for loading process.

Suggestion stuffing the cargo into the container is placing the goods with goods that heavier under the lighter one. Staffing personal should avoid putting heavy item on the top because it would damage the goods under it. Another intimation for container stuffing is to place the goods in the middle of the container or in other word we have to keep the center gravity of the container in the middle after stuffing to avoid imbalance of the container that may cause the imbalance problem when the container is load into the vessel. As the result, staffer cannot just put the goods in any other. So sometimes they have to move some pallet out the warehouse first to be able to get into to get the pallet that they desire because the door of warehouse is too, then it makes accessible area small(Zulkifli, 2017).

1.2 Company Background

Sonic Interfreight is logistics forwarder and provide comprehensive logistics services. Shipping services worldwide with efficient transport management system.

The company has developed into a one-stop logistics service provider. Logistics is not only a transportation management. Company provides transportation design shipping services to appropriate with needs of the customer. The company has been trusted from many customers as a designer and a specialized consultant, so company can answer the logistics management problems for domestic and foreign customers. Sonic Interfreight Co., Ltd provide free zone service for SMEs, especially. The free zone is known as the "King Kaew LCL Free zone" that would act as a dock. Sonic Interfreight is a provider of logistics full service including service vehicles. It is available in a One Stop Service, which does not need to unload product all at once. The product can be taken out of free zones in the desired quantity. Inventory stock can storage in this free zone and pick up product when customer need. The tariffs will occur when the goods leave the free zone only. All of service are managed by the company. It provides service including transport services, company have a complete range of ground transportation service. Currently, we have 63 semi-trailer trucks and 144 trailers to support the expansion of our customers' freight and reasonable price. Sea services, company offer an array of services, which include arranging for reservations and providing details regarding the dates of departure and arrival, names of the mother vessel and feeder, shipping routes, and name of the port. Air services -they have a complete range of ground transportation service (Sonic Interfreight, 2017).

1.3 Objective

1. To identify warehouse's operation used for LCL freight. For study less than container load service of company and how employee work. Work process of less than container load. To find method used for solve problem for increase efficiency in warehouse operation. Reduce risk of product damage when loading product into container.

2. To investigate how to change layout to improve time efficiency and space utilization of warehouse. Because LCL layout of warehouse is inefficient. Level of warehouse floor of LCL load cargo area is lower than level of truck it can be difficult to work and risk to product may be damage.

3. To calculate and measure efficiency of performance when improve and change layout of warehouse. Explain why the company should improve. Show result and describe what the benefits are when they improve.

4. To obtain new concept about layout of warehouse efficient and suitable with the company.

Researchers review many papers that related to the study. It starts by talking about design warehouse layout of LCL to Improve Time Efficiency and space Utilization. Those papers and article were public on reliable source and website.

The following are the theories or information that we get from those researches. Then it introduces:

2. Research Methodology

2.1 Data Collection

Researchers collectted data for used in research. Researchers collect data by interview employee in office work related document in warehouse and employee work in warehouse. Secondary data all of last year because period of time to do thesis is not enough to collect data the whole year. Study process of unloading product into warehouse until loading product to container for export.The data researchers collect are follows:

Previous one years about warehouse information from employee work related document. To used information for study problem in warehouse. Study real work process in warehouse. Employee of company describe and bring researchers to study the system and real work process in warehouse.

How did they work? how to loading product up to container and give example of document. Document detail is invoice, type of product, quantity and etc.

Researchers interview supervisor and employees ใน work in warehouse. Researchers think and consider questions before interview them. Whether it would be appropriate and to gain the most useful information. Example of questions is types of product, period to storage in warehouse and work process of employees in LCL warehouse.

2.2 Define Problems

Researchers define problem occurred in company case study. Study information gain from company and study real work process. Researchers identification of problem by two way as the following:

1. Identify by work place obvervation
2. Asking respondant of define the problem that they have met.

2.3 Analysis and Interpretation of Data

When researchers gain the information is available. Information collected it will be analyze in various forms and find conclusion of data. Analysis of the data obtained from the study. The researchers descript statistics by using Microsoft Excel to calculate S.D. (Standard Deviation) and mean of data. Find defect and find correct solutions. Evaluate data and information to study and how to solve problem.

2.4 Design New Layout and Process

Improved key performance indicator to better measure performance. Measure result when use new process or new concept to improve, design warehouse layout for increased efficiency. Reduce costs to drive forklift to pick up product for loading to container. Use KPI to improve warehouse performance. To know if adapt new process is working it is more work efficiency.

2.5 Compare between New Layout and Process to the Old Way

After researcher study the problem and finding a solution to the problem. Measure performance and evaluate performance. Bring the results to show and compare the results obtained. New solution and new process is more effective and how different from the old system.

2.6 Participants

The interview is conduct with two supervisors and four operational staffs in warehouse.

2.7 Research Instrument

The face to face interview was employed as the instrument of this research.The following are the sample question that researchers asked in the interview.

Table 1 Interview Question

Supervisor	Operation staffs in warehouse
1. How big current capacity of warehouse layout? (Pallets per day) 2. What is your opinion about the layout of the warehouse? Do you think it has any problem or not? In your mind what should be improved? 3. How many permanent operation staffs in the warehouse? Is the labor being enough? If not, how many outsource staffs will be hired? 4. How is the warehouse capacity to keep cargo. Is it big enough?	1. What is your opinion about the layout of the warehouse? Do you think it has any problem or not? In your mind what should be improved? 2. How much material handling in the warehouse? (Forklift, loading ramp, pallet) it is enough? If not what kind of problem that cause by this? 3. How is the warehouse capacity to keep cargo. Is it big enough? 4. Is there any problem with using loading ramp?

2.8 Data Collection

To answer research question, the researchers conduct a focus group interview with supervisor and staff in warehouse. To gather the information researchers used two types of information. They are primary data and secondary data. In order to get secondary data researchers request for the cooperation from company. The data that are provided by the company monthly are old cargo flow record, operation background information and operation time schedule. Moreover, researchers also use secondary data such as textbooks, research article, public thesis and other information that can be found on the reliable website to that relate to the topic and help the study.

Another crucial data is the primary data. In order to collect primary data researchers conduct a face-to-face interview with four different people who are the most familiar with LCL operation of Sonic Interfrieght Co, Ltd. Researchers arrange the appointment to meet and make face-to-face interview. It is the most effective way to get high attention from respondents, and it can ensure that the information is clear because interview can use body language to explain and can see interviewer reaction which can be inform them whether interviewer understand or not.

3. Results Analysis

3.1 Problem with Using Loading Ramp

According to the answer from interview, one of the problem of LCL warehouse is the absence of loading platform. Now loading process depends on loading ramp which is not convenient, high risk, and time consuming, as well as limitation due to weather especially in rainy season.

Level of warehouse floor is lower than level of truck: The problem is the level of warehouse floor is lower than level of truck. So, loading goods into the container is difficult, and risk of during loading process is high. Product can fall and damage.

As what a loading supervisor said, most of the case of cargo falling down occurred when the forklift was driving on the loading ramp. On the other hand, if we compare the speed of the forklift drive on floor and the speed of forklift driving on loading ramp, it shows obviously that forklift drive loading ramp nearly two time slower than drive on the floor. Furthermore, the other problem that associated with using loading ramp is raining. In fact, loading ramp required the loading process outside the warehouse which cause longer distance and the problem in rainy season. The time that they spent driving forklift from the door of warehouse to the door of container on a loading process is approximately 32.68 seconds.

3.2 Crossing Path Problem

According to the seven principles of warehouse, one of the principle is one-way flow which recommend designer to make sure that the flow is in one direction regardless the path structure like straight, clock wise, counter clock wise as well as up or down(Walker, 2018).

Furthermore, according to warehouse print principle, in the inbound and outbound area section, it is stated that inbound and outbound dock door have to be separated in order to get sufficient the dock door. The purpose of the segment is to avoid the cross between inbound and outbound(WarehouseBlueprint, 2018).

Thus, the loading and put away path should not cross each other. As the Figure4.7 warehouse has only one door, so when loading and put away are operated in the same time it will make the process slow. According to the information in Figure4.10 almost a lot of cargo come in the same day of loading day, so the case that loading and unloading in the same time occur very often.

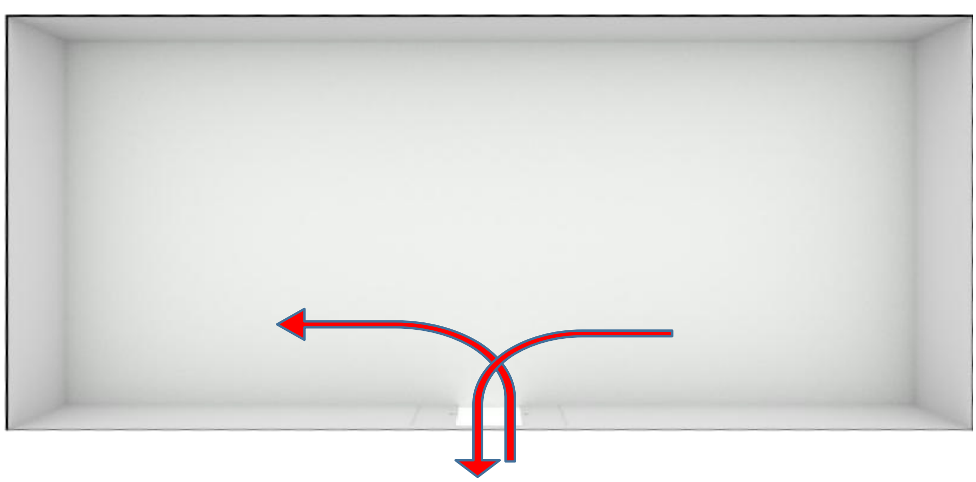

Figure 1 Warehouse with One Door

Warehouse layout inefficiency, according to the observation usable area for storage are only in zone C, D, and some part of Zone B.

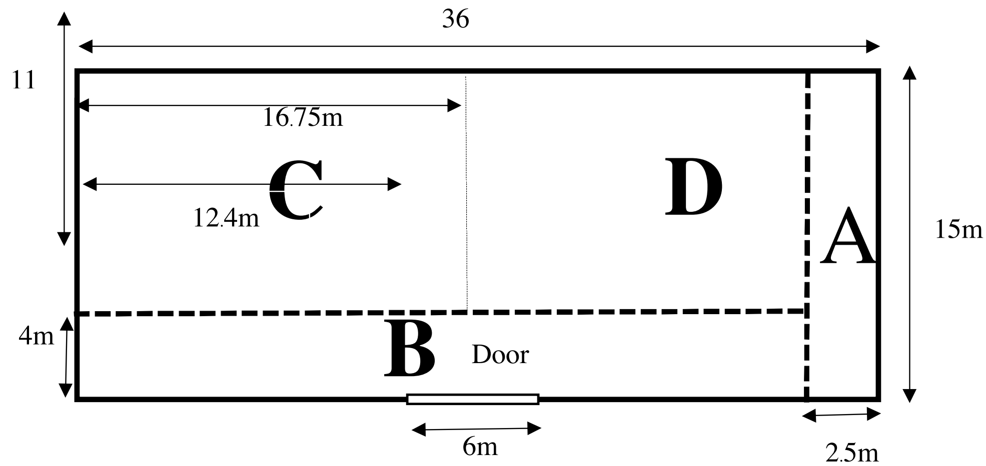

Figure 2 Warehouse Layout

By see the Appendix F which is the calculation to find the area to calculate the number of pallets cans storage in warehouse.

Formula for area of rectangle = Length*Width

So, the total usable area is only 423.5m^2

Furthermore, the average space between each pallet and between pallet to the wall is 40cm or 0.4m. As researchers assume in the resume part the pallet dimension is 1000mmX1200mm. or 1*1.2m.

By following the calculation in Appendix F, the total number of pallet that the warehouse can store is the sum of number of pallet in zone C, D, and some part of B that equal to 161 pallets. The following figure illustrate how the pallet can be put in some area of the warehouse.

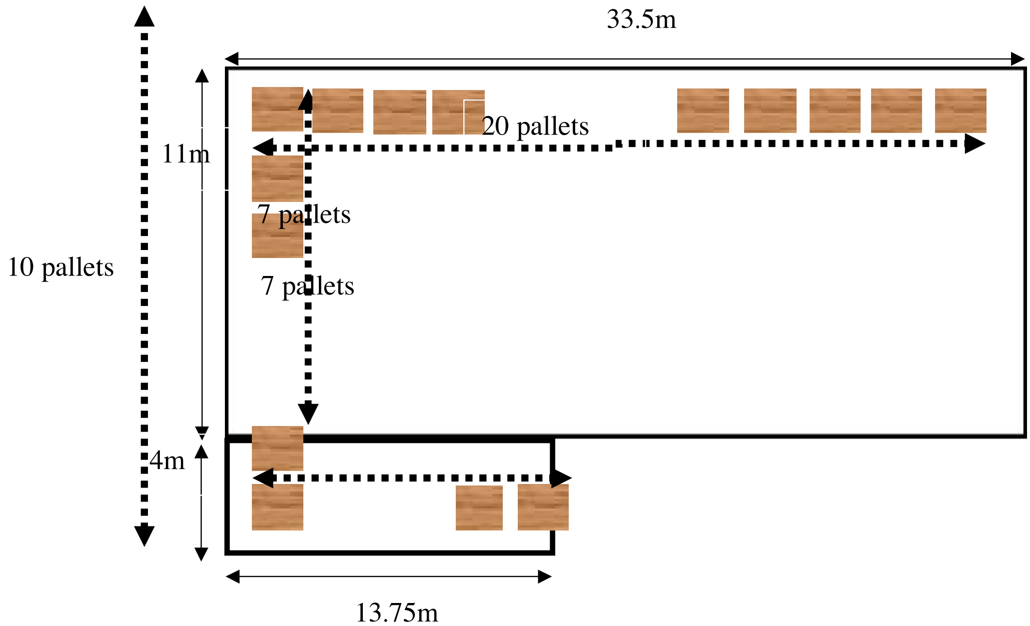

Figure 3 Pallet in Warehouse

According to the answer from interview, there are approximately 30 pallets that are not LCL cargo. Appendix G shows the date and the amount of cargo in the warehouse each day in December. The following chart is showing the number of pallet in December, 2017.

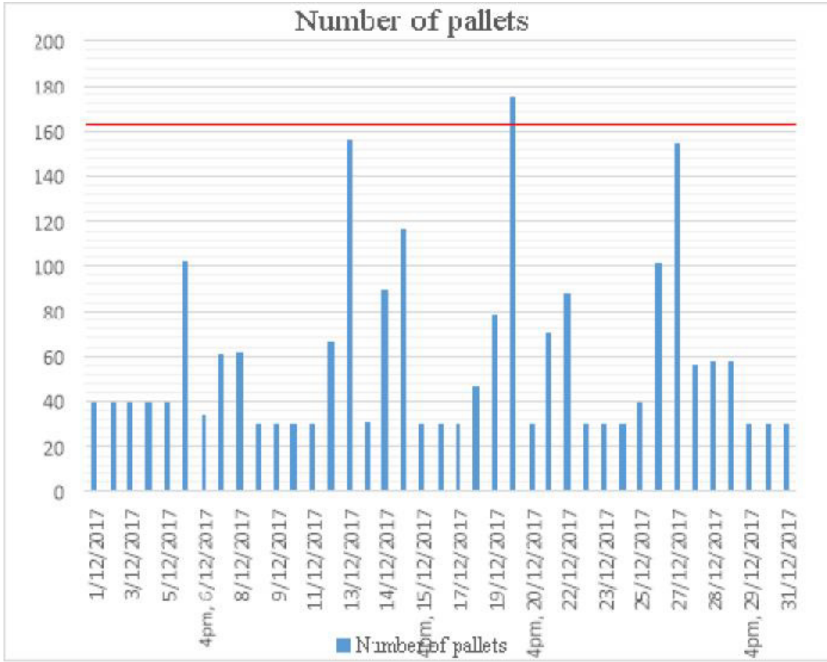

Figure 4 Chart of The Number of Pallet

As we can see in the graph and Appendix G, 20, December 2017 the number of pallets, 175 pallets, exceeded the capacity of the warehouse, 161pallets. It also, moreover, agrees with what researchers get from interview that the case of lack storage space normally happen one or two time a month.

Suggesting solution

1. Solution for research question 1: how to improve time efficiency

    1.1 Design new layout

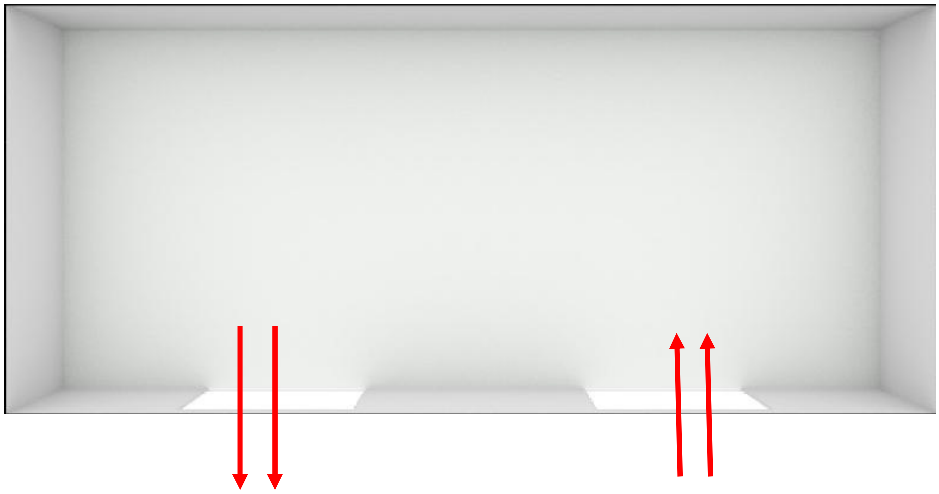

Figure 5 New Design Layout

To facilitate the flow of cargo in and out, new warehouse layout with two doors can be implemented. Increase the speed of work and convenient. Because there are 2 doors in and out. Staff do not to wait for the forklift to come in or out anymore.

According to the data in the table above in December almost a lot of cargo come in the same day of loading day, so the case that loading and unloading in the same time occur very often. The limitation of this layout is losing some space in Zone B.

1.2 Build Loading Dock

By using loading dock, we don’t need to use loading ramp any more. so, the risk of cargo falling down is omitted. It allows the staffs to load cargo even it is raining. As the data show above the time we drive on loading ramp is approximately 8.63+7.65= 16.28 second per loading.

Source: Warehouse Loading Dock Lift Systems (2018)

Figure 6 Build Loading Dock

And it can reduce the distance that forklift have to drive around 20m per loading. Thus, in total the operation time can be reducing 32.68 second per loading or approximately 6 hours per month.

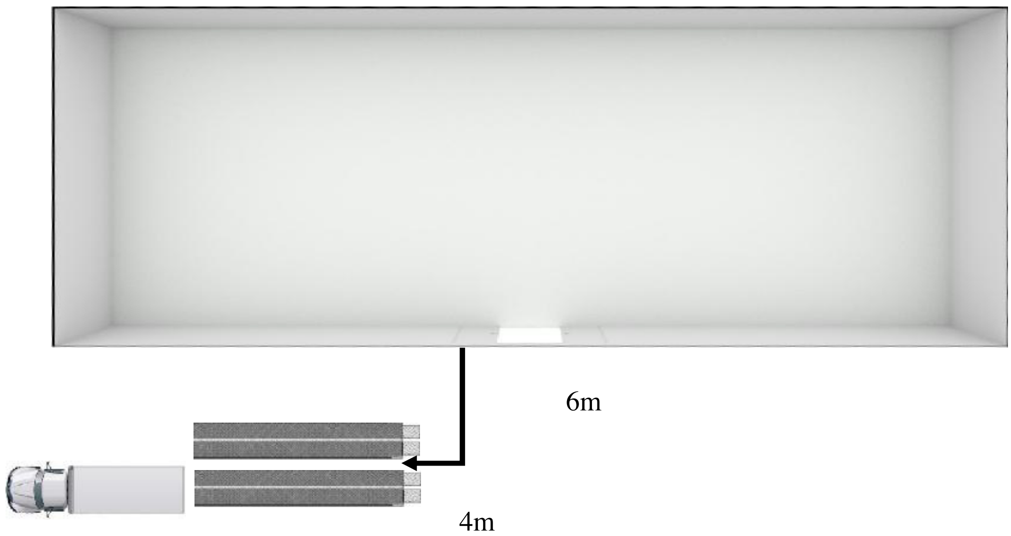

Figure 7 Distance and Loading Ramp

Advantages are shortening the distance to drive forklift to picking goods out of the warehouse to loading the container. Help saving time and reduce time of work and help to work faster. This will preserve the product, reduce product drop or damage incurred during loading. This may be cause from poor packing of customer or anything. Increase the work more effective.

2. Solution for Research Question 2: How to Improve Space Utilization

2.2 Installing Pallet Rack

To improve warehouse storage capacity, the company, have a plan to invest on installing pallet rack in the warehouse. Researchers suggest to different options for warehouse owner.

Option1: Install the pallet rack with Narrow Aisle and purchase Narrow-Aisle Forklifts

The following is the specification of pallet rack

760cmHeight Pallet Racks

Dimensions * D * H: 300cm X 120cm X 760cm

No. Of Levels: 5

Capacity: 12 Pallets

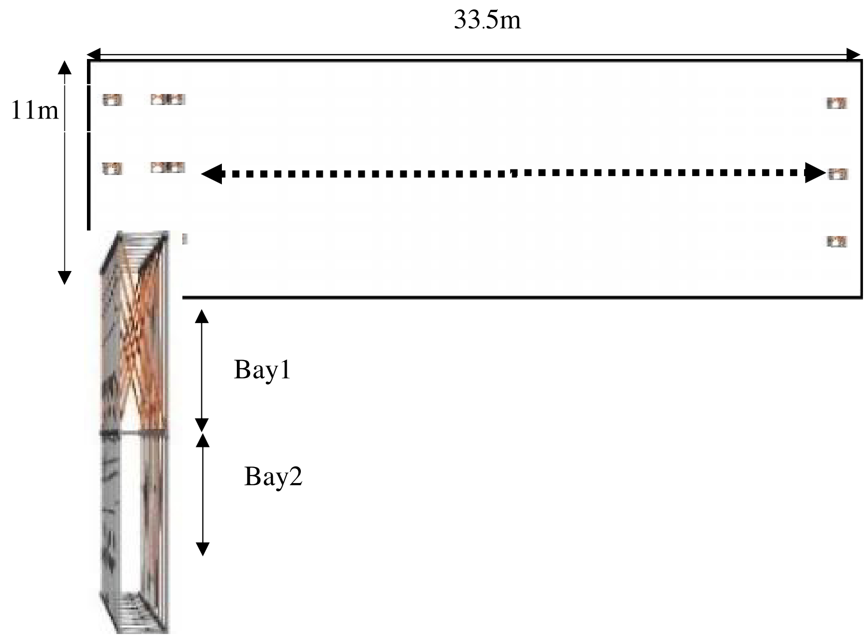

Figure 8 Install the Pallet Rack with Narrow Aisle

With narrow-aisle forklift we can downside the aisle up to 200cm. So, the total rack in warehouse is 52 bays which equal to 624 pallets which mean the capacity of warehouse can increase 463 pallets (from 161 to 624).

Advantages are increase capacity to storage product more but company has to invest in new special forklift that are suitable for use in new pallet rack. Because there is narrow aisle can't use the old forklift. But I think investing in new forklift is just the first time. It can be use in the long time and more utilization of space. Increase revenue for the company.
Option 2: Install the pallet rack with wide Aisle and use old Forklifts

The following is the specification of pallet rack

300cmHeight Pallet Racks

Dimensions W * D * H: 300cm X 120cm X 300cm

Number of Levels: 2

Capacity: 6 pallets

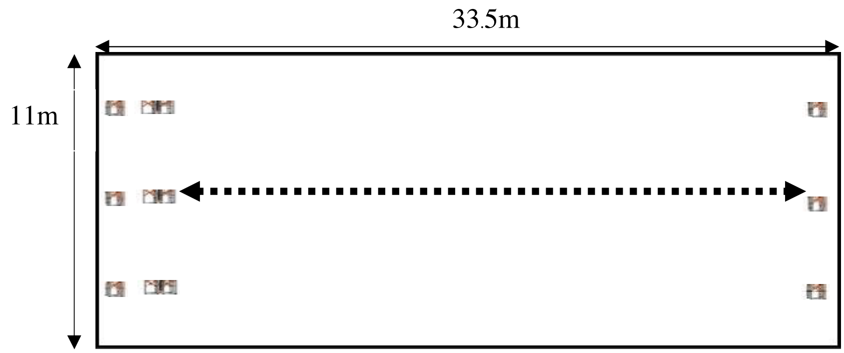

Figure 9 Install the Pallet Rack with Wide Aisle

With wide aisle the space between each bay is can wide up to 300cm. So, the total rack in warehouse is 44 bays which equal to 264 pallets, which means the capacity of warehouse can increase 103 pallets (from 161 to 264). Advantages is pallet rack it is wide aisle and the ability to use old forklift. No need to buy new forklift and lower investment.

4. Conclusion and Recommendation

4.1 Conclusion

This research is about design warehouse layout of LCL to improve time efficiency and space utilization. The objective of research is to study the warehouse layout to storage product, to optimize the layout of company's warehouse case study, and to increase the storage area more. In the day when there are many products to storage in the warehouse. Area of warehouse is not enough storage space. Product it can be place on the floor only, or sometimes if the storage area is not enough. Company will build a tent outside the warehouse to store product that can be splash from the rain but the product that cannot rain splash will store in warehouse. It can be affect in damage to the product, and from the study about the warehouse of the company case study found problems the following:

Firstly, problem with research question 1, how to improve time efficiency, is the use of loading ramp to load product to container. Employees must be careful when loading product to containers, as they may cause the product to fall and damage. Loading ramp, it uses operation time more than the loading dock. Another difficult is the warehouse has only one door. When loading and put away are operated in the same time it will make cross path which lead to time inefficiency.

Lastly, problem with research question2, how to improve space utilization, is the storage space is not enough for the demand which confirm with Eiampiyakul (2008) who stated that problems found in the warehouse operations were lack of space. Manage storage area of the warehouse is not worth it. Because they can only placed on the floor.

After analysis collected data to point out the significant problem. Researchers also suggest the following solutions:

Firstly, to answer the research question1, how to improve time efficiency, researchers suggest to build loading dock help to reduce operation time and distance to loading product to container because when use loading ramp employees must use forklift to pick up the product and load the product to container outside the warehouse.

If using loading dock, it will reduce the time and distance to pick up because the container can park in dock. It also increases the efficiency of work. Thus, in total the operation time can be reducing 32.68second per loading or approximately 6hours per month. Do not careful product fall and damage during loading. Another suggestion is, designing new warehouse layout with two doors for facility to in and out when loading product and increase speed of operation.

Lastly, solution for research question2, how to improve space utilization, install pallet rack for increase capacity researchers suggest two options between install the pallet rack with narrow aisle and purchase narrow-aisle forklifts and install the pallet rack with wide aisle and use old forklifts. This is related to Bergen, (2011) who stated that there are concepts of designing warehouse. Firstly, fixed layout which mean the number of aisles and the length of aisles remain the same for a long period of time.

4.2 Suggestion

For the recommedation, to who want to use the result of this study especially the company in this case, the company can defide the problem that their warehouse is facing which some of the problem are difficult see without research study and data analysis. Futhermore, it is not only benefit to company that is in the case in the case study but also other related business can also consider as the typical problem that most of LCL warehouses have. For suggestion of the future study, it should research on the effect of changing from bulk to pallet rack on forklift path and driving time as well as the cost of implementation.

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Linker: The New Implementation of the Sharing Economy in the Last-Mile Delivery of E-Fulfillment

by

Kakada Kuy
E-mail: kakadakuy05@gmail.com

Zhe Ji
618 Qingshan Road, Licang,
Qingdao, Shandong, China
Tel: +86 150-6689-6628
E-mail: vam0612@126.com

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Zhe Ji
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Tel: +86 150-6689-6628
E-mail: vam0612@126.com

Abstract

The purposes of this thesis are to summary the current problems in the Last-Mile Delivery, and explore the possible solutions, a delivery model with sharing economy application called *Linker*, to improve the Last-Mile Delivery circumstances. This is based on the reasonability of the sharing economy. After the model is proposed, a focus group discussion with people representing different groups and two interviews with experts is conducted to give feedback on the proposed model *Linker*. The contribution of this study is expected to be both theoretical and practical. With the proposal and the application of the *Linker* sharing delivery model, the sharing business will penetrate into the logistics field and thus foster more ideas on improving Last-Mile Delivery. And the Linker is supposed to meet online buyer's higher demand on time and lower cost, and provide a more environmental friendly deliver mode. It is hoped to benefit the community and facilitate the economy.

Keywords: Sharing Economy, Last-Mile Delivery, E-Fulfillment

1. Introduction

Last-Mile Delivery is a term used in supply chain management and transportation planning to describe the movement of people and goods from a transportation hub to a final destination in the home (Goodman, 2005). The issue in supply chain referred to as a Last-Mile Delivery problem. Final delivery, in the same ways is a Last-Mile Delivery of goods from distribution centers (or retailers) to the final destination, consumer. In this situation, transportation cost is more expensive, while products cost will be expensive accordingly. Likewise, E-Fulfillment were increased at the movement of goods to make sure customer satisfy, demand of individual, retailers, industries that want to receive their products on time and in the desired location. The Last-Mile Delivery become unsustainable as the outcome in terms of economy, societal and environment impact, regulations and infrastructure development can be significant (Dablanc, 2010). The main problems in Last-Mile Delivery we are going to solve are: delivery costs and average delivery time. The purpose of this research is to introduce a new model of sharing delivery to minimize online order cost and reduce delivery time of last mile logistics in the urban area. Moreover, sharing economy offers flexibility and efficiency to consumers. Using online platform that can match customers and suppliers, sharing economy service such as Uber and Airbnb might achieve greater efficiency than conventional business.

The Last-Mile Delivery has been the bottleneck for the E-Commerce, as a significant cost for maintaining the satisfaction of customers through the timely and safely delivery of the merchandise. When the labor cost tends to be undifferentiated everywhere in the future, the transportation cost will be the stake to gain the competitiveness. The long-haul transportation is limited significantly by the infrastructure condition in each area, while there are more solutions to improve the Last-Mile Delivery that might suit particular urban area. So, the research on the LastMile Delivery will be cost-effective and we expected to come up with solutions to solve the current obstacles in the Last-Mile Delivery for E-fulfilment.

2. Literature Review

2.1. History of concept

"Last Mile" was originally derived from the telecommunications field, which means the final step of the telecommunications chain that delivers the services and physical stuff (such as cable) to the final users. It is the bottleneck in the telecommunication chain, because the network speed is limited by the "Last Mile". (Cordeiro, 2003) It is similar in the logistic area. Last mile (delivery) has become a problem in the logistics chain, which can create competitive advantage for the companies who effectively and efficiently utilize it. Also, as the bottleneck in the online-business chain, the ineffective Last-Mile Delivery increases the time that needs to deliver the parcel to customers' home and also increases the cost for sellers (to some extent the price of the product for buyers).

2.2. Current problem in the Last-Mile Delivery

According to Reisman (2011), in our urban life, the increasing vehicle activities are the result of last-mile activities that dispatch the parcels to customers. And at the same time, almost 80 percent of freight delivery is transported by trucks, which take more road surface than a passenger car unit, affecting the overall traffic flow and causing traffic congestions. The large vehicles also discharge a lot of polluted air because of its diesel-powered system. So the Last-Mile delivery has to consider more on its influence on the local traffic services and environment. Another issue faced by the last mile is about the cost. In China, each parcel will cost 10 RMB (around 50 THB) to deliver to home, according to SF express company, the popular courier agent in mainland China. When it comes to small items that value under 10 RMB, the cost of transportation becomes significant. In the cases of expensive products where the delivery cost can be ignored, the total price still includes the transportation cost, which is levied on customers eventually.

2.3. Exiting solutions in Last-Mile Delivery

'Uber Rush' could be a good example for the new urban last-mile delivery. It takes good use of the sharing service of Uber drivers to delivery good for retailers and online sellers. As simple as keying in the customers' address and clicking the 'Delivery' button, Uber driver will be summoned to pick up the goods and find the best route to eliver the goods to customers. It doesn't need to wait for a batch of goods to be compiled and delivered together, in which means it saves a lot of time. And this mode of delivery will use the spare time of Uber drivers, so it will also benefit Uber drivers.

(UberRush, 2018) But whether it does save time and cost and benefit community at the same time should be verified. What if the Uber driver's delivery is at the expense of a higher priced Uber customer? What if several orders are addressed to the same area at different time and Uber driver dispatches one by one? That problem will be discussed later in our new model application.

3. Research Methodology

3.1 The process of focus group guide and interview guide design

Focus group guide

As started, the purpose of this thesis is to create a better understanding of the interplay between customer, retailer, and express company in the social context of the E-Fulfillment. The research question that use to find a data contained into four questions was conducts; the first was in the general information about respondent. The second was in the information about online shopping. The third was in the information about Sharing economy (Airbnb, Uber, and sharing bicycle). And the last was in the acceptance of sharing delivery.

Interview expert

Interviews are a systematic way of talking and listening to people and are another way to collect data from individuals through conversations (Kajornboon, 2005). According to David & Sutton (2004, p. 160) interviews is "Prompting can be included with the questions and if a question is inappropriate, data on why no response was made can be recorded." The reason for us to choose the interview is that some problems needed to probe (Gray, 2004, p.217). Suggestion and recommendation will be good primary data to improve our new model of Last-Mile Delivery. Meet what customer want and need in real life. Interviews are designed to generate participant perspectives about ideas, opinion, and experience. The interview question contained into four parts; the first was in general information about the expert. The second was in opinion on the current Last-Mile Delivery situation (Time, cost, process, security, community, and environment). The third was in the opinion upon the sharing economy and its application. The last was in the comment on our sharing delivery model – *Linker* (Time, cost, process, security, community, environments).

3.2 Participants Selection

Focus Group

1. Identify the appropriate participants

Subject selection for qualitative research is purposeful with respondents who can best inform the focus group questions (Sargaent, 2012). Our purpose of the focus group is to observe whether our participants can accept the *Linker* delivery model and what problem they might concern about. The selection criteria are laid down as following: The participants must be someone who shop online regularly and has certain amount delivery experience before. Considering about the diversity, we plan to include people from different demography to see whether their degree of acceptance is different towards sharing delivery, and different genders should be both included. With the background of Thai culture, where people generally do not want to share they mind to strangers, we invite some typical respondents with their acquaintance. But we also make sure that not all the participants know each other, and they will discuss with some strangers as well. All participants had expressed their consent of their real names being included in this research in a written form.

2. Sample size consideration

We plan to have the focus group at the size of 6-8 people. Ideally, each focus group will have six to twelve participants (Gibbs, 1997 and Stewart et al., 2007). We might not get enough information and the group discussion might be dull if there are less than 6 people. And the focus group with more than 12 people will be too large to generate a meaningful informative discussion, as not everybody would be given an equal chance to get involved.

3.3 Interview

To get more professional reflection on the *Linker* sharing delivery model, we asked 2 experts to evaluate our model and provide some suggestions to develop the model. Their expertise is to be in the logistics field, business solution field, online business field, or psychology field.

4. Results Analysis

4.1 Linker delivery introduction

Context

The *Linker* delivery is supposed to be applied in a city (or among cities) that is equipped with developed transportation infrastructure, such as Bangkok and Beijing. *Linker* delivery also require the transparency of the location of distribution center in the city, from which people can find the pickup station on the map. The distribution center or pick up station is the start point that trucks of express company delivers the goods to the consumers in the city (Baker, P., 2008). The access to the warehouse stations (or parcel pick up station) has already existed in some city (Google map, 2018). After somebody shops online and the parcel has been sent to the destination city, the *Linker* delivery starts to work.

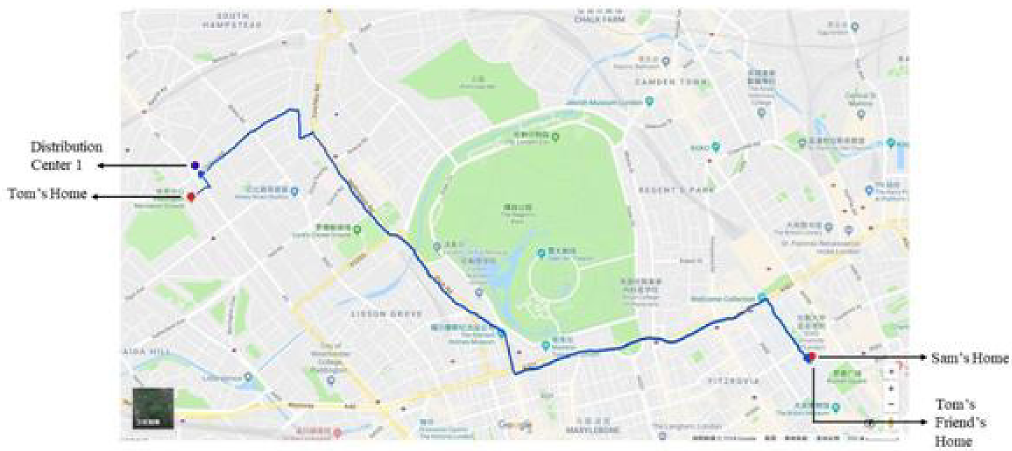
Linker delivery process

<u>Step 1: Use the Linker App and know the pick-up stations</u>

We expect to design an application that could provide distribution centers locations and parcel basic information's for people. The users have to register with their real name and phone number. The application will also display users' credit information by collecting feedback from others. People can check the nearby pick up stations around their home through google map or through a smart phone application.

Step 2: Go somewhere and check the parcel need to be delivered

When somebody is going to somewhere, such as Tom is going to visit friends, he can check if there is any parcel that is needed to be delivered and the destination of the parcel. If Tom find a parcel nearby his house is bought by Sam who just live in the same neighborhood as Tom's friends. In this case, Tom can bring that parcel to Sam with no extra transport. The demonstration can be found in the picture below:



(Google map, 2018)

Figure 1 *Linker* Demonstration: From Point Tom to Sam

Next, Tom goes to the distribution center 1 to take that parcel. Scan it with smart phone to confirm the delivery person is Tom, informing the owner of the parcel, which is Sam, that his parcel has been carried by Tom at distribution center 1. Then the *Linker* application will recommend the route for Tom and calculate approximate time based on the traffic condition. This information will be presented on Sam's phone at the same time, tracking the parcel. Except the private car, all kinds of transportation can be included. BTS, bicycle, motorcycle, and even walk. After Tom arrive Sam's area, he can hand over the parcel to Sam and then scan the QR code on the parcel for the second time to confirm the arrival of the parcel. At the same time, Sam has to confirm he has received the parcel and end the service provided by Tom.

Step 3: Feedback and get award

After Tom delivers the parcel to Sam, both of them can give feedback on the delivery experience. For instance, the receiver can mark the deliverer about the delivery attitude, if the parcel is damaged or disappeared, or the delivery time. In return, the deliverer can comment about the receiver's hand over time and attitude. The credit system in the application is expected to foster people behavior themselves. At the end of the deliver procedure, the deliverer will get small amount fee for his work as a fee. This fee will come from the seller of the goods, which is contained in the listed price. So, online customers will not pay extra money on delivery.

Linker Process in Summary

Figure 2 *Linker* Process

Expected Outcome

With the *Linker* delivery, we expect the decentralized delivery mode in the city. From a deliverer view, we think people don't have reason not to try to get some extra money. And from a receiver view, people may concern about the parcel security issue and the time issue. If we can find some solution to these two problem, the *Linker* delivery is expected to be accepted by people.

4.2 The result of focus group discussion

<u>4.2.1 Individual final opinion</u>

Joe Yenube Lambongang is a 26-year-old entrepreneur who just complete his master degree in material engineering. He takes good use of sharing business and is a big fan of Airbnb during his journey all around the world. He thinks the sharing concept saves time and convenient compared to the conventional mode. For instance, to rent a house in Germany often requires tenant to purchase new furniture while Airbnb has well-furniture rooms, according to Joe's experience. He is willing to try the *Linker* delivery model, either receiving his parcel from others or deliver parcels to others. But the problem he concerns about is the time issue. If there is traffic congestion in the city, the delivery process will be slowed down.

Krittachai Komemeung is a senior project engineer specialized in elevator maintenance. As an indoors person, he always shops online. He will vote for the *Linker* delivery because he embraces the sharing concept. He believes the sharing idea will close people's distance and contribute to a warmer community in the city.

Jombund Eamkaew is a 34 years old senior accountant, and she loved to shop online. She reserved her views towards *Linker* delivery, because she would not really want to take risks to get her parcel from a stranger. She concerns about the safety (will she be attacked?) and security (will her parcel be stealing?) issue. Only when these issue can be carefully controlled, will she try the *Linker* delivery. Otherwise she will use the conventional delivery even at higher expense,

Mr. Rasmeimony Kaing is a 28-year-old researcher in Bangkok. He said online shopping is also useful for person who hard traffic jam while go to store or supermarket. For example, when order something online just spend only the price of products and delivery cost, but if he go to store he need to spend for transportation cost, cost of products plus other cost that total more cost than buy online. Moreover. Using sharing economy like urban it can very helpful and convenience compared to conventional taxi for its lower price, and more environment friendly, as well as reduce traffic jam (less large deliver trucks). According to his experience, He is willing to try the *Linker* delivery, both receiving a parcel from another and deliver to other.

According to **Ms. Ratha Tim**, she is a business developer in a large company in Bangkok. She said sharing economy like Uber is also good. It is a better way than conventional taxi. Normally before using sharing economy she considering about price is mandatory. For acceptance of sharing delivery, she said the problem that she worries is cost and bad service. Illustrated by security of parcel, if parcel damage or lost it's difficult to find somebody to be responsible. From her experience, she will not try the *Linker* delivery model, neither receiving her parcel from other nor delivering to others. Because she doesn't trust other person that is not the delivery man.

According to **Mr. Meak Chantheng**, He is a PHD student that study in Bangkok. He always uses sharing economy like Uber because it easy to use and save time. Sometime Uber have promotion if we compared to use conventional taxi is cheaper than conventional taxi around 40%. After we introduced the *Linker* delivery, He said is very interesting in the model. For someone who free, they can gain extra money by delivery parcel to other person. It's a good try to decentralize the capitals and money in the society.

Ms. Chanpanha Chum often shopping online and received her parcel in 5 days by Thai Post. But she expects to receive the parcel in 2 or 3 days. She often uses Uber, because it is better ways than conventional taxi, more environmental and economic friendly, as well as save time and cost. Consequently, she decides to use sharing economy. After getting the idea of the *Linker* delivery model, she disagrees to receive her parcel that bought online and delivered by other person that is not delivery man, because of trust issue and low responsibility for products damage or lost. Conversely, she willing to deliver the parcel to other person that the save point with her destination and leaver. The price is lower or equal to the price that delivery service charge.

4.2.2 Group's final opinion

All of the group members have online shopping experience and the experience using sharing business such as Uber or Airbnb. The group agreed that the sharing economy brings more benefit to people than the problems and shortcomings. They accepted the sharing economy well and they are willing to see more sharing tries. Their response to the *Linker* delivery are different. 4 people (57.15%) accepted the idea that normal people deliver the parcel for them not a delivery man; while 2 people (28.57%) don't accept the *Linker* delivery; and one of the participants change his mind at last to accept the idea (14.28%).

The voters believe the *Linker* delivery will benefit all the related parties, sellers pay less to express company, buyers pay less to sellers if the price goes down, normal people can earn some extra money through the delivery, less deliver trucks are needed and the environment will be more protected. They believe the sharing concept will foster the relationship between people and decentralize the capital and property in the society.

The main problems they concern about are security issue. Questions like "who will be responsible if the products are damaged or lost?" are needed to be answered. The cheaper price will not encourage the reserved group of people to try our idea. Other issues that are concerned such as "will the delivery time be actually reduced?" and "what if there is nobody drop by my place?" also stop people from trying *Linker* delivery.

4.3 The result of expert interview

4.3.1 Mr. Dan McKay, Business Solution Expert

We had the honor to interviewed Mr. Dan McKay, the expert in the business concept evaluation. From business view, he approved the idea of sharing economy but remind us several aspects that need to consider.

First is the flexibility issue. Even we are discussing about the Last-Mile Delivery, there is still a "last hundred meter" issue in the *Linker* delivery model. For instance, a person uses BTS to deliver a parcel for others. Although the delivery fee can cover the person's BTS cost, it's difficult for them to assemble at certain BTS station at the same time. Last meter means the hand over process in the *Linker* delivery. How to hand over efficiently and safely is the point we need to think. If the deliverer uses quite a significant proportion of the delivery time to hand over, he may not be willing to deliver for others.

We also discussed the solutions and here are the alternate suggestions from Mr. Dan McKay. To solve the problem of *"last hundred meter"*, one solution could be the application of parcel lockers. The system will make sure the security of the parcel and free the time of deliverer and receiver. They can drop the parcel in the locker or take out the parcel at any reasonable time they want. Since the handover problem is because the significant proportion of the delivery time. The second solution is to put the *Linker* delivery in a wider context. Not within the city but between the cities. If a deliverer sends a box from Bangkok to Chiang Mai or vice versa, he may not concern too much about the hand over time because the hand over time only occupies small part of the whole transport time. The suggestions are practical and we will absorb his advice in our following parts.

4.3.2 Assistant Professor Dr. Chatpong Tangmanee, Chulalongkorn University Business School

Assistant Professor Dr. Chatpong Tangmanee is an expert in Online Purchasing and Trust issue, which will be the main problem in out *Linker* delivery model. Getting a concept about our model, Assistant Professor Dr. Chatpong Tangmanee said it is difficult to trust strangers to delivery one's parcel. Because he worries about the circumstances that the parcel is lost or insecure. For example, the buyer bought product online from the seller, based on buyer's trust on the seller. It's the first layer of trust through internet. Then the seller has to find some agency (long haul Delivery Company) that the seller trusts to transport the item from seller's city to the buyer's city (Because normally the products are from different city with the buyer's city). It's the second layer of trust. If when the parcel arrives in the buyer's city, another party (the strangers) takes over the parcel and deliver to the buyers' home, it will be the third layer of trust. The longer the trust chain and the deliver chain, the more problem it will bring out. So it's very difficult for the buyer to trust so many layers (so many strangers) to deliver his parcel. Apart from this, a normal people could be anyone either good person or bad person. To trust a person with no idea about his background is much more difficult than to trust a professional agent, such as Line Man or Express companies.

To mitigate the uncertainties of stranger's delivery, we proposed the idea of parcel locker to Assistant Professor Dr. Chatpong Tangmanee. We assume that with locker the deliverer can leave the parcel in the locker box and the buyer can get the parcel from the locker with the unique password. It has been applied widely in Chinese cities, for example the Tianmao Service Center in the residential area for people to pick up their items purchased online, where you can get your parcel with a confidential parcel code. And Assistant Professor Dr. Chatpong Tangmanee agree with our solution, saying that the locker will solve the problem of the "last hundred meter" problem (which we discussed with Mr. McKay) and will help make sure the trust issue between the deliverer and the receiver. But there are still some shortcomings of parcel locker. The most difficulty is that the locker facilities are not widely installed in Bangkok, if we assume this model to be in Bangkok. Most locker are at shopping area for foreign travelers to host their baggage. It's hard to find lockers in residential areas. If the buyer wants the parcel to be sent to their home, it's difficult to use locker to receive their goods.

Assistant Professor Dr. Chatpong Tangmanee also suggest another method to mitigate the trust problems in the online business and delivery. It is good communication. The sellers and the deliverers are supposed to respond quickly to the questions or comments from the buyers regardless it's positive or negative. The actual and instant chat will release buyers' anxiety and promote better trust relationship between all of the parties. Although people might doubt about the strangers to deliver their item, the smooth communication and quick response will reassure their worries.

5. Conclusion and Recommendation

5.1 Conclusion

Returning to the purpose of this thesis, which is to propose a new Last-Mile Delivery model with sharing economy? We identified the current problems in Last-Mile Delivery, evaluated different application of sharing economy in the Last-Mile Delivery, and propose our new sharing delivery model: *Linker* with evaluation and comment from focus group and interview.

With respect to the current problems in the Last-Mile Delivery, we found that the main problem is the delivery cost that cannot be neglected and the long delivery time that much longer than people's expectation. We found that to improve the customer satisfaction and save cost, sharing economy application in the Last-Mile Delivery, such as UberRush, are created and applied. They foster a more effective delivery process.

Although with the merits of low cost and reusing the spared resource, the company form of the delivery mode limits the resource that can be used to serve more people. So we introduce our new sharing delivery model (*Linker*) that based on the crowd shipping theory to influence a wider scope. The *Linker* model takes good use of every spared person and vehicles to deliver items for others by convenience. We expected the *Linker* model will save cost and reduce delivery time for the Last-Mile Delivery. Through focus group discussion and the in-depth interview with relevant experts, the advantage of *Linker* we found is saving delivery cost, foster people relationships in the community, economically friendly, and decentralizing the capita in the society. But there are some intrinsic disadvantages prevent those models being used widely according to experts and the discussion. The disadvantages are the trust issues, which is the risk of parcel damage, stolen, and dangerous items.

5.2 Implications and Suggestions

Based on the feedback we got from our research, we expect that in the high credit society where people will or have to take responsibility for their own behaviors strictly, the *Linker* model can be applied and accepted well. But in some developing cultures, the *Linker* should be used cautiously and need more regulations to protect both the deliverers and the receivers.

5.3 Future Research Recommendations

According to the research of our thesis, conceptual ideas are identified and evaluated through focus group and in-depth interview. But specific relationship between the sharing economy and the delivery performance need further research, such as the relationship between the sharing economy and the actual delivery time, the trust problem and the risks in different cultures and different religions, the "last hundred-meter delivery" issue. Not limited to the delivery and logistics, we also suggest relating the sharing economy to the decentralization of the society capital, finding out how the models like *Linker* will bring benefit for the majority normal people. Another point is environment emission. We appeal that the business world should pay more attention on the environment than the cost and profit. Sharing economy is benefit for the environment and more research on this topic will justify the importance of sharing economy.

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Blockchain Technology in Logistics and Supply Chain Management

by

Khanh Quynh Anh Bui
E-mail: mitsubui@gmail.com

and

Thao Vy Le
468/6 Tran Hung Dao Street, Ward 2, District 5,
Ho Chi Minh City, Vietnam
Tel: +66 989 957 798, E-mail: ltvyyy@gmail.com

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Tel: +66 989 957 798, E-mail: ltvyyy@gmail.com

Abstract

Due to the increasing globalization of the world economy, organizations are now working with foreign companies, making sales and exchanging internationally. The supply chain network is getting more complex and fragmented than ever. Contracts and agreements are more difficult to reach. This leads to a problem that customers question the authenticity and origin of the products they are purchasing. A reliable supply chain network becomes increasingly important. Blockchain, a technology under controversial successful Bitcoin, is believed to be the solution to the lack of supply chain transparency and trust. This thesis is to look into the benefits of Blockchain as well as smart contracts and how it can address the challenges of logistics and supply chain management. A number of previous research papers have been collected, compared and analyzed in order to investigate the advantages of Blockchain. A case study has also been conducted to clarify the positive influence that Blockchain has on logistics and supply chain management. Blockchain has its immaturities and the technology is still in experiment phase so there's a lot to look forward to in the future. There are challenges and risks that it holds. But the benefits that Blockchain provides to logistics and supply chain management are very promising.

Keywords: Blockchain, Supply Chain Management, Logistics, Supply Chain Transparency, Smart Contract

1. Introduction

Current Problems in Supply Chain and Logistics

Supply chain was one of the most remarkable revolutions in the business world that could enhance the visibility of goods and products flow from upstream (supplier) to downstream (customer). An effective supply chain management provides competitive business advantages by enabling organizations to track movement of raw materials, controlling manufacturing process, synchronizing supply with demand, and reducing transportation cost. However, in today's production and supply cycles, the old technology and concept can no longer support the more complicated and fragmented supply chain. It has become so hard to control and manage the whole procedure. There is a need of an emerging technology that can solve the problems of transparency and efficiency to a variety of industries.

End customers want to know where their products have come from and track down the movements of items. Some people were not satisfied with their products and wanted to check on every steps to ensure the company follow the whole process as they claimed. For example, if there is a foodborne disease outbreak, retailers might find it difficult to figure out where the bad ingredients came from or from which process it was contaminated. The industry is hoping that Blockchain could be a solution to solve the transparency and traceability problems by facilitating origin tracking.

In logistics, the complex process with intermediary freight brokers is also an issue. Many intermediaries charge more fees and increase the shipping cost. The problem is that the process is too complicated and unclear to put checks and balances in place. Freight brokers are the ones who control the logistics industry and facilitate transactions of loads from shippers to carriers. This leads to increases in costs for carriers and also the downstream prices that directly affect consumers. Moreover, the paper-based system throughout the supply chain has not been effective since forms have to be approved through many different channels, which leads to numerous cases of loss and fraud. The idea of smart contracts will help parties "agree upon terms and trust that they will be executed automatically, with reduced risk of error or manipulation in the paperwork process" (Deloitte, 2017).

Blockchain

There are many researchers addressing the needs and convincing that Blockchain Technology will be the solution to the problems according to the fact that there is existing need on the development of Supply Chain and Logistics. However, a survey suggested that among 41 primary papers from scientific databases researched on Blockchain, approximately 80% of them are related to Bitcoin platform and less than 20% are focusing on other Blockchain applications such as smart contracts and licensing (Yli-Huumo et al., 2016). Therefore, this thesis will be examining and discussing on the beneficial implementations of Blockchain on other industries beyond financial transactions. The purpose of this study is to discover the effective use of Blockchain technology in logistics and supply chain management and potential changes in transport procedures and documents.

This section is to describe the methods of how information is obtained and interpreted. A sequential method was designed with 2 phases: the first phase is literature review on current research on related topic; the second phase is a business case evaluation.

2. Literature Review

The first phase consists of building the theoretical foundation for the research through a thorough literature review. A literature review summarizes research on a particular topic and how well people know about a subject. It creates an essential knowledge base at the beginning stage of the project. The purpose of a literature review is to gain opinions of experts on the research topic and expand the knowledge or disagree with those opinions. The researcher uses literature review to give credit to those who have come before and highlight their new contribution to the given area.

The main terms used in the search string were "Blockchain in supply chain", "supply chain transparency", and "smart contract". Since the topic of Blockchain in logistics and supply chain management is rather new to many people, the term “Bitcoin” came out with more results. Most of the papers are related to economic topics of cryptocurrency rather than the application and use cases of Blockchain in other industries. Since the goal of this research is to focus on Blockchain technology application in logistics and supply chain management, “Bitcoin” term was cut out. However, related researches on Bitcoin were using as a supporting tool for better understanding of the topic. The scientific databases were chosen for the searches in order to ensure the authenticity of information. Most of the information in the literature review was secondary data derived from reliable papers published in conferences, books, journals and other thesis papers related to the research topic.

After searching for information in the scientific databases, all papers and articles from reliable sources were then going through the stage of screening. As Rowley and Slack (2004) recommended, the sources should be new and relevant to the research subject and they must be written by an authoritative author. At the screening stage, the titles of papers were to be checked first and studies that were not related to the research topic or research questions were excluded. Sometimes, it was difficult to determine the relevancy of a paper only by its title. In these situations, the papers were passed to the second phase in which abstracts were screened thoroughly. It is necessary to check for keywords and concepts to ensure that the information is appropriate to use in this study. These were used to develop a higher level of understanding of the topic and open for new ideas. After reading the whole papers, information needed to address the research questions was collected and analyzed in detail. It is also important to save the gathered sources for reference part. For those researches that were screening out at the first phase, their citations could be useful in finding relevant articles in the literature review. With the approach explained above, Table 1 shows an example of three sources in the literature review.

Table 1 Example of Sources in the Literature Review of the Research Study

Author(s)	Year	Title
Deloitte	2017	Using Blockchain to drive supply chain innovation
Hua and Notland	2016	Blockchain enabled Trust & Transparency in supply chains
Loop	2016	Blockchain: the next evolution of supply chains

Business Case Evaluation

Blockchain technology is a new, emerging trend in the recent days. Using case study as a methodology will significantly help explain the importance of Blockchain and the reason it is used in businesses. As described by Schramm (1970): The purpose of a case study is to clarify a decision or a set of decisions: why they were taken, how they were implemented, and with what result. In order to understand the research questions, the need to see understand the lack of transparency in supply chain is essential as well as the benefits and potentials in applying Blockchain to supply chain management. To answer how Blockchain will improve the transparency in supply chain, units of analysis should be companies that overcome supply chain current problem by using Blockchain. The food shipment process of Walmart in China was chosen to be evaluated.

The case study was conducted at Walmart for a few reasons. First of all, Walmart is a multinational retail corporation that operates a chain of hypermarkets, discount department stores, and grocery stores (Form 8K – Walmart Inc., 2018). Walmart works with many other partners such as suppliers, regulators around the world. It implies that there are many parties in the middle that create a complex integrated supply chain that Walmart has to deal with. Secondly, the demand for food safety in China is very high since Chinese take their food safety seriously. It is obviously that the customers want to be ensured that the food they are purchasing is original and safe. Thirdly, Walmart has recently announced that it is partnering with IBM, Tsinghua University and JD and trying to create a new method of collecting data about the origin, safety and authenticity of food. Walmart wanted to investigate whether Blockchain could be an alternative to the original paper tracking and manual inspection systems (Craik, 2017).

The steps in this methodology include Data Gathering, Data Interpretation and Analysis.

<u>Data Gathering</u>

A Google search was performed to find highly reliable sources of newspaper and magazines, articles, reports to collect information and facts. Watching Youtube videos will also be considered to support the creation of background understanding. Walmart Case study method will enable researchers to closely examine the data within a specific context. Most of the case studies related to Walmart adopting Blockchain to its supply chain, whether it is descriptive or explanatory ones, will be collected.

<u>Data Interpretation and Analysis</u>

The information collected will be reviewed, compared and rated based on the level of creditability and relevance to the research topic and research questions. The qualitative and quantitative data integration is conducted through analytical and logical reasoning ways of examining. Researchers identify important facts and key issues surrounding the case to study the existence of the problem, what could be the effective solution and why.

3. Results and Discussion

This chapter presents the results of the conducted research methods. The information gathered is carefully analyzed so that it can be used to answer the research questions.

RQ1: How does Blockchain enhance the transparency of supply chain management?
RQ2: How do smart contracts improve the logistics performance?

Findings from Literature Review

The majority of the search results were related to Blockchain technology in supply chain and its most use case Bitcoin (cryptocurrency). The information found on Blockchain technology in logistics and supply chain management was quite new and up-to-date because the idea of applying Blockchain in supply chain was recently discovered. However, there is a lack of books, research and academic papers within the subject of Blockchain and logistics. Most of the articles explained the concept of Blockchain technology and how it could transform the whole supply chain picture. There are still some arguments on the limitations and possibility of the idea which will be discussed in the later part of this chapter.

The definitions of supply chain, Blockchain and smart contract derived from original research papers of the person who came up with the idea, or so called “founder”. “Bitcoin - A Peer-to-Peer Electronic Cash System”, the original work about Blockchain written by Nakamoto, was cited in almost every material and chosen to be a good reference point. The same was done with smart contracts and Nick Szabo, who was the first to think of using Blockchain in digital contracts. The book “Blockchain: Blueprint for the new economy” was also a useful detailed description of Blockchain technology and its application. The information was gathered from many sources to find mutual understanding and definition of Blockchain technology.

All of the chosen material was critically analyzed by looking at the similarities and differences between authors to narrow down the findings and only focus on the scope of study.

The literature review is an important character of the research because it provides readers with understanding of the content before going into details of analyzing data and answering research questions. Therefore, the main purpose of the research is to study on the application of Blockchain in supply chain which can help to enhance transparency and the performance of logistics.

Blockchain in Retailer’s Supply Chain: Walmart & IBM

Customers do not know whether a T-shirt is made from good quality of materials and in a legal manufacturing factory or in any illegal sweatshops. They have no choice without trusting the tag attached on the T-shirt. The vegetables purchased are unsure if they are gardened, took care in a right way and gained Food and Drug Administration approval. The transparency benefit that Blockchain can bring to companies can solve this problem. Typically, the important characteristics of Blockchain technology are immutability and decentralization. It means that the data can be viewed by any parties involved in the supply chain from suppliers to end-consumers; moreover, data cannot be destructive or counterfeit as it is kept in a public ledger. As a world’s leading retailer, Walmart saw such potentials of this technology that it teamed up with IBM to investigate in giving the technology into its supply chain system.

Food safety has always been one of the global top concerns. According to the World Health Organization, about 420,000 people die each year resulted from food poisoning. A decade ago in the United States, a deadly E. coli virus strain in spinach which spread to 26 states, killing three and causing 199 persons infected (Center for Disease Control and Prevention, 2006). The Chinese melamine scandal in 2008, melamine was found in milk for infants. This incident killed six children, causing thousands of others to be hospitalized, and causing hundreds of thousands of others to suffer a decline in health in China (World Health Organization, 2008). The need of transparency in supply chain in the food industry was raised due to unoriginality and bad quality of food supplies. However, the fast moving consumer good (FMCG) industry like Walmart is complicated since there are many stakeholders involved in the production and distribution of the product including farmers, processors, and distributors. There are plenty of steps in the process of making raw materials into final, consumable products. Therefore, the origin can be easily distorted. It takes a lot of time to identify the reason of contamination and the point where food gets contaminated. As a result, the true value of a product and the investigation on negative occurrences due to food contamination, counterfeiting can be difficult to determine. When the spinach case became the red alert at that time, the U.S Food & Drug Administration made all the retailers and food service companies pull spinach nationwide. It took about 2 weeks until they found out that one supplier, one farm, one lot, one day production that was the reason for the breakdown of the entire spinach industry. Another situation recently is a salmonella outbreak in Mexican papayas which took two months to track down the source of the issue and cancel the production (U.S. Food & Drug Administration, 2017). What if there is an unexpected negative incurrence happened, instead of spending days or weeks to obtain data and isolate food-borne illness, it is now shortened to a few minutes, seconds? The consequences could have been less severe if the retailers were able to track the originality and ingredients of the food to find out the roots of the problem and solve it.

Walmart's Vice President of food Safety, Frank Yiannas said that: "The food is guilty, until it is proved innocent." Customers place pressure and reliance on Walmart's safe products. The reputation of Walmart can be strongly influenced even if the issues started from somewhere out of Walmart's control. That's why Walmart implemented trial of Blockchain to tackle food safety. According to Frank Yiannas, traceability answers the questions of who, where, when; but transparency allows us to know how. For example, traceability includes farm location, lot number, and harvest date, while transparency indicates how food was produced, was it grown organically, were pesticides used? Walmart believes Blockchain can increase the level of these two factors in the retail industry. That's why Walmart collaborate with IBM, JD.com and Tsinghua University to develop and create standards and solutions for food safety in China (Gillio Prisco, 2017). These four partners are teaming up to apply Blockchain and Internet of things sensors to trace 2 pilots: first one is Chinese pork and second one is Mexican mangoes shipped to the United States. The first pilot, Blockchain records where the meat originally comes from, how it is stored and its shelf life. Walmart has successfully traced the port products from a farm owned by Chinese meat producer Jinluo to a Walmart distribution centre in Beijin (Katrina, 2017). For the second pilot, Blockchain platform allows Walmart to record the data of the following (Alec, 2017):

- Farm origin data
- Batch number
- Factory and processing data
- Expiration dates
- Storage temperatures
- Shipping details

This information is recorded and put into the system through each step during the whole process. In the tests, shipments are tagged with numeric identifiers at the beginning of their journey, and signed and logged at each checkpoint. Whenever, wherever the shipments reached a destinations or whatever happened to the shipments, all of the information is recorded to the ledger. Walmart is allowed to track back this information by entering a shipment's six-digit "lot" number in a web portal (Alec, 2017). The mangos process from farm to on the shelf is summarized as below (David, 2017):

- A mango tree takes 5 – 8 years to grow and bear fruits
- Mangoes are grown by small farmers in Central or South America
- Mangoes are shipped to a packing house to get washed and boxed
- Mangoes are shipped to the US by air, sea or land (custom border)
- Mangoes are washed, peeled, sliced and put into containers in a facility center
- Mangoes are shipped to Walmart distribution center for refrigeration
- Mangoes are delivered to store and put on shelves

The result of the process is very encouraging. Before Blockchain, the traditional tracking of one step at a time process took six days, 18 hours, and 26 minutes to trace mangoes back to its original farm (Sylvain, 2017). By using Blockchain, the information is available to customers in 2.2 seconds (Carlo, 2017). For the future of Blockchain, smartphone applications can aggregate and display information to not only companies but also to end-consumers in a real-time manner (Project Provenance Ltd, 2015). When customers walk into a store, they can just use their phones to scan the barcodes, digits on the products to obtain all information of them.

If there is no intervention of Blockchain, each party in the supply chain will have their own Enterprise Resource Planning System or any internal systems that used to maintain their own records and the single system does not interact with another. When data move across the chain, each party has different visions of what current state is and they use different tools to assess and analyze the data. This creates friction and disagreement in information exchanging between parties. Moreover, each party can change the information, fake it on purpose for internal sakes or unintentionally record the wrong data during the process even in paper documents or computer files. With Blockchain, every party involved (from farmer, manufacturer, and distributors to retailers) is at the same level, they are all provided with the same information and if there is anyone tampering with the system, the other participants will be notified before the change is permitted.

Blockchain application in supply chain analyzed in this case is to demonstrate its benefits to enhance food safety in the society. Imagine how Blockchain can bring positive affects to other industries that have complex supply chain process and high risk of facing counterfeit such as pharmaceutical supply chain or diamond supply chain. For that reason, not only traceability but the ultimate goal of Blockchain is the transparency (Frank, 2017).

Smart Contracts – A Revolution for International Trade and Logistics

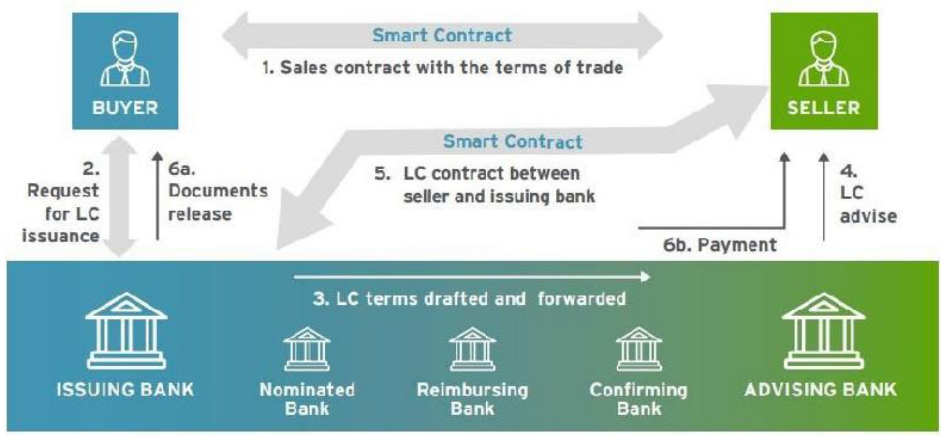
Trade finance by banks and other financial institutions is considered an important function in international commerce since it offers delivery and payment guarantee to buyers and sellers, and it assists them with the trade cycle funding gap (Cognizant, 2017). According to Trade Finance Analytics, the function of trade finance is “to act as a third-party to remove the payment risk and the supply risk, whilst providing the exporter with accelerated receivables and the importer with extended credit”. Trade finance includes activities such as issuing letters of credit, lending, factoring, export credit and financing. Users of trade finance are producers, manufacturers, importers, traders, and exporters. However, there are some pain points of today’s traditional trade financing processes. Trade participants often take higher risks due to reasons such as “manual process inefficiencies, operational and logistical complexities when a large number of entities interact” (Cognizant, 2017). The shipment of goods and payment is sometimes delayed due to multiple checks with the counterparty and verification of funds delivered to the importer. There is a lack of transparency in the movement of goods. Duplicative bills of lading issued by freight forwarders and shipping lines makes the process become more complicated. A bill of lading is a document issued by a carrier (or a shipping agent) works as a receipt of freight service.

Smart contracts can benefit the trade finance by offering payment assurance to sellers through automating payment methods. Cognizant stated in their research paper on “How Blockchain Can Revitalize Trade Finance” in 2017:

“While payment methods like letters of credit (LC) provide an effective way to mitigate business risks through bank facilitation of the trade flow and settlement process, their value can be seriously limited by high costs, contractual delays and process complexities. To reduce the risk of delayed or denied payments, the LC can be modeled as self-executing contracts on Blockchain (see

Figure 1). This would automate compliance verification with contract terms and ensure faster payment to sellers by preventing disputes from arising due to ambiguities in the payment contracts. Automating the payment method on Blockchain also expedites payments through early discovery of discrepancies and increases the efficiency of the amendment process."

The process begins when both the importer and exporter agree on sales of goods and the information is shared with the import bank using smart contract. The import bank can review the agreement and submit draft terms to pay to export bank. The export bank then reviews the provided payment obligation and advises the exporter about the terms. Once approval is made, a smart contract between the exporter and the import bank is generated on the Blockchain to cover terms and conditions. After receiving the obligations, the exporter will digitally sign letter of credit within the smart contract to begin shipment. Upon delivery, importer will digitally acknowledge receipt of goods and trigger payment. Blockchain will automate payment from importer to exporter via a smart contract (Deloitte, 2016).



Source: Cognizant

Figure 1 Letter of Credit Process Flow

Thailand has also adopted Blockchain technology in the project of Blockchain-based letters of guarantee (LGs). With the expectation of upgrading the business efficiency and competitiveness, the Thailand Blockchain Community Initiative was established and its first project of Blockchain-based LGs was expected to cut the operating costs by half using electronic documentation. 14 commercial banks have teamed up with seven partners (Metropolitan Electricity Authority, Provincial Electricity Authority, and Electricity Generating Authority of Thailand, PTT Global Chemical Plc, PTT Polymer Marketing, IRPC Plc and Siam Cement Group) to push forward the idea of implementing cutting-edge technologies such as Blockchain to boost the overall Thai economy. Mr. Predee Daochai, Thai Bankers' Association Chairman, pointed out that "Blockchain would enable LG service to be more efficient, reliable and secure, with a unified information standard". It was a new era of paperless processes for banking and business sectors which is "highly secure, easy to examine and difficult to forge" (Kasikorn Bank News, 2018).

Applying Blockchain technology to international trade will allows parties to make use of more effective and transparent technological infrastructure than the current paper-based system. With Blockchain, an accurate record of all transactions and change in titles can be kept securely without the need of a centralized intermediary. The transformation of bills of lading system is an evidence of the impact of smart contracts on international trade. A paper bill of lading takes long time to be transferred from the exporter to the importer via express courier service. There is more chance that the bill of lading can be lost or stolen during the long travel time. The transportation cost for bills of lading is quite high depending on exporter charges, courier used, and distance travelled. In a Blockchain-based bill of lading system, a bill of lading is established through the carrier's digital signing of a digital bill of lading through a private key upon receipt of the goods. The shipper also retains a private key in order to make decisions regarding the cargo during the carriage, including the endorsement of the bill of lading to another third party. That third party can also further endorse the bill of lading to another party and the process continues until the party that holds the most recent private key claims the cargo at the port of discharge. Every time there is a new transfer, the existing private key can no longer be used and a new key is issued to the transferee. Maersk, the largest shipping line in the world, has partnered with IBM to come up with a Blockchain-based bill of lading system and it is predicted to save billions of dollars with the elimination of the traditional paper-based system (IBM News Room, 2017). A Blockchain-based bill of lading would be decentralized and automated, storing transaction information between involved parties so only permitted participants can gain access to the system. The transactions can only be validated with the collective approval of all the parties involved. This negates the chances of fraud or double spending since the encrypted data would be impossible to be modified by an individual (Rajamanickam, 2017).

Smart contracts will become the future of international trade documents and trade finance. Its real-time review, transparent factoring, disintermediation, reduced counterparty risk, proof of ownership, and reduced transaction fees make smart contracts a revolution in today's supply chain and logistics.

Blockchain in Air Travel

Blockchain is believed to be promising to air travel industry; due to the fact that there are many parties involved in air travel including immigration officers, airlines, airports, agencies and customers. The flow of information about passengers, flights is enormous. Therefore, SITA, a multinational information technology company who provides IT services to the air transport industry, has teamed up with airlines and airports applying Blockchain in their operations. The purpose is to test whether Blockchain would be an effective way to sync flight data between different silos of air transport process. The project is called "Flight Chain". It was carried out by SITA, Bristish Airlines and Heathrow Airport with the support from Gevena and Miami International Airports. (O'Sullivan, 2018). Flight data case was conducted to test Blockchain's possibilities and performance. A white paper by SITA has been published and it reveals the results of the test. Flight data was selected because there is no sensitive information related to a person's identity or commercial aspect to be publicly shared between partners. In addition to that, there are difficulties in sharing data across networks while making sure the data is integrated (FlightChain white paper, 2017). Flight data usually exist in multiple copies and not all partners can have easy access to view these data. Not to mention the data is sometimes conflicting between data sources. It happens often that the appearing information is different and changing from gates, airport monitors or customers' application. The current state of a flight is difficult to determine, there is no “single source of truth for information of a flight”.

The problem of flight data as said by Kevin O’Sullivan, a lead engineer of SITA Labs:

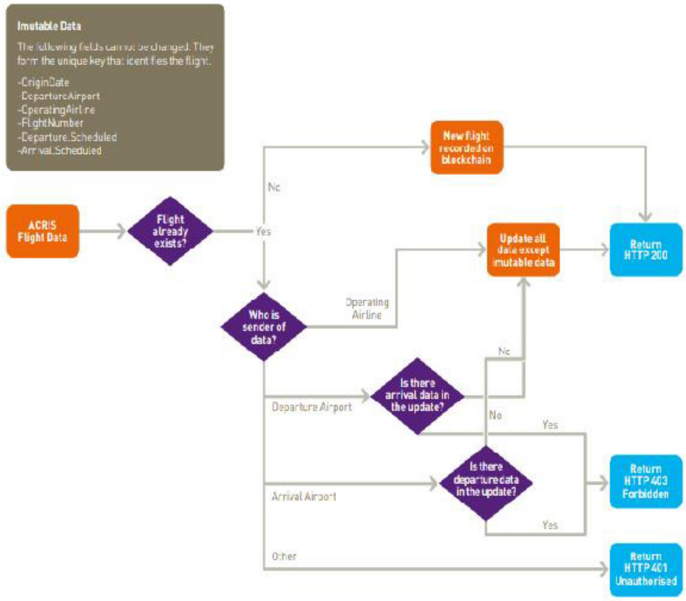
“When a passenger turns up in an airport, their app will say one thing, the display in the airport says another, and then the crew on the ground says something else. Then the ground handlers have different information as well.”

Especially when there is a flight delay, the displayed information is varied between separate control and storage systems.

The root of this problem is that everyone has their own database that stores data, and these databases do no interact or share information. O’Sullivan also stated that airlines and airports have been exchanging information, but only between two or a few partners. Each of the involved parties updates and stores information in their own timetables.

With a distributed database like Blockchain, all the transitions can be immutably recorded and shared to every partner and each of them can visualize the data in real time. Departure airport, arrival airport, ground service employees, airline employees and customers will be able to work from the exactly same data set.

The test was implementing a mutual database (permissioned private Blockchain) where departure airport shares boarding gate, then arrival airport publishes baggage conveyor belt, while an airline shares other important information as well on to the Blockchain. More than two million flight changes were process with smart contracts and stored on the Blockchain. All of this data are shared and synced so that everyone has a same vision of what’s going on, what the next procedures are. All details were uploaded and processed through a smart contract. If the details passed the in previous set-up rules, they would be accepted, written down on the system and distributed to all the stakeholders. Information discrepancies and confusion were believed to be eliminated and help improve operations to be more effective and smooth. The results from the project were unveiled by SITA in the white paper and Blockchain did function as expected. The project has successfully showed that Blockchain is able to provide “a single source of truth for real time flight data” and increase the integrity of shared information (Peters, 2018). They admitted that Blockchain did really keep data in sync and distribute it to participants. In addition to that, the data stored on Blockchain was absolutely unchangeable, tampering-free and always up-to-date in any individual systems. With smart contract application, it provides controlling access to a specific party based on the consensus of what the rules were. In the test, Ryanair were unable to update flight data that is related to British Airways and Munich Airport were unable to update data of the flights that did not departure from or arrive at the airport itself.



Source: Flight Chain

Figure 2 Logic Flow for Flight Chain Smart Contract

In summary, “A private Blockchain has the performance, scalability and resilience to be a useful tool for the air transport industry” (O’Sullivan, 2018).

On the other side, there were key lessons withdrawn during the project mentioned in the white paper as following:

1. “Decentralized” is not “self-managed”: Smart contracts deployment, access and permission management to the Blockchain, software upgrades require a middle organization that is not integrated to the process of Blockchain to govern and manage, especially in private Blockchain systems
2. Blockchain is not bulletproof: this type of system is only as strong as its weakest link. The network is only secure only when all of the nodes ensure high security. Because it is a distributed system, one act of attack from outsiders to the weakest node could lead to information leak or control loss of the whole system.

Project team lead, Kevin O’Sullivan said that it required time and many more trials for the technology to become more mainstream. SITA is looking for participation from other airports and airlines to add into the system and add more complicated rules to smart contract so the results of the test can be more complete.

Limitations of Blockchain

Besides the promising potentials Blockchain is providing and is believed to provide to logistics and supply chain management. Blockchain has been detected its own limitations as it is developing and evolving every day. Those limitations include:

1. Complexity

Blockchain is a new, emerging technology at the moment. It can bring a huge change from traditional ways of managing supply chain. To successfully execute the platform, the risks and function of the platform must be deeply understood. There is still lack of knowledge and understanding about the technology. Apparently, it is complicated and difficult for any big or small companies to educate their employees about this new specialized technology and get familiar with the new platform. It is estimated that business process change makes up for 80% while only 20% is technology implementation (William, 2015). The process of learning and adoption of Blockchain will definitely requires quite a long time.

2. High computing power – High cost

The basic characteristic of Blockchain is that it requires each node in the network to have a copy of a ledger. The process of adding new blocks into the chain is very energy-consuming. As Blockchain becomes more worldwide and the network grows bigger, there is a need for bigger storage, computer power and amount of electricity from every participant. The capital and maintenance cost can be extremely high. Bitcoin, the first application of Blockchain technology, is estimated to have the total running cost to be $600 million per year (O'Reilly, 2015). And this number is expected to increase in the future. It means that small companies which do not have enough resources and capital will eventually get kicked out from the network.

3. Political & social issues

As discussed above, Blockchain is a platform that disrupts the existence of middlemen like banks, brokers, etc. Buyers and sellers can directly contact with each other without the help of the third-party as in traditional business. Some of these middlemen belong to the Government, or run under the governance models, there can be disagreements whether Blockchain should be implemented. The implementation of Blockchain comes along with the fracture in various industries that depend on intermediaries such as banks, insurance, real estate, etc. This will not only transform the industry but also create job losses and increase the unemployment rate of the country, since third parties become unnecessary. Accordingly, some nations have come up with regulations to minimize the threat of Blockchain on the economy.

4. Conclusion and Recommendation

4.1 Conclusion

The objective of this thesis is to introduce Blockchain and analyze the potentials and challenges that it brings to supply chain management of various industries. The research questions have been answered from the analysis and summary of the thesis.

Examining from a narrow point of view, due to the requirement of extra computing power, Blockchain is not assessed to be more efficient than current centralized data systems. However, the current systems do not allow the customers to know the true value of the products and the ethic and responsibility of companies in sourcing and manufacturing the products. Blockchain is considered to be the transformation of supply chain since its primary aim is to improve supply chain. Today supply chain is a wide ecosystem with various interconnections because business is going to an international or global economy which makes it more complex when cooperating with many different partners from many locations. For example, an automotive manufacturer has to work with many raw materials' suppliers, some of them the company has never had transaction with. The verification of documents for TAX clearance, transfer of ownerships, etc. is difficult and some activities are still error-prone. Therefore, companies face problems in running smoothly and it is understandable that the company does not put 100 percent trust and rely on the suppliers. This problem is believed to be solved by the implementation of Blockchain technology. The most important value of Blockchain is that it provides transparency and efficiency for supply chain processes from warehousing, storage to delivery and payment. First of all, there is no sole authority to control over the technology. The responsibility is equally spread out to all the participating parties in the network. Secondly, every transaction occurred is recorded and informed to all the people related. The transactions cannot be modified or deleted without the approval and consensus of others that share the same ledger. Thirdly, the block is connected to the one before and the one after it so that the chain is secured and incorruptible because if one tries to change one block, the whole chain has to alter.

Blockchain technology is a current new trend in supply chain system. The technology is in its prototype stage and there is a slow progress of Blockchain adoption into supply chain and logistics management. However, it shows the promising solution for supply chain visibility and transparency and will soon earn bigger attraction from many industries. Blockchain for the supply chain will significantly transform the way companies do business in the future. Once transparency is enabled between trading partners, a system of trust can be created that has previously been a challenging issue in the Internet commerce market.

The other term widely mentioned in the Blockchain context is smart contract. Smart contracts are being implemented in many different fields in business such as insurance, election, banking to improve the performance and mitigate risks. In this paper, the main objective is to focus on the application of smart contracts in logistics and supply chain, and its impact on these industries. The supply chain consists of a lot of links and each link has to be connected and confirmed by the previous one in order to make sure the information, product, and money flow is accurate. The problem of the traditional supply chain is that it takes too much time and is unproductive. A smart contract can be the solution for these issues because it can enhance the transparency in the contract terms and protect information from fraud. Decentralized smart contracts improve accuracy, reduce the number of insurance intermediaries and lower the cost. It can also provide shipments tracking with the integration of Internet of Things. As mentioned above, the application of smart contracts in trade finance and logistics documents helps transform the maritime trade industry and replace old maritime business practices by substituting transaction documents with a more secured mechanism to deliver, buy and sell assets (Nach and Ghilal, 2017). The Blockchain combined with smart contracts offer an opportunity to improve the process in the transport industry and create trust among business partners.

In conclusion, the Blockchain-based smart contract is a promising idea that can enhance the efficiency of current supply chain processes. However, companies should fully understand how this technology works and decide whether to apply or not. There are pros and cons of every system and it is important to look for other alternatives. Keeping the contracts simple at first is an appropriate way to reduce errors. Further development could come later to increase the network size and complexity. Companies should only use Blockchain technology for parts of the system that need decentralization. The mindset of the business partners involved in the transaction must change before smart contracts are successfully implemented. One essential issue related to the Blockchain technology is trust among parties. Everyone must rely on the data provided and the reputation of each individual plays an important role here. The change in mindset could allow organizations to access to a large amount of data. Companies must keep in mind that this is an opportunity not a threat because they all agree to share this information and gain benefits from it.

4.2 Recommendation

The benefits of Blockchain is undeniable, however, not every business should implement this technology into their operations. It is critical for the company to know whether and how to invest in Blockchain. It depends on the vision of the company and its position, role to the market. Companies that are recommended to apply Blockchain technology are:

1. Companies with a big circle of suppliers:

The companies have difficulty managing the complicated network of suppliers. The product requires many different components from different suppliers. The biggest issue is that the company and suppliers have no common platform to share information. It creates extra time, efforts, cost and delays to have the whole view of process and verify the data. Blockchain makes it possible for company to know the information of all parts, track down the source and pinpoint the exact supplier in case there is a faulty component or rotten ingredient (as discussed in Walmart's case). Therefore, the faster and easier the root of problem is recognized, the faster and more efficient solution can be given.

2. Companies with short product lifecycles:

Their supply chain is dynamic and agile to keep up with and satisfy the demand of customers. The suppliers' relationship is shifting and changing in a short space of time. Using Blockchain can improve company's trust on suppliers. Companies are clearly informed where and how raw materials are processed so that they can truly be aware of the real quality of substances that they are purchasing.

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Factors Affecting the Students and the Parents' Adaptation towards the Electronic Payment System, For the Tuition Fees Of Thai Business Administration Technological College via Smartphones

by

Lisi Lui
E-mail: 764987357@qq.com

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Lisi Lui

E-mail: 764987357@qq.com

Abstract

The objective of this research is to study about the factors affecting the adaptation, by the parents and students, of paying the tuition fees by Electronic Payment System via smartphones. The sample groups consist of 310 parents and students of Thai Business Administration Technological College, Bangkok, Thailand. The questionnaires, used as the instruments, are divided into 3 parts. First part checks personal status of the respondents using a series of checklist. The second part is composed of questions related to factors which affect the respondents' decision of adapting the payment system. And the third part is the questionnaire related to the decision whether the respondents would adapt the payment method or not. For the reliability test of the instruments, the Cornbach Coefficient value is equal to 0.913. The results of this study are as following: 1) there are at least 4 factors which highly affect the decision to adapt the electronic tuition fee payment via smartphones of the parents and the students, including: personal attitude, conformity with reference groups, confident of online services and perception of risks, 2) there are 3 factors which highly encourage the adaptation of the electronic payment system including: perception of the benefits, perception of easy usage and the respondents' determination to use the system, 3) various degree of the attitude, conformity with reference groups, confident of online services and perception of risks of the whole picture affect different degrees of adaptation. If taking all aspects into consideration, the result shows each of the factors differ.

Keywords: Adaptation, Electronic Payment

1. Introduction

From the past until the present, human communication has rapidly changed and constantly developed. The major catalyst is technology which, now a day, has become an indispensible part of human daily life.

Various technologies are used as the means of communication and one of them is the online network which is used for almost all dimensions. It gives rise to a new type business call "E-Commerce" enables the business enterprises to reach for the customers faster than ever using the Internet. Recently, the E-Commerce has been attracting Thai commercial entities because of the increasing channels for the online consumers to purchase products and services, whether through Facebook, Line, Instragram or via other online stores.

Therefore, contemporary entrepreneurs must be able to utilize the online network as an instrument to increase their sale value. Proper uses of the internet can stimulate business growth. Presently, many entrepreneurs have been operating their off-line storefronts in conjunction with their online stores. On the other hand, most of the newer entrepreneurs operate only online store since it does not require large amount of capital and, it can operate around the clock.

The development of telecommunication helps stimulating the growth of Thai E-Commerce. Increasing Internet speed enable rapid data transfer to be more convenient. The reducing price of Internet-accessible devices such as smartphones and computers enable the consumers to easily acquire the devices which result in the increasing Internet accessibility. The above factors flavor the expansion of E-Commerce in Thailand. In addition, Kasikorn Research Center has anticipated that the tendency of Thai E-Commerce Expansion in 2016 is about 15 – 20% which has been increased about 230,000 – 240,000 million Baht over 2015.

As technology advances and economy expands, the complexity of payment system becomes more important and been developed to cope with the demands of business sectors, financial institutions and the consumers. Computer and communication technology have been increasingly incorporated into monetary and banking system. Commercial banks have been developing systems which making transition from conventional fiat monetary system, to electronic system. The innovation of Internet and its commercial integration has created a new platform for Electronic Commerce which allows trading of goods and services, advertisements, and money transfers electronically. It also reduces the cost and increase the efficiency of businesses. Electronic Commerce Transaction process would not be completed without the Payment System.

Electronic Payment System, or E-Payment for short, depends upon electronic devices. Although there are several ways to complete the transaction such as making payment with a credit card online through the Internet network with encrypted security enhancement, the fiat payment using bank checks, bank transfers, or crypto-currencies in a form of digital money stored in a smart card or hard drive, the advantages of Electronic payment outweigh them. The benefits of Electronic Payment for the organizations are rapid monetary transactions. The usual means of transportation are unnecessary. It saves time and expenses, reduces the risks of handling large amount of cash.

Electronic Payment System also increases the efficiency of monetary management since the payments are made online and real-time. Urgent payment can be made regardless of time and distance. The receivers can acquire the payment and manage the amount within in time. The factors which revolutionize the payment system are including the advancement of Information Technology, and behavior of the consumers which open up to the technology. These result in the new behavioral patterns of using payment services through high-speed internet services and mobile devices, such as mobile phones, tablets, and laptop computers. The developments of numerous applications are able to support a wide array of consumers' activities. Also, the government has been increasingly developing various telecommunication infrastructures and pushing Digital Economy hoping to drive the country's economy. By incorporating digital technology, we can increase the proficiency of competitiveness and to add value of domestic products, through innovations and creativities. The mentioned factors would open up new opportunities for business sectors, thus stimulate the consumer to use the Electronic Payment Services.

The authors would like to conduct a research to study the factors which may affect the adaptation of the Electronic Payment System, via smartphones. The results of this study can be used as a data for business sectors and governmental organization to support any developments of Digital Technology for business transactions or to increase the efficiency of electronic monetary transfers.

For the entrepreneurs who already have employed Electronic Payment System, they can increase and effectively implement the system uses to further reduce operational cost and other expenses. The data also can be used as a guide line to improve satisfactory and develop convenient customer services for public consumers. Furthermore, the use of Digital Technology to enhance Thailand's Electronic Payment System is also in conjunction with the government's policy of Digital Economy.

Objective

To study about the factors which affect the decision to adaptation the payment of tuition fees through Electronic Payment System by the parents and students of Thai Business Administration Technological College, Bangkok, Thailand via smartphones.

Research Hypothesis

1. Personal attitude which affects the adaptation of paying the tuition fees through Electronic Payment System by the parents and students of Thai Business Administration Technological College, Bangkok, Thailand via smartphones.
2. Conformity with reference groups affects the adaptation of paying the tuition fees through Electronic Payment System by the parents and students of Thai Business Administration Technological College, Bangkok, Thailand via smartphones.
3. Personal confident of online services affects the adaptation of paying the tuition fees through Electronic Payment System by the parents and students of Thai Business Administration Technological College, Bangkok, Thailand via smartphones.
4. Perception of risks affects the adaptation of paying the tuition fees through Electronic Payment System by the parents and students of Thai Business Administration Technological College, Bangkok, Thailand via smartphones.

Theoretical Framework

In this research, the research authors have observed several factors which affect the decision of whether the parents and students of Thai Business Administration Technological College would adapt the Electronic Payment System to pay for tuition fees using their smartphones or mobile devices. The theoretical framework is as following figure 1.

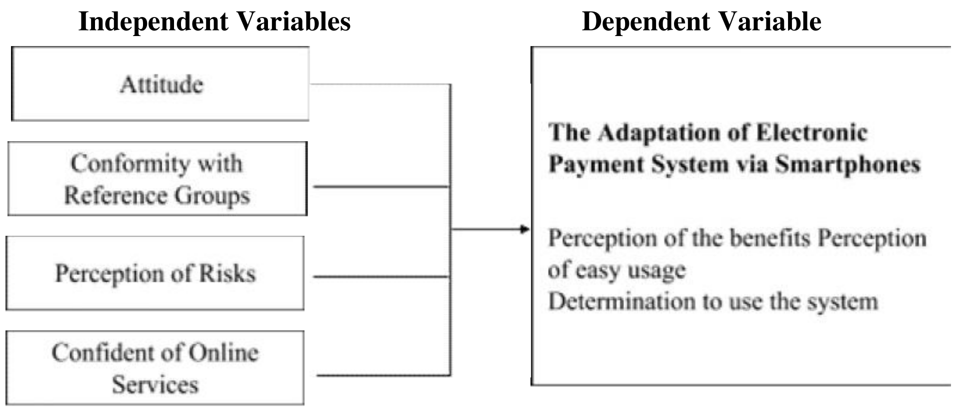

Figure 1 Illustration of the Theoretical Framework

2. Literature Review

2.1 Concepts and Theories Related to Consumer Behaviors

Consumer Behaviors can be defined as a process of decision making and the manners of each individual to make an assessment of procuring the payment for products and services. The assessment of behaviors related purchasing and spending of the consumers depends upon personal factors, psychological factors, and socio-cultural factors as the external stimulants that induce the decision of purchasing. In meanwhile, the process of such decision making is including the perception of problems, data gathering, evaluation of alternatives, making decision to purchase and post-purchase behaviors.

<u>Theories of Adaptation</u>

The adaptation of innovations means the decision to accept and utilize the innovations to their possible full potential considering as a better solution and to be more beneficial. Innovations adaptation of the individuals begins with the process of the initial exposure to the innovation. Then, such individuals are convinced to make a decision of either accepting or rejecting the innovation, proceed with actions according to the decision and confirm the actions' outcome. The time taken during the process, short or long, depends on each individual's characteristics and the types of innovations. [Orathai Luanwan, 2012, p. 6]

Concept of Adaptation

The publics can be educated through the process of learning. Personal adaptation can occur spontaneously through self-learning and, such learning would be accomplished through the individuals' direct operational experience. When the individuals are sure about the benefits of such innovations, they would be keen to invest or make purchase of the innovation.

To summarize, adaptation is an act of each individual's consenting to receive such innovations and willingly acts upon. Such behaviors of each person would change through a process and would take time [Orathai Luanwan, 2012, p. 6].

Adaptation Process can be defined as a type of psychological process of each individual staring from the first reception of the changes through the acceptance and utilization [Jirawat Wongsawatdiwat, 1986].

Theories of Technological Adaptation

The Theory of Reasoned Action (TRA) by Ajzen [Ajzem, 1991] mentions about the actions according to reasons that, each individual's decision to act or not to act is based upon the acquired data. Any course of action or behavior is determined by behavioral intention which composed of 2 factors: first, Personal Attitude toward the behavior and, second, personal perception of either social pressure or social influence is present. The concept of the majority of people would appropriately act or refrain from acting is called Behavioral Conformation of Subjective Norm. Generally, a person would intend to act, any one of the behaviors, after an assessment whether it would result in positive outcomes toward him, her or the significant others. The positive outcome indicates that such behavior can be an appropriate course of action. Once Personal Attitude and conformation of Subjective Norm are consisted with one another, the intention to act would arise. In addition, the scholars should weigh between Personal Attitude and conformation of Subjective Norm to be able to better understand and explain the behavioral intention. [Ajzen, 1991; Fishben, 1990] Both Personal Attitude and conformation of Subjective Norm are based on beliefs. The beliefs which are the foundation of Personal Attitude called Behavioral Belief, while the Subjective Norm is based upon the beliefs according to the reference group. Even though, each person possesses many forms of belief, there always be a belief, which governs the attitude toward particular behaviors, influenced by and conformed to the reference group. To certain extent, people combine their belief in the reference group who are important to them with the expectation of the group toward themselves, think they should or should not perform particular behaviors. Such behaviors are especially affected by the intensity of Normative Beliefs and Motivation to comply with the Reference. The aim of this theory is to predict and understand human behaviors. [Ajzen & Fishbein, 1980] The initial agreement of this theory is that human's intention to act or not to act is governed by Behavioral Criterions, which proposes that factors determining human's intention is Attitude and Conformation of Reference.

2.2 Literature Survey

Kunnatee Aksornkan (2007) has studied about the adaptation of the management system of E-Budgeting, from the factors affected personal and operational adaptation. The result has shown that there are significant differences between personal adaptation and operational adaptation point of view. By comparing the task effectiveness, the personnel are not familiar with the E-Budgeting system and still attached to the conventional system while personnel foreseen the advantage of new technology that would assist the work faster and more effectively. From the operational point of view, the system is moderately complex to operate. The protocol is hard to understand, the usage is cumbersome and fairy complex. A large number of simultaneous users cause the system to halt or produce more errors which cause more lost-working time. Therefore, the degree of adaptation to the system is only modulate since the users view the system as complex and may actually obstruct their work tasks.

Chutinon Nakalertkawe's (2010) the Adaptation of E-Service Technology has studied about factors which affect the use of E-Service to make payment for services. The ricks perception, security and privacy are the factors, in means time, the users can perceive that the ease of usage would also affect their perception toward the advantage of functionalities.

Pornpong Jongprasitpon's (2009) Online Payment of the Internet Users found that the Internet users prioritize on the factors of security risks and benefits of online payment, which is extremely fast. Learning how to make an online payment is relatively easy. Some online stores offer cheaper prices or give more discounts than conventional shops, which attract more users to choose online payments instead of cash payments. Demographic factors, increasing personal experience of computer and internet usage among the population result in the increasing trend of online payment adaptation.

3. Research Methodology

The sample populations in this research are 1,613 students or parents of Thai Business Administration Technological College that were randomly selected by systematic sampling and simple random sampling based on the number of students or parents of Thai Business Administration Technological College. The sample size in the questionnaires was used to compare the sample size from the Krejcie and Morgan tables. The total sample size was 310. The questionnaires were divided into 3 parts.

Part 1 Physical Factors, a series of check list to acquire personal status, divided into 11 categories.

Part 2 Influential Factors on the decision making to accept electronic payment method by parents and students of Thai Business Administration Technological College through via Smartphone devices. These questionnaires were based on 5 rating scales, divided into 4 categories 13 numbers and testing on total reliability was 0.98.

Part 3 E-Payment Acceptance of parents and students of Thai Business Administration Technological College via Smartphone Devices. These questionnaires were based on 5 rating scale, and divided into 3 categories 8 numbers.

4. Research Methodology

1. The researcher asked for a letter from the Graduate School, The field of educational administration, Sripatum University, for a permission to conduct the research with the sample group at Thai Business Administration Technological College.
2. Researchers sent all documents and make an appointment for the returning date of the questionnaires.
3. The researcher picked up all 310 questionnaires, or 100%
4. Check the returned questionnaires and select only the completed questionnaires for data analysis.

Statistics used in data analysis were comparative analysis, factors analysis on decision making payment of tuition fee by the parents and students in Thai Business Administration Technological College, suing E-Payment via Smartphone Devices, and Classification Factors influencing on the decision making of the sample by using hypothesis test. F-Test was the case that the first variable had only two options. And one-way ANOVA test was used for the first variable had two or more alternatives, it could be tested by using the Least Significant Difference (LSD)

5. Results Analysis

1. The affecting factors on the decision making to accept the payment electronically of parents and students of Thai Business Administration Technological College via Smartphones including: personal attitude, conformity with reference groups, confident of online services and perception of risks were at a high level. While the Bloggers' Feedback / Website Ads influenced on using electronic payment service via Smartphone devices was moderate.

2. Adaptation of Electronic Education Payment made by Parents and Students of Thai Business Administration Technological College via Smartphone Devices influenced by the factors of perception of the benefits, perception of easy usage and the respondents' determination to use the system were at a high level.

- From the comparison of Personal Attitudes affecting the adaptation of Electronic Student Payment by Parents and Students of Thai Business Administration Technological College via Smartphone Devices, it was found that the F value was statistically significant at .05 indicating that attitudes had an effect on the acceptance of electronic tuition payment by parents and students of Thai Business Administration Technological College. When considering each aspect, it was found that all aspects had different effects on acceptance.
- From the comparative results of conformity with reference groups affecting the adaptation of the electronic payment by parents and students of Thai Technology College, it shows that the F value was statistically significant at the .05 level indicating that the electronic payment acceptance of the parents and students of the College of Technology, Thailand, through smartphone devices. The results of the study showed that all aspects were different.
- The results of the confident of online services comparison affect the adaptation of the electronic payment by parents and students of Thai Technology College shows that the F value was statistically significant at .05. The acceptance of electronic student payment by parents and students of Thai Technology College, The difference in online confidence among the respondents was found to be different.
- For the Perceptions of Risk affecting the adaptation of the electronic payment by parents and students of Thai Technology College via Smartphone Devices, it was found that the F value was statistically significant at the .05 level indicating that the electronic payment acceptance of the parents and students of the Thai Technology College was via the smartphone device. The difference in perception of risk was found to be different, and it was found that each aspect was different.

6. Discussion

The factors affecting the decision to adapt the payment of electronic education of parents and students of Thai Business Administration Technological College via Smartphone Devices can be discussed are as following:

1. Factors influencing the decision to accept and adapt to the E-Payment method by parents and students of Thai Business Administration Technological College via Smartphone Devices were high, included personal attitude, conformity with reference groups, confident of online services and perception of risks.

2. Adaptation of E-Payments made by parents and students of Thai Business Administration Technological College, which was classified by the differences attitude, are diverse as a whole, resulting in different degrees of adaptation. When considering each dimension, each of the dimensions is different from one another.

This study produce similar result with a research of Angkarn Meewanukul (2010), the study has shown that the factors affecting the intention to use financial transactions through 3G innovation of consumers Perception of easy usage and Confidence of Online transactions affect the customers' intention to use financial transactions through 3G innovation. The attitude towards personal intention to use financial transactions through the most innovative 3G represents is mostly positive. Interestingly, the introduction of 3G innovation increases the transactions.

3. The degree of Adaptation of Electronic Payment, for tuition fee, made by Parent and Student of Thai Business Administration Technological College were different. From the text above, the finding is similar to The Theory of Reasoned Action (TRA). It is possible to predict the behavior of a person. There are two important determinants: behavioral attitudes and the conformation to the reference group in that behavior. Theoretical model of acceptance of technology (TAM) states that the extended knowledge from rational action theory can predict the acceptance of such service. There are 3 important variables that are affecting: the benefits of E-Payment, the easy usage and the sample group' personal determination.

4. Degree of adaptation of the Electronic Payment System by parent and student of Thai Business Administration Technological College via Smartphone were different due to the perception of risk was found to be different for each individual, and it was found that each aspect was also different.

The above finding is in conjunction with the research of Orathai Luanwan (2012). It has found that personal factors would influence the adaptation of Information Technology. The government officials, at Chaeng Wattana, Bangkok Thailand, have found that personal aspects affecting the acceptance of different technologies according to the characteristics of each individual including sex, income and education. However, the factor of their respective professions has no effect to the adaptation of technology. The personal factors of perception of the benefits and perception of easy usage are vastly different from person to person depending on personal nature and their respective professions. All personnel recognize the benefits of such technology, but it doesn't affect the adaptation. In addition, the research of Chutanon Nakharntee (2010) the Adaptation of E-Service Technology has shown that the ricks perception, security and privacy are the factors. The users also perceive that easy usage would also influence their perception toward the benefits of such system.

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Cross-Border E-commerce Research of Chinese SMEs

by

Liu Han Sheng
Tel: +66 982 632 418, E-mail: Sirawithpooti@hotmail.com

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Liu Han Sheng

Tel: +66 982 632 418, E-mail: Sirawithpooti@hotmail.com

Abstract

In recent years, the international economic development has entered a low tide, and the development of traditional international trade in China's small and medium-sized enterprises has been greatly affected. With the rapid development of e-commerce, cross-border e-commerce has begun to rise. Cross-border e-commerce is a huge development opportunity for SMEs, bringing many favorable conditions, but at the same time there are new problems and challenges. This paper analyzes the opportunities and challenges of SMEs' cross-border e-commerce and proposes relatively relevant measures.

Keywords: SMEs, Cross-Border, E-commerce

1. Introduction

In 2012, Cross-border eCommerce sales reached $300 billion-, while global online trade is expected to soar to $1.4 trillion by 2015, presenting multi-channel retailers with limitless business opportunities for international expansion. In China and the US alone, half a billion online shoppers surf the web each day for the best deals. Global acquirers can help retailers with innovative solutions to overcome challenges posed by serving a diverse audience with varying consumer expectations, in multiple languages, solutions which can make cross-border ecommerce domestic and truly profitable.

International ecommerce is called cross-border ecommerce, when consumers buy online from merchants, located in other countries and jurisdictions. Online trade between consumers and merchants which share one common language and border or which make use of the same currency are not always perceived as cross-border by consumers. EU neighbors which speak a common language, united by SEPA, are just one example. The process of cross-border e-commerce generally includes communication based on e-commerce platform, online payment by means of agreement, and cross-border logistics for goods transportation and completion of transactions. Cross-border e-commerce is essentially an organic combination of e-commerce and international trade and international logistics. Since 2012 like Figure 1 China's cross-border e-commerce has developed rapidly.

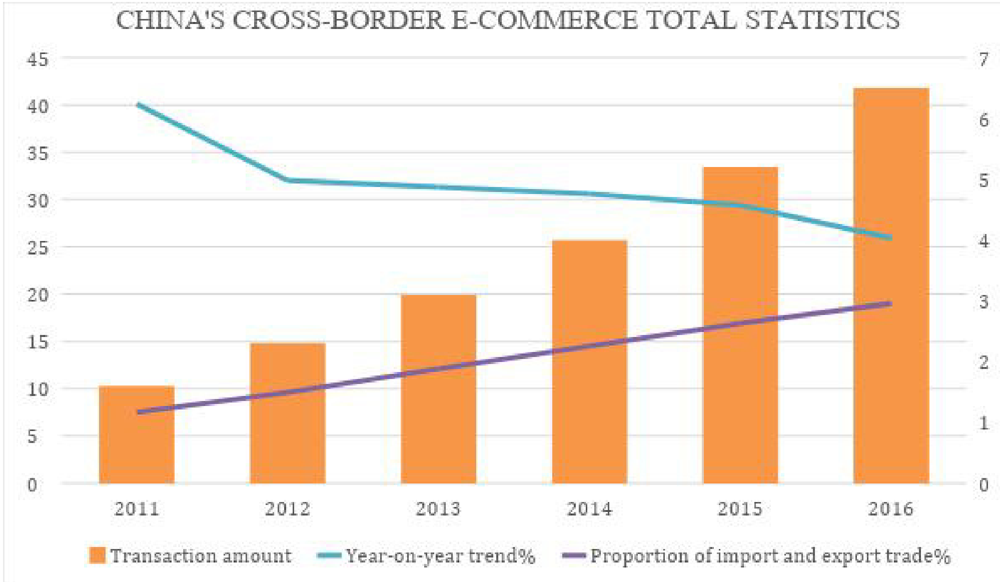

Figure 1 China's cross-border e-commerce total statistics

2. Cross-border e-commerce Situation

The internet enables consumers to shop globally, by purchasing products and services across their border, driven by a common language, a common border, special offers, or simply because the product or service isn't available in the consumer's own region. The increasing popularity of tablets and smartphones, allows consumers worldwide to compare prices, connect with other consumers via social media, to discuss products and services, to select a web shop independent of its location and to transfer payments via their PC, laptop, mobile phone or tablet at any place, anytime, anywhere.

Not only consumers, Merchants and Payment Service Providers profit the opportunities, presented by global ecommerce; banks have come to realize, that offering acquiring services to successful stakeholders engaged in online trade, can be more profitable than selling banking products. Online Retailers, Card Processors and Payment Service Providers have hardly been affected by the economic crisis; on the contrary, these stakeholders have risen like a phoenix from the ashes, in an age when international expansion through global online trade has become big business.

3. Cross-border e-commerce is an opportunity for Chinese SMEs

3.1. Cross-border e-commerce effectively reduces costs and streamlines sales

In a cross-border e-commerce environment, companies can conduct global market searches through the Internet. First of all, it is possible to purchase low-cost raw material supplies in a wider market and effectively reduce the production cost of goods. Secondly, enterprises can directly conduct advertising and sales of goods through cross-border e-commerce platforms, and immediately conduct sales communication and negotiation, and streamline the sales of goods. Thirdly, traditional trade needs to go through multiple sales links from manufacturers, exporters, importers, distributors, retailers, etc. In the cross-border e-commerce environment, trade eliminates intermediate links and enhances the profit margin of commodities. Once again, cross-border e-commerce digitizes documents and documents, and material costs are greatly reduced. For example, in Figure 2, with one yuan as the investment cost, the benefits of cross-border e-commerce are much higher than the benefits of traditional trade, and are growing year by year.

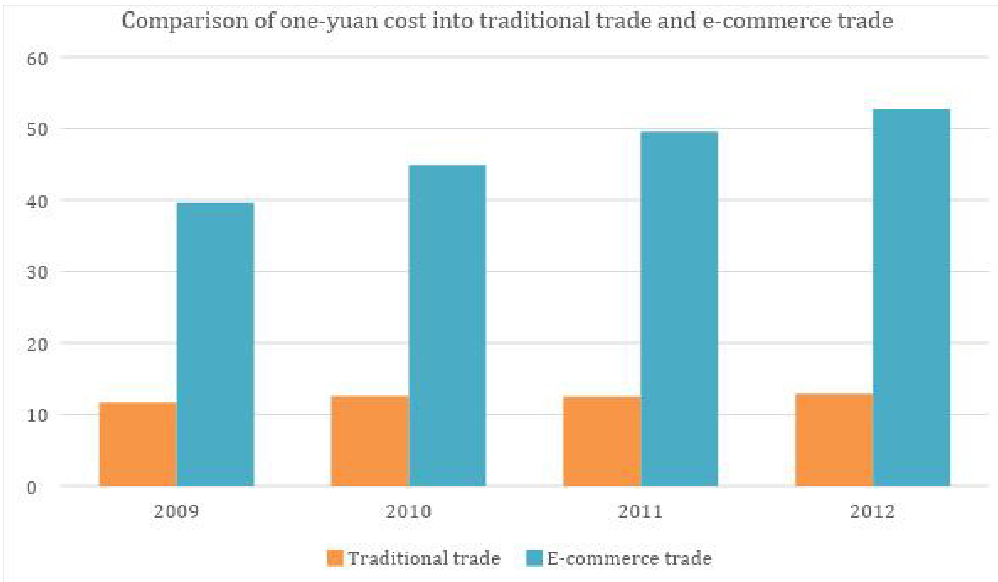

Figure 2 Comparison of one-yuan cost into traditional trade and e-commerce trade
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3.2 Cross-border e-commerce barriers are low, marketing advantages are obvious

Cross-border e-commerce has a relatively low threshold, and Chinese SMEs can participate in it. Even if they do not have import and export qualifications, they can obtain agency clearance services on cross-border e-commerce platforms, which provides Chinese SMEs with Opportunities for development can participate in foreign trade activities at a lower cost. The enterprise marketing market has expanded, and the open Internet space and the information dissemination characteristics of the Internet itself have made marketing more effective. China's SMEs are no longer tied to the traditional market, and the funding and manpower constraints are compensated for in the marketing process.

3.3 Improve brand image and transaction rate

In the process of the development of small and medium-sized enterprises in China, due to various factors such as capital and manpower, the brand image is difficult to establish, and the problems such as small business volume are more prominent. Cross-border e-commerce has broken the original restrictions, and the information and service information of products can be widely spread. SMEs can publish their own information quickly and accurately, and deal with transaction information in real time, bringing more convenience to enterprises and customers. Order volume and transaction rate continue to rise. Moreover, in the platform of cross-border e-commerce, SMEs can quickly receive feedback from customers, and after-sales and other services lay the foundation for the increase in transaction rate. The brand image of SMEs themselves has also been continuously established in information dissemination and transaction opportunities.

3.4 China's national policy support

The rapid development of e-commerce has attracted the attention of the state. In 2012, the total transaction volume of cross-border e-commerce in China reached 2 trillion yuan, an increase of about 32.0%. In the following years, cross-border electricity The business has always maintained a rapid development trend, and its scale has been continuously expanded and its influence has been continuously deepened. China has set up a number of policies to support this, and has taken the lead in establishing cross-border e-commerce pilots in cities such as Shanghai and Hangzhou. At the same time, it has explored and guided the development of cross-border e-commerce, and promoted the steady development of cross-border e-commerce. Especially for the retail support of cross-border e-commerce, the new policy of collecting export tax rebates for cross-border e-commerce platforms has provided strong support for SMEs to develop cross-border e-commerce.

4. The main problems in the development of cross-border e-commerce for Chinese SMEs

4.1 Logistics transportation and customs clearance problems

The biggest cost for SMEs to conduct cross-border e-commerce lies in logistics and transportation. Among cross-border e-commerce, small-scale logistics and transportation mainly include international logistics, domestic logistics parcels, and warehouse-type transportation. Among them, the international logistics speed block is extremely high, which is not suitable for the use of small and medium-sized enterprises; the logistics packet is slow. The extension of the trading cycle is not conducive to rapid order formation; warehouse transportation costs are too high, and SMEs are difficult to support. Therefore, the problem of logistics and transportation is still a difficult point in the development of cross-border e-commerce for small and medium-sized enterprises.

Cross-border e-commerce involves entry and exit issues in multiple countries. Different countries have different standards for entry and exit management, but they have a high degree of emphasis on customs safety. In the process of customs inspection of goods, it often takes a lot of time, which is not conducive to the rapid completion of transactions. In addition, the customs of all countries have not fully opened up the import and export of small-sized goods. When the number of retail goods is large, it is necessary to declare the goods, which makes it difficult for SMEs to cross-border e-commerce.

4.2 Vicious competition caused by competitive pressure

The low threshold and high income of cross-border e-commerce have attracted a large number of enterprises, and the competitive pressure of SMEs in cross-border e-commerce has been increasing. In the process of product sales, vicious competition has emerged. In addition, SMEs do not have a deep understanding of cross-border e-commerce. They often follow the trend to join the ranks of cross-border e-commerce. They have a shallow understanding of cross-border e-commerce and lack professional marketing methods. Insufficient analysis of market demand, insufficient development of customer sources, blindly began vicious competition such as price wars.

In addition, SMEs often lack their own brand awareness and legal awareness, and have caused problems such as intellectual property infringement and counterfeiting in the process of competition. Due to problems in knowledge products and the phenomenon of customs detainment caused by counterfeiting, the laws and regulations vary from country to country. The unified credit norms and credit management system have not been applied in cross-border e-commerce, and cross-border electricity has been applied. The overall credit of the business is in jeopardy.

4.3 Lack of talent for SMEs

Cross-border e-commerce has a global market space. Customers from all over the world, different languages, habits, backgrounds and other factors cause communication difficulties. Therefore, it is necessary to communicate with talents with certain foreign language level to cross-border customers. Understand communication. On the other hand, cross-border e-commerce often requires the maintenance, update, website design and daily technical support of the information platform, including security issues, etc., which require professional personnel to perform proficient operations. In addition, cross-border e-commerce operations, market development, customer source mining, and market dynamics require professional talents to conduct operational analysis, while SMEs often lack sufficient capital and treatment attractiveness, resulting in a shortage of talent.

4.4 The challenge of currency payments to cross-border e-commerce

International expansion through cross-border ecommerce can only be realized after online Merchants have overcome a number of challenges.

A solid partner in the targeted region can help the Merchant analyze and understand local business customs, consumer preferences and cultural differences, which affect decisions around inventory management and product marketing. Marketing strategies will have to be customized, to reach a different audience in a foreign market and a different infrastructure might require local logistic and delivery services. A "One size fits all" approach might prove to be a pitfall. Consumers often have high expectations around logistics and timely delivery and shipping costs are important drivers determining consumer preferences. Merchants which offer free or cheap delivery attract more consumers.

After geography (common borders), language is another important driver. Common language and culture reduces the barriers and saves the retailer high transaction costs involved in adapting websites and promotional copy. However, in order to reach an international audience, the retailer will have to invest in translations and in local proofreaders, who understands local terminology and culture. Multilingual customer support is crucial for customer loyalty.

Consumers prefer to pay in their local currency. Global expansion requires multi-currency conversion and settlement in currencies defined by major card schemes, including interchange rates. Banks in other jurisdictions have to be compliant with local legal requirements. Global payment solution providers with regional partners in the card payment sector, partners which have acquired expertise in the technical, innovative and legal aspects of online sales, can help merchants to manage transactions over one secure payment gateway.

Even though credit card payment remain preferred payment method worldwide, accounting for 58% of all non-cash payment transactions in 2012, new payment methods have become popular in different regions. Boleto bancario in Brazil, COD in Germany, IDEAL in the Netherlands, etc. and in some countries payments are only collected after the products have been delivered. In some countries, disappointed consumers have the legal right to send merchandise back within a specified period of time. The merchant has to manage logistics, including chargebacks.

Notwithstanding the above challenges, global online trade is expected to grow to $1.4 trillion by 2015 and cross-border ecommerce has already surpassed $300 billion; testimony to the fact that the digital highway provides retailers with unprecedented business opportunities for international expansion.

5. Main measures for the development of cross-border e-commerce existing problems in Chinese SMEs

SMEs should support the development of cross-border e-commerce and leave the country without policies and regulations. In addition, SMEs should proceed from themselves and take measures to solve various problems in development. First of all, cultivate a talent team, use school-enterprise cooperation and other methods to train professionals, including e-commerce, international trade, IT design and other talents to form a team to conduct research and exploration of cross-border e-commerce, research and investigation of the market environment, adapt to cross The development of environmental e-commerce. At the same time, strengthen its own brand building, and establish a legislative concept to attract customers with service and quality. Secondly, to ensure the speed of logistics, choose a reliable logistics and transportation mode, follow up and feedback on logistics, improve customer satisfaction with enterprise services in the case of ensuring logistics, and improve the negative impact of logistics problems through reasonable communication and service.

6. Conclusion

Under China’s “One Belt, One Road” policy, cross-border e-commerce has more and more opportunities for SMEs. Although faced with difficulties, it is the current development goal to achieve faster and more convenient. SMEs also have more measures to improve their own businesses, not blindly investing, rational analysis of current market conditions and then invest. For the future development of enterprises, cross-border e-commerce has become the main goal of enterprise development. With the increasingly fierce competition for product homogenization in the past few years, more and more Chinese companies are beginning to realize the importance of brands in the cross-border e-commerce field, and major mainstream cross-border e-commerce platforms have also been launched. Your own brand new deal. But brand building is not an easy task. He needs all kinds of factors, especially for start-ups. Even the first thing to realize is the risk in the brand creation process. In fact, from a global perspective, brand excess may be the true face of this era, such as food, clothing and other traditional industries, Europe and the United States and other developed countries' brands are very strong. But this does not mean that there is no chance for the brand to be created, because "Made in China" has always been deeply rooted in the hearts of people with low prices and good quality.

Therefore, for developing countries along the “One Belt, One Road”, if they can use the advantages of cross-border e-commerce to carry out accurate brand marketing in the form of big data, the opportunities of Chinese brands may be much larger than traditional European and American brands. At the same time, although in the traditional industry, Chinese brands are temporarily inferior to European and American brands, but in related emerging technology industries such as drones, the market share of Chinese brands far exceeds that of overseas similar brands. Therefore, for the start-up enterprises, on the one hand, the test is the courage and wisdom of the enterprise itself, on the other hand, it also tests whether the enterprise can seize the rare opportunity of the national policy in time to meet the difficulties.

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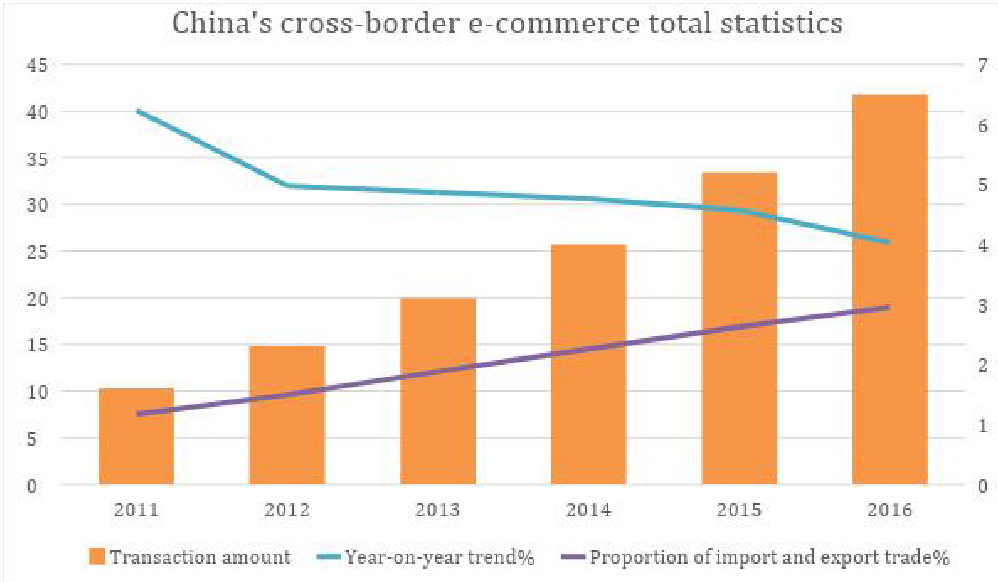
Appendices



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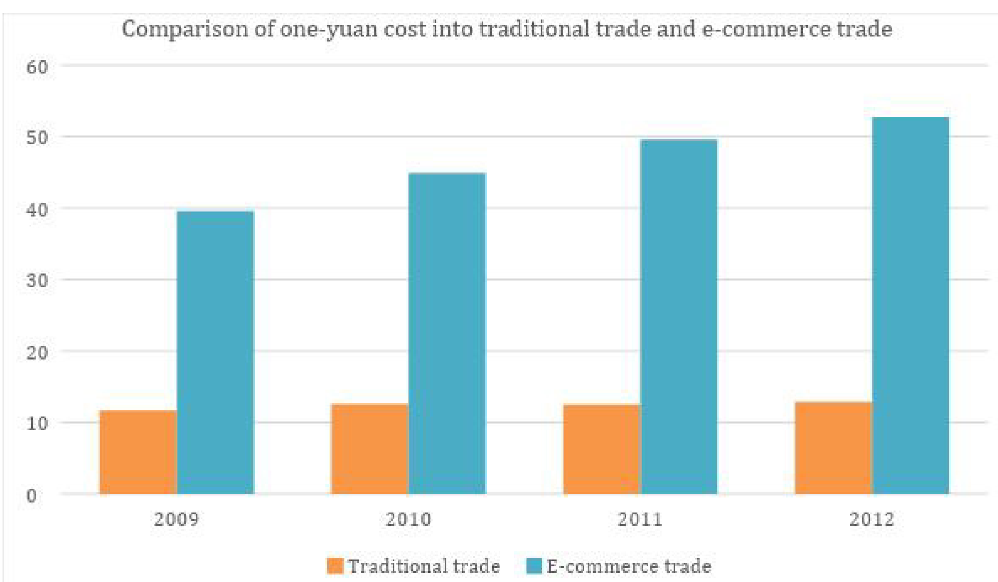

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Management and Conservation of Historic Site for Cultural Heritage Tourism

by

Panot Asawachai
College of Tourism and Hospitality,
Sripatum University, Bangkok, Thailand
Tel: +66877739963, E-mail: panot.as@spu.ac.th

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Panot Asawachai
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Tel: +66877739963, E-mail: panot.as@spu.ac.th

Abstract

This research study aimed to review (1) the heritage values and cultural significance of the scriptures library at Wat Rakhang Khosittaram Woramahavihara, and (2) the potential for cultural heritage tourism. Critical to the aims was the assumption of acknowledging the importance of promoting better understanding for tourists and community of the place, the associated roles of management and conservation plans, cooperation between the stakeholders, and appropriate interpretation and presentation of cultural heritage resources. Scriptures library at Wat Rakhang Khosittaram Woramahavihara is a valuable historic site that still maintains its cultural significance which is one important key factor to indicate why such place is worth conserving. Scriptures library, or Ho Phra Traipidok, is located at Wat Rakhang Khosittaram Woramahavihara in Bangkok Noi district, Bangkok. Wat Rakhang Khosittaram Woramahavihara is an ancient monastery founded in Ayutthaya period. It was established as a royal temple in the reign of King Taksin the Great, Thon Buri period. The scripture library was originally the residence of Phra Rajavarindra, a state official who became King Rama I, the founding king of Chakri dynasty. The residence was donated to the monastery which was, at that time, called Wat Bang Wa Yai. This scriptures library is shown the wooden traditional Thai house with a long history of use in Thailand nowadays. Moreover, its significances were identified and analyed to understand its congenital values to the tourists and local residents of the place in terms of aesthetic, historic, social and scientific perspectives. These values support the notion of Scriptures Library at Wat Rakhang Khosittaram Woramahavihara sustaining its identity. However, there are no management plans to promote cultural heritage tourism and conserve cultural heritage significance in scriptures library at Wat Rakhang Khosittaram Woramahavihara today. There is, therefore, a need to provide better understanding of the temple's significance to tourists through the inception of management plans which will provide for tourism, conserve the significance of cultural heritage values, and also enhance community invlovement as well as providing economic and social benefits. Proposed management and conservation plans for cultural heritage tourism at Scriptures Library at Wat Rakhang Khosittaram Woramahavihara and its communities is also proposed for creating sustainable tourism. Finally, scriptures library at Wat Rakhang Khosittaram Woramahavihara is encounting a number of problems threatening its significance including garbage, dirty with pigeon droppings, air pollution, insufficient knowledge of conservation and management, and erecting tall buildings that block the view of historical temples. Therefore, the government, all members in the community and stakeholders are major participants for futurte actions to address those problems. In order to get achieve a stronghold of the community in the sustainable way. Scriptures library at Wat Rakhang Khosittaram Woramahavihara has a very high potential for Cultural Heritage Tourism as well as Historical Tourism, because of its cultural heritage value.

Keywords: Cultural Heritage Tourism /Local Heritage /Management and Conservation of Historic Site/ Management and Conservation Plans

1. Introduction

Bangkok, Thailand's capital, is a famous destination of cultural heritage tourism and historical tourism. Many cultural and historical resources in Bangkok such as religious buildings, museums and palaces are attracted the interest from international visitors around the world. Wat Rakhang Khosittaram Woramahavihara is one of Buddhist temples in Bangkok which is now one of the most important tourist destinations for visitors to Bangkok because of its scriptures library. The scriptures library, or Ho Phra Traipidok, is located at Wat Rakhang Khosittaram in Bangkok Noi district, Bangkok. This scripture library was originally the residence of Phra Rajavarindra, a state official who became King Rama I, the founding king of Chakri dynasty. Wat Rakhang Khosittaram is an ancient temple founded in Ayutthaya period. It was established as a royal temple in the reign of King Taksin the Great, Thon Buri period. At that time, the temple was called Wat Bang Wa Yai. This monastery stands on the west bank of Chao Phraya River. Wat Bang Wa Yai became a royal monastery under the royal patronage of King Taksin the Great. King Rama I was at that time a state official at King Taksin's court. When he was 33 years old, he moved his house at Amphawa, at the present, in Samut Songkhram province to the area where is nearby this monastery. This is time when his residence was built. In 1782, King Rama I ascended the throne at the age of 46. He thought of his former residence because he wished to have the structure rehabilitated to make it more substantial and more beautiful. He declared his intention for it to be made a Thai Buddhist monastery library, or a Ho Phra Traipidok, in which the Tripitaka would be deposited. Thus, King Rama I assigned King Rama II, who was a prince then, to be in charge of improving the residence in 1784. Subsequently, it was re-erected in the middle of the pound on the back side of the ordination hall (Ubosoth) of Wat Rakhang Khosittaram.

As the time passed by, the scriptures library was deteriorated. Thus, there are two phases for restoration that had been taken. The first phase, it was in 1968, under the reign of King Bhumibol Adulyadej (King Rama IX), that Somdet Phra Phuttachan (To Phromrangsi) Foundation and The Department of Fine Arts, moved the library from the silted up pond because the water became polluted. However, there were some problems occurred at the first phase. Those were 1.) The Department of Fine Arts couldn't obtain a budgetary allocation for the job and 2.) There was a need for men of learning and for craftsmen trained in architectural restoration. Therefore, the abbot of the temple wrote the letter to The Association of Siamese Architects Under Royal Patronage for requesting assistance to restore the scriptures library. When this was known by King Bhumibol Adulyadej, he graciously came to visit the library in 1971 and also granted a sum of money to inaugurate the campaign to raise funds for the restoration.

As the time coincide with the auspicious celebration of the Chakri dynasty, and the Rattanakosin Bicentennial Celebration, The Shell Company of Thailand Limited had contributed funds for restoring the library. Therefore, the second phase of restoration had finally been completed in 1982. H.R.H. Princess Maha Chakri Sirindhorn preceded, on behalf of H.M. The King Bhumibol Adulyadej, to perform the religious celebrating as an opening ceremony the scriptures library on 14 August 1982. Nowadays, the library is located in the west of the old ordination hall and it stands on the ground and used as a monastery library.

Figure 1 The scriptures library at Wat Rakhang Khosittaram. Photo by Panot Asawachai, 2017

The scriptures library is a Thai architecture comprises 3 buildings with a fenced porch in the front. The building is faced to the east. These 3 connected buildings have their structural arrangement. This means the central room is now placed King Rama I painting and the room on the right is called “The Reading Room” where is now placed a beautiful gilded lacquer cabinet. The room on the left is called “The Retiring Room” where is also placed the other gilded lacquer cabinet. The building is made of timber plank walls and the roof tiled. The buildings are finely decorated with woodcarvings. Colour glass mosaics and gold leaves. The interior walls are decorated with mural paintings from King Rama I period. Moreover, beautiful art objects and scriptures cabinets are housed in this library.

The scriptures library of Wat Rakhang Khosittaram is registered as an “Ancient Monument” of Thailand by Act on Ancient Monuments, Antiques, Objects of Art and National Museums, B.E. 2504 (1961). According to Section 4 in this act, “Ancient monument” means an immovable property which, by its age or architectural characteristics or historical evidence, is useful in the field of art, history or archaeology and shall include places which are archaeological sites, historic sites and historic parks.” The scriptures library is useful in the field of art, history or archaeology and its importance architectural characteristics. Therefore, that is the reason for registering as the nation’s ancient monument. Nowadays, the ownership and tenure pattern of this scriptures library are belonged to Wat Rakhang Khosittaram. However, Fine Art Department is the organization, which takes a responsibility in controlling of repairing, modifying, altering, demolishing, adding to, destroying and removing the scriptures library. In 1987, the scriptures library was received the conservation award by the Association of Siamese Architects under Royal Patronage. The objectives of this award are aimed to 1) promote and support the conservation of valuable architectural heritage 2) to announce prestigious awards and provide encouragement to those who own and maintain historic buildings and 3) to add social value in conservation and application of old buildings, instead of destroying them or supplanting them with new ones. As the result, the scriptures library has become the good example for conserving the old building as many people who are interested in art and architecture come to visit it every day.

Nowadays, this scriptures library is used as a monastery library. Furthermore, it is maintained as a building of artistic and historical importance in its own right. However, the scriptures library is poor looked after by the temple at present. Referring to the field observation, the scriptures library is penned and set separately from the temple’s compound. Inside the fence, it has been developed as the rest area for the people who come to this temple for pilgrimage. The scriptures library is now dirty with pigeon droppings and garbage. Sadly, the temple stores the temple’s accessories under the scriptures library. That is made the scriptures library unclean and undisciplined. A few months ago, the temple built the new building behind the scriptures library for using it as a store room. Many people were afraid that the construction of the new building would be affected the structure of the library. So, the new building was demolished for preventing this affect. Because of demolishing the store room, the temple stores the accessories under the library instead. The scripture library is opened everyday and free of admission fee. There is not any communication for interpretation inside the library.

2. Objectives

1. To review and analyze cultural significance and heritage values of the scriptures library at Wat Rakhang Khosittaram as it is one of Thailand's heritage and cultural sources.
2. To study the process of current management and conservation plans for cultural heritage tourism at the scriptures library at Wat Rakhang Khosittaram, and to propose management and conservation plans for cultural heritage tourism at the monastery which is collaborated between the stakeholders.

3. Scope of the study

1. Area of study: This research focused on the scriptures library at Wat Rakhang Khosittaram and its community.

The scriptures library at Wat Rakhang Khosittaram is located in 250 Arun Ammarin Road, Siriraj Sub District, Bangkok Noi District in Bangkok. This temple is surrounded by two major communities which are Wat Rakhang community and Sala Ton Chan community. Its community landscape is located at the east of Arun Ammarin Road, with the site boundaries connecting close to Chao Phraya River.

2. Focus of the research: investigating and outlining cultural heritage management toward cultural heritage tourism at the scriptures library at Wat Rakhang Khosittaram and its community.
3. Target groups: spilted into three groups of stakeholders which are consisted of monks who live in Wat Rakhang Khosittaram and local residents, private and government agencies, and tourists.
4. Examining and discovering : addressing both tangible and intangble heritage values. Tangible includes heritage buildings and infrastructure. Intangible includes culture, beliefs, way of life, and other related aspects.

4. Research Methodology

This research was focused on qualitative method. Qualitative method aims to gather an in-depth understanding of issues studied. In this case, research instruments of this research were carried out as follows:

(1) Literature research
(2) Field observation
(3) In-depth interview
(4) Interview / focus group meeting / participatory research

Literature research: The researcher had conducted a through literature search from books, academic journal, research reports, government data, daily newspapers and the Internet. The research was focused on topics relevant to the study. This literature research helps for basic understanding and background of temples' contexts from the past until today. Furthermore, information or data of what this temple was involved into the government policy of promoting cultural heritage tourism were also observed.

Field observation: The research had made an inventory of cultural heritage significance that had relevance to cultural heritage tourism at this temple and its communities by observation and photographic recordings. Field data sheets had prepared to facilitate field data collection. Relevant temple's antique collections, if available, were examined to determine the changes in cultural heritage significance and values of this temple and the temple's communities over time.

In-depth interview: This was undertaken with the abbot, monks, leaders of local communities, government organizations' officers, academics, private-sector operations, visitors and people working in architecture. All interviews were recorded by using a portable tape recorder (if permitted by the respondents) to avoid any disruptions caused by note taking.

Interview / focus group meeting / participatory research: The research approached local residents in the communities that are nearby the temple to solicit their personal opinion about the cultural heritage significance and values of the temple. The researcher also participated in religious and cultural ceremonies and festivals that reflect the communities' cultures.

5. Analysis of Data

As all interviews were undertaken in Thai language, the collected data was transcribed and translated into English. To reduce bias and misunderstandings arising from translations, the researcher refered translation-related concerns to some English native speakers in Thailand. Analysis the results were comprehended into these topics:

- Analysis of value and cultural significance of the temple's scriptures library which is including aesthetic, historic, social and scientific values.

-Determining the positive and negative impacts of cultural heritage tourism development on cultural heritage significances and values of the temple's scriptures library.

- Consideration and development of policies for the conservation and management recommendations on conserving and managing the cultural heritage significances and values of the temple's scriptures library and its communities.

Cultural Significance Analysis

According to Australia ICOMOS (1999, p.12), Cultural significance is a concept which helps in estimating the value of places. The places that are likely to be of significance are those which help an understanding of the past or enrich the present, and which will be of value to future generations. The adjectives used in definitions of cultural significance are aesthetic, historic, scientific and social values. For this scriptures library, cultural significance is found in each value as follows:

Value	The scriptures library at Wat Rakhang Khosittaram
Aesthetic	1.) The architecture of the scriptures library is shown a fine traditional Thai house, being like that of old at the former capital (Ayutthya period). 2.) There are many fine components of the scriptures library to see. For example, (1.) The door leaves with pediment above that one passes through to come onto the platform are ornamentally carved as of old. They are beautiful and make a real visual surprise. (2.) The door into the central room is also beautifully carved, but with different ornamentation than that on the door leaves outside and (3) Many beautiful bracket pieces can be seen around the library. These brackets are taken the form of an ornately decorated Naga. 3.) The cabinets for keeping the Tripitaka have been placed in both the right and left rooms. These cabinets are shown as beautiful art objects and they are shown of fine washed gilded lacquer art.

Credit by Panot Asawachai, 2017.

Figure 2 The door leaves with pediment above that one passes through to come onto the platform are ornamentally carved as of old.

Credit by Panot Asawachai, 2017.

Figure 3 The door into the central room is also beautifully carved, but with different ornamentation than that on the door leaves outside

Credit by Panot Asawachai, 2017.

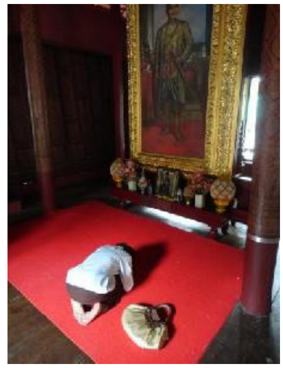
Figure 4 - 6 Many beautiful bracket pieces can be seen around the library. These brackets are taken the form of an ornately decorated Naga

Value	The scriptures library at Wat Rakhang Khosittaram
Scientific	1.) One of the values of this building is that it allows us to learn something about the methods of construction of houses during the reign of King Rama I (1782-1809).

Value	The scriptures library at Wat Rakhang Khosittaram
Historic	1.) This scriptures library is shown the wooden traditional Thai house with a long history of use in Thailand. The age of this building is more than 200 years.

Value	The scriptures library at Wat Rakhang Khosittaram
Social	1.) Nowadays, this building is used as a monastery library. Furthermore, it is preserved as a building of artistic and historical importance as well. This is because the building is closely linked with the present King's illustrious ancestor (His great-great-great-grandfather).

For the scriptures library, the significance in aesthetic is the most important significance for preserving this building. For anyone interested in the art of Thailand, a visit to the scriptures library at Wat Rakhang Khosittaram is a must because it can be shown the spectacular beauty of the early Rattanakosin period.



Credit by Panot Asawachai, 2017.

Figure 7 The library is now become the place for worshipping the King Rama I and it is used as a monastery library. Furthermore, it is preserved as a building of artistic and historical importance as well

Current Management of the scriptures library at Wat Rakhang Khosittaram

At the present, the scriptures library at Wat Rakhang Khosittaram formally enages in tourism. However, the library is devalued and dilapidated by the present improper management. Before taking a look at the current management of the library, there must take a look at the potential benefit of promoting the scriptures library at Wat Rakhang Khosittaram as a major tourist destination for cultural heritage tourism.

The first potential benefit of promoting the scriptures library at Wat Rakhang Khosittaram as a tourist destination is to create the awareness of public value's importance and to conserve it. "Public value" or "Community heritage value" is terms sometimes used to refer to those elements of significance of heritage places that are most generally valued by communities and society as a whole. The public value is consisted of historic, aesthetic, scientific and social attributes. These attributes can create a sense of place which is important to national or local self-identity. Thai people from the past to present generations remind the scriptures library at Wat Rakhang Khosittaram as a memorial place of King Rama I. Many visitors including the communities around this temple appreciate thelibrary's aesthetic value such as beautiful bracket pieces and door leaves with pediment. The library also has major historical value due to its role in the history of Thai architecture in the early Rattanakosin period. All these attributes contribute to the reasons why the communities and Thai people value this temple as a public value. As the conclusion, promoting this temple as a tourist destination can be created the public awareness of library's significances that can be conserved the public value for this temple.

The second potential benefit is economic benefit. Promoting tourism into this temple can be brought "Tourism development". Tourism development can bring improved income and living standards for local people. It stimulates the economy in the communities by creating demand for communities' producing and through infrastructure development projects. Creating jobs for local people may be associated directly such as local tour guide or managerial positions; or in supporting tourism industry like food production or retail suppliers. Some locals are hired as permanent employees to take care of this temple and the library. According to the temple's location, There are two communities nearby this temple and they can be promoted as cultural heritage attractions which are Baan Chang Lo and Baan Matoom Communities. These two communities are on the verge of losing the skills they are famous. Baan Matoom community has been famous for making sweetened bael fruit and Baan Chang Lo community has been famous for making Buddha statues since Ayutthaya period. Tourism development which brings economic benefit to these communities means increased spending in the communities generated from visitors or tourism businesses can directly and indirectly promote the viability of local businesses. Nevertheless, infrastructure including roads, parks and other public spaces can be developed and improved both for visitors and local residents through increased tourism activity in the communities. This is also the economic benefit from tourism development as well.

The pride of communities from presenting this temple as a tourism destination can be generated through tourism. This is the third potential benefit which is counted as "Social benefit". A positive sense of community identity can be reinforced and tourism can encourage local communities to maintain their traditions and identity. The scriptures library at Wat Rakhang Khosittaram is the pride of the communities and the nation as a whole. This is because there are many important components and contents which make this library unique. For example, the library is finely decorated with woodcarvings, color glass mosaics and gold leaves. Furthermore, beautiful art objects, the scriptures cabinet of washed gilded lacquer are housed in the library. This unique can be brought the pride of the communities and the nation as a whole.

According to data received by in-depth interview and field observation**,** there is no any current conservation plan for this temple and the library. However**,** this research indicates the following factors are significant for the scriptures library at Wat Rakhang Khosittaram's management and temple's management.

1) Way of life

The scripture library of Wat Rakhang Khosittaram has been a place for holding religious ceremonies. According to Thai customs, there is a variety of practices including religious activities held at the temple, such as making merits, listening the sermon, Buddhist ordination ceremony, and an important Buddhism ceremony which is called The Candle Festival. The most elaborate of the traditional parading of candles to the temple has been transferred from generations to generations. These can be regards as intangible heritage of the temple and communities and can be last very long time.

2) Tourism facilities

- Car park: there is official car park for the tourists who want to visit this temple and the library. It is generally known, all tourists' vehicles should park at the provided car park at behind the area of temple. However, some tourists use public transports such as taxi, public bus and public ferry to access to this temple.

- Accommodation is not available for tourists in the temple's communities.
- Toilet facilities: there are two station public toilets available in the temple compound. The toilet is adquately separated for male and female.
- Information center: there is no official information center in the temple compound at this moment. However, there is a Tourist Information center of Tourism Authority of Thailand (TAT) located at the Tha Chang ferry pier as information center of Wat Rakhang Khosittaram. Moreover, the visitors who would like to visit the library as a group tour should send the letter for asking the permission from the abbot of Wat Rakhang Khosittaram first.
- Interpretation: Nowadays, the interpretation at the scriptures library at Wat Rakhang Khosittaram is "rich in objects but poor in interpretation". This temple and its library have many interesting and important fabrics that are related with cultural significance. However, the

interpretation process for educating and communicating is not foreseen its importance. There are a few information boards for informing the temple's history inside the temple. These information boards are not given the details of cultural significances of this temple. They just provide general information of temple's history. This can not be enhanced the visitor experience and conserved the pride of the communities and nation.

- Food shop/restaurant: There are many food shops and local restaurants available around the temple. Tourists can find them easily. However, most shops are opened only in the evening period of a day. Most of them run between 17.00-21.00 hrs.

- Safety: there are security guards managed by the temple available everyday from 7.00-17.00 hrs.

3) Tourism activities

The scriptures library is now promoting a cultural tourism and religious tourism programs at the temple that are highly relevant to Thai's belief, which pays respecting to the royal portrait of King Rama I kept inside the library and pays respecting to the molded statue of Somdet Phra Phutthachan (To Phromrangsi) who is a revered monk of this temple. The temple itself is considered as one of the nine sacred temples in Bangkok where is well-known for Thai Buddhist pilgrimage. In 2006, "Paying Homage to Nine temples in Bangkok" launched by Bangkok Mass Transit Authority in cooperation with Tourism Authority of Thailand (TAT), Wat Rakhang Khosittaram Woramahavihara was one of those nine temples that was very successful because of an increasing number of Thai tourists. Moreover, other tourism activity seasonally organized by the monks is pays respecting to the molded statue of Somdet Phra Phutthachan (To Phromrangsi). This Buddhism ceremony is widely known among Thai tourists who are always held in every June.

4) Resources

There are two main sources of money for looking after of the scriptures library at Wat Rakhang Khosittaram Woramahavihara;

4.1 The fund from Fine Arts Department is the main fund for renovating the historic buildings inside the temple compound and also developing the infrastructure inside the temple.

4.2 Donation: this fund is responsible for sanitation, infrastructure, education, and other public services.

Budget is mostly spended on conservation of historic buildings inside the temple compound. Budget allocation for developing and promoting tourism activities is insignificant.

5.) Stakeholder

Stakeholders for relevant to the cultural heritage tourism at the the scriptures library at Wat Rakhang Khosittaram Woramahavihara and the templeat present can be divided into three parts as follows:

5.1 Government sector: the municipality of Bangkok Noi district is a representative, which is officially authorized to provide tourism information to the tourists and improve better quality of environment around the temple's area. The municipality also collaborates with Tourism Authority of Thailand (TAT) for tourism promotion. Moreover, Department of Fine Arts is also involved for conservation of historic buildings inside the temple compound and this department is responsible for providing funds for conservation.

5.2 Abbot and monks of Wat Rakhang Khosittaram Woramahavihara: this key stakeholder is more suitable to play the role of organizing cultural heritage tourism at Wat Rakhang because they are as a cultural heritage center of the temple.

5.3 Communities: this party is also the main important key stakeholder to take role of ecourageing conservation and promoting tourism at the temple.

Proposed Management Plan for Cultural Heritage Tourism

According to current management of the scriptures library at Wat Rakhang Khosittaram Woramahavihara, they should improve the interpretation program. This is for communicating the values and all meanings of cultural heritage site by encouraging individuals and communities to reflect on their own perceptions of the site. All media to communicate include publications, signs, self-guided activities, visitor centers, audio-visual devices and indoor and outdoor exhibits (Hall, C.M. & McArthur, S. 1996, p. 91). The interpretation programs at the scriptures library at Wat Rakhang Khosittaram Woramahavihara should be established;

1.1 Setting a visitor service center

This visitor service center should be included both service and interpretation areas at the same place. The service area is for providing snacks, drinks, toilet, and rest area. The interpretation area is the area to provide some background knowledge of the temple, the library and the important significances of this temple. As the conclusion, this visitor service center is established as an assisting tool of the process of transferring useful information to visitors. However, it should be operated by community as well. This is because community participation in providing visitor service center will be brought the community's pride.

1.2 Signage improvement and development

Signs and information boards can be a direct technique to reach visitor's understanding. Signage can be a link between the community, messages and visitors. All signs are valuable tools to get visitors understand the site in same direction. Furthermore, the signage should be attached to the appropriate location and it should be provided both in Thai and English. The signage and information boards should be located around the temple and nearby such as entrance of the temple. The signage and information boards should inform visitors know what exists and what is important inside the temple's area.

1.3 Developing potential media

The media to facilitate visitors at pre-visit, on site and post-visit should be developed such as publication, visual media and web page. Nowadays, there are only web pages providing for this temple in Thai languages. So, This should be developed the English version web pages suddenly as for providing pre-visiting and post-visit experience to the international tourists.

1.4 Establishing Wat Rakhang's local museum

Grouping traditional objects with a basis of similarity (temple's document, religious objects, communities' offering objects to the temple and etc.) is recommended. There are a lot of interesting objects at this temple such as the Buddhist scripture cabinets. So, that is why there should have a local museum inside the temple. This is an other way to build interpretation program to the visitors. All objects should be explained their history and significance with obvious informative signs in both Thai and English. Furthermore, prohibited signs should be regulated for all people such as no touching objects, no smoking, no shoes. Nowadays, there is no any local museum operated inside the temple.

1.5 Traffic and transportation management

Coaches and heavy vehicles are not allowed inside the temple due to their heavy weight and compaction of soil. Normally, the visitors who want to visit this temple have to take public transportations such as bus, taxi, ferry and taking a walk to this temple because there is limitation of car park area available. So, the best solution of this problem is to suggest the traveling route of walk.

This is because the visitors can experience the other place nearby this temple at the same time. The routing should be started from Wang Lang Market – Wat Rakhang – Wat Kruawan – Wat Arun.

Proposed Conservation Plan for Cultural Heritage Tourism

There is no any conservation plan for conserving the scriptures library at present. So, there is needed for setting the policies and conservation plan for the future. The policies that should be put in this place to ensure that it will be conserved in a way that protects its important values whilst providing for the future are as following;

- Do not allow any person construct any building within the compound of the scriptures library except permit has been obtained from the Department of Fine Arts.
- In the case where the building being constructed without permit, the Department of Fine Arts has the power to stop the construction and to demolish the building or a part of the building.
- Do not allow any action of repairing, modifying, altering, demolishing, adding to, destroying, removing the scriptures library or its parts or excavating for anything within the compound of the library, except by the order of the Department of Fine Arts, or permit has been obtained from the Department of Fine Arts. If the permit contains any conditions, they have to be complied with.
- Inside the scriptures library, please refrain from running around, eating and/or drinking, smoking, or improperly disposing of wastepaper.
- The scriptures library has the right to refuse the enter to those wearing improper attire, and bringing in pets.
- There should have the persons who are in charge of looking after the objects inside the scriptures library for protecting the objects from touching and stealing.
- Inside the scriptures library and the temple, there must have the communication of interpretation such as information panel, audio tour, tour guide or brochure. This communication of interpretation will be shown the cultural significance and values of this scriptures library to the public.
- There must have a group of people who is responsible for looking after the surrounding environment of the scriptures library such as decorating and cutting the brunches of trees inside the fence and keeping the area clean.

Plan for the future

For a plan in the future, the information service such as brochures, site panels and audio tour are insufficient. Without good interpretation or inappropriate presentation of the heritage, it is difficult for the visitor to appreciate the value of the scriptures library. Even though, there is only one site panel in front the scriptures library, the visitors still neglect to read it anyway because it is left abandoned without proper maintenance, as shown in Figure 8.

Credit by Panot Asawachai, 2017.

Figure 8 The site panel is not well maintained. So, the people cannot read what the information is on the panel

In addition, the scriptures library needs to have the "interpretation" to achieve a number of objectives in preserving the significance in aesthetic of this library as following:

- Enriching visitors' experience in aesthetic value when visiting the scriptures library;
- Assisting visitors to develop a keener awareness, appreciation and understanding of the scriptures library being visited;
- Accomplishing management objectives through encouraging thoughtful use of the scriptures library by visitors, including reducing the need for regulation and enforcement, and carefully distributing visitor pressure to minimize environmental impacts on fragile resources.

There are some several options for interpretation for communicating the significance in aesthetic of this scriptures library. The options are the interpretation methods. Each option has its own advantage and disadvantage to consider. Here are the options for communicating the significance in aesthetic of this library and the temple:

Options	Advantage	Disadvantage
Training tour guides for personal interpretation	1) Interpret complicated processes and help visitors understand the aesthetic value easily. 2) Can be cost effective, require little investment. 3) Can generate income. 4) Can provide employment. 5) Can offer two-ways communication between the tour guide and the visitors.	1) Usually require a lot of organizing. 2) Involve teams of people who need support and nurture. 3) Are never finished as there is a need to be flexible to accommodate demands from the visitors, foresee developments and be creative. 4) Need continuing commitment from everyone involved to maintain quality.

Options	Advantage	Disadvantage
Providing "site panels"	1) Providing interpretation at any hour of the day and on the spot that it is needed. 2) Integrating pictures and diagrams with text. Perhaps to show how the scriptures library was in the middle of the pond.	1) When greeting large numbers of people at once. Some people will stand in front of a panel while the rest walk past and panel cannot answer spontaneous questions. 2) At interpreting complicated stories on a single panel.

6. Discussion and Conclusion

The scriptures library at Wat Rakhang Khosittaram Woramahavihara's is famous attraction site in Bangkok. Wat Rakhang Khosittaram Woramahavihara is one of famous Buddhist temples in Bangkok which is considered as an interesting temple and has much special significance because it used to be a royal monastery under the royal patronage of King Taksin. Nowadays, it is a royal temple under the royal patronage of Chakri Dynasty. The scripture library was originally the residence of Phra Rajavarindra, a state official who became King Rama I, the founding king of Chakri dynasty. The residence was donated to Wat Rakhang and it is later used as the scriptures library of this temple. The scriptures library of this temple is rich in cultural significances, which are aesthetic, historic, scientific and social values. The potential benefits of promoting the scriptures library of Wat Rakhang as a tourist destination are to create the awareness of public value's importance and to conserve it. Secondly, promoting tourism into the scriptures library of this temple can be brought "Tourism development". Tourism development can bring improved income and living standards for local people. This can be counted as "Economic benefit". Thirdly, the pride of communities from presenting this temple's scriptures library as a tourism destination can be generated through tourism. This is the third potential benefit which is counted as "Social benefit". According to current management of the scriptures library of Wat Rakhang Khosittaram Woramahavihara, it is shown that local residents need tourism coming to their and temple and community. However, the current management cannot completely provide better understanding of the scriptures library of Wat Rakhang Khosittaram Woramahavihara's significances to tourists. Thus, a proposed management plan is needed which mainly aims at providing opportunities and facilities for tourists to have conserving the significance of cultural heritage values, and also enhancing community involvement as well as economic benefit and social benefit. From the assessment and analysis from the field study it is shown that proposed management planning for cultural heritage tourism in the scriptures library at Wat Rakhang Khosittaram Woramahavihara into interpretation program which is involved: 1) setting a visitor service center, 2) signage improvement and development, 3) developing potential media, 4) establishing Wat Rakhang's local museum, 5) traffic and transportation management.

At present, the local community and the monks who live at this temple agree to set a visitor service center where is the interpretation area that provides visitors with some background knowledge of the scriptures library of Wat Rakhang Khosittaram Woramahavihara and prepare the facility before going to see the real site and its ehibitions. It is proposed to locate within the area of the temple that is nearby the entrance of the temple in order to be easier for visitors to find. Moreover, direction signs in both Thai and English versions are all located around the site and nearby such as entrance of the temple and at the main road before the entrance of the temple. For developing potential media, publication and web page in both Thai and English version are now developed to provide for visitors. Nowadays, there is no any local museum operated inside the temple. However, the monks who live at this temple and the communities agree to establish Wat

Rakhang's local museum in the future. For traffic and transportation management, government agencies have not been sufficiently involved in management the traffic and transportation problems in the temple's area. The road is also without proper guide posts as well as street signs, which they are necessary things for visitors in order to reach the temple and the community. The main road to the temple is now starting to decline without maintenance. These are some examples waiting for government agencies to support and make all come true as soon as possible.

7. Suggestions for Future Research

Certainly, future research needs to be conducted, so the suggestions for furture research in relation to this research include:

1. The future research should be specific on how to conserve the library at Wat Rakhang Khosittaram Woramahavihara's identity and deal with the global changes that influence the reduction of heritage values.

2. The future research should be carried out on how well management and conservation plans effective to the temple and the community after all participants start with their own responsibilities.

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The Impact of Compensation on Task Performance of Employees in Electrical, Electronics and Telecommunications Industry Group in Thailand

by

Praphan Chaikidurajai
Graduate College of Management
Sripatum University, Bangkok, Thailand
E-mail: praphan.ch@spu.ac.th

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Praphan Chaikidurajai
Graduate College of Management
Sripatum University, Bangkok, Thailand
E-mail: praphan.ch@spu.ac.th

Abstract

This purpose of this research was to study about the impact of compensation on task performance of employees in electricity, electric and telecommunication industry group in Thailand. The research methodology is a survey research by using questionnaire to collect data. The population is the employees in electricity, electric and telecommunication industry group in Thailand. Random Sampling the author used is Accidental or Convenience Sampling. The questionnaires were verified for content validity by experts and tried out the reliability by using Cronbrach's alpha coefficiency. Statistical Data Analyses using in this research are frequency, percentage, mean, standard deviation and multiple regression. The research was found out that compensation in terms of only non-financial compensation both work and work environment have an effect on task performance of employees in electricity, electric and telecommunication industry group in Thailand.

Keywords: Compensation, Task Performance

1. Introduction

Since this research is subject to the effect of human resource practices on task performance of employees in electrical, electronic and telecommunication industry group in Thailand which was studied from management or specialist or officers in human resources department. It was found out that human resource practices in the aspect of compensation has a medium level of mean and lowest average. Besides, human resource practices in term of compensation also have an impact on task performance of employees in electrical, electronic and telecommunication industry group in Thailand. Meanwhile, the author has a chance to participate in salary and welfare survey project in national industrial group with Human Capacity Building Institute (HCBI), The Federation of Thai Industries. It was found out that the employees resign from the company is because of compensation. Therefore, the author is interested in conducting research related to the impact of compensation on task performance of employees in electrical, electronic and telecommunication industries.

2. Literature Review and Hypotheses

Mondy and Noe (2005) gave the meaning of compensation that all rewards which employees received by exchanging with work including wage, salary, incentives and other benefits. Total compensation which organization has paid to employees can be divided into two types which are financial compensation and non-financial compensation by:

1. Financial Compensation means money compensation or something can be assessed, useful for economic or money for employees including direct financial compensation and indirect financial compensation.

1.1 Direct Financial Compensation means money that is paid for employees in terms of wage, salary, overtime payment, incentives, allowance, bonus or lump sum prize.

1.2 Indirect Financial Compensation means rewards for employees aside from direct financial compensation which are called as welfare or fringe benefits from organization to employees.

2. Non-Financial Compensation means compensation received from work and work environment.

2.1 Non-Financial Compensation from work means interesting job, challenging job, responsibility, opportunity to get promote, admiration, recognition and pride of work.

2.2 Non-Financial Compensation from environment means good compensation policy, good command, good colleagues, participation, environment and good workplace.

A-longkorn Mesutha and Smith Satchachukorn (1999) identified the meaning of task performance of employees in organization that the result from work results by employees in organization both direct and indirect way which assigned by supervisors to achieve the 15 organization's goals.

3. Task performance consists of the 15 organization's goals as follow:

3.1 Quantity means the amount of work's results under efficiency and effectiveness.

3.2 Quality means working according to the rules; the works have positive results and benefits for everyone as well as organization.

3.3 Work Knowledge means the employees have knowledge and understanding of work process to achieve the goal.

3.4 Equipment Skill means the knowledge of using material and equipment with the adequate understanding and regulation as well as helping together to maintain the equipment and concerning about caution.

3.5 Ability to learn new task means fast and right understanding of learning new jobs.

3.6 Work Responsibility means the attention in work and the awareness of how important of work and always finish work on time.

3.7 Human Relation means employees can work and have good relationship with colleagues.

3.8 Punctuality means the respect of work time policy and regulation.

3.9 Communication means clear, easy and understandable model and system of communication throughout the organization.

3.10 Creativity means employees must have developing new idea or working process to be related to the change by using creativity to be guideline of work.

3.11 Cooperation and Coordination means co-operation to achieve goal of work and activity together.

3.12 Behavior and work according to the regulation means appropriate behavior according to the rules and regulations.

3.13 Reliability means ability to work right according to the assignment with efficient result.

3.14 Problem solving and decision making means thinking system, analysis or intelligence to create thing related to employees' work performance.

3.15 Self-development means to be always continuing having self-knowledge and development related to work.

Osibanjo, A O., AA Adeniji, HO Falola & PT Heirsmac Princess Thelma Heirsmac (2014) studied about compensation packages: a strategic tool for employees' performance and retention. The result of this study showed that there is a strong correlation between compensation packages i.e. salary, bonus, incentives, allowance and fringe benefits or help benefits and employees' task performance and retention.

Ann Dzuranin (2012) studied for the impact of cash and non-cash rewards towards employees' performance and satisfaction. It was found out that the reward that has an impact on work motivation is non-cash rewards which are employees' work motivation. It also has a direct effect on organization's achievement. Therefore, organization shall consider increasing non-cash rewards or related policies for employees' work efficiency.

Muhammad Ramzan (2014) researched on the impact of compensation on employee performance in a commercial bank. He found out that financial compensation (salary, rewards and severance payment) has an effect on employees' performance in statistic insignificant at 0.05.

Neelam Bari, Uzma Arif, Almas Shoaib (2013) conducted the research on the impact of non-financial rewards on employee attitude and performance in the workplace. The result showed that giving support to employees, freedom, career development plan, and valuation of employees are positive factors towards attitude and performance of employees in the workplace and also increase employees' work efficiency.

Oburu Lewis Nyaribo etc. (2016) studied about the effect of non-financial compensation on employee performance of three micro-finance institutions. It was found out on this research that non-financial compensation has an effect on effectiveness of employee performance which is vary depends upon policy and motivation process for employees.

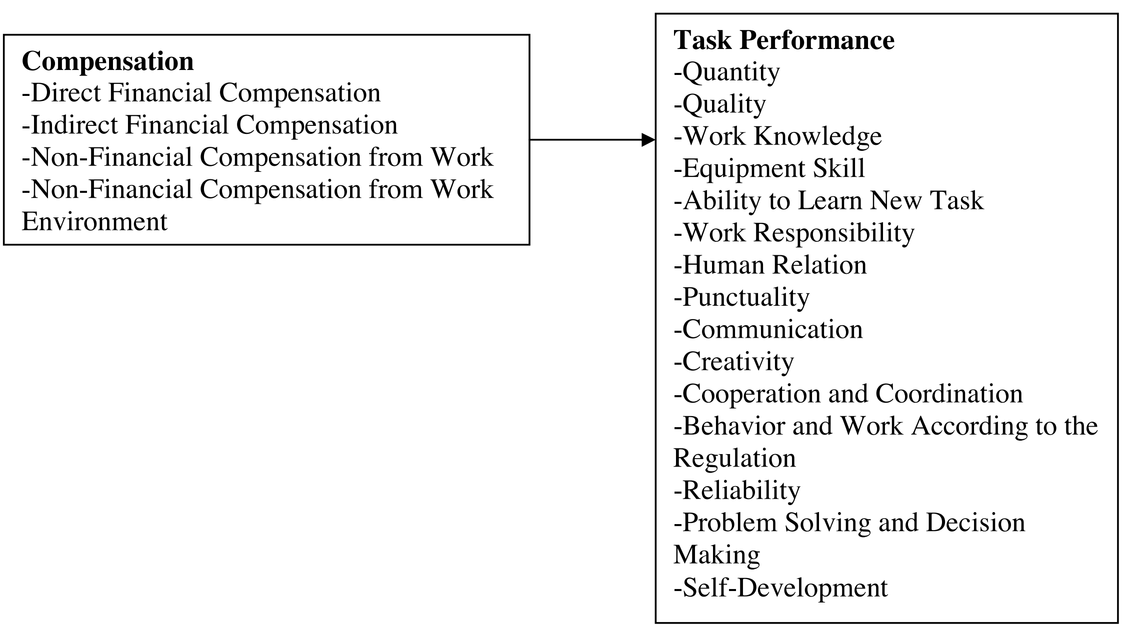

Figure 1 Conceptual Framework

Hypotheses

Compensation has an effect towards task performance of employees in Electrical, Electronics and Telecommunications Industry Group in Thailand.

3. Research Methodology

The methodology of this research is the survey research. The population is the employees from both operating and officer levels from companies in industry group according to giving information about the salary in year 2013/2014 with unknown numbers of actual population.

Sample, using sample size calculation in case of unknown numbers of actual population from:

Formula, n = P (1-P) (Z) 2 / e 2

when n = Sample size

P = Required percentage of random sampling from all population

e = Percentage of deviation from random sampling

Z = Confidence level

The researcher needs 50% of random sampling from all population with confidence level of 95% (Z at confidence level of 95% is equal to 1.96) and accepts deviation from random sampling at 5% of sample size which calculates as follow:

n = (.50) (1-.50)(1.96)2 / (.05) 2

= 384.16 from the calculation it shows that the approximate sample size is 384 staff (Sinjaru, 2007).

The sampling plan use Accidental or Convenience Sampling and Data collection is conducted from employees in electricity, electronics and telecommunications industry group in Thailand according to giving information.

The author created questionnaire's tools from development and analysis of questions from related literature reviews which having content validity by 3 experts' opinions to examine content validity. The result of content validity is at 0.91. The tested content validity of questionnaire was tried out with 30 employees. Then, using the result to calculate for reliability with Cronbach's Alpha Coefficient by using the criterion of questions having Cronbach's Alpha Coefficient from 0.70 and above which will be convinced that the question has reliability. The results of reliability value are at 0.951 of compensation and .965 of task performance. The statistics using for data analysis are Frequency and Percentage to analyze general information of respondents. Mean ($\bar{x}$) and Standard Deviation (S.D.) are used for compensation and task performance analyses. Multiple Regression Analysis are used for the impact of compensation on task performance of employees in electrical, electronic and telecommunication industries group in Thailand.

4. Results and Discussion

The author had received questionnaire back with complete data for analysis from 272 respondents which calculated as 70.8% of sample size. Most of sample is female with the amount of 165 respondents or 60.7%. 106 respondents or 39.0% are people in the age between 36 and 50 years old. 138 respondents or 50.7% are single. 173 respondents or 73.6% are undergraduate people. 121

respondents or 44.5% are people who work for 1 to 6 years. 212 respondents or 78.0% are people who have an income between THB 9,000 and less than THB 20,000.

Table 1 Mean, S.D. and Interpretation of Compensation and Task Performance of Employees in Electronic Industry and Telecommunication Groups in Thailand

	Compensation	$\bar{x}$	S.D.	Interpretation
1.	**Direct Financial Compensation** Salary and special compensation which you receive from organization are proper for your position and responsibility	2.93	.812	Medium
2.	Salary and special compensation which you receive from organization are proper for your education and experiences	2.94	.801	Medium
3.	You receive salary and special compensation which are proper comparing to the same qualification of department	2.80	.831	Medium
4.	You are satisfy with received salary and special compensation recently	2.96	.767	Medium
5.	Annual reward/position allowance which you receive is proper for your assigned work from organization	2.92	.778	Medium
6.	You receive an increase annual reward/position allowance when performance be in line with specified rules of organization	2.90	.771	Medium
7.	**Indirect Financial Compensation** Fringe benefits related to medical fee are proper for your medical payment	3.12	.825	Medium
8.	Fringe benefits related to medical fee which can make you have motivation on work	3.10	.791	Medium
9.	Fringe benefits related to educational support for your children are enough for your children	2.87	.802	Medium
10.	Fringe benefits related to your children's education are enough for your children	2.72	.809	Medium
11.	**Non-Financial Compensation (Work)** There is a task(s) assigned from organization which motivates you to truly use your ability and knowledge for work	3.32	.718	Medium
12.	You feel that your job is interesting and not a routine job	3.23	.729	Medium
13.	Your assigned task(s) is suit for your knowledge, ability and makes your feel motivated	3.36	.678	Medium
14.	A type of your work needs to use knowledge, high skill and it is interesting job	3.47	.676	Medium
15.	Your assigned task(s) makes you have creation and fully use your ability	3.50	.734	High
16.	You have freedom to solve the problems of your work	3.42	.774	Medium
17.	You can achieve the goal of work as you are assigned by a director	3.76	.712	High
18.	You try to find new way of work to achieve a goal of work	3.61	.667	High
19.	You can have high performance to get promote by being in your position	3.09	.861	Medium
20.	You have an opportunity to improve your ability and knowledge by using your position	3.29	.802	Medium

21.	You have an opportunity to get promote by doing your job	2.82	.908	Medium
22.	The admiration receiving from service receiver and colleagues are the thing that you want to receive from doing your job	3.14	.823	Medium
23.	Your director trusts on you to assign other special tasks of organization for you	3.19	.738	Medium
24.	Your performance is accepted by colleagues	3.31	.697	Medium
25.	You work with your total ability and expect the highest satisfaction from service receiver	3.68	.731	High
26.	You feel that your work is the key success of organization.	3.64	.735	High
27.	**Non-Financial Compensation (Work Environment)** You feel satisfy with compensation such as annual increase salary.	2.89	.879	Medium
28.	You think organization has proper policy for the budget of compensation payment.	2.86	.830	Medium
29.	Your director cares and takes responsibility of your work.	3.34	.839	Medium
30.	You can consult, explain, or ask for any suggestion of work from your director	3.47	.841	Medium
31.	Your director gives you an opportunity to give an opinion or freedom to make any decision related to work that you have responsibility for	3.40	.826	Medium
32.	Other workers in your organization are willing to co-operate for work	3.39	.725	Medium
33.	Colleagues give a respect and listen to each other for work development efficiency	3.38	.677	Medium
34.	Your suggestion related to work always has been used	3.07	.750	Medium
35.	You are often give opinions related to work and organizational activities	3.03	.843	Medium
36.	You think organization is clean and tidy workplace	3.50	.884	High
37.	General organizational environment creates your work motivation	3.41	.787	Medium
38.	You think the building and workplace are suit to the characteristic of organization	3.45	.781	Medium

	Compensation	$\bar{x}$	**S.D.**	**Interpretation**
1.	Financial Compensation	2.92	.616	Medium
	1.1 Direct Financial Compensation	2.91	.671	Medium
	1.2 Indirect Financial Compensation	2.95	.668	Medium
2.	Non-Financial Compensation	3.32	.472	Medium
	2.1 Non-Financial Compensation (Work)	3.37	.469	Medium
	2.2 Non-Financial Compensation (Work Environment)	3.27	.553	Medium
	Compensation	3.22	.457	Medium

Task Performance	$\bar{x}$	S.D.	Interpretation
1. Employees can work efficiency and effectiveness.	3.43	.751	High
2. Employees can work on customer's requirements or specifications and the results are positive rather than negative image of the company.	3.54	.733	High
3. Employees have the knowledge and understanding of their related duties and tasks as well as understand how and steps to perform very well.	3.55	.752	High
4. Employees have the knowledge and the expertise in the use of materials and equipment related to task performance, as well as the safety precautions in the use regularly.	3.61	.765	High
5.Employees have the ability to learn new tasks quickly and to understand correctly.	3.52	.708	High
6. Employees work hard, be responsible for their job, be regard to the importance of the work and be trying to get the job done on their schedule all time.	3.58	.769	High
7. Employees have good relationships with others and work with their colleagues or subordinates as well and have a mind to help others willingly.	3.58	.787	High
8. Employees come to work on time and have consistency to work punctuality all the year.	3.59	.819	High
9. Employees can communicate and clarify the story or idea to others simple and to the point.	3.45	.786	High
10. Employees have developed new ideas or new work process to comply with changes by using as a guide in the operation.	3.41	.787	High
11. Employees have to cooperate and coordinate with others involved to achieve the operation goals.	3.54	.772	High
12. Employees have their behaviors appropriately and work according to the rules or regulations of the company.	3.54	.791	High
13. Employees can work carefully, their performances are reliable and supervisors don't need to be closely controlled.	3.57	.780	High
14. Employees have the ability to analyze and solve problems and make decisions in their work correctly and timely.	3.47	.723	Medium
15. Employees have development or seek knowledge for themselves regularly to be aware of their work or related work.	3.49	.749	High

Task Performance	$\bar{x}$	S.D.	Interpretation
1. Quantity	3.43	.751	High
2. Quality	3.54	.733	High
3. Work Knowledge	3.55	.752	High
4. Equipment Skill	3.61	.765	High
5. Ability to learn new task	3.52	.708	High
6. Work Responsibility	3.58	.769	High
7. Human Relation	3.58	.787	High
8. Punctuality	3.59	.819	High
9. Communication	3.45	.786	High
10. Creativity	3.41	.787	High
11. Cooperation and Coordination	3.54	.772	High
12. Behavior and work according to the regulation	3.54	.791	High
13. Reliability	3.57	.780	High
14. Problem solving and decision making	3.47	.723	Medium
15. Self-development	3.49	.749	High
Task Performance	**3.53**	**.633**	High

Table 1 represents Mean ($\bar{x}$) and Standard Deviation (S.D.) of compensation and task performance. The author found out that the opinion of respondents towards compensation has a mean in the medium level at $\bar{x}$ = 3.22 and S.D. = .457. When analyzing each aspect, it was found out that the mean is in the medium level in very aspects i.e. financial compensation has $\bar{x}$ = 2.92, S.D. = .616; direct financial compensation has $\bar{x}$ = 2.91, S.D. = .671; indirect financial compensation has $\bar{x}$ = 2.95, S.D. = .668; non-financial compensation has $\bar{x}$ = 3.32, S.D. = .472; non-financial compensation (work) has $\bar{x}$ = 3.37, S.D. = .472; and non-financial compensation (work environment) has $\bar{x}$ = 3.27, S.D. = .472.

It was also found out that the respondents have an opinion towards task performance in the high level of mean which is $\bar{x}$ = 3.53 and S.D. = .633. When analyzing each aspect, it was found out that there are most aspects having high level of the mean, for example, Equipment Skill has the maximum mean at $\bar{x}$ = 3.61, S.D. = .765; the second level is Punctuality at $\bar{x}$ = 3.59, S.D. = .819; Human Relation is $\bar{x}$ = 3.58, S.D. = .787; Task Responsibility is $\bar{x}$ = 3.58, S.D. = .769; Creditability and Trust is $\bar{x}$ = 3.57, S.D. = .780; Work Knowledge is $\bar{x}$ = 3.55, S.D. = .752; Quality is $\bar{x}$ = 3.54, S.D. = .733; Co-operation and Co-ordination is $\bar{x}$ = 3.54, S.D. = .722; Behavior and work according to the regulation is $\bar{x}$ = 3.54, S.D. = .791 and Ability to learn new task is $\bar{x}$ = 3.52, S.D. = .708. Other aspects are in the medium level of mean i.e. Self Development is $\bar{x}$ = 3.49, S.D. = .749; Problem Solving and Decision Making is $\bar{x}$ = 3.47, S.D. = .723; Communication is $\bar{x}$ = 3.45, S.D. = .786; Quantity is $\bar{x}$ = 3.62, S.D. = .343 and Creativity is $\bar{x}$ = 3.41 and S.D. = .787 accordingly.

Table 2 Results of Multiple Regression Analysis between Compensation and Task Performance

Variables	**Beta(β)**	*P*
Constant	.768	**P=.000*
1. Direct Financial Compensation	-.096	*P= .145*
2. Indirect Financial Compensation	.058	*P= .383*
3. Non-Financial Compensation (Work)	.257	**P= .000*
4. Non-Financial Compensation (Work Environment)	.452	**P= .000*
R^2	.426	
Adjusted R^2	.417	
F-value	49.485*	

**** significant at the level 0.001* *** significant at the level 0.01*
** significant at the level 0.05*

Table 2 represents Multiple Regression Analysis of the impact of compensation on task performance which has Adjusted R^2 41.7% of task performance. Sub-Variables of the impact of compensation on task performance are non-financial compensation (work): **Beta (β)** = .257, $p < .05$; and non-financial compensation (environment): **Beta(β)** = .452, $p < .05$. It can be written in Prediction Equation as follows:

$\hat{Y}$ = 0.768 + 0.257 (non-financial compensation from work) + 0.452 (non-financial compensation form work environment).

Therefore, this research result only supports hypotheses of non-financial compensation from work and non-financial compensation from work environment which have statistic significant impacts on task performance at 0.05; whereas, non-financial compensation from work has an increase in 1 unit and has an effect towards task performance of employees to increase in 0.257 unit. In contrast, non-financial compensation from work environment has an increase in 1 unit and has an effect towards task performance of employees to increase in 0.694 units. Therefore, non-financial compensation from work has less impact on OCB than non-financial compensation from work environment with statistic significant at 0.05. It is in comply with the finding of Ann Dzuranin (2012) studied for the impact of cash and non-cash rewards towards employees' task performance. It was found out that the reward that has an impact on task performance is non-cash rewards which are employees' work motivation. It also has a direct effect on organization's achievement. Besides, it is also conform to the finding of Neelam Bari, Uzma Arif, Almas Shoaib (2013) conducted the research on the impact of non-financial rewards on task performance in the workplace. The result showed that giving support to employees, freedom, career development plan, and valuation of employees are positive factors towards task performance of employees in the workplace. Moreover, it is also in parallel with the research result of Oburu Lewis Nyaribo etc. (2016) studied about the effect of non-financial compensation on employee performance of three micro-finance institutions. It was found out on this research that non-financial compensation has an effect on effectiveness of employee performance and Muhammad Ramzan (2014) researched on the impact of compensation on employee performance in a commercial bank. He found out that financial compensation (salary, rewards and severance payment) has an effect on employees' performance in statistic insignificant at 0.05. It shall be because of non-financial compensation from environment in the workplace i.e. a good policy on compensation, a good mastership, good colleagues, sportsmanship, environment and nice workplace which is proper for working; as well as non-financial compensation from work i.e. interesting job, challenging task, responsibility, opportunity to get promote, admiration, recognition and pride of work. Those mentioned factors shall create work enthusiasm, positive attitude and also task performance towards organization which bring to many aspects of behavior to support work and colleagues in organization as well as to reduce internal conflicts in organization. It can be organizational culture which brings to an achievement according to set policy of organization.

5. Conclusion and Implications

1) Management should concern on both financial and non-financial compensation to create motivation on task performance since most employees give an average opinion on compensation especially on fringe benefits related to medical fee as well as family and child have lowest mean according to the study which might create less motivation on work after working for a long time.

2) Management should concern on financial compensation especially indirect way and non-financial compensation especially work environment to create work motivation Besides, these factors are able to increase task performance and have an impact on work efficiency i.e. to support children's payment, authority, medical fee, nursery and food allowance including work environment and atmosphere etc.

3) Management should most concern on non-financial compensation from work environment since it does not increase any costs or any payments by organization and the most important thing is to have an impact on task performance. For example, it should have a good compensation's policy, allowance in relevant to performance (high performance, get high compensation), fairness according to good governance, excellent command from management, good supervisor and colleagues, responsibility, opportunity for participation, good environment and workplace etc.

4) Management should most concern on non-financial compensation from work since it does not increase any costs or any payments by organization and the most important thing is to have an impact on task performance i.e. interesting job, challenging job, responsibility, opportunity to get promote, admiration, recognition as well as receiving important tasks which require knowledge, ability and experiences to make ones pride of work etc.

5) Management should create work atmosphere, co-relation between employees and organization, ability to give an opinion in the meeting, suggestion of problem solving especially the issues related to employees' job, giving an opportunity for employees to participate in activities to create the feeling of the owner of organization. These are able to create the responsibility for employees which brings to work efficiency.

6. Future Research

1) There should have a study on other variables instead of compensation which the management thinks it has an impact on the data and task performance i.e. quality of work life, job characteristic, leadership, work motivation or organizational commitment etc.

2) There should have a study on these variables with employees in other industries who are willing to give information.

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Causal Model of Brand Loyalty for Fitness Business in Bangkok

by

Sumalee Namuang
Graduate College of Management,
Sripatum University, Bangkok, Thailand
Tel/Fax: +662 561 2222, Ext. 3031, E-mail: namuang@hotmail.co.th

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Sumalee Namuang
Graduate College of Management,
Sripatum University, Bangkok, Thailand
Tel/Fax: +662 561 2222, Ext. 3031, E-mail: namuang@hotmail.co.th

Abstract

The objective of this study were on 1) to study the influence of factors influencing brand loyalty in the fitness business in Bangkok 2) to study the influence of brand loyalty on fitness brands in Bangkok 3) to develop a causal model for brand loyalty in the fitness business in Bangkok. This research was used mixed methods analysis both in qualitative and quantitative methods. The questionnaire was used to collecting the data from persons using fitness services in Bangkok with 400 samples. The data were analyzed by using structural equation model (SEM). The research found that most of the men are from 30 to 39 years old. Is a private company employee. Average monthly income 30,001- 40,000 Baht Master's degree and use the fitness service on weekdays (Monday - Friday) time at 06.01 PM. go to up and above for 6 months membership. The average cost is from 301 - 500 Baht, with experience 3 to 4 years. The hypothesis test found that Direct Experiences, Service Quality, Exercise Commitment, have significant direct effect to Brand Awareness , Brand Association and Brand Loyalty and have indirect effect by Brand Awareness and Brand Association have significant direct effect to Brand Loyalty which is a statistically significant influence on the level of .01.

Keywords: Brand Loyalty, Brand Awareness, Brand Association, Fitness Business

1. Introduction

The fitness business is a service business that associates with exercising and, nowadays, this type of business rapidly grows. According to the 2015 Physical Activity Survey of National Statistical Office, collecting the data during March – April 2015 from 55,920 households, it was found that 12.90 million people of the populations aged 15 and over play sports/do exercise, divided into 7.21 million men and 5.69 million women or 55.9% and 44.1%, respectively. Among the populations aged 25 – 44 years, this group plays sports/does exercise (41.8%). In 2015, the large fitness brand conquered the market in Thailand for 90%. Regarding the evaluation of the fitness market in this year, the value is approximately THB 9,000 million with the 9-10% of growing rate and 1,000 registered places. However, there are only 4 largest brands that have branches around the country, which are Fitness First, Virgin Active, True Fitness, and V Fitness. The total branches of each are more than 40 while the vast investment is 90% of the marketing value. The other 900 branches belong to the local investors (Bangkokbiznews,2017). Regarding the reference of Department of Business Development, Ministry of Commerce, it was revealed that the total revenue of the fitness center business in the year 2016 amounts THB 3,572 million of 127 companies that submitted the financial statement; moreover, the industry earn THB 512 million of net profit, a higher number of the previous year. Meanwhile, the overall industry reaches THB 91 million of net loss. Although the profit increases as compared to the number of those who submitted the financial statement, it was found that, in 2015, there are 335 companies with the revenue amounting over THB 4.400 million. In consequence, the smaller number demonstrates the violent competition of this industry (Brandinside.asia, 2017). On the contrary, while the major companies reduce but the health trend still increases in Thailand, it results in the abundance of alternative fitness. In 2015, 324 small fitness business, or those with the assets not over THB 50 million, submitted the financial statement to Department of Business Development causing the overall industry of fitness centers is progressed by the small business.

The concept of brand equity has become an increasingly important component in determining the marketing strategies of companies. Many fitness centers may have a brand equity that is attributable to one of the brand components (such as logo, position, size, and attractiveness) in the view of their members. However, the brand management can lead to a better understanding of the factors that affect the brand equity (Gladden and Funk, 2001). Focusing on brand equity can also help reduce the issues of member retention and income fluctuation of the fitness centers. In addition, adding value to the brand equity can increase consumer loyalty towards the brand instead of the product (such as exercising) represented by the brand, which will provide the brand a longer life as the trend in products and services changes rapidly in the business world. Aaker (1991, 1993) and Keller (1993) argued that brand equity leads to slower marketing performance of competitors and lessens the need for elastic response. Benefits of brand equity can solve different problems that fitness centers are facing. Brand equity makes potential members of fitness centers feel confident when making a purchase. Moreover, brand equity also enhances consumer satisfaction with products as well as makes the marketing strategies of fitness centers more effective and able to solve problems. Keller (1993) said that companies with higher brand equity may also obtain benefits in other areas, such as maximizing profits and minimizing production costs. Brand equity can enhance the fitness center's ability to set high prices for its products and services. In addition, the brand equity also allows the fitness centers to use a recognized brand name in a variety of products, which is known as brand extension.

For this research, the author wants to study and focuses on the influence of the factors affecting the loyalty and the influence of brand loyalty in the fitness center business in Bangkok which led to the scope of the research as seen in figure 1.

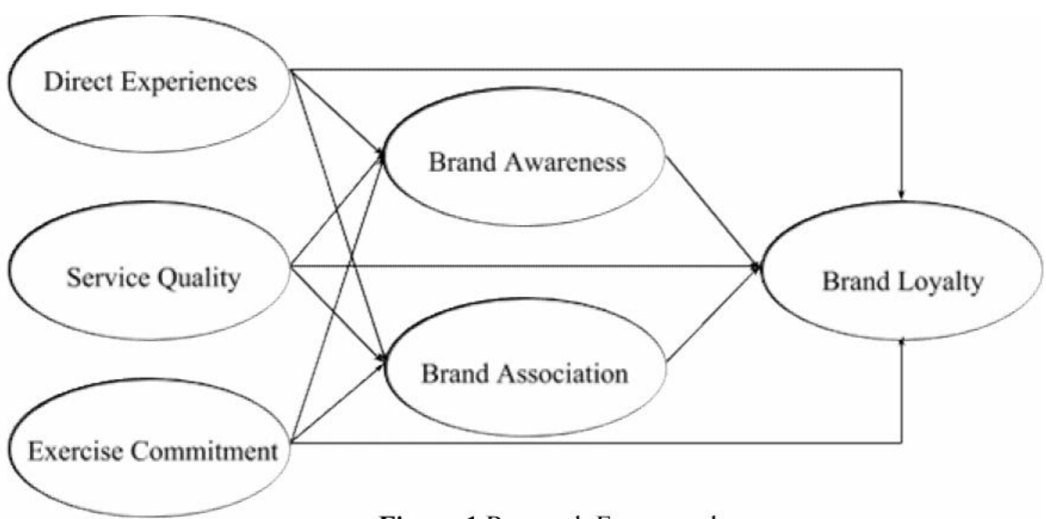

Figure 1 Research Framework

2. Objectives

1.To study the influence of factors affecting the loyalty and the influence of brand loyalty in the fitness center business in Bangkok.

2. To develop a casual model of brand loyalty building of the fitness center business in Bangkok.

3. Literature Review

Direct experience refers to an event that involves a person in a personal manner resulting from a confrontation and way of life through things (Bo Edvardsson, Bo Enquist, Robert Johnston, (2010). It is an experience that provides sensory, emotional, cognitive, behavioral, and relational values. Direct experience in consumer's decisions toward feelings, thoughts, actions, and relationships (Schmitt, 1999; Pine and Gilmore, 1999; Brakus, J. Josko., Schmitt, B. H. and L. Zarantonello , 2009; Keng and Ching-Jui,2013) consists of the following elements is 1) Sensitive 2) Cognitive 3) Affective 4) Active and 5) Relational.

Service quality means the quality of service that is over or meets the expectations of the customers (Parasuraman, Zeithaml, and Berry, 1985) resulting from the overall evaluation of such service based on perception. According to the results of the study, the evaluation of service quality based on consumer perception is in the form of comparison of attitudes towards expected and perceived services that are consistent each other (Parasuraman, Zeithaml, and Berry, 1985). According to Zeithaml et al. (1990), the definition of service quality in each dimension has the following elements is 1) Empathy 2) Assurance 3) Responsiveness 4) Reliability and 5) Tangible.

Exercise commitment means a mental feeling that represents the desire and willingness to continue participating in such activity (Scanlan and Lewthwaite, 1984; Scanlan, Carpenter, Schmidt, Simons, and Keeler, 1993). It is based on the Sport Commitment Model (SCM) that consists of the following components is 1) Sport Enjoyment 2) Involvement Opportunities 3) Involvement Alternatives 4) Social Constraints and 5) Involvement Opportunities.

Brand awareness means that consumers can recognize or recall a brand or its symbol linking to the trust or confidence with reasonable quality , which is why consumers decide to buy products or services. It may include customer experience obtained from services or discussions. A brand recognized by target customers with good quality is more selected than those consumers have never known before (Keller, 1993; and Aaker, 1996). Brand awareness consists of the following components is 1) Brand Recognition and 2) Brand Recall.

Brand association means that things in the memory of consumers are associated with a brand resulting from their feelings and attitudes (Keller, 1993; and Aaker, 1991). This association creates the brand meaning in the thought of consumers. It consists of the following components is 1) Product Attribute 2) Benefit and 3) Brand Attitude (Alexandris et al., 2008).

Brand loyalty means the behavioral and attitudinal loyalty. The frequency and number of times that customers buy a brand represent how they see the brand as something special or favorite (Aaker, 1991; Zeithaml Et al., 1996; and Oliver, 1999). It consists of the following components is 1) Price Sensitivity 2) Word of Mouth and 3) Repurchase.

4. Methodology

The data collection in this research, the author studied ideas, theories, and literature reviews from the primary data sources by researching books, textbooks, journals, researching documents, and electronic documents in Thailand and foreign countries. The literature review to find the related variables from the online database of Sripatum University and collected data by the questionnaire. The populations were fitness users in Bangkok for 400 persons, selected by the multi-stage sampling method. This is a mixed research containing qualitative study and quantitative study with Structural Equation Modeling which is a statistical technique to test the casual relationship. To achieve the objectives, Statistics used in data analysis were divided into three parts as follows is :

1) Descriptive statistics were used to explain or describe the conditions or characteristics of the distribution of variables according to the group characteristics and measured as percentage, mean, and standard deviation. The researcher analyzed these basic statistics for 23 observed variables to explain or describe the characteristics of their distribution as mean, standard deviation, skewness, and kurtosis using software package. In addition, the researcher also tested the hypothesis of skewness and kurtosis to see if it was different from zero through Z-test. If observed variables were distributed as normal, SK would be 0 (SK = 0), which means that variables were distributed as a normal curve. If observed variables were distributed in left, SK would be less than 0 (SK < 0) or data of most variables had high mean scores. Finally, if observed variables were distributed in right, SK would be more than 0 (SK > 0) or data of most variables had low mean scores. In addition, in case of normal distribution curve, KU would be 3 indicating that it was mesokurtic normal distribution curve or frequency distribution curve with medium height. On the other hand, if KU was more than 3, it was leptokurtic distribution curve or frequency distribution curve with high height, while if KU was less than, it was platykurtic distribution curve or frequency distribution curve with low height.

2) Correlation analysis statistics were used to determine the relationship between variables by analyzing the Pearson correlation coefficients. With these statistics, the researcher could know the relationship between variables whether there was a linear relationship as well as could identify the direction of the relationship (positive or negative) and the size of the relationship. These data were then used as a basis for analyzing a causal model to build brand loyalty of the fitness centers in Bangkok. The level or magnitude of the relationship was indicated by correlation coefficient. If correlation coefficient was close to -1 or 1, it indicated high relationship level. If correlation coefficient was close to 0, it indicated low relationship level or none.

3) Model analysis statistics were used to analyze structural equation model and causal model to build brand loyalty of the fitness centers in Bangkok investigated in this study. Theories and research relating to variables were developed as research framework and model that involved the empirical data with LISREL for Windows Version 8.80 in order to examine the model fit to empirical data. The research assessed the model fit using Chi-Square, χ^2/df, CFI, GFI, AGFI, RMSEA, and SRMR. The criteria to examine the model fit to empirical data can be explained as follows.

(1) Chi-Square (χ^2-test) is a test statistic that is widely used to test that the fit function is actually zero according to the hypothesis and to examine the model fit to empirical data. If Chi-Square is significant, the model and empirical data do not fit each other.

(2) Comparative Chi-Square (χ^2/df) should be less than 2.00 indicating that the model fits to empirical data

(3) Comparative Fit Index (CFI) should be 0.90 or higher indicating that the model has a comparative fit

(4) Absolute Fit Index that is widely used and also was used by the researcher are Goodness of Fit Index (GFI), which indicates the amount of variance and covariance explained by the model, and Adjusted Goodness of Fit Index (AGFI), which indicates the amount of variance and covariance explained by the model adjusted by degree of freedom. In general, GFI and AGFI are between 0 and 1 and acceptable GFI and AGFI should be more than 0.90

(5) Root Mean Square Error of Approximation (RMSEA) is the statistic used to test the hypothesis. Good RMSEA should be less than 0.05. RMSEA between 0.05 to 0.08 means that the model quite fits to empirical data, between 0.08 to 0.10 means that the model slightly fits to empirical data, and more than 0.10 means that the model does not fit to empirical data.

(6) Standardized Root Mean Square Residual (SRMR) was used in this study as standardized residual index. This residual is divided by the estimated standard error and should be less than 0.05 to conclude that the model fits to empirical data.

If the research model did not fit to empirical data, the researcher was required to modify the model until the research model fits to empirical data.

5. Results

According to the research, most of the sample group is men aged 30 – 39, employees of a private company, and earn THB 30,001 – 40,000. Most graduated with a master degree. They use the fitness service in the business days (Monday-Friday) from 18.01. They are six-month members and pay around THB 301 – 500, with 3 – 4 years of experiences. In regards to the analysis of the casual factor in building the brand loyalty of the fitness business in Bangkok, details are as follows:

1) The overall direct-experience is at the high level with the mean at 3.99 and S.D. at 0.305. Especially for the behavior aspect and the feeling aspect, the means are 4.14 and 4.08 and S.D. are 0.488 and 0.539, which are respectively at the high level.

2) The service quality consists of the followings: the overall expectation of service quality is at the high level with the mean at 4.06 and S.D. at 0.215 while responsiveness has the mean at 4.16 and S.D. at 0.433. For the perception of service quality, its overview is at the high level with the mean at 4.12 and S.D. at 0.217, especially the responsiveness has the mean at 4.19 and S.D. at 0.434 or at the high level. For the evaluation of satisfaction towards the service quality by the service users, it was found that the difference between the mean of expectation and the perception of service quality in overall is positive. Therefore, for the physical characteristics of service, the mean of perception is higher than the expectation's for 0.04 as the service users are satisfied with the service quality which refers to the eye-catching of the fitness' physical appearance with the mean of perception higher than the expectation for 0.11. As for the credibility of service, the mean of perception is higher than the expectation for 0.09. It was discovered that the users are satisfied with the service quality which is the fitness provides good service since the first time of use; the mean of perception is higher than the expectation for 0.16. As the mean of responsiveness is higher than the expectation's for 0.03, it was founded that the users are satisfied with the service quality which is the fitness responses to their demand; the mean of perception is higher than the expectation for 0.10. As

the mean of service confidence is higher than the expectation's for 0.07, it was founded that the users are satisfied with the service quality which refers to the behavior of the fitness's officers build confidence to customers; the mean of perception is higher than the expectation's for 0.21. For the mean of empathy that is higher than the expectation's for 0.09, it was founded that the users are satisfied with the service quality which is the service time gives convenience to the customers; the mean of perception is higher than the expectation for 0.18.

3) According to the commitment of exercising, the overview is at the high level with the mean at 4.04 and S.D. at 0.290, especially in personal investment with the mean at 4.18 and S.D. at 0.532, and entertainment with the mean at 4.12 and S.D. at 0.536; the two results are respectively at the high level. In terms of the brand awareness, the overview is at the high level with the mean at 4.11 and S.D. at 0.332, especially in brand recall with the mean at 4.16 and S.D. at 0.471, and brand recognition with the mean at 4.05 and S.D. at 0.398; the two results are respectively at the high level. In terms of brand connection, the overall result is at the high level with the mean at 4.03 and S.D. at 0.307, especially in utilities with the mean at 4.10 and S.D. at 0.457, qualifications with the mean at 4.03 and S.D. at 0.454, and brand's attitude with the mean at 3.95 and S.D. at 0.521; the three results are respectively at the high level. In terms of brand loyalty, the overview is at the high level with the mean at 4.14 and S.D. at 0.341, especially in repeat purchase with the mean at 4.18 and S.D. at 0.519, and price sensitivity with the mean at 4.14 and S.D. at 0.507; both are respectively at the high level.

The analysis of the causal effects on the brand awareness (BAWAR), brand association (BASSO), and brand loyalty (BLOYA) was conducted to answer the research questions and hypotheses. The researcher presented the results of direct effect (DE), indirect effects (IE), and total effects (TE) in the relationship model between (1) direct experience (DIEXP), (2) service quality (SQUAL), and (3) exercise commitment (ECOMM) and (1) brand awareness (BAWAR), (2) brand association (BASSO), and (3) brand loyalty (BLOYA) as seen in table 1

Table 1 The analysis of the causal effects on the Brand Awareness (BAWAR), Brand Association (BASSO), and Brand Loyalty (BLOYA)

Causal	**DIEXP**			**SQUAL**			**ECOMM**			**BAWAR**		
Effect	**TE**	**IE**	**DE**	**TE**	**IE**	**DE**	**TE**	**IE**	**DE**	**TE**	**IE**	**DE**
BAWAR	0.48	-	0.48	0.36	-	0.36	0.22	-	0.22	-	-	-
SE	0.06	-	0.06	0.06	-	0.06	0.04	-	0.04	-	-	-
T	7.81	-	7.81	6.33	-	6.33	5.48	-	5.84	-	-	-
BASSO	0.56	0.34	0.22	0.47	0.26	0.22	0.08	-0.01	0.09	0.70	-	-
SE	0.06	0.06	0.11	0.05	0.06	0.69	0.03	0.04	0.04	0.11	-	-
T	9.60	5.27	6.60	8.59	4.54	3.19	2.02	-1.33	2.36	6.60	-	-
BLOYA	0.56	0.12	0.41	0.53	0.09	0.44	0.11	0.06	0.17	0.26	-	0.26
SE	0.06	0.04	0.07	0.06	0.04	0.06	0.03	0.02	0.036	0.09	-	0.09
T	9.04	3.02	5.61	9.26	2.57	7.85	3.31	2.55	4.17	2.97	-	2.97

According to the table 1 the analysis hypotheses and empirical data, the model fitted with the empirical data and direct and indirect effects could be explained as follows.

1) According to the study, direct experience (DIEXP), service quality (SQUAL), exercise commitment (ECOMM), and brand awareness (BAWAR) could explain the change in brand loyalty (BLOYA) at 100.0 percent. Brand loyalty (BLOYA) was directly influenced by direct experience (DIEXP) with a direct effect size of 0.41 and statistical significance at 0.05, by service quality (SQUAL) with a direct effect size of 0.44 and statistical significance at 0.05, by exercise commitment (ECOMM) with a direct effect size of 0.17 and statistical significance at 0.05, and by brand awareness (BAWAR) with a direct effect size of 0.26 and statistical significance at 0.05. In addition, brand loyalty (BLOYA) was also indirectly influenced by direct experience (DIEXP) and service quality (SQUAL) through brand awareness (BAWAR) with an indirect effect size of 0.12 and 0.09, respectively, and statistical significance at 0.05.

2) According to the study, direct experience (DIEXP), service quality (SQUAL), and exercise commitment (ECOMM) could explain the change in brand association (BASSO) at 100.0 percent. Brand association (BASSO) was directly influenced by direct experience (DIEXP) with a direct effect size of 0.22 and statistical significance at 0.05, by service quality (SQUAL) with a direct effect size of 0.26 and statistical significance at 0.05, and by exercise commitment (ECOMM) with a direct effect size of 0.09 and statistical significance at 0.05. In addition, brand association (BASSO) was also indirectly influenced by direct experience (DIEXP) and service quality (SQUAL) through brand awareness (BAWAR) with an indirect effect size of 0.34 and 0.26, respectively, and statistical significance at 0.05; and

3) According to the study, direct experience (DIEXP), service quality (SQUAL), and exercise commitment (ECOMM) could explain the change in brand awareness (BAWAR) at 78.0 percent. Brand awareness (BAWAR) was directly influenced by direct experience (DIEXP) with a direct effect size of 0.48 and statistical significance at 0.05, by service quality (SQUAL) with a direct effect size of 0.36 and statistical significance at 0.05, and by exercise commitment (ECOMM) with a direct effect size of 0.22 and statistical significance at 0.05.

Therefore, in developing a causal model to build brand loyalty in the fitness centers in Bangkok, the research conducted a synthesis and analysis of data in the literature review and created a model that could be used to build brand loyalty in the fitness centers in Bangkok.

According to the analysis of the factor loading values of the observed variables, they were all positive ranging from 0.54 to 0.93 as well as were all different from zero at a statistical significance of .01 ($t > 2.575$). The observed variables with highest factor loading value were brand recognition (BRECOG4), brand recall (BRECAL4), and brand awareness (BAWAR) with a factor loading value of 0.93.

The observed variables with lowest factor loading value were service empathy (EMPAT2) and service quality (SQUAL) with a factor loading value of 0.54. The reliability coefficients of all observed variables (R^2) indicating the covariance of the external observed variables in terms of direct experience (DIEXP) and exercise commitment (ECOMM) ranged from 0.54 to 0.88 and in terms of brand awareness (BAWAR) and brand loyalty (BLOYA) ranged from 0.74 - 0.93. When individually considering the standard factor loading values (Beta), it was found that:

1) For direct experience (DIEXP), the variable with the highest factor loading value was perception (AFFEC1) with a standard factor loading value of 0.81 and the covariance with direct experience (DIEXP) at 65.0 percent, followed by emotion (COGNI1) with a standard factor loading value of 0.74 and the covariance with direct experience (DIEXP) at 54.0 percent. The variable with

the lowest standard factor loading value was behavior (ACTIV1) with a standard factor loading value of 0.63 and the covariance with direct experience (DIEXP) at 40.0 percent.

2) For service quality (SQUAL), the variables with the highest factor loading value were service assurance (ASSUR2) and service reliability (RELIA2) with a standard factor loading value of 0.82 and the covariance with service quality (SQUAL) at 74.0 and 75.0 percent, respectively, followed by service tangibility (TANGI2) with a standard factor loading value of 0.84 and the covariance with service quality (SQUAL) at 71.0 percent. The variable with the lowest standard factor loading value was service empathy (EMPAT2) with a standard factor loading value of 0.75 and the covariance with service quality (SQUAL) at 57.0 percent.

3) For exercise commitment (ECOMM), the variable with the highest factor loading value was social limitation (SOCIA3) with a standard factor loading value of 0.88 and the covariance with exercise commitment (ECOMM) at 78.0 percent, followed by option to involvement (INVOL3) with a standard factor loading value of 0.86 and the covariance with exercise commitment (ECOMM) at 73.0 percent. The variable with the lowest standard factor loading value was opportunity of involvement (INVALT3) with a standard factor loading value of 0.77 and the covariance with exercise commitment (ECOMM) at 59.0 percent.

4) For brand awareness (BEWAR), both variables had the highest standard factor loading value of 0.90 and the covariance with brand awareness (BEWAR) at 80.0 and 81.0 percent, respectively.

5) For brand association (BASSO), the variable with the highest factor loading value was attribute (ATTRIB5) with a standard factor loading value of 0.84 and the covariance with brand association (BASSO) at 70.0 percent, followed by benefit (BENEF5) with a standard factor loading value of 0.78 and the covariance with brand association (BASSO) at 60.0 percent. The variable with the lowest standard factor loading value was brand attitude (BEAITT5) with a standard factor loading value of 0.73 and the covariance with brand association (BASSO) at 54.0 percent; and

6) For brand loyalty (BLOYA), the variable with the highest factor loading value was price sensitivity (REPUR6) with a standard factor loading value of 0.80 and the covariance with brand loyalty (BLOYA) at 64.0 percent, followed by word of mouth (WORDM6) with a standard factor loading value of 0.78 and the covariance with brand loyalty (BLOYA) at 60.0 and 62.0 percent, respectively. The variable with the lowest standard factor loading value was repurchase (PRICE6) with a standard factor loading value of 0.75 and the covariance with brand loyalty (BLOYA) at 56.0 percent.

6. Conclusion and Discussion

For the analysis of the correlation by Maximum Luklihood method, in respect to the first analysis, the results showed that the model was perfectly fitted with the empirical data. Considering the statistics that consist of Chi-Square, χ^2/df, CFI, GFI, AGFI, RMSEA and SRMR, it was found that Goodness of Fit Index had no consistency with the empirical data or correspond to the criteria (before adjustment). The author, therefore, adjusted the statistical condition of the model by allowing the error of the observation variables could be related. As for the Adjusted Goodness of Fit index, the model fits the empirical data apparently (after adjustment) as seen in table 2.

Table 2 The Overall Analysis of Goodness of Fit Index of the Model

Index	Criteria	Pre-adjustment		Post-adjustment	
		Statistics	Result	Statistics	Result
χ^2/df	< 2.00	2.769	Fail	1.092	Pass
CFI	≥ 0.95	0.990	Pass	1.000	Pass
GFI	≥ 0.95	0.880	Fail	0.950	Pass
AGFI	≥ 0.90	0.850	Fail	0.940	Pass
RMSEA	< 0.05	0.067	Fail	0.015	Pass
SRMR	< 0.05	0.038	Pass	0.026	Pass

According to the table 2 the overall analysis of the model's Fit Index, the model fitted to empirical data with the following accepted indices: χ^2/df = 1.092, CFI = 1.000, GFI = 0.950, AGFI = 0.940, RMSEA = 0.015, and SRMR = 0.026. Therefore, it could be concluded that the structural equation model fitted to empirical data that could be described as follows:

(1) Comparative Chi-Square (χ^2/df) was 1.092 indicating that the model fitted to empirical data because it was less than 2.00

(2) Comparative Fit Index (CFI) was 1.00 indicating that the model had a comparative fit because it was 0.90 or more

(3) For Absolute Fit Index, two indices were considered: Goodness of Fit Index (GFI) was 0.950 and Adjusted Goodness of Fit Index (AGFI) was 0.940. Therefore, it could be concluded that the model fitted to empirical data because both indices were between 0 and 1 and the acceptable GFI and AGFI were more than 0.90

(4) Root Mean Square Error of Approximation (RMSEA) was 0.015 indicating that the model quite fitted to empirical data because RMSEA was less than 0.05 or between 0.05 and 0.08

(5) Standardized Root Mean Square Residual (SRMR) was 0.026 indicating that the model fitted to empirical data because it was less than 0.05.

As a result, it could be concluded that the Structural Equation Modeling fits the empirical data as seen in figure 2.

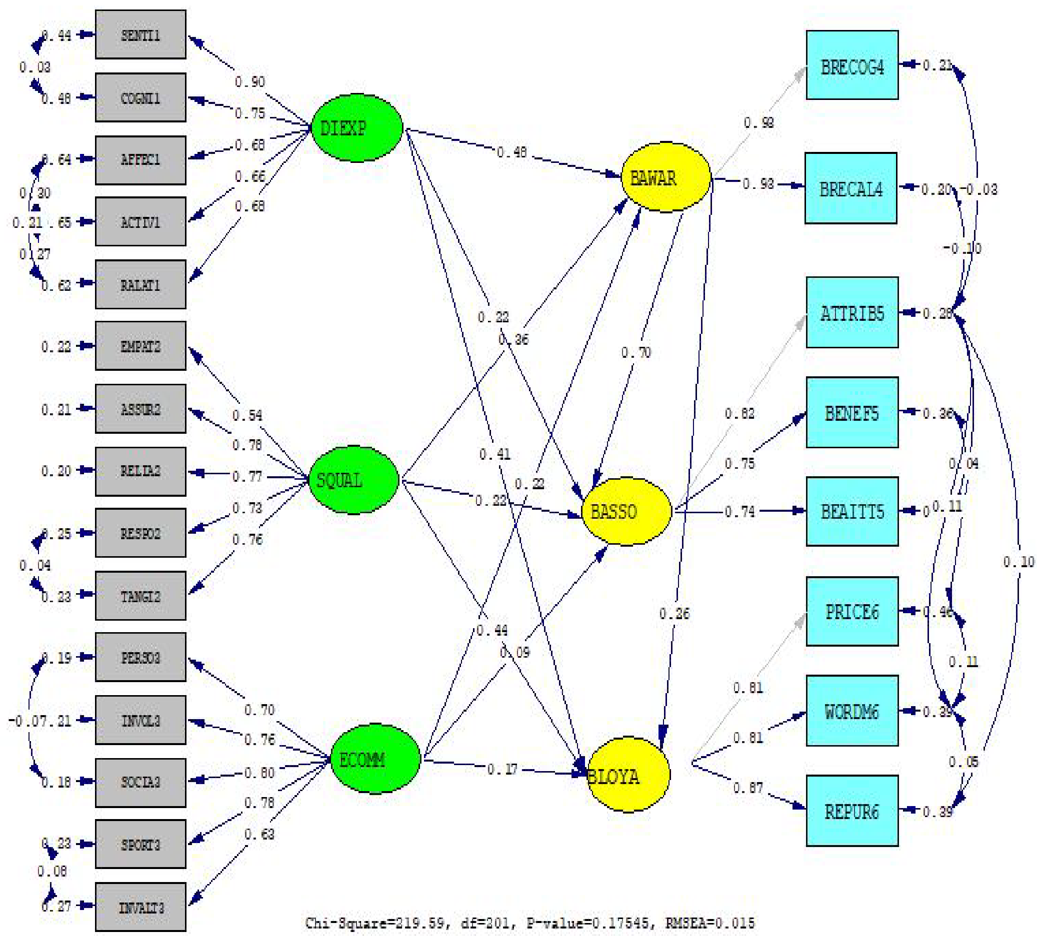

Figure 2 The Overall Analysis of Goodness of Fit Index of the Model

Regarding the figure 2 that represents the test of the casual model in building the brand loyalty of the fitness center business in Bangkok as hypothesized with the empirical data, the study result is as the followings:

1) The direct-experience has the positive direct effect on the brand loyalty of the fitness center business in Bangkok for 0.41, which corresponds to the research of Smith &Swinyard, (1982); Kempf& Smith, (1998); Russell, Dale W. (2010) that found the direct experience associates with the human relation via the senses: sight, sound, hearing, and taste. Furthermore, in the consistency of the research of Keller (2003); Alexandris et al. (2008) the direct experience connects to the brand results in the brand loyalty. It occurs through the direct experience of consumers with the brand and the marketing information that is published by the brand or its stakeholder.

2) The direct experience has the positive direct effect on the brand awareness of the fitness center business in Bangkok for 0.48, which corresponds to the research of Whelan and Wohlfeil (2006); Brakus Schmitt and Zarantonello (2009); Reisenwitz, Timothy H. (2016) as they found that the direct experience means feeling, knowledge, understanding, and responsiveness towards the behavior

induced by the stimulus that relates to the brand. Moreover, in compliance with the works of Chattopadyay and Laborie (2005); Schmitt (2009); Zarantonello and Schmitt, (2010); Reisenwitz, Timothy H. (2016) the brand's experience is the principle that reflects the accumulated information through interaction or past experiences with the brand which become the stimulus of the responsiveness. In addition, similar to the research of Kotler (1973–1974); Khoei, Rahil(2014) it was found that consumers' direct and indirect experience with the brand through sound, size, shape, smell, and color, helps to build the interest, conveying message, and inducing feeling which may increase the purchasing opportunity.

3) The direct experience has the positive direct effect on the brand connection of the fitness center business in Bangkok for 0.22, which corresponds to the research of Aaker(1991); Keller(1993); Gladden & Funk(2001); Alexandris et al. (2008); Ranfagni, Silvia; Guercini, Simone(2014) on the connected feeling with the brand in the context of sports, and to the research of Mahony et al., 2000) the loyalty of fitness brands influences the attitude towards brand and repeat behavior. Additionally, in correspond to Keller's research (2003) he found that the relationship of brands occurs through the consumers' direct experience with the brand and the marketing information.

4) The service quality has the direct influence on the brand loyalty of the fitness center business in Bangkok for 0.44, which corresponds to the research of Zeithaml, Berry, and Parasuraman (1996) ; Hartline, Maxhim and McKee (2000);Harris and de Chernatony (2001); Keller (2003) ; Boyd and Sutherland (2006);Morhart, Herzog and Tomczak (2009) ; Yan Chao(2015); Leckie, Civilai, (2016) as they found that employees have the important roles in evaluating the consumers by giving service of the company. They are the living brand ambassadors that the company invests in training and development to reflect the value of the brand. In consistency with the works of Riley and De Chernatony (2000); Brodie et al., (2009); Fatma, Mobin (2016) the harmonization with the brand building is the integrated process that starts from the relationship between the company and its employees and the interaction between employees and customers.

5) The service quality influences the brand awareness of the fitness center business in Bangkok for 0.36, which corresponds to the research of Goonros, (1984; 1990); Parasuraman, Zeithaml, & Berry, (1998); Zeithaml&Bitner, (2006); Alexandris et al., (2008); CorreiaLoureiro (2013) as they found that the service quality is the main concept in the marketing research due to the service quality perception associates with the consumers' satisfaction. Moreover, the SERVQUAL model that is composed of 5 factors has been applied in the research about the service quality. In accordance with the works of Li-Pang Ho (2014); Joongi Eom (2015) it was found that the service quality model in the context of fitness presented in many aspects demonstrates the environment of the fitness gym. Moreover, in compliance with Hajli, Nick(2016)the physical factors of service for the fitness business relate to facilities, the equipment, the environment, the design of facilities, and the social factors in the context of the fitness.

6) The service quality influences the brand awareness of the fitness center business in Bangkok for 0.26, which corresponds to the research of Parasuraman, Zeithaml, and Berry, (1988); Cronin and Taylor, 1992); Zeithaml et al., (1996); Zenker Sebastian (2012) they found that the service quality differentiate the expectation of customers and the perception of service and this is the method to make the competition advantages. The service quality is judged by the customers as it relates to the service provider and the interaction between customers and the service. As in the research of Sargeant and West (2001), they found that service perception and service commitment relate to the customer's loyalty. Likewise, according to Cronin and Taylor (1992); Rust and Oliver (1994); Oliver (1999); Schnittka, Oliver(2012); Guercini,Simone(2014); Chih-Hao Chen(2015) the service quality influences the idea development in brand connection that also affects the brand loyalty of customers.

Similar Aaker (1991) the building brand royalty through the brand connection focuses on the customers' satisfaction received from the service quality.

7) The commitment of exercising influences the brand loyalty of the fitness center business in Bangkok for 0.17, which corresponds to the research of Jacoby and Chesnut (1978) ; Dick and Basu (1994) ; Back (2005) ;Casper, J. (2007); Wang, Chao; Kwok, Simon (2010) the commitment in exercising has the relation with the brand loyalty which represents that the loyalty appears in the strong attitude, commitment, and intention in doing sports. It could be evaluated that it is the process when the customer becomes the brand loyalty which stems from the knowledge that becomes the loyalty. In conformity with the works of relationship between commitment in works and other factors were found. In addition, for Scanlan TK (1993); MacAuley D (2001) they discovered that the commitment in exercising relates to brand loyalty as it has been developed in the context of competitive sports to test this commitment.

8) The commitment of exercising influences the brand awareness of the fitness center business in Bangkok for 0.22, which corresponds to the research of Scanlan TK(1993); Simons JP(1993);Alexander et al. (2002);Algesheimer et al., (2005); Dwyer, B. (2010); Datta, Saroj Kumar. Anvesha(2014) they found that if the consumers have the good feeling about the sports brands, their attitude of commitment to exercising will be produced resulting in the feeling toward the sports brands. It indicates the commitment to exercising builds the emotional relation with the brand. Like Asker (1991); Fullerton, S. (2007) they divided the brand into 4 components which are (1) quality perception, (2) brand perception (3)brand connection and (4) brand loyalty. In conformity with Shocker, Srivastava&Ruekert (1994); Boone, Kochunny and Wilkins (1995); Jensen, Jonathan A. (2015) the customers' loyalty is the key to maintain the brand. As in the research of Scanlan, Carpenter, Schmidt, Simons and Keeler (1993) ;Yoo et al., (2000); Keller(2003) ; Alexandris et al., (2008) the role of commitment in exercising is the primary factor of brand connection; it is created by the consumers' direct experience.

9) The commitment of exercising influences the brand connection of the fitness center business in Bangkok for 0.29, which corresponds to the research of Boninger, Krosnick, &Berent (1995) ; Keller(2003); Ross et al. (2006); Ranfagni, Silvia(2014) the brand connection will be created following to the level of mental commitment towards exercising. It indicates the type of connection that the fitness member receives. Moreover, according to Ross (2006) he suggested that the value of brand includes the connection with the brand, brand recognition, and brand loyalty as they are the hearts and could be applicable in the fitness center business. In agreement with the research of Scanlan TK (1993); Carpenter PJ (1993); Mahony, Madrigal and Howard (2000);Filo et al. (2008) ; Koll, Oliver (2011); Chih-Hao Chen (2015) the relationship between brand connection and brand loyalty will have the extremely positive attitude towards the sport brands. As Aaker (1996) confirmed the good brand connection with the service user tends to receive the higher loyalty from customers.

10) The brand awareness influences the brand loyalty of the fitness center business in Bangkok for 0.26, which corresponds to the research of Aaker (1991) brand awareness affect perception and loyalty. As in the previous research that tested the relationship between brand perception and brand loyalty, it shows the consistency with the works of Yoo et al. (2000); Jung& Sung, (2008) according to the theory of Aaker (1991) it demonstrates that brand perception and the good relation has the effect on brand loyalty, including perception and building of brand. This exemplifies the effect of brand perception and any associated with brand loyalty. Correspondingly, the studies of Pappu et al., (2005); Pappu& Quester, (2006); Baig, Sajjad Ahmad (2015) represent the positive effect of perception of brand loyalty. There is the difference between brand perception and brand loyalty in

compliance with Khoei, Rahil (2014); Li-Pang Ho (2014); Baig, Sajjad Ahmad (2015); Jensen, Jonathan A. (2015).

7. Suggestions

1. Suggestions for the implementation in the management.

1) The fitness entrepreneurs must study information and do the analysis while giving priority to the 5 direct experiences: 1) Sensitive 2) Cognitive 3) Affective 4) Active and 5) Relational that affects the behavior of fitness service users, for example, the mesmerizing of logo/title/brand of the fitness gym when hearing/seeing from the media, the recall of brand or logo of the fitness gym when they want to do exercise. To be unique, as compared to the rivals, means credibility to use the service for a long period. Meanwhile, the brand loyalty of the fitness center, for instance, the regular use of the fitness services, the suggestions of service promotions to friends or relatives, and if the service price is up, they still use the same service, the analysis of this information to plan the operation in the short period and in the long run will increase efficiency and effectiveness of brand awareness, brand connection, and brand loyalty of service users.

2) The fitness entrepreneurs must study information and analyze the factors affecting the users' behavior in being aware of the brand, remembering logo/title/brand of the fitness after hearing/seeing the brand from the media, and recall the brand or the logo once they want to do the exercise. Moreover, they must study the information of the brand loyalty, for example, when the termination of the contract, the customers intend to return to use the service in the future. With SERVQUAL too to measure 22 programs, there are 5 dimensions which are 1) Empathy 2) Assurance 3) Responsiveness 4) Reliability and 5) Tangible. They are the tools to realize the empirical data that indicates the efficiency of the operation while the quantitative data and the qualitative data make the complete understanding about the service expectation of customers and the entrepreneurs are able to give the service that fit or over their expectation. These data could be applied for the short-term and long-term planning of the operation for better efficiency and effectiveness.

3) The fitness entrepreneurs must study information and do the analysis by paying attention to the commitment in the 5 exercise factors which are 1) Sport Enjoyment 2) Involvement Opportunities 3) Involvement Alternatives 4) Social Constraints and 5) Involvement Opportunities that affect the behavior of service users to mesmerize the brand when they see in the media or recall the brand or the logo rapidly, including the data of brand loyalty, repeat purchase after the termination of contract, promotion of services to friends or relatives. These data should be analyzed to respond the brand awareness, brand connection, and brand loyalty for better efficiency and effectiveness.

4) The fitness entrepreneurs must study information and analyze the factors by giving importance to brand awareness which includes brand recognition and brand recall which influence the behavior of fitness service users, for example, when it comes to the termination of contract, they want to extend the contract which indicates their intention to return in the future; to suggest promotion or services to friends or relatives all the time, and if the price is up, they still return to use the service. The analysis of these data will build the brand loyalty that focuses on mesmerizing the logo/brand after hearing/seeing the brand of the fitness while the brand recall of logo recall is when they want to do the exercise and think of the brand. These data could be applied for the short-term and long-term planning of the operation for the unstoppable enhancement of efficiency and effectiveness.

5) The fitness entrepreneurs must study information and analyze the factors by giving importance to the 3 aspects of brand connections which are 1) Product Attribute 2) Benefit and 3) Brand Attitude, which influences the brand loyalty, for example, the uniqueness of the brand compared to the rival means the consumers regard that it makes them learn how to exercise more correctly and the activity becomes relax or relive the stress. The connection that relates to symbols becomes the structure of the product's identity causing consumers to remember and recall the brand easier. The strength of symbol is the main component in the development of brand and value perception. The connection will help to manage the brand effectively by perceiving/inputting data, making the difference, building a reason to purchase, building positive attitude/feeling, and being the foundation for the extension of the brand.

2. For further researching, the model in this research should be applied in the other educational institutes or the units relating to fitness business in Thailand or foreign countries as the mean to validate the consistency with the empirical data. Moreover, the other casual factors should be studied to realize the effect on brand awareness, brand connection, and brand loyalty. In the next research, Ethnographic Delphi Futures Research is probably applied and the comparative study of brand loyalty and the leading fitness business in Thailand in the state sector and the private sector should be continued.

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Political Management and Economic Policy Reform: The Case of Thailand

by

Sukunya Thipha
Graduate College of Management,
Sripatum University, Bangkok, Thailand
Tel: (66) 9105 46474, E-mail: noo_aye@hotmail.com

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Sukunya Thipha
Graduate College of Management,
Sripatum University, Bangkok, Thailand
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Abstract

This article analyzes the economic policy reform experience of Thailand during the 2018 in three policy areas, exchange rate, trade, and agriculture. A political management model that shows how strong but skillful political organizations and governments are as critical to policy reform success as is economic content is used for the analysis. The model proposes that government officials have to make policy reforms politically feasible if the reforms are to succeed. The assumption is that successful decision makers will take three kinds of political initiatives: (1) appeal to national sentiments, (2) seek the collaboration of affected interest groups, and (3) manage external actors. The article provides evidence that Thailand economic performance may be correlated with the degree of political initiative taken. The success or failure of Thailand also provides instructive experience for the next election government administration as it moves forward with a variety of policy reforms

Keywords: Political Management, Economic Policy, Leadership, Policy Reform

1. Introduction

Political management is very important that can affect the ability of political organizations and governments to achieve their goals. Business concepts of management have potential relevance to help understand how political organizations may reflect on the implications for governance, participation, and democracy. This paper sets out initials ideas arguing the political management involving planning, organizing, and reviewing of resources to achieve economic policy reform in Thailand. Political management identifies a range potential problem in practice such high staff turnover, over controlling leaders and over lose management practices in minister's offices. Normally, politicians and staffers are left to learn through working or volunteering in parties first or on the job, restricting representation to career politicians. According to Martinelli (1993), applying economic policy issues rely on the policymakers who should proceed what they commit to people before election. In doing so, it emphasizes the existence of credibility constraints and political constraints on the policymakers' optimization problem. Political constraints are originated in the fact that policymakers are restricted in their choices by the actions of other political actors. Credibility constraints are given by the fact that the public knows (even if imperfectly) that the government pursues some objectives and that it does so subject to political and other constraints. It is important to notice that credibility constraints would arise even in the absence of divergent objectives between the different members of society, while political constraints can only be binding if political agents have conflicting objectives.

While the political economic literature in general postulates a framework of political institutions corresponding to that of the developed nations, approaching economic reform issues entails to recognize the peculiar political conditions prevalent in the reforming countries. While in the literature at large it is assumed that voting is the only or the most relevant form of participation with respect to macroeconomic policy issues (Persson and Tabellini 1990), in developing countries electoral accountability can be less important as a political constraint than other forms of political involvement by the members of the public, such as lobbying by interest groups, public protests, and even violent actions, because democratic institutions are less common and tend to be fragile. Therefore, the research study focused on investigating how politics leading to economics reform in macroeconomic policy issues and the way in which bureaucratic in Thailand can be overcome to stimulate economy growth.

Objective of the Study

1. To investigate the factors (politics, economics, and security) affecting economics reform.
2. To investigate the influence of the factors (politics, economics, and security) affecting economics reform.
3. To develop the model for the relationship of politics, economics, and security towards economics reform.

Benefit of the Study

1. To recognize the model for the relationship of politics, economics, and security towards economics reform.
2. To recognize the factor affecting the model for the relationship of politics, economics, and security towards economics reform.
3. To recognize the guideline of the model for the relationship of politics, economics, and security towards economics reform.

2. Literature Review

2.1 Definition and Theory

Politics

Definition

Politics (meaning "affairs of the cities") is the process of making decisions that apply to members of a group. It refers to achieving and exercising positions of governance—organized control over a human community, particularly a state.

Classifications

Formal politics refers to the operation of a constitutional system of government and publicly defined institutions and procedures. Political parties, public policy or discussions about war and foreign affairs would fall under the category of Formal Politics. Many people view formal politics as something outside of themselves, but that can still affect their daily lives. Semi-formal politics is politics in government associations such as neighborhood associations, or student governments where student government political party politics is often important. Informal politics is understood as forming alliances, exercising power and protecting and advancing particular ideas or goals. Generally, this includes anything affecting one's daily life, such as the way an office or household is managed, or how one person or group exercises influence over another. Informal Politics is typically understood as everyday politics, hence the idea that "politics is everywhere".

Political management

Definition

Political management is a broad and ever evolving field encompassing a number of activities in professional politics. The field includes campaign management and consulting, advertisement creation/purchasing, grassroots politics, opposition research, issue advocacy, lobbying, fundraising, and polling. Some consider political management to be an applied form of political science.

History

Political managers first emerged during the early 20th century as American politics drifted away from party-centered politics towards an atmosphere focusing more on the individual candidates. Candidates began to hire their own staff to manage strategic decisions, fundraise, and handle the day-to-day campaign activities. Initially corporate public relations firms were hired to manage campaigns. However, eventually public relations firms specializing in political campaigns began to surface during the 1950s and 60s. One of the first professionals to be labeled a "political consultant" was Joseph Napolitan who went on to found the American Association for Political Consultants. Eventually consultants specializing in specific aspects of the campaign began to grow in popularity, like, Tony Schwartz, the creator of the now infamous "Daisy" ad, and one of the first media consultants to specialize in political campaigns. After media, polling was one of the first services sought out by campaign managers, followed by direct mail. Today, political managers specialize in a wide range of consulting areas including strategy, polling, direct mail, fundraising, web design, lobbying, and get out the vote efforts.

Economics

Definition

Economics is the social science that studies the production, distribution, and consumption of goods and services. Economics focuses on the behavior and interactions of economic agents and how economies work. Microeconomics analyzes basic elements in the economy, including individual agents and markets, their interactions, and the outcomes of interactions. Individual agents may include, for example, households, firms, buyers, and sellers. Macroeconomics analyzes the entire economy (meaning aggregated production, consumption, savings, and investment) and issues affecting it, including unemployment of resources (labor, capital, and land), inflation, economic growth, and the public policies that address these issues (monetary, fiscal, and other policies). See glossary of economics. Other broad distinctions within economics include those between positive economics, describing "what is", and normative economics, advocating "what ought to be"; between economic theory and applied economics; between rational and behavioral economics; and between mainstream economics and heterodox economics.

Economics Policy

Definition

The economic policy of governments covers the systems for setting levels of taxation, government budgets, the money supply and interest rates as well as the labor market, national ownership, and many other areas of government interventions into the economy. Most factors of economic policy can be divided into either fiscal policy, which deals with government actions regarding taxation and spending, or monetary policy, which deals with central banking actions regarding the money supply and interest rates. Such policies are often influenced by international institutions like the International Monetary Fund or World Bank as well as political beliefs and the consequent policies of parties.

Types of economic policy

Almost every aspect of government has an important economic component. A few examples of the kinds of economic policies that exist include:

- Macroeconomic stabilization policy, which attempts to keep the money supply growing at a rate that does not result in excessive inflation, and attempts to smooth out the business cycle.
- Trade policy, which refers to tariffs, trade agreements and the international institutions that govern them.
- Policies designed to create economic growth or policies related to development economics.
- Policies dealing with the redistribution of income, property and/or wealth.
- Regulatory policy, anti-trust policy, industrial policy and technology-based economic development policy.

Economics Reform

Definition

Economics reform comprises policies directed to achieve improvements in economics efficiency, either by eliminating or reducing distortions in individual sectors of the economy or by reforming economy-wide policies such as tax policy and competition policy with an emphasis on economics efficiency, rather than other goals such as equity or employment growth. Economics reform" usually refers to deregulation, or at times to reduction in the size of government, to remove distortions caused by regulations or the presence of government, rather than new or increased regulations or government programs to reduce distortions caused by market failure. As such, these reform policies are in the tradition of laissez faire, emphasizing the distortions caused by government, rather than in ordoliberalism, which emphasizes the need for state regulation to maximize efficiency.

2.2 Literature Survey

Khemani (2017) reviewed the literature relevant to understanding political constraints to economic reforms. Reform refers to changes in government policies or institutional rules because status quo policies and institutions are not working well to achieve the goals of economic well-being and development. Further, reforms refer to the alternative policies and institutions that are available that would most likely perform better than the status quo. The main question examined in the political economy of reform literature has been why reforms are not undertaken when they are needed for the good of society. The succinct answer from the first generation of research is that conflict of interest between organized socio-political groups is responsible for some groups being able to stall reforms so that they can extract greater private rents from status quo policies. The next generation of research is tackling a more fundamental question: why does conflict of interest persist; or, why do some interest groups exert influence against reforms if there are indeed large gains to be had for society? These are questions about norms and preferences in society for public goods. The next step is to examine where norms and preferences for public goods come from, and which institutional arrangements are more conducive to solve the public goods problem of pursuing reforms. After reviewing the available and future directions for research, the paper concludes with what all of this means for policy makers who are interested in understanding the factors behind successful reforms. On the other hand, Aragona, (2015) questioned that: What are the socioeconomic impacts of resource abundance? Are these effects different at the national and local levels? How could resource booms benefit (or harm) local communities? This paper reviews a vast literature examining these questions, with an emphasis on empirical works. First, the evidence and theoretical arguments behind the so-called resource curse, and other impacts at the country level, are reviewed. This cross-country literature highlights the importance of institutions. Then, a simple analytical framework is developed to understand how resource booms could impact local communities, and the available empirical evidence is examined. This emerging literature exploits within-country variation and is opening new ways to think about the relation between natural resources and economic development. The main message is that others factors, such as market mechanisms and local spillovers, are also relevant for understanding the impact of resource abundance. Finally, the paper discusses issues related to fiscal decentralization and provides ideas for future research.

In 2014, Keefer and Milanovic advanced research on inequality with unique, new data on income distribution in 61 countries, including 20 Latin American countries, to explore the effects of political parties on redistribution. First, consistent with a central -- but still contested -- assumption of the political economy literature, left-wing governments redistribute more. In addition, consistent with recent research on the importance of party organization and the organizational differences between younger and older parties, older left-wing parties are more likely to internalize the long-run costs of redistribution and to be more credible in their commitment to redistribution, leading them to redistribute less. With entirely different data, the paper also provides evidence on mechanisms: left-wing governments not only redistribute more, they tax more; older left-wing parties, though, tax less than younger ones. However, Anderson, et al. (2013) stated that the agricultural and food sector is an ideal case for investigating the political economy of public policies. Many of the policy developments in this sector since the 1950s have been sudden and transformational, while others have been gradual but persistent. This paper reviews and synthesizes the literature on trends and fluctuations in market distortions and the political-economy explanations that have been advanced. Based on a rich global data set covering a half-century of evidence on commodities, countries, and policy instruments, the paper identifies hypotheses that have been explored in the literature on the extent of market distortions and the conditions under which reform may be feasible. Hanusch and Keefer (2013) introduced a new explanation for political budget cycles: politicians have stronger incentives to increase spending around elections in the presence of younger political parties. Previous research has shown that political budget cycles are larger when voters are uninformed about politician characteristics and when politicians are less credible. The effects of party age can be traced to organizational differences between younger and older parties that also affect voter information and politician credibility. Parties organized around particular individuals, rather than around policy labels or a party machine, are less likely to survive the departure of party leaders, to adopt organizational attributes that promote voter information and political credibility, and to limit political budget cycles. Previous research has also shown larger political budget cycles in younger democracies. Evidence presented here indicates that party age accounts for this effect. In the same year of 2013, Strand, Jon. revealed that while notoriously inefficient, fuel subsidies are widespread, and in many cases politically stable. This paper discusses and models various political economy aspects of fuel subsidies, focusing on gasoline and kerosene. Both economic and political are considered to explain differences in subsidies, with particular focus on democratic and autocratic governments. A political process is modeled whereby a promise of low fuel prices is used in democracies to attract voters, and in autocracies to mobilize support among key groups. Subsidies to fuels are viewed as either easier to observe, easier to commit to, easier to deliver, or better targeted at core groups, than other public goods or favors offered by rulers. Easier commitment and delivery than for regular public goods can explain the high prevalence of such policies in autocracies, and also in young democracies where the capacity to commit to or deliver complex public goods is not yet fully developed. The analysis provides a framework for empirical testing and verification.

Additionally, Bunse and Fritz (2012) found that supporting effective public sector reform is a major challenge that the World Bank and other agencies and stakeholders have been grappling with. It is increasingly recognized that political economy factors play a crucial role. However, beyond this broad proposition, specific questions arise: What country contexts are more/less propitious for public sector reforms and what reforms are likely to succeed where? And can more explicitly taking political economy challenges into account help to pursue public sector reforms even in less propitious contexts? This paper addresses these issues in two ways: first, it draws on the existing literature to identify key propositions about factors that can trigger or facilitate public sector reforms, and those that tend to work against (successful) reforms. Second, it investigates the experience of World Bank public sector operations over the decade 2000-2010. It finds that governments in many developing countries face incentives to initiate public sector reforms, but that at the implementation stage, political costs frequently outweigh potential gains; and hence reforms are abandoned or left to wither. Real breakthroughs have been achieved in countries experiencing major structural shifts and those having political leadership committed to higher-level goals. The review of operations shows that successful projects are significantly more widespread than the literature would lead to assume. Furthermore, it provides tentative evidence that investing in understanding political economy drivers has been associated with better project performance. Key implications are the need to differentiate between country contexts more clearly ex ante, concentrate more on reform implementation during windows of opportunity that are typically of limited duration, and design reforms with a clear plan of engagement with stakeholder incentives. Nonetheless, Adams-Kane and Lim (2011) developed an empirical measure of growth poles and uses it to examine the phenomenon of multipolarity. The authors formally define several alternative measures, provide theoretical justifications for these measures, and compute polarity values for nation states in the global economy. The calculations suggest that China, Western Europe, and the United States have been important growth poles over the broad course of world history, and in modern economic history the United States, Japan, Germany, and China have had prominent periods of growth polarity. The paper goes on to analyze the economic and institutional determinants, both at the proximate and fundamental level, that underlie this measure of polarity, as well as compute measures of dispersion in growth polarity shares for the major growth poles. In addition to political economy, Ayee, et al. (2011) mentioned that with a focus on the institutional set-up and the political environment as central to understanding and rectifying the poor impact of mining on Ghana's economic development, this paper highlights the vulnerabilities in mining sector governance along the industry value chain. The authors explain why it has been difficult to implement policies that would have improved social welfare. They find that incentive problems in institutions directly or peripherally involved in mining governance are a major factor, as are an excessively centralized policy-making process, a powerful executive president, strong party loyalty, a system of political patronage, lack of transparency, and weak institutional capacity at the political and regulatory levels. The paper argues that the net impact of mining on economic development is likely to be enhanced with appropriate reforms in governance. Most importantly, there should be a greater awareness of incentive problems at the political level and their possible implications for sector performance and the economy at large. The set of checks and balances, as stipulated by the Constitution, have to be reinforced. Furthermore, capacity building at different levels and institutions is needed and should be combined with efforts to enhance incentives for institutional performance.

Moreover, Gboyega, et al. (2011) stated that the relatively slow pace of Nigeria's development has often been attributed to the phenomenon of the resource curse whereby the nature of the state as a "rentier" dilutes accountability for development and political actors are able to manipulate institutions to sustain poor governance. The impact of the political elite's resource-control and allocation of revenues on core democratic mechanisms is central to understand the obstacles to development and governance failure. Given that problems of petroleum sector governance are extremely entrenched in Nigeria, the key question is whether and how it is possible to get out of a poor equilibrium after fifty years of oil production. This paper uses a political economy perspective to analyze the governance weaknesses along the petroleum sector value chain and attempts to establish the links between challenges in sector regulation and the following major political and economic attributes: (i) strong executive control on petroleum governance in a political environment of weak checks and balances; (ii) regulatory and operating roles bundled into one institution, thereby creating conflict of interest; and (iii) manipulation of elections and political appointments. The restoration of democratic government has helped improve transparency and management of oil revenue and reforms at the federal level and proposed reforms of the petroleum sector hold much promise. At the same time, the judiciary has started to restore confidence that it will serve as a check and balance on the executive and the electoral process. Yet, these reforms are fragile and need to be deepened and institutionalized. They must be addressed not as purely technocratic matters but as issues of political economy and vested interests that must, through regulation and reform, be aligned with the public interest and a vision of Nigerian development.

Furthermore, Khemani (2010) examined a puzzle in the political economy of infrastructure in India -- the co-existence of relatively low shares of capital spending in public budgets alongside evidence of large demand for village infrastructure from poor voters. It argues that this pattern is due to infrastructure projects being used at the margin for political rent-seeking, while spending on employment and welfare transfers are the preferred vehicles to win votes for re-election. New suggestive evidence on the variation of public spending composition across states, and within states over time is offered that is consistent with this argument. This evidence underscores a growing argument in the development literature that the level and composition of public spending per se may not be sufficient metrics to assess the quality of public goods policies -- greater infrastructure spending in some contexts may go to political rents rather than to the actual delivery of broad public goods for growth and poverty reduction. As well, Bodea, Cristina and Elbadawi (2008) analyzed the economic growth impact of organized political violence. First, the authors articulate the theoretical underpinnings of the growth impact of political violence in a popular model of growth under uncertainty. The authors show that, under plausible assumptions regarding attitudes toward risk, the overall effects of organized political violence are likely to be much higher than its direct capital destruction impact. Second, using a quantitative model of violence that distinguishes between three levels of political violence (riots, coups, and civil war), the authors use predicted probabilities of aggregate violence and its three manifestations to identify their growth effects in an encompassing growth model. Panel regressions suggest that organized political violence, especially civil war, significantly lowers long-term economic growth. Moreover, unlike most previous studies, the authors also find ethnic fractionalization to have a negative and direct effect on growth, though its effect is substantially ameliorated by the institutions specific to a non-factional partial democracy. Third, the results show that Sub-Saharan Africa has been disproportionately impacted by civil war, which explains a substantial share of its economic decline, including the widening income gap relative to

East Asia. Civil wars have also been costly for Sub-Saharan Africa. For the case of Sudan, a typical large African country experiencing a long-duration conflict, the cost of war amounts to $46 billion (in 2000 fixed prices), which is roughly double the country's current stock of external debt. Fourth, the authors suggest that to break free from its conflict-underdevelopment trap, Africa needs to better manage its ethnic diversity. The way to do this would be to develop inclusive, non-factional democracy. A democratic but factional polity would not work, and would be only marginally better than an authoritarian regime. In contrast, Gradstein (2003) identified that public provision of education has often been perceived as universal and egalitarian, but in reality it is not. Political pressure typically results in incidence bias in favor of the rich. The author argues that the bias in political influence resulting from extreme income inequalities is particularly likely to generate an incidence bias, which we call social exclusion. This may then lead to a feedback mechanism whereby inequality in the incidence of public spending on education breeds higher income inequality, thus generating multiple equilibria: with social exclusion and high inequality; and with social inclusion and relatively low inequality. The author also shows that the latter equilibrium leads to higher long-run growth than the former. An extension of the basic model reveals that spillover effects among members of social groups differentiated by race or ethnicity may reinforce the support for social exclusion.

2.3 Conceptual Framework

The conceptual framework drawn from the above literature review was placed within a logical and sequential design. It was deduced from the relevant theories of politics, economics, security, and economics reform. The purposes of the construct framework were to clarify concepts and propose relationships among the concepts in this research study. The conceptual framework is shown in Figure 1.

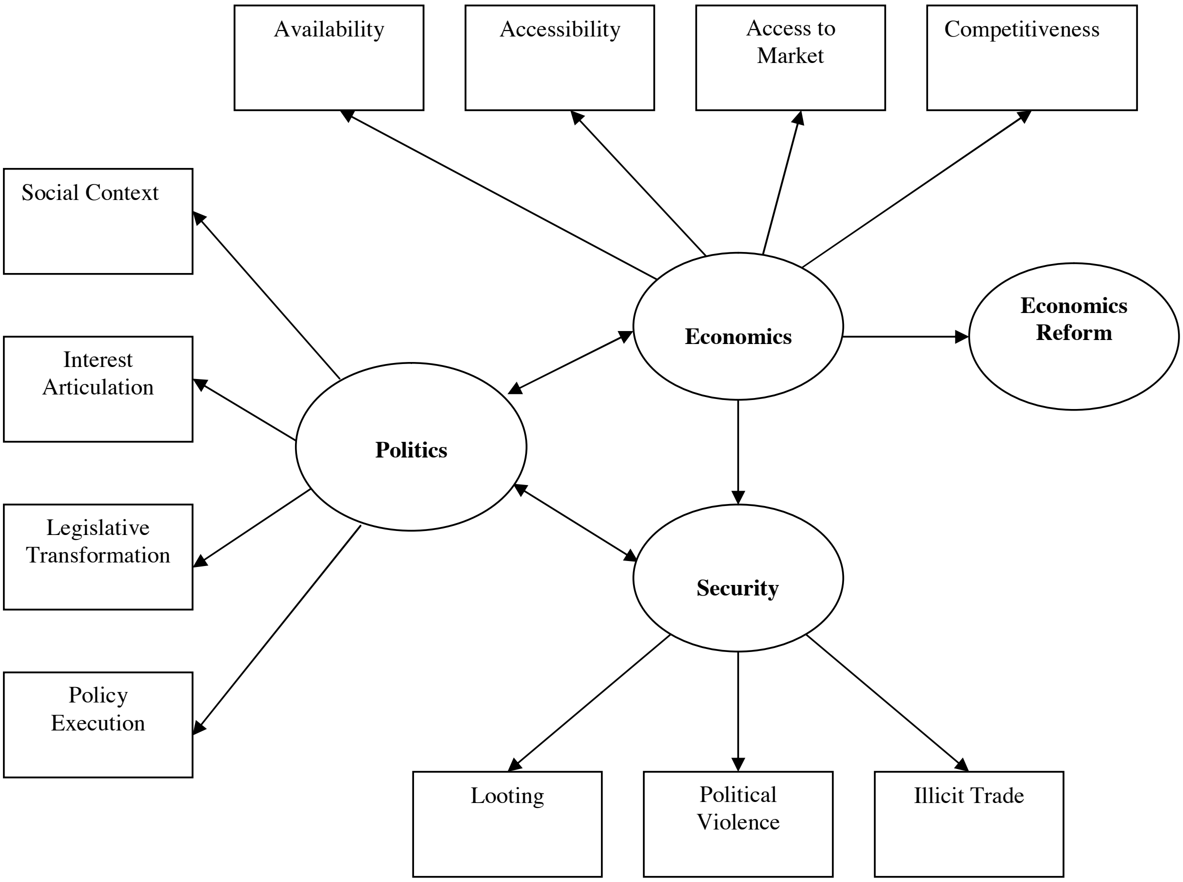


Figure 1 Conceptual Framework

2.4 Research Hypothesis

Hypothesis 1:

H_0: Politics will not positively direct influence on economics
H_1: Politics will positively direct influence on economics

Hypothesis 2:

H_0: Politics will not positively direct influence on security
H_1: Politics will positively direct influence on security

Hypothesis 3:

H_0: Economics will not positively direct influence on security
H_1: Economics will positively direct influence on security

Hypothesis 4:

H_0: Economics will not positively direct influence on economics reform
H_1: Economics will positively direct influence on economics reform

3. Research Methodology

The study and research on development of model for relationship of politics, economics, and security towards economics reform is the mixed method through conducting of quantitative and qualitative research for data collection. The quantitative research is an analysis of the structural equation modeling (SEM), and in-depth interview as part of the qualitative research for developing a conceptual framework in order to validate model and opinions of people concerned.

3.1 Qualitative Research

In this research, the qualitative research is applied for building the research conceptual framework based on the relationship of politics, economics, and security towards economics reform with in-depth interview.

1. Population
Politicians contribute to economy development in Thailand.

2. Population Selection
A field study was conducted by the purposive sampling through selection from different political parties.

3. Data Collection
The researcher conducted interview document developed from the study of documents with relevant researches in order to prepare for a questionnaire. The researcher enclosed the letter to request for assistance on the interview for data collection with the politicians from different political parties through research method in accordance with research procedure.

3.2 Quantitative Research

1. Population and Sample Group
Population in research included politicians who contribute to economy development in Thailand.

2. Size of Sample Group
Sample groups used in this research study were politicians from different political parties. A procedure of the sample size determination is shown as follows.

2.1 According to determination of sample group size used in this research study, the researcher considered on the size of sample groups in accordance with suggestion of Schumacker & Lomax, 1996; Hair et al. (2010) that the ratio between sample groups per number of parameters or variables to be used should be 15-20 times of observed variables. In this research study, latent variables comprised of 4 variables, and observed variables comprised of 11 variables. Therefore, the appropriate and sufficient sample size should be in between 15 x 11 = 165, and 20 x 11 = 220.

Nevertheless, the research presented here chose 400 samples in order to assure for the most appropriate samples representing the best population.

2.2 In this research study, the researcher applied a multi-stage sampling method, probability sampling and simple random sampling. Drawing was made to get sample groups of politicians from different political parties.

2.3 Researcher applied convenience sampling using a questionnaire in data collection from politicians from different political parties. The questionnaire was distributed at each visit of the political parties dispersed around Bangkok metropolitan area.

2.4 In addition, the calculation for collection was classified for distribution in accordance with personal demography. The researcher collected data from more than 400 politicians, in order to reduce error of insufficient number of samples.

3) Data Collection

Instrument applied is the questionnaire that is classified into 4 parts as follows.

Part 1 is demography data of respondents.

Part 2 is the questionnaire asking for a significant level of each variable in politics, with a Likert scale.

Part 3 is the questionnaire asking for a significant level of each variable in economics, with a Likert scale.

Part 4 is the questionnaire asking for a significant level of each variable in security, with a Likert scale.

Part 5 is the questionnaire asking for an influence of politics, economics, and security towards economics reform, with a Likert scale.

Part 6 is the open-ended questionnaire related to additional opinion and suggestion.

4) Validation of Instrument Quality

The construction and measurement of instrument efficiency were classified as follows.

1. Measurement of instrument efficiency before data collection by deleting any queries that were not passed for Validity and Reliability.

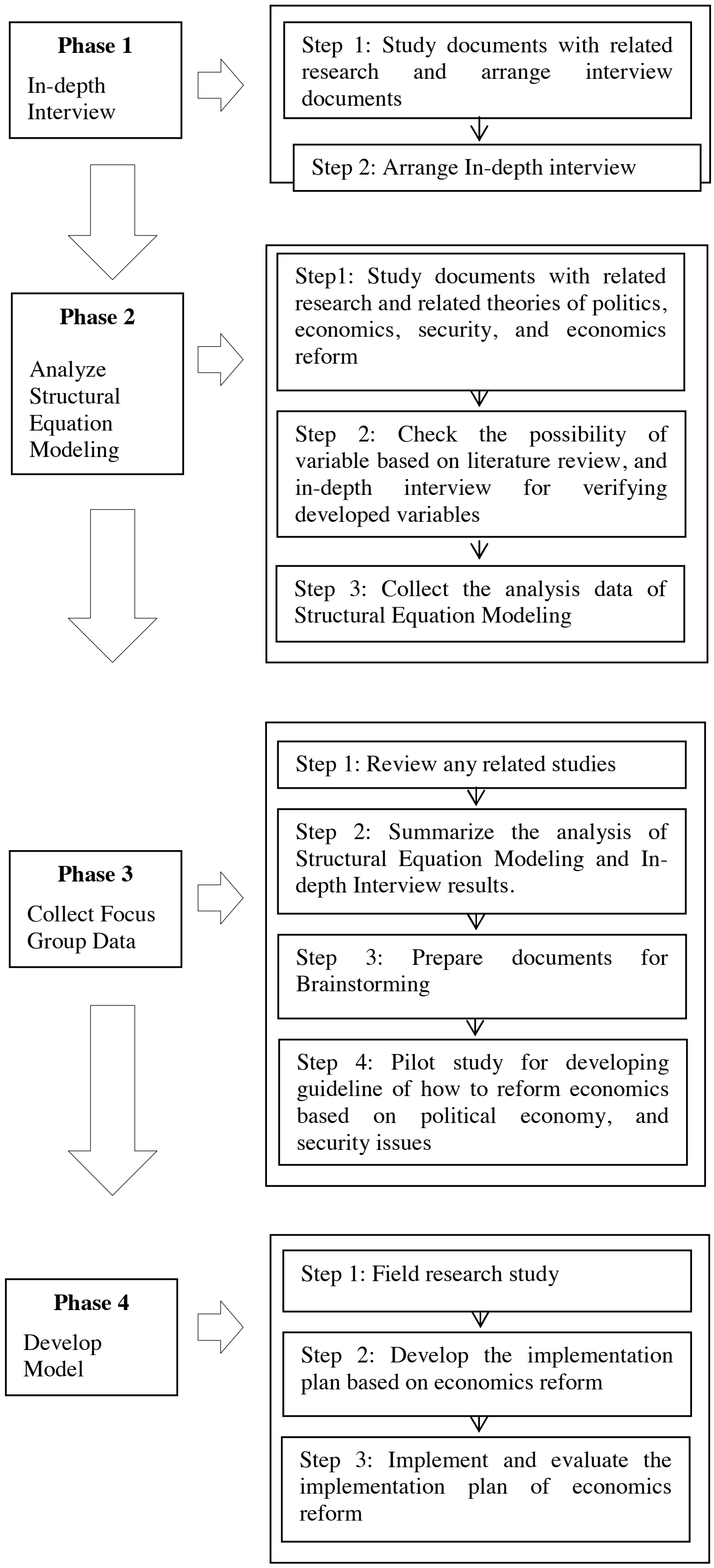
2. Validation of primary agreement before applying the LISREL program.

5) Statistical Analysis

1. Analyzing mean, standard deviation, skewness and kurtosis, correlation coefficient, and statistics in finding instrument quality value with SPSS for Window.

2. SEM is a statistics technique applied for testing and estimating causal relationships, and a confirmatory factor analysis.

3.3 Research Procedure



4. Discussion and Conclusion

In Thailand, economics reform must be cooperated with how to restructure budget distributed to poor people as higher percentage. BBC News (2018) stated that Thailand is the only country in south-east Asia to have escaped colonial rule. Buddhist religion, the monarchy and the military have helped to shape its society and politics. The military has ruled for most of the period since 1947, with a few interludes in which the country had a democratically elected government. The Thai economy is now expected to maintain the current clip throughout 2018, with the government raising its export growth target to 6.8 percent for the current year from 5 percent in 2017. But whether or not better economic prospects can translate into a smoother political road for the recent government and Thailand more generally is unclear. The opposition to the junta has been growing, with elections that had been promised for 2015, then 2016, then 2017, then 2018, and now potentially out to 2019. Several issues need to be raised illustrated as follows:

· No political or institutional priority is given to economics reform management based on political turmoil and long conflict; it hardly appears in local government proposals.
· Little importance is given to economics reform issues in plans for local integral development and especially in the allocation of economic and financial resources.
· The concept of economics reform problems as a whole is feeble, which leads to a sectoral view of problems: poverty, crime, unstable economy, and drug smuggling.
· There is an imbalance between the economics reform impact of urbanization and the actions and efforts of municipalities, businesses, or communities themselves for economics development and rehabilitation.
· Countries' laws and regulations are too conditional and limited for adequate local economics reform management.
· The role of local nongovernmental actors in economics reform management is not clearly enough defined.
· Citizen action and participation in local economics reform management (sub-district, district, or province) are given low priority.

In view of the foregoing conclusions, the researcher will recommend the following actions for future study:

· To have local governments set priorities for their economics reform efforts in the various spheres of management: political, social, economic, and technological.
· To institutionalize local economics reform management in the context of sustainable development.
· To promote at the national and regional levels a review of the organization and functions of local governments, in order to institutionalize structural mechanisms that will promote effective management of the economics reform and of integral, sustainable local development.
· To promote organizational coordination of structures, programs, and projects at the various levels of government, institutions, or sectors in national economics reform systems.
· To strengthen the institutional capacity of the municipalities - their human, financial, and, in particular, technological resources - for proper economics reform.

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Factors Influencing Behavioural Intention of Airline Passengers Towards Myanmar National Airlines

by

Thomas E. Fernandez
Hamburg, Germany
Tel: +66818330416, E-mail: thomas.utcc@gmx.net

and

Kyaw Nyunt Wai
Yangon Campus, University of the Thai
Chamber of Commerce, Yangon, Myanmar

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Abstract

In this paper the authors conducted a research about airline passengers' intentional behaviour towards Myanmar National Airlines (MNA), the biggest airline in the Republic of the Union of Myanmar. The approach was a quantitative research with a questionnaire focussing Service Quality, Customer Satisfaction, Trust, and Brand Image, leading to the Behavioural Intention to use the airline again. It was found that the airline received "Neutral" rating in all five areas, and the authors make recommendations how to improve the ratings.

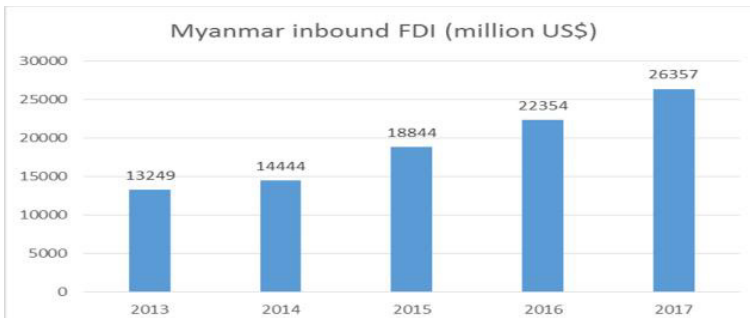
Keywords: Airline Industry, Service Quality, Customer Satisfaction, Trust, Behavioural Intention

1. Introduction

The airline industry is one of the major business industries all over the world. The airline industry contributes to the development of the tourism industry which generates crucial revenue to countries such as Myanmar, trade across nations and foreign direct investment. The global airline industry is the major contributor for trade and development of relating industry for the economy of the country (Gonenc and Nicoletti, 2000). In addition, the strong air travel improvement, air travel deregulation, globalization of economies and technology has allowed connectivity between countries all around the world. Improved access allows producers to take power of an expansion of trade, specialization and economies of scale, leading to lower production costs and prices; and growing production choices. However, more than any other industry, the airline industry is subject to rapid flux due to transformations in competitor moves, government or international regulations, employee dynamics and more importantly, customer expectations which is also influenced markedly by major players of the market (Jan *et al*., 2013). Due to high competition with the need of maximizing profits, airlines are in constant need to strengthen their position by retaining customers despite the presence of other competitors in the market.

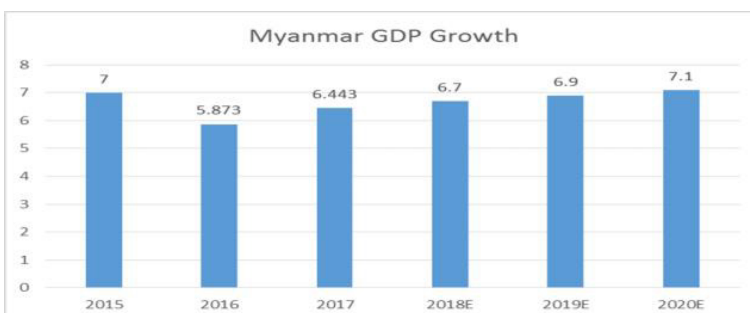
The authors focus on Myanmar's flag carrier Myanmar National Airlines (MNA), which is also the oldest airline in the country and the largest airline by number aircraft (MNA, 2019).

The Republic of the Union of Myanmar, commonly called Myanmar, is a country in South-East Asia formerly known as Burma (BBC, 2007). The country has a population of a little over 55 million (World Factbook, 2018), which is expected to grow to at least 57.8 million (Karasawa, 2018) or even 73.9 million by 2030 (Shibata, 2014). Myanmar is bordering India, Bangladesh, Thailand, Laos and China. It started transitioning from a military government to democracy in 2011 and has seen sanctions by the US and other countries lifted in 2016 (World Factbook, 2018). The lifting of sanctions has allowed foreign companies to engage in business with Myanma companies and also to invest in the country (figure 1). This led to economic growth (figure 2), and growth in turn lead to the doubling of demand for passenger air transport from 2007 to 2016 (anna, 2017)



Source: Adapted from DICA (2018)

Figure 1 Myanmar Inbound FDI



Source: Adapted from World Bank (2018)

Figure 2 Myanmar GDP Growth

Understanding passengers' behavioural intention has always been a critical issue in the airline industry. Every airline aims to be the leader in the market, and since to low-cost airline industry is competitive, airlines need to understand their passengers' perception in order to achieve airline goal. Behavioural intention in terms of repurchase intention and word-of-mouth of passengers is an importance predictor for profitability of the airline (Reichheld and Sasser, 1990). As the national flight carrier of Myanmar, it is very important for Myanmar National Airlines (MNA) to understand the behavioural intention of passengers not only for profitability but also for becoming the market leader in domestic flights among local airlines operating in Myanmar. The aviation market of Myanmar is highly competitive with a total of 11 local licensed airlines, for 30 domestic airports and 36 dormant, altogether 69 airports (Burma – Aerospace and Defense, 2017). Currently, international carriers are not allowed to enter domestic routes of Myanmar. The private local airlines are operating with an average of two to three aircraft per airlines. However, this leading to oversaturated market which prevents private domestic airlines to achieve economies of scale and reduction of operation cost.

While in 2017, nine of the top 15 airlines operating in Myanmar were also based in Myanmar (anna, 2017), three of these local airlines suspended operations in 2018 (Citrinot, 2018).

Therefore, in order to be outstanding among the competitors, MNA has to develop an effective strategy to achieve behavioural intention of customers to use them again which will lead not only to attract new customers but also to maintain the existing customers. When it comes to having more and more competitors in the market in terms of low cost, better service quality, facilities, incentives and many other marketing strategies, MNA has to protect its image in every aspect in order to upkeep the dominant position. Rivals will come in terms of joint ventures supported by international players and the market will become more and more aggressive. Therefore, it is very crucial to strength MNA's reputation and credibility through service quality especially with customers' satisfaction, infrastructure maintenance as well as cost-effectiveness. On the other hand, there a is lack of in-depth academic research for Myanmar's airline industry. Moreover, studies towards behavioural intention of airline passenger and the factors which contribute to behavioural intention towards not only MNA but also whole airline industry of Myanmar are not sufficient. Therefore, the researchers were interested to fill the research and literature gap by conducting the study aiming to find the characteristics responsible for airline passengers' behavioural intention in Myanmar, which will be conducted as an empirical study towards MNA airline.

The purpose of this study is to examine and analyse the factors that have direct or indirect influences on behavioural intention of airline passengers towards Myanmar National Airlines. There are many possible factors that influence behavioural intention. However, the researcher focused on the major contributing factors, based on previous studies, which are service quality, satisfaction, trust and image. The research objectives of the study are as follows:

• To study the influence of service quality on satisfaction, trust and image of MNA
• To observe the influence of satisfaction, trust and image on behavioural intention of passenger towards MNA

2. Literature Review

A literature review was conducted to determine the relevance of the five terms to the research questions. Specifically, how does the service quality influence the customer satisfaction, trust and brand image in the aviation industry, and how do these factors in turn influence the behavioural intention of the passengers.

Service Quality

Parasuraman et al. (1988) defined service quality as the difference between perceived service level and customer expectations where service quality perception results from comparing what consumers consider the service should be and the service provider's actual performance. In other words, the customer compares this airline's service to other airlines' service and makes a judgement.

Grönroos (2001) mentioned that the core characteristic of service is their process nature. So, service is a process that advantages to a result during moderately concurrent production and consumption processes. This is more challenging for customers to assess service quality than good quality. Service quality can be described as a consumer's total impression of the efficiency of the firm and its services (Park *et al*., 2004) and as a chain of services in which the whole service delivery is branched into a sequence of processes (Chen and Chen, 2007). Most definitions of service quality depend on the attitude and focus on meeting the customers' requirements and how well the service delivered the compliments to the customers' confidence of it. In the airline industry, service quality is admitted in various interactions between customers and airlines with employees following to influence customers' perceptions and appearance of the carriers (Gursoy *et al*., 2005). Most of the airlines are looking more to service quality to expand a competitive edge by differentiating their products because competitors are comparatively effective in responding to price changes. These airlines' competitive asset lies in their service quality as perceived by customers (Chang and Yeh, 2002). Accordingly, certifying quality of service is the key for survival of all industries contracting in service offerings airlines comprehensive. Customers who received high quality of service is willing to pay more money, resulting of high consumer's behavioural intentions (Bitner *et al*., 1990).

Satisfaction

Oliver (1981) defined passenger satisfaction as a person's feeling of fulfilment or disappointment by comparing a service perceived with his or her expectation. The customers arrive with certain expectations, and if these are met, they are satisfied; if not, they are disappointed, or dissatisfied.

Satisfaction can be considered as a customer's overall direct feeling which describes that the customer has the feel of how the product or service is the same with their standard, norms or ideal (Fornell, 1992). Jan *et al*. (2013) also described the customer satisfaction as the perception of the customer towards the organization based on its awareness and efficiency of service confrontation. Therefore, the researchers suggested that customer satisfaction modified the model of decision making from customer's point of view to the corporation point of view including effect and feeling which control the level of customer satisfaction based on perception. Park *et al*. (2004) defined customer satisfaction as an evaluation process of the customers to choose the service depending on their service experience. However, some researchers suggested that customer satisfaction is not only emotional response of customers but also their effective reaction towards a service. Burns and Neisner (2006) stated that the evaluation of customer satisfaction is through both acknowledgment and affective response to service encounters. Therefore, the customers who are satisfied with a product or service seem to have a good brand perception (Nguyen and LeBlanc, 1998), and higher chance of returning to the same service provider (McDougall and Levesque, 2000). There is a positive relationship between customer satisfaction and future use of the airline, as well as recommendation to others (Abdullah *et al*., 2007). In addition to this, Archana and Subha (2012) described that service qualities of airlines including in-flight services, in-flight digital service, and airline back-office operations influence passengers' satisfaction towards airline. However, Abdullah *et al*. (2007) found that the customer will probably switch to another airline or will not recommend the airline to others if he/she is not satisfied with the services provided by the airline. According to Amin *et al*. (2013), the higher the level of customer satisfaction, the more the firm can retain its customers.

Trust

Moorman et al. (1993) defined passenger trust as a willingness of the customers to rely on and have confidence in an organization. Do the customers trust this airline to perform the service they expect?

Trust is a perception of the customers to rely on and have confidence in a business entity (Moorman *et al*., 1993). Deng et al. (2010) described trust as the attitude of customers towards a service provider based on the capability, virtue and compassion of service provider. Therefore, trust can be regarded as the intention of customer having confidence in the capability of the service provider to fulfil his or her wants and needs (Chaudhuri and Holbrook, 2001). According to Ou *et al*. (2011), the trust of customers can encourage them to take risks although there are some difficulties and it is related to the perceptions of the customers on the quality of the product or service to be identical as the company promise. Nevertheless, Aaker (1997) suggested trust as an important factor of consumer's perception towards the organization or brand. Trust is beneficial for both businesses and consumers from which business can achieve cost reduction, increased sales, favourable word-of-mouth, as well as the consumers' benefit of reduced risk perception towards the business (Moorman *et al*., 1993). The higher the level of trust of customer, the more the transaction cost or communication cost will be reduced because of high customer loyalty (Coll *et al*., 2014). According to Morgan and Hunt (1994), trust and customer satisfaction are regarded as the key mediating factors in building the relationship with customers due to their effect on consumer commitment. Customers rely on trust not only to reduce the level of risk, but also to determine whether they will repeat to use the same brand again in the future (Cho, 2006).

Image

Keller (1993) defined an airline's image as a customer's overall perception about an organization reflected in the associations of customer's memory. How do the customers perceive the airline in terms being able to provide the service as expected?

An image of an airline can be described as a customer's overall perception about an organization reflected in the associations of customer's memory, for example, a good impression of the airline, the image of the airline by comparing with competitors' image, the image in the minds of passengers, and a good reputation in society of the airline (Singh, 2015). Keller (2013) stated the image of a brand as "perception about a brand as reflected by the brand associations held in a consumer's memory". Moreover, if the airline achieves a good image, it will stand out in the market place and can attract both repeated customers as well as new customers (Connor and Davidson, 1997). Dowling (1994) described that the more passengers think positively of the image towards the airline, the more likely passengers will assume that the service provided by the airline is better with higher quality. In addition, Forgas *et al*. (2010) mentioned that image in airline industry plays an important role due to its reflection of social value. The image of an airline has a significant positive influence on behavioural intention of passengers, as reflected in the study of Taiwanese air travellers (Yang et al., 2011).

Behavioural Intention

Saha and Theingi (2009) defined behavioural intention as the customers' subjective probability to perform a certain behavioural action. In other words, what intention does the customer have to behave in a certain way – i.e. fly with this airline again? This is regardless of whether they actually do it.

Behavioural intention of a person can be regarded as the probability to perform a certain behavioural action (Fishbein and Ajzen, 1975). Therefore, behavioural intention of a customer can be defined as the subjective probability of a customer to conduct a specific behavioural action (Saha and Theingi, 2009). Moreover, behavioural intention is described as the indicator of an individual's willingness to take specific behavioural actions (Ajzen, 1991). In addition, behavioural intention has been defined as the likelihood to engage in a particular behaviour (Oliver, 1999). Previous researchers described the behavioural intention of customers as a critical indicator for the profitability of the business entity (Reichheld and Sasser, 1990; Anderson *et al*., 1994). This is due to the fact described by the Saha and Theingi (2009) who stated that the revenue and cost of the organization are affected by repurchase and positive word-of-mouth which are criteria of behavioural intention. Furthermore, the service quality and customer satisfaction are regarded as important variables to predict future behavioural intention (Singh, 2015).

3. Conceptual Framework

The service quality results in customer satisfaction, customers' trust in the airline, and the brand image of the airline. These three factors in turn cause the behavioural intention. Therefore, the conceptual framework of this study is as follows:

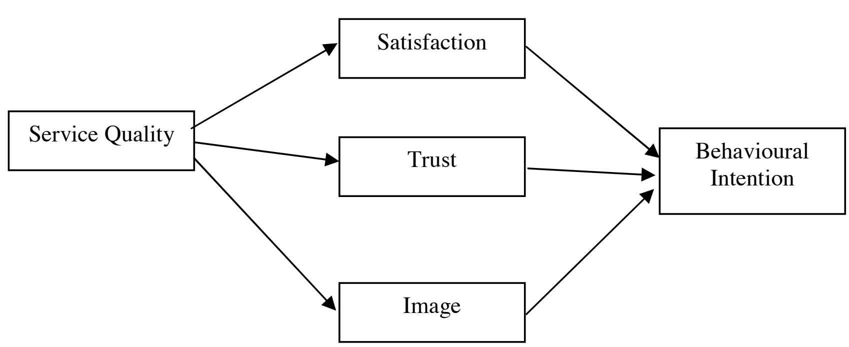


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Figure 3 Conceptual Framework

4. Methodology

In order to collect empirical data, a questionnaire was created. The first question was for screening, “Have you ever travelled with Myanmar National Airlines (MNA)?”. Only questionnaires with a positive reply were considered.

Demographical data included gender, age group, marital status, education level and monthly income in Myanmar Kyat (1 US$ equals about MMK 1,550).

For the five factors that are of interest in this paper, i.e. Service Quality, Satisfaction, Trust, Image and Behavioural Intention, five-point Likert scales were used, with ratings 1 = Strongly Disagree, 2 =Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree. Six questions were asked about Service Quality, and four about each of the other factors.

The sample size was calculated using Cochran’s (1977) formula, using a 95% confidence level and 5% error margin:

$$\mathbf{n = Z^2pq/ e^2}$$

n = size of the sample group

Z = confidence level at 95% (α= 0.05)

p = estimate of variance

q = 1- p

e = probability of error at 5%

$$n = 1.962^{2} (0.5) (0.5) / (0.05)^2$$

$$n = 384.94$$

Hence a minimum sample size of 385 was required. The questionnaires were distributed through email and social media – predominantly Facebook, which is “wildly popular” in Myanmar according to The Wall Street Journal (2018) – in early 2018, and 515 responses were received. Out of these, 491 responses were usable, well above the required minimum of 385.

4. Data Analysis

The majority of respondents are in the age group between 31 to 45 years, which consist of 244 respondents equal to 49.69% of total respondents, followed by the age group between 18 to 30 years, which consists of 204 respondents or 41.6%. The age group between 46 to 60 years, which is composed of 36 respondents or 7.3% is the third largest group. The lowest percentage of respondents is observed in 60 years old and above representing 1.4% or 7 respondents.

The majority of respondents are bachelor’s degree holders representing 299 respondents followed by master’s degree holders with 158 respondents. High school graduate and below totalling 18 respondents. The lowest percentage of respondents holding higher than Master’s degree reveals 16 people.

Income distribution reveals that most respondents (187 or 38%) have an income of MMK 1,000,000 or more. This compares to an average salary in Myanmar of MMK 80,000 (Salary Explorer, 2018); 75% of the population earn MMK 100,000 or less (ibid.).

So, the majority of the respondents are below middle age, have tertiary education and earn an above-average salary. This is no surprise, given that air transport is much more costly than surface transport, such as bus or rail.

For analysis of the questions about the five factors, the following scale was used:

Table 1 Scale of Mean Results

Scale	Level of agreement
1.0-1.80	Strongly disagree
1.81-2.60	Disagree
2.61-3.40	Neutral
3.41-4.20	Agree
4.21-5.00	Strongly agree

Service Quality

On the five-point Likert scale, the respondents are feeling Neutral with the service quality of MNA with the mean at 3.30 and standard deviation of 0.83. The research further shows that respondents find the flight schedules convenient with a mean of 3.42 with a standard deviation of 0.89.

Satisfaction

Respondents were quite satisfied with their experience, as the mean is 3.38 with a standard deviation of 0.82.

Trust

The overall mean in trust is neutral, with a mean of 3.16 and a standard deviation of 0.80, but it needs to be noted that the question whether the respondents trust that MNA can effectively solve problems such as flight cancellation, flight delay and baggage damage, the mean was as low as 3.07 with a standard deviation of 0.82.

Image

Respondents are fairly satisfied with MNA's brand image, resulting in a mean of 3.40 and a standard deviation of 0.84.

Behavioural Intention

The behavioural intention was still within the Neutral range at 3.37 and a standard deviation of 0.87.

In summary, the overall means are as follows:

Variable	Overall Mean	Level of Agreement
Service Quality	3.30	Neutral
Satisfaction	3.38	Neutral
Trust	3.16	Neutral
Image	3.40	Neutral
Behavioural Intention	3.37	Neutral

5. Conclusion and Recommendation

This study has shown that the respondents feel neutral about the Service Quality they receive from Myanmar National Airlines. This figure alone is not conclusive; as outlined in the Literature Review, the customers evaluate the service based on their comparative experiences and expectations. The authors recommend further research into the reasons why the respondents did not give a better evaluation. Especially interesting here would be a comparison with domestic and with international competitors. The authors recommend to conduct further research to find the focus which issues need improvement.

Satisfaction follows the Service Quality. It is noteworthy here that the mean for the Satisfaction is above the mean for the Service Quality. As the overall direct feeling comparing the service received with their own standards, norms or ideals (Fornell, 1992), the respondents were slightly more satisfied with their experience than they rated the overall Service Quality. The reason may be that they realised that their expectations were not realistic in the given environment, or that they felt they had paid a low fair and perceived that they had received value-for-money, to name just two possible explanations. Further research should clarify this, as a deeper understanding is required as to why the customers are not very satisfied. Both service quality and satisfaction needs to be understood with regards to whether the interviewees compare them with other domestic airlines or with international airlines they had one or more experiences with. Only this way can concrete action be recommended.

Trust is a perception indicating how much confidence the customers have in a business. The survey questions focussed on the management side of the business, not on safety. Can the airline solve problem such as delays, will the airline keep its promise? As the Service Quality the customers experienced has a slightly higher result than the Trust questions in the questionnaire, it can be understood that the respondents did not believe that the service will remain on the same level in the future. However, it must be noted that Trust still achieves a Neutral rating, so there is no distrust that would be detrimental to the business. The airline can build on that non-negativity and improve towards a positive feeling of trust by their customers.

The brand image that the airline has with the respondents is Neutral. According to the interviewees, the brand image of the airline is not bad, and with a mean of 3.40 neutral and just at the edge to becoming good. This can be used to reinforce the positivity of the brand image and improve it through improving the service quality and communicating it to the customers with marketing tools.

The behavioural intention following the satisfaction, trust and brand image is therefore Neutral, which does not come as a surprise. Customers may or may not use the airline again. The positive aspect of this is that this does not indicate an objection or negative feelings against using the airline, the airline merely needs to reinforce the positive feelings, which follow satisfaction, trust and brand image.

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Ungul Laptaned, Editor-In-Chief, Graduate College of Management, Sripatum University, Bangkok, Thailand, Tel.: +66 2 561 3001, Fax.: +66 2 561 1721, E-mail: ungul.la@spu.ac.th, epxull@yahoo.com.

Ioannis Manikas, Associate Editor, Department of Systems Management and Strategy, University of Greenwich, Greenwich, United Kingdom, Tel.: +44 20 8331 9000, Fax.: +44 20 8331 8145, E-mail: i.manikas@gre.ac.uk.

and

Gilbert Nartea, Guest Editor, Faculty of Commerce, Lincoln University, Lincoln, Canterbury, New Zealand, Tel.: +64 3 325 2811, Fax.: +64 3 325 3850, E-mail: gilbert.nartea@lincoln.ac.nz.

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Ungul Laptaned
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Graduate College of Management
Sripatum University, Building 11, floor 11, 2410/2 Phaholyothin Road,Jatujak, Bangkok 10900, Thailand
Tel: (+66) 2579 1111 ext. 3000 - 4 Fax: (+66) 2579 1111 ext. 3011 E-Mail: phongvitchulada.su@spu.ac.th

Sripatum International College
Sripatum University

Sripatum International College
Sripatum University, Building 11, floor 8, 2410/2 Phaholyothin Road, Jatujak, Bangkok 10900, Thailand
Tel: (+66) 2579 1111 ext. 1017, 1018, 1308 Fax: (+66) 2558 6868 E-Mail: intl@spu.ac.th

Sripatum University, Thailand

Sripatum University is one of the oldest and most prestigious private universities in Bangkok, Thailand. Dr. Sook Pookayaporn established the university in 1970 under the name of "Thai Suriya College" in order to create opportunities for Thai youths to develop their potential. In 1987, the college was promoted to university status by the Ministry of University Affairs, and has since been known as Sripatum University. "Sripatum" means the "Source of Knowledge Blooming Like a Lotus" and was graciously conferred on the college by Her Royal Highness, the late Princess Mother Srinagarindra (Somdet Phra Srinagarindra Baromarajajanan). She presided over the official opening ceremony of SPU and awarded vocational certificates to the first three graduating classes. Sripatum University is therefore one of the first five private universities of Thailand. The university's main goal is to create well-rounded students who can develop themselves to their chosen fields of study and to instill students with correct attitudes towards education so that they are enthusiastic in their pursuit of knowledge and self-development. This will provide students with a firm foundation for the future after graduation. The university's philosophy is "Education develops human resources who enrich the nation" which focuses on characteristics of Wisdom, Skills, Cheerfulness and Morality.

University of Greenwich, United Kingdom

The University of Greenwich is a British university with campuses in south-east London and north Kent. These include the Greenwich Campus, located in the grounds of the Old Royal Naval College in the Royal Borough of Greenwich, London, England. It is the largest university in London by student numbers and the greenest in the UK as assessed by The People & Planet Green League. The university's wide range of subjects includes architecture, business, computing, education, engineering, humanities, natural sciences, pharmacy and social sciences. It has a strong research focus and well-established links to the scientific community.

Lincoln University, New Zealand

Lincoln is New Zealand's third oldest university. Founded in 1878 as a School of Agriculture, the organisation was linked to Canterbury College, welcoming its first intake of students in 1880. In 1896, with agriculture now well established as the mainstay of New Zealand's exports, the School of Agriculture separated from Canterbury College and became Canterbury Agricultural College, with its own governing body and the ability to award degrees through the University of New Zealand. In 1961, the university was officially renamed Lincoln College, becoming a constituent college of the University of Canterbury. In 1990 Lincoln University formally separated from the University of Canterbury and became the self-governing national university that it is today. Internationally Lincoln University has academic alliances with complementary institutions in Asia, the Middle East, Europe and the Americas. These alliances support academic relationships and enhance educational opportunities for teaching staff, students and those undertaking advanced research.

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Sripatum University
2410/2 Phaholyothin Rd., Jatujak, Bangkok, 10900, Thailand
Tel.: +66 2 579 1111, Fax.: +66 2 558 6868
E-mail: ir@spu.ac.th
Website: www.spu.ac.th

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