

STUDY OF STUDENTS' SATISFACTION TOWARDS CLASS SCHEDULE: INTERNATIONAL COLLEGE, SUAN SUNANDHA RAJABHAT UNIVERSITY

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ABSTRACT

This research aims to study to satisfy the students' schedules. And to achieve the schedules of students' satisfaction.

The research sample was Undergraduate and graduate students studying in various disciplines of international colleges. The researcher used a sample size set by the researcher Robert V. Krejcie of the University of Minnesota and Earlyle W. Morgan of the University of Texas (1970). The sample size was 400. The systematic random sampling was randomly selected from the student code.

The results showed that Suan Sunandha Rajabhat University has satisfied the schedule in the overall level. When considering each side, it was found that the most the schedule is consistent with the study plan you are studying. And students with different levels of education and disciplines. There was no significant difference in the satisfaction of the students.

Keywords: satisfaction, class schedule, International College

INTRODUCTION

Scheduling study table teach is considered a critical mission that nearly all educational institutions responsible preparation course schedule course syllabus, executed efficiently. By the form of scheduling classes are difficult and take more preparation according to the size of the information and the terms in the schools, which have different characteristics and problems that occur are varies according to various criteria, such as course content, number of classrooms, number of regular professors, number of special professors, professor's free time, student's free time, number of courses to be enrolled in each semester, number of credits according to the regulations of the University. In the current study had courses are taught in a large number. Scheduling classes relevance to professor. Date, time and venue of teaching, these factors are problems that concern with the scheduling of related institution. In addition, it may be due to the incompleteness of the information and the coordination of the relevant areas.

Therefore, there are many important factors that need to be considered in each semester. Thus, the scheduling classes might create dissatisfaction for students. On the other hand, if the schedule is properly set up, it may be a factor that encourages students to be more interested in learning. For this reason, the researcher is interested in studying the student's satisfaction with the scheduling of the university. To obtain guidance on how to improve the system for scheduling efficiency and maximum benefits to help students plan to time in school and helps students to recognize content in the course enrollment, can be worth the time and resources used in the study.

Research Objectives

1. To study satisfaction in scheduling students.
2. To find ways of scheduling classes to meet student's satisfaction.

RESEARCH METHODOLOGY

This study uses quantitative research. The purpose of this study was to investigate the satisfaction of students' schedules of Suan Sunandha International College. The process of conducting research consists of population, sample, research tools, data collection, analysis of data and statistics used in the research. The statistics used in the research. The population used in this research was undergraduate and graduate studies in the Department of International College. University Senior High School in 2560 and has set the size of the sample, the researchers used tables to determine sample sizes of Robert V. Krejcie University. Minisota and Earyle W. Morgan of the University of Texas (1970) the number of samples from 400 people, and how to select a sample volumes. Using a random system (Systematic Random Sampling) random code from students who have already sorted.

Data collection

The researcher collected data on this research by submitting a questionnaire based on the number of student population of international colleges, Suan Sunandha Rajabhat University. The sample was systematically sampled. Number of sample is 400 questionnaires and received questionnaire return 400 questionnaires, representing 100 percent.

Summary of research

The results showed that respondents are satisfied with the arrangement, International College schedule supercheap Stuart Park in the overview level, very average standard deviation 4.04.58, when considering a list of issues, found that the issues that students have the most satisfaction is to schedule your instruction is consistent with the study plans that you are studying ($\bar{x} = 4.20$, S.D. = 0.42) is a way to check the course syllabus which clearly and easy to reach ($\bar{x} = 4.17$, S.D. = 0.43) table teach accuracy ($\bar{x} = 4.09$, S.D. = 0.37) and are the least satisfied in the officer can provide information and answer any questions. ($\bar{x} = 3.87$, S.D. = 0.97)

Satisfaction of students per class in the image included on many levels. When considering a side list, find that Matt is teaching schedule are consistent with the study plans that are studied. Can debate whether the students came to study in a University. The most important goal is to graduate in due time, so that the correct lessons schedule. In accordance with the curriculum that is being studied as a particularly important factor to make the students have graduated them according to the way the course duration and will allow them to plan appropriate learning each year.

Comparative study on the effects of different disciplines that have the satisfaction to arrange of International College, Suan Sunandha Rajabhat University, gardens, Stuart found that students who study in different disciplines. Have satisfied the course schedule of International College, Suan Sunandha Rajabhat University. There was no difference between the statistical significance level 0.05 level.

Satisfaction of students per class in the image included on many levels. When considering a side list, find that Matt is teaching schedule are consistent with the study plans that are studied. Can debate whether the students came to study in a University. The most important goal is to graduate in due time, so that the correct lessons schedule. In accordance with the curriculum that is being studied as a particularly important factor to make the students have graduated them according to the way the course duration and will allow them to plan appropriate learning each year.

A comparative study on different educational level with satisfaction to arrange of International College, Suan Sunandha Rajabhat University. Stuart found that undergraduate students and master's degree of satisfaction with the course schedule of of International College, Suan Sunandha Rajabhat University.. There is no difference. Can debate whether higher education in both undergraduate and graduate levels. The student has satisfied as well. This is probably because the schedule has to notify the student in advance before the semester begins, students can prepare to do properly.

Suggestion

The results of the study of satisfaction in the schedule of international college students. University High School purpose Researchers have suggested a timetable to guide the appropriate timetable is as follows:

1. Suggestions from this research

- 1.1 should have the technology to assist in scheduling classes timetable. However, to achieve faster and more accurate
- 1.2 should be steps taken to modify the timetable to clear. For the students who want to modify the timetable

2. Suggestions for further research

- 2.1 should have the satisfaction of teaching and learning in general. To improve the effectiveness of teaching and learning in college is increasing.
- 2.2 make a qualitative study To learn about the needs of students in the class schedule timetable.

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FACTORS AFFECTING TO THE OPERATION OF THE ACTION PLAN: A CASE STUDY OF INTERNATIONAL COLLEGE, SUAN SUNANDHA RAJABHAT UNIVERSITY

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ABSTRACT

This research aims to study 1) to study factors affecting the performance of the five year strategic plan (2560 - 2564) and the operational plan for the fiscal year 2016 of the International College 2) To provide recommendations for development of operational procedures appropriate to the strategic plan and annual work plan.

The research sample was International College Staff Suan Sunandha Rajabhat University 56 students were selected by using specific sampling method. The research instrument was a questionnaire. The statistics used in the research were percentage, mean, standard deviation

The research findings were as follows: 1) Factors affecting the perception of work performance in overall were at the high level. 2) Factors affecting the achievement of motivation achievement at the overall level were at the high level. Most of the tasks are responsible for the whole process. 3) Factors affecting occupational performance in overall career were at the high level. Most of the issues of promotion and advancement come from the ability to work.

Keywords: strategy, annual action plan, international college

INTRODUCTION

The implementation of the various agencies present in it is very important that needs to be planned carefully. In order to determine the appropriate management direction. This will make the organization stronger and more competitive with other organizations. To make themselves survive in a highly competitive situation. One important factor that many organizations adopt as a tool for determining their operations is "strategy." The term "strategic" refers to a systematic plan of action. There are various elements associated with each other. It is a map with a vision or a dream image. It's a mental affair. The goal is to demonstrate the shared commitment of all parties and seize the power of all parties to carry out a mission that is responsible. To achieve the objectives set. To achieve the desired effect and results.

A good strategic plan comes from analyzing the past, knowing the present to pursue the future. Analyze past situations, analyze resources and capital as a potential or capabilities that are not yet developed or not yet fully developed. Or is it still hidden? A good strategic plan is the result of a good planning process. Manage the plan efficiently and effectively. It is a well-planned, well-coordinated and well-coordinated plan. Involve all parties involved in the cause. And have a good role-playing. Strategic planning and annual action plans by the top executives must formulate policies while all levels of management must work together to formulate strategic issues for the organization. Indicators of success, strategies, and plans for the project.

There is a difference in management at each level. So executives at each level has different duties and responsibilities, ie, the executives will be responsible for policy and plans of the organization as a whole (overall policy and plan). Mid-level executives will have responsibilities and responsibilities regarding the organization's policies and plans in the form of sub-policies or sub-plans. Top executives have responsibilities and responsibilities in the action plan. Project preparation, determining the details of plan and project activities.

International College, Suan Sunandha Rajabhat University is the agency is under Suan Sunandha Rajabhat University. Therefore, the implementation of the college must be in accordance with the university's

strategic plan. In addition to the strategic plan, the annual action plan is very important in achieving the university's policy and objectives and achieve vision as The University's "Smart Archetype University"

Research Objectives

1.2.1 To study the factors influencing the performance of the five year strategic plan (2017 - 2021) and the operational plan for the fiscal year 2018 of the International College, Suan Sunandha Rajabhat University

1.2.2 To provide guidance for the development of operational procedures. The five-year strategic plan (2017 - 2021) and the operational plan for the fiscal year 2018 of the International College, Suan Sunandha Rajabhat University

RESEARCH METHODOLOGY

Population and sample

The population in this study is 37 academic staffs and 27 support staffs from International College, Suan Sunandha Rajabhat University. For the sample design, the researchers used a sample size chart from Krejcie & Morgan (Krejcie & Morgan). The proportion of interest in the population is 0.5. The acceptable tolerance is 5% and a confidence level of 95% of the sample had a total of 56 people.

Research tools

This study uses quantitative research. The research instrument was a questionnaire. The researcher conducted the questionnaire survey to study the factors affecting the success of the implementation of the five-year strategic plan (2017-2021) and the operational plan for the fiscal year 2016 of the International College, Suan Sunandha Rajabhat University. The questionnaire was divided into 3 parts:

Part 1 General information about the personnel questionnaire, including gender, education, work experience and current job position.

Part 2: Factors affecting the success of the implementation of the 5-year Strategic Plan (2017-2021) and the Action Plan for the Fiscal Year 2016 of the International College. Suan Sunandha Rajabhat University

Part 3: Difficulties and Suggestions

Data analysis

Data analysis using the program for research in the Social Sciences (SPSS) to analyze the frequency and percentage to describe data of the sample. And use standard deviation to explain in distribution of information.

A section on data analysis from the open-ended questionnaire. Barriers and suggestions using descriptive analytic.

To present the results. Analyzer uses a presentation in the form of a table with a description of the content.

Data collection

The researcher collected data on this research. By submitting a questionnaire to the population of the International College, Suan Sunandha Rajabhat University. A total of 56 samples were collected systematically and 56 were returned.

RESULTS

Research result

Knowledge in the operation

It was found that International College staffs have the understanding the impact of the implementation of the five-year strategic plan (2017-2021) and the operational plan for the fiscal year 2018 of the International College. Suan Sunandha Rajabhat University in the high level. When considering each side, it was found that. The highest average is a well-known function. It can be explained that each employee is aware of his or her own system of work that will make the work more effective, satisfying the work. The staff of the International College Suan Sunandha Rajabhat University, although there are different functions according to the job.

However, they still must perform their duties under the vision, mission of the University. Moreover, knowing the working system will affect the implementation of the five-year strategic plan and the annual action plan.

The motive

It was found that International College staffs have opinion that the achievement motivation factors affect the success of the implementation of the five-year strategic plan (2017-2021) and the operational plan for the fiscal year 2018 of the International College, Suan Sunandha Rajabhat University in the high level. When considering each issue, it was found that the most important factor affecting the success of the operation is responsible work that is important to the whole process. The results of the research are consistent with McKayland's (1998) concept that achievement motivation refers to the need for competitive success when compared to the highest standards. It can be argued that employees feel they are responsible for the whole process. Demonstrate that employees have success in working. They have been working in a number of important positions with the College.

Career advancement

The work progress factors that affect the success of the implementation of the five-year strategic plan (2017-2021) and the operational plan for the fiscal year 2018 of the International College, Suan Sunandha Rajabhat University. The overall level is very high. The mean was 4.23, with standard deviation 0.81. On a case by case basis, it was found that the factors that contributed to the success of the operation were the promotion and the progression from the ability to perform. So employees want to have a breakthrough in their work. If they want to be promoted, they have to be dedicated to work. In line with McKean's concept of a highly motivated person who is dedicated to the job. Therefore, the career advancement factors affect the performance of the annual strategic plan and action plan.

Suggestion

The results of the research on the factors affecting the success of the implementation of the five-year strategic plan (2017-2021) and the operational plan for the fiscal year 2018 of the International College, Suan Sunandha Rajabhat University. The researcher has suggestions to guide the improvement of working efficiency for the employees of international colleges, Suan Sunandha Rajabhat University as follows:

- International College Staff development should be developed for each employee's career progression and welfare system development to be a factor that motivates employees to work more effectively in order to reduce the rate of employees turnover.
- International Colleges should continually educate, advise and review all employees' work practices to ensure that they are in compliance with the five-year strategic plan and annual work plan.
- Employees should have an understanding of their strategic plans and annual plans to bring the results to improve the knowledge and operation of employees.

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ENTREPRENEURIAL ORIENTATION OF MASTERS LEVEL UNIVERSITY STUDENTS: AN EMPIRICAL STUDY OF DIFFERENT ACADEMIC PROGRAMMES

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ABSTRACT

Though some students view the entrepreneurship is dissolute for the society but most of the university students endeavor for being an entrepreneur. This research is carried out to examine the Entrepreneurial Orientation (EO) within the student population of different academic programmes of one university. This paper contributes on the process of developing entrepreneurship related activities within universities. The post positivistic paradigm guided this study employed questionnaire survey in Kathmandu University of Nepal. The 7 point Likert scale is used to acquire the perceptions of the respondents. Total 259 questionnaires were distributed to the Masters level students of different academic programmes but only 187 questionnaires returned where 169 were found suitable for the study. The descriptive and inferential statistics are used to analyze, infer and generalize the results. Basically, frequency, mean, standard deviation, principal component analysis, correlation and regression analysis are applied to fulfill the purpose of the study. The findings show that EO is significantly different between the academic programmes having without any difference in sub constructs. This paper suggests that the innovative ideas can be helpful to develop entrepreneurial study. This paper is valuable to examine the students' attitude differences towards entrepreneurship.

Keywords: Entrepreneurial Orientation, Entrepreneurship, University education, Kathmandu University

Paper type: Research Paper

THE IMPORTANCE OF EVENT DESIGN MANAGEMENT TO VISITORS OF A CULINARY EVENT IN CAPE TOWN, WORLD DESIGN CAPITAL 2014

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ABSTRACT

In developing countries such as South Africa, there has been an increased growth in the events sector of the tourism and hospitality industry. Innovative culinary events have become an important niche in the continuous expansion of a competitive product offer for global leisure cities such as Cape Town. Although literature indicates that there is a connection between a destination's gastronomy, travel, hospitality and visitor experience, little is known about the importance of effective design management to visitors of culinary events. Event design management relates to the various functional areas, such as entertainment and environment design, which are combined to create unique and satisfactory visitor experiences at recreational events. In 2014 Cape Town was designated the World Design Capital by the International Council of Societies of Industrial Design (ICSID), and a year-long programme of design-led events and hospitality activities commenced aimed at enhancing local and international visitor experiences. This study explored the importance of event design management to visitors at a culinary event and examined the role it plays in visitor expectations and experiences. The study followed a quantitative research methodology and utilised the internationally recognised Event Management Body of Knowledge (EMBOK) to identify the critical design management areas to be explored. The population constituted of visitors to the annual Good Food and Wine Show hosted in Cape Town in 2014 during the city's World Design Capital designation. A sample of 381 questionnaires was completed. The results of the study provide evidence suggesting that visitors have become particularly knowledgeable and interested in gourmet food and are continuously seeking new food themed experiences in a well-designed event environment. The data analysis further revealed that the experiential dimensions of culinary events, particularly those related to the event environment, entertainment and catering management are increasingly important to visitors and should be designed as interactive and authentic experiences. In conclusion, the findings of the study suggested that culinary event visitors in Cape Town have a robust expectation of creativity and innovative design and it is therefore imperative for event managers to consider the implementation of a holistic design management plan in order to ensure relevance and sustainability in the growing niche of culinary events.

RESERVOIR OPERATION OPTIMIZATION USING ARTIFICIAL NEURAL NETWORK

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ABSTRACT

Optimal operation of reservoir is one of the most important problems of water resource engineering addressed by many researchers. To complicate the problem and increase its dimensions, including increasing the number of reservoirs, reduced the possibility of solving this problem using conventional methods optimization. Since the temporal pattern of the river flow is not always matching on the temporal pattern of consumption. It is necessary that in times of high water flow to be controlled and be use it to low water period. Systems of reservoirs are used to regulate and control the flow of the river to make available the necessary water in location and time. Therefore, reservoir design is important in terms of storage volume required. In the current design is considered constant of supply, which reduces the resiliency of reservoir performance. Therefore, it can be apply in the design of various supply levels. After calculating the volume and performance indicators of reservoir such as reliability, resiliency and vulnerability to determine the optimal supply. Certainly, in such a situation maximum use will be made of existing water resources. So with according to the accuracy and high performance artificial neural networks (ANN) to predict the events of this method is used for reservoir operation optimization. In this study has been calculated the rate of release and need from the reservoir in the each period based on the volume of water entering the reservoir at the beginning of the same period. Thus, any combination of the above can be suitable volume output from the dam to be determined in the each period. This study was used to the dam of 15 Khordad and the results are compared with the results of other classical methods (regression method). The results showed relatively good accuracy of this method is applied in this field. Operation policy resulting from of this model is presented as the optimal operation policy.

Keywords: Operation Optimization, Reservoir, Regression, Artificial Neural Network (ANN).

COMPARATIVE ANALYSIS OF ICT ADOPTION AS CHANGE MANAGEMENT STRATEGY WITHIN BUSINESS ORGANISATIONS A CASE OF NIGERIA AND USA

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ABSTRACT

Despite the growing number of studies on ICT and the development of E-commerce the concept is still new among different organisations especially underdeveloped and developing countries the literature still suggests the need for advancing understanding of the key factors experienced in different contexts around the world. The re-branding of business activities brought about by an extensive use of ICT adoption has become an essential element of business success and a factor for competitive advantage in electronic commerce today. Government and Business organisations are no exceptions, as their survival, growth and development depends to large extent on the application of ICT towards organizational modeling and enhancing efficiency within their functional units and maintaining customer relations management. The paper is intended to compare the challenges of ICT adoption and level of development attained among developed and developing countries, where ICT adoption serves as an alternative for survival, growth and development among constraints of inexperienced IT management and substandard employees, poor infrastructure and high rate of cybercrime

Keywords: ICT Adoption, E-Commerce and Organizational performance.

TRADE, TRANSPORTATION, AND THE ENVIRONMENT: WELFARE EFFECTS OF EMISSIONS REDUCTIONS AND INTERNATIONAL EMISSIONS TRADING

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ABSTRACT

There is growing concern about trade-related environmental issues associated with increasing globalization. Most of the concerns are related to how international trade affects the level of greenhouse gases (GHGs) such as carbon dioxide (CO₂) from the production and consumption of goods, while GHG emissions from international shipping and aviation, which are an essential pillar of international trade, tend to be overlooked. The level of GHGs generated by international shipping and aviation has risen sharply in accordance with the expansion of world trade because of the shifting of trade from proximate partners to distant partners under trade liberalization. We examine environmental regulations of international transport in a two-country, two-good general equilibrium model where international transport generates pollution, which is treated as a pure public bad. The main finding is that under a reasonable condition regarding the world demand for international transport, permit trading between the international transport sectors of two countries always benefits an international-transport-importing country but may harm an international-transport-exporting country even if it receives all of the direct gains from permit trading.

Keywords: Emissions trading system, Environmental regulation, International trade, Transportatio

INTRODUCTION

There is growing concern about trade-related environmental issues associated with increasing globalization. Most of the concerns are related to how international trade affects the level of greenhouse gases (GHGs) such as carbon dioxide (CO₂) from the production and consumption of goods, while GHG emissions from international shipping and aviation, which are an essential pillar of international trade,¹ tend to be overlooked. The level of GHGs generated by international shipping and aviation has risen sharply in accordance with the expansion of world trade.² According to the International Energy Agency (IEA) (2013), CO₂ emissions from international marine and aviation bunkers in 2011 were both about 80 percent higher than in 1990 (primarily because of significant growth in Asian countries, particularly China), while global CO₂ emissions increased by about 50 percent in the same period.³ In 2011, emissions from international marine and aviation bunkers amounted to about four percent of global emissions, approximately equal to the sum of total emissions in Germany and Italy.

¹ According to the United Nations (2012, p.44), maritime transport handles over 80 percent of the volume of global trade in goods and accounts for over 70 percent of its value. By contrast, air transportation handles only 2 percent of world trade by weight but about 40 percent by value (see http://files.aea.be/Downloads/AEAcargobrochure_2012.pdf).

² In the period 1970–2012, international trade in goods by maritime transport has grown 4 percent annually and international air cargo has expanded 9 percent annually. See, for example, <http://www.epa.gov/international/trade/transport.html>.

³ Transport accounted for 22 percent of global CO₂ emissions in 2011, making it the second largest emissions-generating sector, after electricity and heat generation [IEA, 2013, p.11]. About three quarters of transport emissions in 2011 were generated by the road sector, for which emissions had increased by 52% since 1990. It is interesting to note that emissions from international shipping and aviation increased faster than did those from the road sector.

In business-as-usual scenarios, emissions from international shipping and aviation are expected to more than triple by 2050.⁴ This is not compatible with the internationally agreed goal of limiting the average global temperature rise to 2°C, required to prevent disruptive climate change, by reducing worldwide emissions by 40–70 percent from 2010 levels by 2050 [IPCC, 2014].

Empirical studies have found that a significant volume of trade-related GHG emissions are generated by international transportation, particularly international shipping and aviation, because of the fragmentation of global production and the shifting of trade toward more distant trading partners under the growing importance of cross-regional preferential trade agreements [WTO, 2013]. Hummels (2009) calculated that if world trade was fully liberalized, CO₂ emissions associated with international transportation would grow by as much as 10 percent, while production-related emissions would not rise. This is because trade would shift from proximate partners to distant partners that could not be reached by land transport, thereby increasing emissions from maritime and air transport. Cristea et al. (2013) found that international transportation is responsible for 33 percent of worldwide trade-related emissions, and over 75 percent of emissions for the major manufacturing categories. They also estimated that full liberalization of tariffs and economic growth concentrated in China and India raise emissions from transport much faster than the value of trade because of the shifting of trade toward distant trading partners.⁵

Emissions from international shipping and aviation are excluded from the present worldwide environmental framework (the United Nations Framework Convention on Climate Change (UNFCCC)) because it is difficult to identify which countries should be responsible for these emissions.⁶ Therefore, the environmental regulation of international shipping and aviation has been entrusted to specialized international organizations such as the International Maritime Organization (IMO) and the International Civil Aviation Organization (ICAO), respectively.⁷ However, as mentioned above, emissions from international marine and aviation bunkers have significantly increased, despite efforts by the IMO and ICAO to limit this increase through emissions standards and operational improvements.

It is important to restrict more effectively the emissions from international shipping and aviation (hereafter referred to jointly as international transport), which are expected to grow strongly in the absence of intervention. Recently, two notable examples of environmental frameworks for international aviation have emerged. First, the European Union (EU) agreed to apply the EU emissions trading system (ETS) to flights within the European Economic Area (EEA) for the period 2013–2016.⁸ Second, in 2013, the members of the ICAO reached a multilateral agreement to develop, by 2016, a global market-based measure (MBM) such as an ETS to restrict emissions from international aviation, to commence in 2020.⁹ The IMO is also considering the enforcement of a

⁴ Emissions from international shipping are expected to rise by 200–300 percent for the period 2007–2050 [International Maritime Organization, 2009, p. 106]. According to the International Civil Aviation Organization (2013, p. 25), by 2020 international aviation emissions are projected to be 50–70% higher than in 2010 even if fuel efficiency improves by 1.5 percent annually, and by 2050 they could be four to six times higher than the 2010 value.

⁵ See also Olsthoorn (2001), Corbett and Winebrake (2008), DeSombre (2008), and Krautzberger and Wetzel (2012) for emissions from international transportation.

⁶ By contrast, the environmental framework of the UNFCCC (the Kyoto Protocol) regulates GHG emissions from international road transport, such as rail and truck, similarly to those from domestic transport.

⁷ The parties included in Annex I of the Kyoto Protocol shall pursue limitation or reduction of GHG emissions not controlled by the Montreal Protocol from aviation and marine bunker fuels, working through the ICAO and the IMO, respectively (Article 2.2 of the Kyoto Protocol). See http://unfccc.int/methods_and_science/emissions_from_intl_transport/items/1057.php.

⁸ In 2012, the EU was to apply the EU ETS to flights operated from or to non-European countries as well as flights within and between countries in Europe. However, following the recommendation of the ICAO Council, in 2014, the EU agreed to limit the implementation to flights within the EEA. See http://ec.europa.eu/clima/policies/transport/aviation/index_en.htm.

⁹ For details, see <http://www.icao.int/environmental-protection/Pages/default.aspx>.

worldwide ETS for international maritime transport as an important MBM option, but the members of the IMO have not yet reached an agreement.¹⁰

The purpose of this paper is to examine the welfare effects of environmental regulations of international transport in a two-country trade model. We focus on two types of environmental regulations: (i) international emissions trading between the international transport sectors of two countries; (ii) one of the two countries unilaterally enforces strict environmental regulation of its international transport sector. The former corresponds to a worldwide ETS for international transport, as considered by international organizations such as the ICAO and IMO. It can also be interpreted as the application of the EU ETS to international aviation if we treat the two countries in our model as countries within the EEA. The latter scenario may correspond to the application of the EU ETS to international aviation if we think of the two “countries” (regions) as the EEA and the rest of the world. We identify and interpret the conditions for welfare improvement under the regulations. Our study contributes to understanding recent policy discussion on international transport and the environment, particularly a worldwide ETS for international transport.

We construct a two-country, two-good general equilibrium model with an international transport sector in each country. International transport generates pollution, which is treated as a pure global public bad that reduces utility. The two final goods and international transport services are freely traded between the countries so that their prices are set to meet the world market-clearing conditions. Because international transport is indispensable for importing goods, environmental regulations of international transport directly affect international trade flows, thereby changing the terms of trade for both final goods and international transport itself. Thus, it is important to study this issue in a general equilibrium model that can consider interactions between markets. To our knowledge, there exists no such theoretical study rigorously dealing with environmental regulations of international transport in a general equilibrium model.

The main result of this paper is that under a reasonable condition regarding the world demand for international transport, permit trading between the international transport sectors of the two countries benefits an international-transport-importing country, regardless of the world permit price, while an international-transport-exporting country may lose from permit trading overall, even if it receives all of the direct gains from permit trading. The larger the volume of trade in international transport, the higher the possibility of welfare deterioration by permit trading in an international-transport-exporting country. This result suggests that the trade pattern in international transport services is crucial to the welfare effects of permit trading in international transport emissions. Because permit trading improves the efficiency of production by reallocating pollution permits between the two countries, the national income in each country increases as a result of permit trading. This increase in the national income will change the demand for goods and international transport services, thereby causing two terms-of-trade effects, i.e., for final goods and international transport. The terms of trade for international transport tend to be favorable for an international-transport-importing country because permit trading improves the production efficiency of international transport and increases its world supply. Thus, permit trading makes an international-transport-importing country better off even if it does not receive the direct gains from permit trading. By contrast, an international-transport-exporting country needs to receive large direct gains from permit trading to benefit from international emissions trading because its terms of trade tend to deteriorate.

Our theoretical result seems consistent with empirical observations. A feature of international maritime transport is that fleet ownership is concentrated in a few countries such as Greece and Japan.¹¹ Ship operations are also concentrated in a few firms.¹² This suggests a high degree of market concentration in the maritime

¹⁰ See <http://www.imo.org/MediaCentre/HotTopics/GHG/Pages/default.aspx>.

¹¹ Owners from five countries, Greece, Japan, China, Germany and the Republic of Korea, together accounted for 53 percent of world tonnage in 2013 [UNCTAD, 2013, p. 43]. An alternative way to consider fleet ownership is in terms of the market value of vessels. According to UNCTAD (2013, p. 42), the top five ship-owning countries controlled about 48 percent of the world fleet by fleet value.

¹² For example, in 2013, the three largest European container ship companies operated one third of the global container carrying capacity [UNCTAD, 2013, p. 51].

transport sector, which suggests large trade imbalances in maritime transport services among countries. A large part of the global market for air cargo used to be provided by a limited number of large carriers such as FedEx and UPS Airlines [OECD, 2010, p. 112]. However, in recent years, because of developments in emerging economies, many carriers provide international airfreight services, i.e., market concentration is mitigated (IATA 2014). While the EU and the members of the ICAO have reached an agreement on MBMs such as an ETS for environmental regulations of aviation, the members of the IMO have not agreed to implement such measures for maritime transport, as mentioned above. This may be because trade imbalances in maritime transport are larger than that in aviation. A maritime-transport-exporting country is more likely to lose from permit trading under a large volume of exports, thereby reducing its incentive to support the introduction of permit trading.

As for unilateral environmental regulations, we find that a country may benefit from voluntarily imposing strict environmental regulation of its international transport sector, despite this regulation having the effect of shrinking the international transport sector. This is because the terms of trade for both final goods and international transport can be improved by the regulation.

The existing studies on trade and the environment have mainly examined the relation between pollution emissions and changes in production and consumption caused by trade.¹³ However, few papers have focused on the relation between international transport and the environment because most trade models omit transportation sectors. Some of the trade literature has investigated the role of international transportation, but the focus was not on environmental issues [e.g., Samuelson, 1954; Mundell, 1957; Herberg, 1970; Cassing, 1978; Francois and Wooton, 2001; Andriamananjara, 2004; Behrens and Picard, 2011]. The exception is Abe et al. (2014), who investigated the strategic environmental regulation of international transportation in a two-country oligopolistic trade model, but their focus was on the effects of trade liberalization, not of emissions trading, on international transport.

The introduction of an ETS is believed to minimize abatement costs and yield benefits to both buyers and sellers of permits because it equalizes the marginal abatement costs across emission sources according to textbooks on environmental economics. The existing literature has examined whether this result remains valid even under free trade in emission permits between countries using a general equilibrium model of international trade. Copeland and Taylor (2005) demonstrated that permit trading between countries may harm a participating country, although permit trading improves world welfare. This is because changes in the production of goods through permit trading may cause a negative terms-of-trade effect that cannot be compensated by the direct gains from permit trading. They underscored the importance of considering the effects of permit trading in the presence of international trade. Marschinski, Flachsland, and Jakob (2012) showed that the linking of ETSs between countries with different types of environmental regulations may make a participating country worse off because of the terms-of-trade effect caused by the linking. These articles found possible welfare improvement/deterioration if emission permits are internationally traded between final goods sectors but did not identify the sufficient condition for the result. In this paper, by considering emissions trading between international transport sectors, we explicitly derive the sufficient condition for welfare improvement. Our paper thus complements the existing studies.

The rest of the article is organized as follows. Section 2 introduces the basic model. Section 3 considers the effects of a unilateral emissions reduction. Section 4 explores the effects of international emissions trading. Section 5 concludes the article.

II. Basic Model

We develop a two-country, two-good general equilibrium model with an international transport sector in each country, to examine the impact of environmental regulations of pollution emissions from international transport. We refer to the two countries as “home” and “foreign”, and use an asterisk (*) to denote foreign variables. The two final goods are labeled as good 1 and good 2, and international transport services are indispensable for trade in goods. To focus on the impact of environmental regulations of international transport, we assume that only

¹³ See, for example, Copeland and Taylor (2004), Gallagher (2008), Copeland (2012), and Takarada, Ogawa, and Dong (2014) for a survey on trade and the environment.

international transport services generate pollution emissions. Pollution is treated as a pure global public bad that reduces utility. The final goods and international transport services are freely traded, and all of the markets are completely competitive.

To begin with, we focus on the home country to characterize the production and demand sides and environmental regulations. The structure of the foreign country is similar to that of the home country. We allow for differences in production technologies, consumers' preferences for goods and environmental quality, and environmental regulations between the two countries. After presenting the basic setting of our model, we describe the equilibrium of the world economy.

The "production" of international transport services requires specific factors of production (such as aircrafts, marine vessels, airport or port facilities, and engineers) and emits pollution. Although this pollution is a byproduct of output, it is modeled as a productive factor as in Copeland and Taylor (2003, 2005). A firm can produce a certain amount of international transport services with less pollution emissions by increasing its input of the specific factor for abatement activity (i.e., the specific factor and pollution are substitutes in production). In our model, the final goods are produced by employing many factors of production without generating any pollution emissions (i.e., only transportation generates pollution in the model).

To mitigate the damage caused by pollution emissions, the government of each country sets national pollution quotas and implements the pollution target with a marketable permit system. In order to consider a realistic and meaningful situation, we assume that the government initially implements weak environmental regulation of international transport by setting a large pollution quota. A fixed number of pollution permits, Z , are auctioned off to home firms in the international transport sector, and all revenue is redistributed to home consumers in a lump-sum fashion. The price of permits is equalized among firms in the international transport sector through a marketable permit system. Under weak environmental regulation, the marginal damage of pollution to consumers is larger than the permit price.

Let us consider the role of international transport. Despite free trade, the prices of goods are higher in an importing country than in an exporting country because of transportation costs. Without loss of generality, the home country exports good 1 and imports good 2. We assume that transporting one unit of good 1 from the home country to the foreign country requires α units of international transport services, while transporting one unit of good 2 requires β units. The values of the parameters α and β represent the difficulty of international transport, which depends on the properties of the goods. We denote by p the price of good 1 (good 2 is treated as the numeraire) and by t the price of international transport services. Then, the price of good 1 in the foreign country becomes $p + \alpha t$, although it is p in the home country, and the price of good 2 becomes $1 + \beta t$ in the home country.

In our model, differences in the prices of goods between the countries are endogenously determined because the price of international transport must satisfy the world market-clearing condition for international transport. On the one hand price differences are transportation costs for consumers, but on the other hand they are revenue for firms producing international transport services.

We now examine the demand side. The welfare of the home country, denoted by u , is negatively affected by the sum of pollution emissions from the two countries' international transport sectors (i.e., global pollution emissions), $Z_W = Z + Z^*$. The expenditure function with negative externalities is expressed by $E(p, q, Z_W, u)$, where $q = 1 + \beta t$. Because pollution has a negative effect on utility, $E_Z = \partial E / \partial Z_W > 0$ holds. E_Z denotes the marginal damage of pollution to consumers. Assuming that the final goods are normal goods, and choosing $E_u = 1$, we have $E_{pu} > 0$ and $E_{qu} > 0$ (the marginal propensities to consume good 1 and good 2 in the home country are pE_{pu} and qE_{qu} , respectively). The consumption of international transport services itself does not enhance utility. Because international transport is essential for trade in goods, it can be interpreted as an intermediate good. As in Copeland and Taylor (2003,

2005), preferences are assumed to be weakly separable across the set of goods and pollution. This weak separability ensures that the marginal rate of substitution is independent of a change in the amount of pollution. Thus, we obtain $E_{pZ} = E_{pu}E_Z$, which is positive because goods are normal in consumption ($E_{pu} > 0$).

Each country's national income is the sum of income from the production of goods and international transport services. In the home country, income from goods production is expressed using a gross domestic product (GDP) function, $G(p, q)$, where we omit the fixed factor endowment vector. $G(p, q)$ has all the standard properties of a GDP function [e.g., Dixit and Norman, 1980; Wong, 1995]. We denote by $F(K, Z)$ the aggregate production function of international transport in the home country, where K is the endowment of the specific factor, which is inelastically supplied. Then, income from the production of international transport services is given by $tF(K, Z)$. Consequently, the national income of the home country is $G(p, q) + tF(K, Z)$. Similarly, $G^*(p + \alpha t, Z^*) + tF^*(K^*, Z^*)$ represents the national income of the foreign country.

The equilibrium of the world economy is described by the following system of equations:

$$E(p, q, Z_W, u) = G(p, q) + tF(K, Z), \dots\dots\dots(1)$$

$$E^*(p + \alpha t, Z_W, u^*) = G^*(p + \alpha t) + tF^*(K^*, Z^*), \dots\dots\dots(2)$$

$$E_p(p, q, Z_W, u) - G_p(p, q) + X_p^*(p + \alpha t, Z_W, u^*) = 0, \dots\dots\dots(3)$$

$$\beta X_q(p, q, Z_W, u) + \alpha X_p^*(p + \alpha t, Z_W, u^*) - F(K, Z) - F^*(K^*, Z^*) = 0, \dots\dots\dots(4)$$

Where $X_q(p, q, Z_W, u) = E_q(p, q, Z_W, u) - G_q(p, q) > 0$ and $X_p^*(p + \alpha t, Z_W, u^*) = E_p^*(p + \alpha t, Z_W, u^*) - G_p^*(p + \alpha t) > 0$ are the amounts of imports in the

home and foreign countries, respectively. (1) and (2) are the budget constraints for the home and foreign countries, respectively. The current account is balanced through trade in the two final goods and international transport services. (3) and (4) are the market-clearing conditions for good 1 and international transport services, respectively. The world market for good 2 clears by Walras' Law.

III. Emission Reductions in International Transport Sectors

In this section, we consider the effects of unilateral enforcement by one country of strict environmental regulation of its international transport sector. Although our model is simple, its equilibrium behavior appears to be complex. To facilitate the exposition, we consider a small reduction in pollution permits by one country when the other country does not change its environmental regulations. In the real world, countries are not allowed to freely generate pollution emissions from international transport because (i) there are national environmental regulations and (ii) international organizations such the ICAO and IMO impose certain restrictions (e.g., emissions standards) on pollutants from international aviation and shipping, respectively. Thus, even if a country imposes stricter environmental regulations of international transport, other countries are in fact unable to weaken their environmental regulations (i.e., there is no carbon leakage).

First, we examine how a reduction in the number of pollution permits in the international transport sector affects the prices of goods and international transport services. Next, we investigate the effects of emissions reductions on individual welfare and world welfare (the sum of the two countries' welfares).

3.1. Effects of Emissions Reductions on Prices

Totally differentiating (1)–(4), we obtain the following equations:

$$\frac{|H|}{F_Z} \frac{dt}{dZ} = (1 - \beta t E_{qu}) \lambda + X_p^* \{ E_{pu} (1 - \alpha t E_{pu}^*) - E_{pu}^* (1 - \beta t E_{qu}) \} + \kappa t E_{pu}, \dots\dots\dots(5)$$

$$\frac{|H|}{F_z^*} \frac{dt}{dZ^*} = (1 - \alpha t E_{pu}^*) \lambda + X_p^* \{E_{pu} (1 - \alpha t E_{pu}^*) - E_{pu}^* (1 - \beta t E_{qu})\} + \kappa t E_{pu}^*, \dots \dots \dots (6)$$

$$\frac{|H|}{F_z} \frac{dp}{dZ} = \{E_{pu}^* (1 - \beta t E_{qu}) - E_{pu} (1 - \alpha t E_{pu}^*)\} T^* - \mu t E_{pu} - \kappa (1 - \beta t E_{qu}), \dots \dots \dots (7)$$

$$\frac{|H|}{F_z^*} \frac{dp}{dZ^*} = \{E_{pu}^* (1 - \beta t E_{qu}) - E_{pu} (1 - \alpha t E_{pu}^*)\} T^* - \mu t E_{pu}^* - \kappa (1 - \alpha t E_{pu}^*), \dots \dots \dots (8)$$

where $|H|$ is the Jacobian determinant of the system (1)–(4), $\lambda = E_{pp} - G_{pp} + X_{pp}^*$, $\mu = \beta^2 X_{qq} + \alpha^2 X_{pp}^*$, $\kappa = \beta X_{qp} + \alpha X_{pp}^*$, and $T^* = \alpha X_p^* - F^*$. $|H| > 0$ if the equilibrium is locally Hicksian stable (see Appendix A). We assume Hicksian stability in this paper. From the properties of the expenditure and GDP functions, $\lambda < 0$ and $\mu < 0$ hold. $\lambda < 0$ means that an increase in the price of good 1, p , reduces consumption of good 1 and raises production of good 1. $\mu < 0$ indicates that an increase in the price of international transport services, t , reduces the world demand for international transport. T^* is the foreign country's excess demand for international transport services. From the properties of the expenditure function, $pE_{pu} + qE_{qu} = 1$ holds, which can be rewritten as $1 - \beta t E_{qu} = pE_{pu} + E_{qu} > 0$. Similarly, we have $1 - \alpha t E_{pu}^* > 0$. Assume that environmental regulations are binding in both countries. Then, the output of international transport increases as the number of pollution permits increases ($F_z > 0$ and $F_z^* > 0$).

The effects of a small change in the number of pollution permits of the home (foreign) country, $Z^{(*)}$, on the prices of international transport services and good 1 are given by (5) and (7) ((6) and (8)), respectively. The effects on the prices are complicated because there are two terms-of-trade effects, i.e., for final goods and international transport services. To obtain clear-cut results, we impose the following assumption.

Assumption 1 *A change in the price of good 1 has a negligible effect on the world demand for international transport services, i.e., $\kappa = \beta X_{qp} + \alpha X_{pp}^* \cong 0$.*

This assumption is reasonable for the following reason. Suppose that the price of good 1 rises. In the home country, because the price of good 2 (the imported good) becomes relatively lower, consumption of good 2 increases and production of good 2 decreases, which increases the amount of imports. Thus, the home demand for international transport increases ($\beta X_{qp} > 0$). By contrast, in the foreign country, consumption of good 1 (the imported good) decreases and production of good 1 increases, which leads to a reduction in the demand for international transport ($\alpha X_{pp}^* < 0$). The sign of κ depends on the sum of these two opposite effects, and they are nearly offset under Assumption 1. Note that κ is the partial derivative of $\beta X_q + \alpha X_p^*$ with respect to p . Therefore, it simply measures how a change in the relative price of good 1 affects the world demand for international transport, holding all else constant.

We obtain the following proposition for the price of international transport services.

Proposition 1 *Consider Assumption 1. Unilateral enforcement of strict environmental regulation of the international transport sector (a reduction in $Z^{(*)}$) will increase the price of international transport services if the preference for good 1 is sufficiently weak in the home country but strong in the foreign country (E_{pu} is small but E_{pu}^* is large).*

Proof. The terms on the left-hand side of (5) and (6), $|H|/F_z^{(*)}$, are positive because $|H| > 0$ and $F_z^{(*)} > 0$. When E_{pu} is small and E_{pu}^* is large, the term in braces in (5) and (6), $E_{pu} (1 - \alpha t E_{pu}^*) - E_{pu}^* (1 - \beta t E_{qu})$, becomes negative because $1 - \alpha t E_{pu}^* > 0$ and

$1 - \beta t E_{qu} > 0$. The first terms of (5) and (6) are negative because $\lambda < 0$. We can neglect the third term under Assumption 1. Therefore, the right-hand sides of (5) and (6) are negative. ■

The intuition behind this result is as follows. Consider the case of a reduction in the number of pollution permits in the home country, Z . There are three effects to be considered. First, a reduction in Z directly decreases the supply of international transport, which raises the price of international transport (the direct effect). Second, this increase in the price has the following indirect effect. In the foreign country, the direct effect enhances income from the international transport sector, which increases the demand for good 1 mainly because the foreign country has a strong preference for good 1 (the imported good). As a result, the foreign demand for international transport (the derived demand for imports) increases to a large extent. In the home country, the rise in the price of international transport services has an ambiguous effect on income from the international transport sector because the output is reduced by a reduction in Z . Therefore, it is ambiguous whether the demand for international transport increases in the home country. The sum of these two effects is the indirect effect. Third, the demand for international transport is also affected by changes in the price of goods. A change in the price of international transport services affects the price of goods by changing the import demand in each country, and this change in the price of goods will further affect the price of international transport services. We can ignore this interaction under Assumption 1. Consequently, the strict regulation will increase the price of international transport services because the direct effect dominates other effects. We can understand by analogy the case of a reduction in the number of pollution permits in the foreign country.

As for the effects on the price of goods, given by (7) and (8), we cannot obtain clear results by imposing meaningful conditions. Any change in the price of good 1 depends on variables such as preferences, the price of international transport services, and the volume of trade in international transport services. It is ambiguous whether the price of good 1 increases because the effects caused by a reduction in the number of permits interact in a complicated manner through the markets.

3.2. Welfare Effects of Emissions Reductions

Next, we investigate the effects of a unilateral emissions reduction on each country's welfare. Let us focus on an emissions reduction by the home country. We can similarly understand the case of the foreign country. Totally differentiating (1), we obtain

$$du = X_p^* dp + T^* dt + (tF_Z - E_Z) dZ \dots\dots\dots (9)$$

From (9), the welfare of the home country depends on three effects: (i) the terms-of-trade effect for final goods, $X_p^* dp$; (ii) the terms-of-trade effect for international transport services, $T^* dt$; (iii) the net benefit from an emissions reduction, $(tF_Z - E_Z) dZ$. The home country gains from the terms-of-trade effect for final goods if the price of good 1 increases ($dp > 0$), because the home country exports good 1 ($X_p^* > 0$). If the home country exports international transport services ($T^* > 0$), an increase in the price of international transport ($dt > 0$) will improve welfare. The net benefit is decomposed into a reduction in income from the international transport sector (tF_Z) and consumers' gain associated with a reduction in pollution emissions (E_Z). When environmental regulation is initially weak, the net benefit from an emissions reduction ($dZ < 0$) is positive ($(tF_Z - E_Z) dZ > 0$) because the utility gain dominates the income loss ($tF_Z < E_Z$).

Totally differentiating (1)–(4), we obtain the formal expressions for the welfare effects but they are very complicated (see Appendix B). A reduction in the number of pollution permits directly improves welfare provided that initial environmental regulation is weak. Moreover, it indirectly affects the prices of goods and international transport services by changing the demand and supply of goods and international transport services. We cannot clarify whether an emissions reduction makes countries better off by imposing meaningful conditions, because the reduction has an ambiguous effect on the price of goods, as already mentioned.

Consider world welfare. The effect of an emissions reduction on world welfare is clear, in contrast to the case of individual countries' welfare. Totally differentiating (1) and (2), we have

$$du + du^* = (tF_Z - E_Z - E_Z^*)dZ + (tF_Z^* - E_Z - E_Z^*)dZ^* \dots\dots\dots (10)$$

When each country's environmental regulation is weak in the initial equilibrium ($tF_Z < E_Z$ and $tF_Z^* < E_Z^*$),¹⁴ both terms in parentheses in (10) are negative. That is, a unilateral emissions reduction improves world welfare, thereby making at least one country better off. This result is straightforward.

Our result suggests that a country may benefit from voluntarily imposing strict environmental regulations of the international transport sector despite these regulations having the effect of shrinking the international transport sector. This is because there is not only the net benefit from an emissions reduction but also a possible improvement in the terms of trade for final goods and international transport services. A country that does not strengthen its environmental regulation is more likely to benefit from voluntary regulation by the other country because the size of the international transport sector is constant.

IV. International Emissions Trading in International Transport Sectors

In this section, we consider the effects of international emissions trading on the two countries' international transport sectors. In doing this, first, the basic model is modified. Next, we investigate how such emissions trading affects prices and welfare. We examine a small movement toward full free trade in pollution permits, as in Copeland and Taylor (2005), to obtain clear-cut results.

Without loss of generality, we assume that the domestic permit price in the initial equilibrium is higher in the home country than in the foreign country. In each country, the domestic permit price is equal to the marginal value product of pollution permits, $tF_Z^{(*)}$. Therefore, we have $tF_Z^* < tF_Z$ under this assumption. This implies that an environmental regulation of international transport is initially stricter in the home country than in the foreign country. Note that this difference in the permit prices does not always mean that the home country generates less emissions per unit of international transport services than the foreign country does, because production technologies may be asymmetric between the countries. We assume that when the two countries allow international emissions trading, the world permit price, r , will lie between the domestic permit prices of the two countries, i.e., $tF_Z^* \leq r \leq tF_Z$.¹⁵ Thus, once international emissions trading begins, the home country becomes a buyer of pollution permits, while the foreign country becomes a seller of them.

The basic model is modified as follows:

$$E(p, q, Z_W, u) = G(p, q) + tF(K, Z + z) - rz, \dots\dots\dots (11)$$

$$E^*(p + at, Z_W, u^*) = G^*(p + at) + tF^*(K^*, Z^* - z) + rz, \quad (12)$$

$$\begin{aligned} &\beta X_q(p, q, Z_W, u) + \\ &\alpha X_p^*(p + at, Z_W, u^*) - \\ &F(K, Z + z) - \\ &F^*(K^*, Z^* - z) = 0 \end{aligned} \quad (13)$$

¹⁴ The permit price is equalized between the countries ($tF_Z = tF_Z^* = E_Z + E_Z^*$) when global pollution emissions are optimally regulated.

¹⁵ This relation between the world and domestic prices is typical, as in the case of international factor movement in a competitive market model.

where z is the number of pollution permits traded between the countries. The third term of (11) represents payment for traded permits by the home country, while the third term of (12) is the revenue of the foreign country from selling permits to the home country. The market-clearing condition for good 1 is the same as in the basic model. Therefore, the equilibrium is described by the system of equations comprising (3) and (11)–(13).

4.1. Effects of International Emissions Trading on Prices

Totally differentiating (3) and (11)–(13), we obtain

$$|H| \frac{dt}{dz} = (tF_z - r)(\kappa\varepsilon - \gamma\lambda) + (F_z - F_z^*)\{t\gamma E_{pu}^* X_p^* + \kappa t E_{pu}^* + (1 - \alpha t E_{pu}^*)(\varepsilon X_p^* + \lambda)\}, \quad (14)$$

$$|H| \frac{dp}{dz} = -(tF_z - r)(\varepsilon\mu - \gamma\kappa) - (F_z - F_z^*)\{\mu t E_{pu}^* + \varepsilon T^*(1 - \alpha t E_{pu}^*)\}$$

$$-(F_z - F_z^*)\{\kappa(1 - \alpha t E_{pu}^*) + \gamma t T^* E_{pu}^*\}, \dots\dots\dots (15)$$

where $\gamma = \beta E_{qu} - \alpha E_{pu}^*$ and $\varepsilon = E_{pu} - E_{pu}^*$.

First, we examine the effect on the price of international transport services, given by (14). We may expect the price to fall because the world supply of international transport will increase through the efficient reallocation of pollution permits between the two countries under international emissions trading. As we will show below, the price tends to fall under certain conditions. $\varepsilon X_p^* + \lambda < 0$ because the equilibrium is locally Hicksian stable (see (A2) in Appendix A). Then, the third term in the braces of (14), $(1 - \alpha t E_{pu}^*)(\varepsilon X_p^* + \lambda)$, is negative. If $\gamma < 0$, $\kappa < 0$, and $\varepsilon > 0$, the right-hand side of (14) is necessarily negative, i.e., the price of international transport services is reduced by international emissions trading ($dz > 0$). We have $\gamma < 0$ and $\kappa < 0$ when the requisite amount of international transport services for transporting one unit of good 1, α , is large and that for transporting one unit of good 2, β , is small. $\varepsilon > 0$ holds under the condition that the preference for good 1 is strong in the home country (large E_{pu}) but weak in the foreign country (small E_{pu}^*).¹⁶ As for the magnitude of the price change, we find that the larger the difference between the domestic permit prices of the two countries ($tF_z - tF_z^*$), the greater the decrease in the price of international transport services.

Remark 1 *The price of international transport services is reduced by international emissions trading between the two countries' international transport sectors if α is large, β is small, and $\varepsilon > 0$.*

The intuition behind this result is as follows. The world supply of international transport services increases despite the fixed global pollution emissions because international emissions trading improves the efficiency of production by reallocating pollution permits between the two countries. This directly reduces the price of international transport services (the direct effect). There are two indirect effects. (i) In the home country, the international transport sector expands through buying permits, which increases the national income despite payment for traded permits because the home country purchases permits at a lower price than its domestic price. The foreign country's national income also rises because the revenue from international emissions trading is large enough to cover the loss associated with a reduction in the size of the international transport sector by selling permits. These increases in the national income of the two countries raise their demand for final goods, thereby increasing the world demand for international transport. However, this increase is small because both

¹⁶ This condition is not odd. We can show that $E_{pu} > E_{pu}^*$ if the utility functions are identical across the two countries and the sub-utility functions of goods consumption are homothetic. The home country prefers good 1 more than the foreign country does because the domestic price of good 1 is lower in the home country than in the foreign country because of transportation costs.

countries prefer exported goods rather than imported goods under $\varepsilon > 0$. (ii) The world demand for international transport is affected by a change in the price of goods, p , but the magnitude is small under $\gamma < 0$ and $\kappa < 0$. Because α is large, the price of good 1 in the foreign country, $p + \alpha t$, becomes high, which leads to low consumption of good 1. Therefore, a change in p has a slight effect on the foreign demand for international transport. This can be explained using the analogy that a change in p has an insignificant effect on the home demand for international transport because β is small. Consequently, the direct effect dominates the two indirect effects, and the price of international transport services is lowered by international emissions trading.

Next, consider the effect of international emissions trading on the price of goods, given by (15). Even if we impose meaningful conditions, we cannot determine the sign of (15). The price of good 1 may be increased or decreased by international emissions trading. Intuitively, this is because there are complicated effects caused by interactions between the markets.

4.2. Welfare Effects of International Emissions Trading

Now, we consider how international emissions trading affects each country's welfare. Interestingly, we obtain clear results despite the changes in the prices of goods and international transport services being generally ambiguous.

The following equations are derived by totally differentiating (3) and (11)–(13):

$$|H| \frac{du}{dz} = (tF_Z - r)\lambda\mu - (F_Z - F_Z^*)\{t\mu X_p^* E_{pu}^* - \lambda T^*(1 - \alpha t E_{pu}^*)\} \\ - \kappa[\kappa(tF_Z - r) + (F_Z - F_Z^*)\{X_p^*(1 - \alpha t E_{pu}^*) - tT^* E_{pu}^*\}], \dots \dots \dots (16)$$

$$|H| \frac{du^*}{dz} = (r - tF_Z^*)\lambda\mu - (F_Z - F_Z^*)\{-t\mu X_p^* E_{pu} + \lambda T^*(1 - \beta t E_{qu})\} \\ - \kappa[\kappa(r - tF_Z^*) + (F_Z - F_Z^*)\{-X_p^*(1 - \beta t E_{qu}) + tT^* E_{pu}\}] \dots \dots \dots (17)$$

The welfare effects for the home and foreign countries are given by (16) and (17), respectively. For given prices of goods and international transport services, $tF_Z - r$ and $r - tF_Z^*$ represent the direct gains from permit trading in the home and foreign countries, respectively. Given Assumption 1 and assuming that the home country imports international transport services ($T^* < 0$), the sign of (16) is positive, i.e., international emissions trading always causes welfare to rise in the home country. By contrast, if the world permit price is nearly equivalent to the domestic permit price of the foreign country ($r - tF_Z^* \cong 0$), the sign of (17) is negative, i.e., the foreign country is necessarily made worse off by permit trading. Summing up, we obtain the following proposition.

Proposition 2 *Take as given Assumption 1 and that the home country imports international transport services ($T^* < 0$). Then, international emissions trading between the two countries' international transport sectors has the following welfare effects.*

- (i) *The welfare of the home country always improves.*
- (ii) *The welfare of the foreign country necessarily deteriorates if the world permit price is approximately equal to the domestic permit price of the foreign country ($r - tF_Z^* \cong 0$).*

This result is of great interest and counterintuitive. Even if the home country (an international-transport-importing country) receives no direct gains from permit trading ($tF_Z - r = 0$), it necessarily benefits from it. Further, international emissions trading may make the foreign country (an international-transport-exporting

country) worse off even if it enjoys all of the direct gains from permit trading by selling permits at a high price, i.e., tF_Z , the current market price of the home country ($tF_Z^* < r = tF_Z$). The larger the volume of exports of international transport (the smaller the value of T^*), the higher the possibility of welfare deterioration in the foreign country.

To explain why international emissions trading benefits the home country but harms the foreign country, let us review our result on a step-by-step basis. In each country, the national income is increased by permit trading because of an improvement in production efficiency. First, this increase in the national income raises the demand for goods, thereby changing the price of goods (the terms-of-trade effect for final goods). It is ambiguous whether this terms-of-trade effect is favorable to the home country. Second, this change in the price of goods affects the demand for imports, thereby changing the world demand for international transport, which is negligible under Assumption 1. Third, from Remark 1, the terms-of-trade effect for international transport tends to be favorable to the home country. Consequently, the positive effects dominate the negative effects in the home country. By contrast, when the foreign country cannot fully enjoy direct gains from permit trading, it is harmed by permit trading because the terms of trade for international transport tend to deteriorate. This negative terms-of-trade effect is significant when the volume of trade in international transport is large. We know that at least one country benefits from permit trading because permit trading improves the production efficiency of the world economy.

Our results suggest that the welfare effects of permit trading in international transport sectors are essentially dependent on the trade pattern of international transport. In other words, trade patterns of final goods and emission permits do not affect the welfare effects. Thus, an international-transport-importing country has an incentive to support permit trading regardless of the world permit price. However, an international-transport-exporting country has a great interest in the level of the world permit price. If the direct gains from permit trading are not sufficiently large, an international-transport-exporting country will not participate in the marketable permit system despite the fact that it improves world welfare.

Our theoretical prediction seems in line with real-world observations. Countries such as those in the EU have reached an agreement on MBMs such as an ETS for environmental regulations of international aviation, but the members of the IMO have not yet agreed on such measures for international maritime transport, as mentioned above. This may be because trade imbalances in international maritime transport among countries are greater than that in international aviation. That is, a maritime-transport-exporting country is more likely to be harmed by permit trading, thereby reducing its support against permit trading.

The core contribution of this paper is to show the explicit conditions for the welfare effects of permit trading between countries. By using a general equilibrium model of international trade, Copeland and Taylor (2005, pp. 225–229) considered the welfare effects of international emissions trading between two countries' final goods sectors but did not derive the explicit conditions that determine the welfare effects. In their model, a terms-of-trade effect is created when permit trading alters the production of goods in both countries. This terms-of-trade effect is favorable to only one country and its magnitude is ambiguous although we know that changes in production depend on factor intensity (Rybczynski effect). Marschinski et al. (2012) investigated international emissions trading between the final goods sectors of two countries with different types of environmental regulations, such as partial emissions coverage and an economy-wide cap-and-trade system. They found that the welfare effects from the linking of ETSs between countries are ambiguous because of the terms-of-trade effect caused by the linking.

In our model, permit trading benefits both countries by expanding the volume of trade in goods because permit trading increases the world supply of international transport services. In other words, permit trading reduces trade impediments (transportation costs) and works similarly to trade liberalization. Thus, both countries can gain from permit trading, particularly an international-transport-importing country. An international-transport exporting country may be made better off by permit trading if it enjoys a large share of the direct gains from permit trading.

Concluding Remarks

In this paper, we developed a two-country, two-good general equilibrium model with an international transport sector in each country to examine how environmental regulations of international transport affect welfare. The novelty of our analysis is that it sheds light on the effects of worldwide emissions trading in international transport sectors, which have attracted public attention in recent years.

We demonstrated that a unilateral reduction in the number of pollution permits in the international transport sector has ambiguous effects on individual countries' welfares because of the terms-of-trade effects for final goods and international transport services caused by emissions reductions. By contrast, the welfare effects of international emissions trading between the two countries' international transport sectors are clear, although permit trading also creates the two terms-of-trade effects. Under a reasonable condition regarding the world demand for international transport, an international-transport-importing country always benefits from permit trading, regardless of whether it enjoys any direct gains, while permit trading necessarily harms an international-transport-exporting country if it cannot enjoy the direct gains.

The important implications of our results are as follows. (i) A country that has significant environmental awareness and exports international transport is likely to benefit from a unilateral reduction in the number of pollution permits, because consumers' gain associated with the reduction in emissions is large and the terms of trade for international transport tend to improve. (ii) Without raising global pollution emissions, international emissions trading increases the world supply of international transport, thereby facilitating international trade. Therefore, it is quite important to establish a worldwide marketable permit system not only to protect the environment at lower cost but also to increase the gains from trade. (iii) Both countries can be made better off by permit trading if an international-transport-exporting country enjoys the direct gains from permit trading. However, a country's share of the direct gains is determined by bargaining between buyers and sellers. Thus, international income transfers (side payments) are generally required to attract support for international emissions trading from all countries.

For future research, it would be worthwhile building alternative models in order to better understand the mechanism underlying the effects of environmental regulations of international transport. Marketable permit systems for final goods and international transport can be integrated into a single worldwide marketable permit system to reduce global pollution emissions more efficiently. It would be interesting to construct an oligopoly model of international trade in order to consider strategic interactions between firms with respect to international emissions trading in the international transport sector.

Appendix A: Stability Conditions

Taking $Z^{(*)}$ as an exogenous variable and totally differentiating (1)–(4), we obtain

$$H \begin{bmatrix} du \\ du^* \\ dp \\ dt \end{bmatrix} = \begin{bmatrix} tF_Z - E_Z & -E_Z \\ -E_Z^* & tF_Z^* - E_Z^* \\ -E_{pu}E_Z - E_{pu}^*E_Z^* & -E_{pu}E_Z - E_{pu}^*E_Z^* \\ F_Z - \beta E_{qu}E_Z - \alpha E_{pu}^*E_Z^* & F_Z^* - \beta E_{qu}E_Z - \alpha E_{pu}^*E_Z^* \end{bmatrix} \begin{bmatrix} dZ \\ dZ^* \end{bmatrix}, \quad (A1)$$

where

$$H = \begin{bmatrix} 1 & 0 & E_p - G_p & \beta X_q - F \\ 0 & 1 & X_p^* & \alpha X_p^* - F^* \\ E_{pu} & E_{pu}^* & \lambda & \kappa \\ \beta E_{qu} & \alpha E_{pu}^* & \kappa & \mu \end{bmatrix}.$$

We consider the dynamic system consisting of (1) and (2) and the following two equations:

$$\dot{p} = E_p(p, q, Z_W, u) - G_p(p, q) + X_p^*(p + \alpha t, Z_W, u^*),$$

$$\dot{t} = \beta X_q(p, q, Z_W, u) + \alpha X_p^*(p + \alpha t, Z_W, u^*) - F(K, Z) - F^*(K^*, Z^*).$$

Linearizing the system at the equilibrium values of the variables, we derive

$$\begin{bmatrix} d\dot{p} \\ d\dot{t} \end{bmatrix} = \begin{bmatrix} E_{pu}u_p + E_{pu}^*u_p^* + \lambda & E_{pu}u_t + E_{pu}^*u_t^* + \kappa \\ \beta E_{qu}u_p + \alpha E_{pu}^*u_p^* + \kappa & \beta E_{qu}u_t + \alpha E_{pu}^*u_t^* + \mu \end{bmatrix} \begin{bmatrix} dp \\ dt \end{bmatrix},$$

where $u_p = -(E_p - G_p)$, $u_t = -(\beta X_q - F)$, $u_p^* = -X_p^*$, and $u_t^* = -(\alpha X_p^* - F^*)$. Then, the Hicksian perfect stability conditions are as follows:

$$E_{pu}u_p + E_{pu}^*u_p^* + \lambda < 0, \quad \beta E_{qu}u_t + \alpha E_{pu}^*u_t^* + \mu < 0, \dots \quad (A2)$$

$$\det \begin{bmatrix} E_{pu}u_p + E_{pu}^*u_p^* + \lambda & E_{pu}u_t + E_{pu}^*u_t^* + \kappa \\ \beta E_{qu}u_p + \alpha E_{pu}^*u_p^* + \kappa & \beta E_{qu}u_t + \alpha E_{pu}^*u_t^* + \mu \end{bmatrix} > 0. \dots \quad (A3)$$

Rewriting $|H|$, we find that $|H|$ is equivalent to the left hand side of (A3).

Appendix B: Welfare Effects of Emissions Reductions

From (A1), we derive the formal expressions of the welfare effects of emissions reductions in each country as follows:

$$|H| \frac{du}{dZ} = \begin{vmatrix} tF_Z - E_Z & E_p^* - G_p^* & -F^* \\ tF_Z E_{pu}^* + (E_{pu} - E_{pu}^*)E_Z & \lambda & \kappa - \alpha\lambda \\ -\alpha E_{pu} E_Z - F_Z + \beta E_{qu} E_Z & \kappa - \alpha\lambda & \mu - 2\alpha\kappa + \alpha^2\lambda \end{vmatrix},$$

$$|H| \frac{du^*}{dZ} = \begin{vmatrix} -E_Z^* & E_p^* - G_p^* & -F^* \\ (E_{pu} - E_{pu}^*)E_Z^* - tF_Z E_{pu} & \lambda & \kappa - \alpha\lambda \\ F_Z - (tF_Z - E_Z^*)(\beta E_{qu} - \alpha E_{pu}) & \kappa - \alpha\lambda & \mu - 2\alpha\kappa + \alpha^2\lambda \end{vmatrix},$$

$$|H| \frac{du}{dZ^*} = \begin{vmatrix} -E_p & E_p - G_p & F^* \\ -tF_Z^* E_{pu}^* - (E_{pu} - E_{pu}^*)E_Z & \lambda & \kappa - \alpha\lambda \\ F_Z^* - \beta E_{qu} E_Z + \alpha E_{pu} E_Z & \kappa - \alpha\lambda & \mu - 2\alpha\kappa + \alpha^2\lambda \end{vmatrix},$$

$$|H| \frac{du^*}{dZ^*} = \begin{vmatrix} tF_Z^* - E_Z^* & E_p - G_p & F^* \\ tF_Z^* E_{pu}^* - (E_{pu} - E_{pu}^*)E_Z^* & \lambda & \kappa \\ F_Z - \alpha E_{pu}^* E_Z^* + (tF_Z^* - E_Z^*)\beta E_{qu} & \kappa & \mu \end{vmatrix}.$$

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THE RESEARCH OF QUICK RESPONSE IN RETAIL FASHION SECTOR: A CASE OF ZARA(HK)

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ABSTRACT

Fashion retailer has become more demanding and in order to survive they have to sustain competitive advantages. Quick response (QR) is a new business strategy to maximize consumer satisfaction by implementing new technologies (e.g. bar-coding, RFID). QR has greatly helped many fashion retailer companies to maintain its position in the market.

In this paper, Zara's retail business model has been studied and is recommending being the benchmark for the future retailer. By implementing QR, Zara is responsive to the market demand. The findings indicated that successfully implemented QR enable Zara to enjoy number of benefits, for instance shorter development cycle time, which maximize sales volume and profit margin, reduce product development expenses, reduce stock commitment and lastly improve customer service. Zara has achieved operational excellence in manufacturing process by centralized its production in Spain and utilize JIT system. Reduce waste, reduce bullwhip effect, enable production of small batches, least inventory along the entire Zara's supply chain, more flexibility, more speedy and reducing the risk of overproduction.

The study also found Information technology is one of the requirements for successful implementation of QR. IT is being utilized by Zara to communicate and share information among entire supply chain. For future research, case studies of other retailers and distributors in different geographical markets would provide a more in-depth insight.

INTRODUCTION

The importance of time as a competitive advantage has been wisely introduced for some time. The ability to be able to meet the customer demands in ever-shorter delivery time. Moreover to ensure that supply can be coordinated to meet the peaks and low of demand. These factors evidently are critical in today's fashion retailer, where competition is based on time. To become more responsive to the market needs requires more than speed. It also oblige to high level of maneuverability and flexibility (Stalk and Hood, 1990).

Zara has developed an innovative and highly responsive system that support excellent example of vertically integrated supply chain. Zara's quick response (QR), involves constant monitoring of customers' demands, production process, and distribution. Thus allow Zara to deliver products bi-weekly, also shorten stocking and restocking period than the competitors. Consequently, Zara continue to satisfy their customer needs in short period of time.

Distribution wise, the two week deliveries have satisfied customer's demand at the same time ensue stores do not run out of items on display, this fast turnaround also eliminates the need for stock occupying warehouse.

Zara have employed 300 designers, they are able to produce several design a day and produce these testing product in small quantity in Zara's own factory. In this manner, design failure is very low since Zara only manufacture those well-received products in bulk quantity. The inventories changed within 3 to 4 weeks, this creates a feeling of freshness and scarcity among customers, which keep Zara products more valuable and able to generate higher revenue.

QUICK RESPONSE IN SUPPLY CHAIN

QR is a companywide strategy that pursues the reduction of lead-time in all aspects of a company's operations. During the mid-1980s, quick response (QR) methods were developed in the USA between suppliers and fashion retailers in recognition that a new strategy had to be implemented to compete with offshore manufactures (KAS, 1997).

According to Business Dictionary Quick Response can be define as "Just in time inventory partnership strategy between suppliers and retailers of general merchandise. It is aimed mainly at reducing order response

time, and achieving greater accuracy in shipping the correct goods in correct quantities, by employing computerized equipment such as barcodes and EDI to speed up flow of information. Its other objectives include reduction in operating expenses, out-of-stock situations, and forced mark-downs (discounts)".

Additionally QR has been defined as "consumer driven business strategy of co-operative planning by supply chain partners...using IT and flexible manufacturing to eliminate inefficiency from the entire supply chain (McMichael et al., 2000, p.613).

According to Kurt Salmon Associates (KSA) the inefficiency in the supply chain of fashion retailer can be estimated for almost \$25 billion lost each year. The major reason for such loss was due to length of the time to move commodities through the supply chain, beginning from raw materials (fiber) to garment purchased.

Quick Response Strategy

The ideology behind implementing a QR strategy is to provide customer with better choice, increase availability and lower price while at the same time retailer can benefit from improved profitability. Additionally Giunipero claimed that:

First at all QR was introduced to reduce excess inventory keeping in the supply chain from raw materials to consumer purchase. Second at all, QR reduce the risk of forecasting by making decision of what and how much to buy closer to the time of consumer purchase. And lastly to pass on to the consumer, savings gained through greater efficiency (Giunipero et al., 2001).

Traditionally, apparel brands first design and manufacturers goods and then try and find buyers for those products. Needs and wants are given estimated consideration. They only can estimate how much they will supply and have no idea about the demands. In this case, the apparel brands will have to take a risk of wrong forecasting. Part of the cost, then will have to pass to their customers. This result waste of many things, such as waste of overproduction, waste of process the goods and waiting time for goods to manufacture, waste of the stocks and transportation (Hunter and Valentino, 1995).

Requirements for Quick Response

According to Martin Christopher, to be truly responsive to the market, supply chain must process a number of distinguishing characteristics. As we know market is very sensitive, this requires supply chain to be capable of responding to real demand. Many organizations are forecast driven rather than demand driven; their forecasting is based on previous sales or past customer behavior, which means that they do not possess accurate data on actual customer requirements. The use of information technology, establish a connection between organization, their retailer and customers, which help organization to better response to market demand in effective and accurate way. Kurt Salmon Associates has the same theory that certain technology has to be implemented along entire supply chain, which is described in details below:

- (1) At the lowest stage suppliers and retailers use electronic point of sales (EPOS) equipment with UPC bar codes scanning at the SKU level. In addition companies use at least one electronic data interchange (EDI) transaction set or the comparable Internet system to exchange documents such as purchase order.
- (2) At the second level merchant have to redesign their internal stock process and expected to begin using automatic replenishment methods to be able receive ready merchandise in the store. Use cross docking in central and regional distribution, and stock should be moved with the marking label. Additionally retailer and suppliers start to use several EDI transaction sets such as advance shipping notice (ANS).
- (3) At the highest level, the concept of the integrated supply chain is implemented and all the partners measure their performance in terms of total supply chain effectiveness in meeting customer needs through joint planning, forecasting, product development (KAS, 1997).

Additionally tools such as computer-aided design (CAD), enable buyers and designers to draw new or alter designs and to send these online to their supplier. Also manufacturers can link directly with the computer-aided manufacturing (CAM), which greatly reduces time to final garment.

From the above points we can see how crucial role information technology is playing in quick response ability. Accurate sales and stock data allow management to making right decision within short period of time, avoiding any possibilities of wrong forecasting.

QR Benefits and Advantages

Certain number of benefits can be seen from implementing QR concepts. At first it can be noticed shorter development cycle time, which maximize sales volume and margin, reduce product development expense, reduce stock holding, increase stock turnover, improve customer service and as a result of all this competitive advantage is achievable. (KSA, 1997; Hunter, 1990; and Giunipero et al., 2001).

By knowing what they needs to produce, Zara can schedule when each of their products should be ordered or produced. QR concept eliminates non value-added activity; therefore less time and money spend on the activities that do not bring revenue. For instance, retailer benefit can be gained by making decision on design and style of garments along with color ranges much closer to the time goods are required in the shops.

Additionally, QR can be beneficial to customer service improvement, by providing sales staff with real information where the garments are in the supply chain and also being able to process customer orders based on this information (Forza and Vinelli, 1997). Zara has implement PDA in every shop around the world, manager can check/update inventory via point of the sale system, and report the inventory list and customer feedback to headquarter. When there is enquiry from customers to check where the garments are, Zara staffs can quickly response by checking on the system.

ROLE OF THE QR IN ZARA PRACTICE

Zara, the Spanish fashion retailer is known for its responsiveness to market demands, and is an excellent example of vertically integrated retailer using QR methods. The following are example of Zara how used QR to achieve its competitive advantage.

Short Lead Time

Zara is able to adjust its system or process to enhance service and supply chain management. Firstly by focusing on shorter response times, Zara will make sure that its stores always have cloths that particular customer demand at the specific time of year. The involvements of customer opinion also eliminate duplication, shorter set up time and lead to higher quality. Within 30 days, Zara is able to design, and manufacture and deliver clothes to its stores. This means that Zara can easily identify current trend and quickly catch up with customer demand, while competitors are struggling to deliver new design for next season. Compare to its competitors; take H&M and GAP for example, the lead-time for planning, designing and producing clothes stretch into 4-12 months, where Zara only take 30 days. Thus through this practice, Zara is able to gain more profit than the competitors. Zara will gain more revenue by selling products in small quantity at full price; on the other hand, the competitor has to sell products on discount due to overestimate the consumer demand. In short, when most retailers try to forecast what and how much its customer might buy in the nearer future, Zara moves in step with customer by practicing QA strategy (Lopez and Fan, 2009).

In the fashion industry, the most important factors is “Catch up with the trend”. Zara’s Trend identification comes through constant research begin with traditional consumer market research, relentless customer feedback through store PDA, emails, phone calls, and also by visiting places that trendy people will go: student dorms, disco, Bar, concerts etc. Unlike others retailers, Zara can react fast effectively in fulfilling their customer demand (Dutta, 2002).

Lower Quantity

Secondly by controlling the quantity manufactured in each style. Thus greatly reduces the usual cost associated with overproduction and inventory. At the same time Zara has created a virtue of stock-outs, which is called “artificial Scarcity”. According to Dutta (2003) “as with all things fashionable, the less its availability, the more desirable the object becomes. Empty racks don’t drive customer to other stores because shoppers always have new things to choose from. Also being out of stock in one item helps sell another, since people are happy to get what they can.

Moreover having smaller quantities on the stock will greatly reduce risk of unnecessary inventory and more likely fewer items will be discounted. Traditional apparel brand, for example H&M, when the fashion season ended, almost half of its products will have 50% discount. Some of the consumer will wait until discount. However, in Zara, only 18% of its products will on sale, and these particular products will have limited quantity to offer.

More Styles, More Choice, Higher Chances of Hitting It Right

Lastly, Zara produce 12000 styles of clothes a year. Instead of producing large quantities per style, Zara produces more styles in small quantity. In this case, even if style A sells out, style B already available on the rack. According to Dutta, Zara can offer much more current fashions than any of its compatriots. Brand new products being introduced frequently and with delivery twice a week to its stores help to keep up with the current trend. If Zara found particular style is not popular, its normal practice is to discount it right away during the seasonal sale. If any products still not sell out, Zara retail shop will return these products to headquarter to replace. Customers who visit Zara do not have opportunity to see those off-season stuffs in the shop because it has been replaced by Zara long time ago (Ghemawat and Nueno, 2003).

BEST PRACTICE OF ZARA

Manufacturing

Manufacturing process is one of the Zara's important stages where quick response has the biggest influence on production process. Additionally, obtaining up correct data from customer demand have led Zara's the fastest manufacturing process in the world. On average, it only takes 10 to 15 days to transform design concept to reach retail outlets, thanks to Zara's advance manufacturing facility in Galicia and its coordination with 300 small shop where perform final assembly (Ferdows, Lewis, and Machuca, 2005).

Many of Zara's competitors, like H&M, Gap etc; they outsourced their production completely to factories around the world, many of them choose Asian countries where very low labor cost. It is estimated that 80 percent of Zara's production is carried out in Europe; many of Zara apparel produce within short distance to the centralized distribution centre, Zara's headquarter in Spain. As a matter of fact, almost half of facilities are owned or closely control by Zara.

Jose Maria Castellano stated, "The fashion world is in constant flux and is driven not by supply but customer demand. We need to give consumer what they want, and if I go to South America or Asia to makes cloths, I simply cannot move fast enough".

Therefore many complex operations like creating patterns, cutting, and color treatment are executed in factories owned by Zara. However labour intensive work like sewing and assembly are outsourced to small workshops that have established collaborative agreements with Zara. In order to make sure subcontractors will maintain high quality products, Zara's provides shops with the technology and logistics needed to get the job done on time. In return, Zara enjoys local expertise in garment making, enable Zara to take close control of fabric and garment quality, and avoids problems such as high freight costs, long lead-times and production trouble spots (Dutta, 2002).

Just in Time (JIT)

In today's competitive world, shorter product life cycles, customer ever increase demands and promptly changing environment is putting a lot of pressure on manufacturers for quicker response. In turn, the manufactures put pressure on their supplier. One way to ensure quick turnaround is having sufficient inventory in stock; however excess inventory can quickly become "dead inventory". Better way to deal with this is to make your production agile, able to adapt to continuously changing customer demands. "Just in time" systems can improve quality and delivery performance of suppliers and remove unnecessary cost from the supply chain (Robinson and Cohen, 2005).

All 23 factories belong to Zara use sophisticated JUST IN TIME system, subsequently developed in 1990 in cooperation with Toyota. In fact that was the first experiment of this kind in Europe. Consequently all employees had to learn how to use new machines and work in multifunctional teams. Furthermore, Zara's unique quick response, composed of human resources as well as information technology, allows Zara to respond to the demand of its customer better then the competition. To transfer of communication is facility with IT software that is specified designed for Zara's diverse business (Ghemawat and Nueno, 2003).

According to Schonberger, R The basic elements of JIT were developed by Toyota in the 1950's, and became known as the Toyota Production System (TPS). JIT was well established in many Japanese factories by the early 1970's. JIT began to be adopted in the U.S. in the 1980's (General Electric was an early adopter), and the JIT/lean concepts are now widely accepted and used.

“Just-in-time manufacturing means producing the necessary items in necessary quantities at the necessary time. It is a philosophy of continuous improvement in which non-value-adding activities (or wastes) are identified and removed” (encyclopedia.com, 2009).

Main components of JIT are:

- Production Leveling
- Pull System
- Good Housekeeping
- Small Lot Production
- Setup Time Reduction
- Total Preventive Maintenance (TPM)
- JIT Purchasing
- Line Balancing
- Flexible Manufacturing

The average UK retailer commits 60% of their purchasing budget six months prior to the fashion season, when the season actually start, the budget already increase to 90%, only 10% remaining for the rest of the month budget for purchasing. In contrast, Zara only commits up to 20% six months in advance of the season, the rest can be decided during the season. Zara try to avoid a situation that spends too much money in production and discounting over half of the products at the end season. Instead, Zara utilize its competitive advantage-fashionable design and flexibility production makes the company successful and allows the company reacting to the latest fashion trends and customer demands (Morell, 2001).

Another element of JIT which is wisely use by Zara Is production of small batches, just to test the market acceptance. For instance, Zara will only produce those products in small quantity to check on the response of the market. If the product has been sold well, Zara can easily reorder and deliver to the store within 10 days.

Similar to United color of Benetton, Zara use “Postponement” strategy to gain more speed and flexibility, thus purchasing more than 50% of its fabric undyed so that it can react faster to midseason color changes. During the 1980s and early 1990s, Benetton was the world leader in the casual apparel market with stores spread across the world. The company was well known for its postponement strategy, wherein the dyeing of the garment was postponed till the colors in vogue for the season were identified (Ghemawat and Nueno, 2003).

Finally, limited production allows the company to, as Zara’s CEO (Castellano) said “once put it “reduce” to a minimum their risk of making mistake, and we do make mistake with our collection”.

This "just-in-time" concept proved to be the ideal concept not only for Toyota vehicle manufacture, but also as we know have been successfully used in fashion retailer. Besides Zara, another successful Japanese fashion retailer Uniqlo has proved JIT effectiveness.

Fast Retailing Uniqlo essentially uses Toyota-style, just-in-time inventory procurement. It monitors sales patterns weekly and orders garments just before the stores are likely to need them. This way, Uniqlo rarely has excess inventory. And if Uniqlo were to see a sharp dip in sales, it wouldn’t halt work. Instead, it would use the same fabric to make an entirely different product. For example, sales of cashmere sweaters suddenly drop; Uniqlo might turn that goat’s wool into scarves. As a result Uniqlo expect units’ sales to climb more than 75 percent this year to 50 million. Which bring \$1.2 billion profitability, 24 percent more than last year (Alexander, 2009).

The 23 fully owned factories responsible for internal manufacture applied JIT production system in order to reduce any waste in the supply chain. According to Professor Haul Lee from University of Stanford, one of the biggest sources of inefficiency in logistics is “bull-whip effects”, which result in tendency for fluctuations in

final demand to get amplified as they were transmitted back up the supply chain. Since Zara is vertically integrated “bull whip effects” will be minimized.

However Campbell Soup’s chicken noodle soup has experienced unfortunate bullwhip effects, which greatly affect its operation. Campbell Soup sells products whose customer demand is fairly stable; the consumption doesn’t swing wildly from week to week. Yet the manufacturer faced extremely variable demand on the factory level. After some investigation, they found that the wide swings in demand were caused by the ordering practices of retailers. The swing was stimulated by forward buying (Hoyt, 2001; and Peleg, 2003).

Zara’s flexible supply chain and quick response would not be possible without having full control over its processes. Zara’s vertical integration of design just in time manufacturing, delivery and seals, flexible structure, low inventory rule, quick response policy and advance information technology enable a quick response to customer changing demands.

CONCLUSION

Fashion retailer has become more demanding and in order to survive they have to sustain competitive advantages. Quick response method has greatly helped many fashion retailer companies to maintain its position on the market.

In this report, Zara’s retail business model has been studied and is recommending being the benchmark for the future retailer.

By implementing QR, Zara is responsive to the market demand. QR enable Zara to reduce unnecessary inventory, lower risk of wrong forecasting and provide customer lower price, better choice, fulfill continuously changing customer demand. Successfully implemented QR enable Zara to enjoy number of benefits, for instance shorter development cycle time, which maximize sales volume and margin profit, reduce product development expenses, reduce stock commitment and lastly improve customer service.

Zara control most of the steps on the supply chain. It designs, produces and distributes itself, which allows Zara to monitor and maintain its competitive advantages. Zara has achieved operational excellence in manufacturing process by centralized its production in Spain and utilize JIT system. Reduce waste, reduce bullwhip effect, enable production of small batches, least inventory along the entire Zara’s supply chain, more flexibility, more speedy and reducing the risk of overproduction.

It was found that Information technology is one of the requirements for successful implementation of QR. IT is being utilized by Zara to communicate and share information among entire supply chain.

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INTEGRATION OF KANO MODEL AND SERVQUAL INTO QUALITY FUNCTION DEPLOYMENT FOR DEVELOPING TRAINING PROGRAM

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ABSTRACT

Occupational Safety & Health Management System (OSH) is a very important knowledge to any industrial organization in order for them to make sure that the safety and health elements in their organization are well maintained and according to the law. It is very important for the industrial management and workers to know and understand the correct OSH knowledge & concept. Because of that it is very important for them to attend sufficient and relevant OSH training in order for them to attain the OSH knowledge. These training must be effective and have sufficient impact. For that purpose a new method is used in this research. The Kano's Model and SERVQUAL are been integrate into the House of Quality (HOQ) for the purpose of developing an OSH training course that would not only satisfy the requirement and needs of the industry but also unexpected factors towards the trainee that attend the course. By using this method we can see that the level of understanding for the training participant using this new model is higher compared to the level of understanding for the participant from the conventional OSH training program that been conducted by the training provider. With the increment in the level of understanding the level of effectiveness for doing OSH related job for the training participant would also be different. We can prove this by using the Kirkpatrick's Evaluation Model, whereby we would evaluate the trainee from the conventional OSH training program against the newly develop OSH training program. The evaluation would be based on their level of understanding and the level of effectiveness of doing OSH related jobs in their respective workplace.

Keywords: Occupational Safety & Health; Training; House of Quality (HOQ)

INTRODUCTION

A good employee is a worker that can perform excellently on the task given as stated in the Job Description and the Key Performance Index. In order to fulfill the Job Description and Key Performance Index, every employee should have adequate skills and knowledge.

They can obtain the skills and knowledge by attending courses related which provided by the employer or external trainer. A good course is a course that put into consideration of the needs of the customers and fulfils them. Customer in this context is the employer of the said worker. This study provides a new perspective on a new method of constructing skills and learning course based on the needs of the employer by using Quality Function Deployment (QFD). In theory, the course model produced will grant maximum output to the employer. In order to measure the employer's satisfaction, it is suggested to use Kirkpatrick Evaluation Model. This model measures the performance of staff who has attended the training program and it is also used to measure the results of the employer's investment by sending their staff to undergo the training program.

LITERATURE REVIEW

Kano Model

Kano et al. (1984) developed a model for improvement and enhancement of a product or service. According to Kano, customer needs can be classified into three categories (Kano, 1995, 2001; Bergman and Klefsjo, 2003), the categories are must be, one dimensional and attractive. For the must be categories the need can be considered as the basic requirements for the product or services. Both the customer and the service or product provider agreed on the importance of the needs in these categories, they are expected but unspoken and

unarticulated (Cheng Lim et al., 1999). For these categories of needs the level of satisfaction for the customer will not raise above the normal level if the product or service provider able to fulfill those needs but the customer will felt very disappointed if the needs are not fulfilled. In other words while a low performance on such attributes leads to dissatisfaction in a customer; a high performance does not lead to satisfaction (Kano et al., 1984; Matzler and Hinterhuber, 1998; Busacca and Padula, 2005). Meanwhile for the one dimensional categories, the needs that falls in these categories are actually the expectation of the customer towards the product function or the services that been provided by the service provider. These needs are very well expected, expressed and articulated by the customer. For the needs in this categories it can be expressed in a linear relationship, whereby if the customer needs are not fulfilled the level of satisfaction will be low and in other hand if the needs are fulfilled the level of satisfaction will become high (Redfem and Davey, 2003) and by providing for such needs, the product or service provider creates the expected quality for their product or services. It is important for the product and service provider to focus their resource to compete with their competitor in order for them to sustain themselves in the market. Lastly would be the attractive dimension. The needs that fall in this categories are the customer needs that they themselves doesn't realize that the need it. In other words the needs are unexpected and unspoken. The relationship between the needs in this categories and the customer satisfaction are one way linear relationship. If the product or service provider are able to provide the unexpected towards the customer, their level of satisfaction will increase, however if the satisfaction level will not been effected if the product or service provider attribute in this category are not performed well. In other words they lead to satisfaction of customers when present but do not lead to any dissatisfaction if not present (Berger et al., 1993) and by discovering such needs and expectations, and providing the customer with these, the product or service provider creates what can be called, the attractive quality (Kano et al., 1984; Lilja and Wiklund, 2006). By integrating the Kano Model and SERVQUAL we would able to determine the service quality criteria that falls into the must be, one dimensional and attractive category. This information will be an important input towards the creating a training courses model.

SERVQUAL

Service Quality is one of the main factors that can contribute to the success or failure of a manufacturing or service organization in today's competitive environment. (Kuei and Lu, 1997) considered service quality as a critical determinant criterion for competitiveness. Compare to product quality whereby it can be easily determine, service quality is very intangible and qualitative, The customer have to undergo the service in order to determine the level of service provided to them. (Parasuraman et.al., 1985, 1988) suggest that in a service setting, customer judge its quality by comparing their perceptions of what they receive with their expectations of what they should have received, (Kim et.al. 2003) have determine two key elements in the attainment of high quality. The first one is the identification of customers service requirements and expectations whereby it is generally recognized that consumers evaluate the service they receive and their expectation are critically important in determining whether or not they are satisfied (Brown and Swartz, 1989). It can be simplify that the consumers' expectations are the key criteria to the quality of service that a firm delivers. The second key factor of service quality is customer perception (Zeithaml, 1988) suggest that the notion of perceived quality reflects the opinion of the customer regarding the superiority or global excellence of a product or service. Finally (Parasuraman et. al. 1985, 1989) suggest that service quality should be represented as the difference or gap between service expectation and actual service performance. He also suggest that service quality can be measure using the SERVQUAL scale consist of a set of 22 questions build from the five SERVQUAL dimensions; reliability, assurance, tangible, empathy and responsiveness. In this research we will used the Modified SERVQUAL scale whereby we add two more dimensions to the current SERVQUAL dimensions: competence and content. These two dimensions are very crucial dimension in determining the service quality for training program. In the end we also add eight new question towards the 22 SERVQUAL question making the total question become 30. We can used the set of 30 question to determine the strength and weakness of the current training courses model and at the same time it can be integrate with the Kano Model analysis to determine the training courses must be, one dimensional and attractive criteria.

Quality Function Deployment (QFD)

Quality Function Deployment can be considered an outstanding matrix diagram that can be used as a powerful tool for product development. It involves the integration between different department in an organization like the Design Department, Quality Department, Manufacturing Department and even the Marketing Department. (Griffin, 1992) considered QFD as an investment in people and information. It enables an organization to measure customer "wants" and map them against the engineering "how" in a way that highlights trade-offs and drives the product's design towards customer requirements (Vonderemse and Rangunathan, 1997) QFD facilitates the growth and prosperity of a firm by developing an array of products that are attractive to existing and new customers (Akao, 1990; Cohen, 1988; Hales, 1994). Products designed with QFD may have lower production cost, shorter development time, and higher quality than products developed without QFD (Graessel,

1993; Hunter, 1994; Raynor, 1994). These benefits are attracting an increasing number of product development practitioners to the QFD methodology (Akao, 1990; Ealey, 1988; Garvin, 1988; King, 1989). Although manufacturing industries were the first to adopt QFD, service and government organizations are also using it in their efforts to improve performance (Garvin, 1987; Hauser and Clausing, 1988; Kogure and Akao, 1983; Sullivan, 1986 and 1988). Based on we can say that QFD is one of the most appropriate tools that can be used to develop a training course model using the customer requirements that we obtained using the integration of Kano Model and Modified SERVQUAL. The new training courses model will have all the necessary criteria that are needed to increase the level of satisfaction of the trainee.

Kirkpatrick Model

Training evaluation is a very crucial step in determining the level of effectiveness for training program. (Kirkpatrick, 1994) had designed a model with four level of evaluation. Those levels are reaction to the training, learning measures, behavior measures and results. (Steensma and Groeneveld, 2009) explain the method of evaluation for each level. The explanation is as stated below.

Reactions to the training

Trainees are asked if they enjoyed the training and if they have learned from it.

Learning measures

For example, if the purpose of a training program is to increase knowledge, an appropriate knowledge test should be used to determine whether the trainees have actually learned from the training. So, learning measures test retention of training material.

Behavior measures

Behavior measures indicate the extent to which the training transfers to the job, to the workplace of the trainee.

Results

Results measures are used to show whether broad, often more long-term organizational goals are attained through the training. Measures used may vary from return on investment to lower sickness absenteeism or even reduction of turnover. The link between the training and such long-term results is, of course, often not clear. More often than not, long-term results are affected by multiple causes, and training may be only one of the many possible causes. Still, careful utility assessments and other large-scale evaluations are useful instruments to indicate the effectiveness of the training on this fourth level of evaluation.

It is very important for us to use this evaluation model to measure the effectiveness of the newly develop training program and compare it with the results from the traditional training models.

Occupational Safety & Health

Occupational Safety & Health Managements an important part of ensuring that the safety and health of staffs are well maintained by the respective organizations. (Nunez & Villanueva, 2011) find that Occupational Safety and Health (OSH) activities are never considered within the sources of the intellectual capital of the firm. However, it is widely recognized that safer and healthier workplaces are, along with competitive advantage, one of firm's major objectives, as they can improve productivity, boost employees' morale and reduce costs (Thompson, 1997). Normally the organization would expect that their staff would learn the aspect of OSH from their common sense and past experience. (Shannon et al., 2001) point out that it was the research into major catastrophes such as Union Carbide (India) or Challenger (USA), where conventional prevention worked, that highlighted an increasing need to device new workplace accident prevention models. (Starbuck & Farjoun, 2005) clearly illustrate the need of supplementing traditional safety practices (inspections) with the management of organizational learning when describing the Columbia disaster in 2003. One of the best methods to increase the level of understanding with OSH principle is by sending organization staff to the OSH training program. There are several studies that have showed the correlation between organizational knowledge and OSH, The studies are diverse from different field such as psychology (Zohar, 1980; Zacharatos et al., 2005; Van Vegchel et al., 2005), organizational management (Atherley et al., 1975; Roy, 2003; Landsbergis et al., 1999) or health studies (Amell et al., 2001; Torp and Moen, 2006). There are also researches and institutions have been recently attracted by interrelations between OSH and the intellectual capital (Nielsen et al., 2007). They provide some preliminary evidence on the role of organizational knowledge in building safer and healthier workplaces (Nunez & Villanueva, 2011). (Schulte et al., 2004) present the United States example on knowledge management in the field of OSH. They describe actions taken by some public initiatives such as the National Occupational Research Agenda (NORA), and several company- level real-life situations, for example, the Hewlett-Packard experience, where innovative knowledge management models are applied to OSH. Other significant initiatives

include the Dutch knowledge infra structure program for OSH practitioners (Hugenholtz et al., 2007) or the OSHAS 18001 standard that includes recommendations and norms for managing OSH knowledge in firms(Nunez & Villanueve, 2011).

RESEARCH OUTCOME

A survey was conducted to 100 industrial workers in the state of Johor, Malaysia. Based on Survey 1 the SERVQUAL dimensions have been modified whereby in the case of training provider there should be two more dimensions added to the original SERVQUAL dimensions. The new dimensions are Trainer Competency and Course Contents. The SERVQUAL questionnaire is also been modified by adding eight more questions as a tool to measure the new dimensions. Below are the modified SERVQUAL dimensions and the respective questions that are related to each one of it.

Dimensions	No of Questions
Tangible	4
Reliability	5
Responsiveness	4
Assurance	4
Empathy	5
Trainer Competency	4
Course Contents	4

Table 1: Modified SERVQUAL

The research continues by conducting another survey using the integration of Kano Model into the SERVQUAL Questionnaire. The results have shown training competency and course contents), one dimension falls into the one dimensional categories (empathy) and two dimensions falls into the attractive categories (responsiveness and assurance). The surveys also have shown the level of satisfaction for the traditional training program based on the Modified SERVQUAL dimensions. The results are stated in Table 2: From the results we can say that the weaknesses in the traditional training program are responsiveness and empathy. These two dimensions must be improved in order to increase the level of satisfaction among the training participants. Next is the process of constructing a training program (in this case it would be Occupational Safety & Health Training) based on the findings above using QFD. The program would focus on the attractive factors and at the same time improve the weak factors. In the end a training program that can overcome the weakness of a traditional training program and provide an attractive input can be constructed and run by the training provider. An Occupational Safety & Health Training Program is later conducted to 30 industrial workers. Survey 2 is then conducted after the participants have finished attending the training courses and the results are as stated in Table 3. Survey 2 also has able to determine the level of satisfaction for the newly develop training program based on the Modified SERVQUAL dimensions. The results are stated in Table 4: From the Table 3 we can see clearly that the difference of performance between the ordinary training courses model and the newly develop training courses model is 15%. This is a very significant value and can play a major factor for the staff performance and also for the company's return on investment in staff training. Based on Table 5 we may conclude that the level of satisfaction increase rapidly (19%). This is a prove that the newly develop training program is better than the traditional training program in every aspect of the Modified SERVQUAL dimensions.

CONCLUSION

The integration of Kano's Model and SERVQUAL into QFD, construction of training course model which can fulfill customer's needs and wants can be created. This model can overcome linear problem or SERVQUAL model. This new model can produce training program which consists of unexpected aspects. This can be achieved by using Kano's Model. Service provided also will obtain benefit through this model. With QFD, training provider can indentify needs to be prepared in order to complete the training course program. Finally we can see that by using this method we can increase the level of reaction, learning, behavior and results of the training participant.

Dimensions	Satisfaction Level
Tangible	73%
Reliability	74%
Responsiveness	65%
Assurance	69%
Empathy	68%
Trainer Competency	79%
Course Contents	75%

Table 2: Training Participant Level of Satisfaction for Traditional Training Program

Measurements	Traditional Training Courses Program	Newly Develop Training Courses Program	Difference in Percentage
Reaction to the Training	70%	86%	16%
Learning Measurements	71%	88%	17%
Behavior Measurements	73%	87%	14%
Results	72%	85%	13%
Average	71.5%	86.5%	15%

Table 3:

Comparison of the Training Model.

Dimensions	Satisfaction Level
Tangible	86%
Reliability	89%
Responsiveness	92%
Assurance	88%
Empathy	89%
Trainer Competency	95%
Course Contents	97%

Table 4: Training Participant Level of Satisfaction for the Newly Develop Training Program

Dimensions	Traditional Training Courses Program	Newly Develop Training Courses Program	Difference in Percentage
Tangible	73%	86%	13%
Reliability	74%	89%	15%
Responsiveness	65%	92%	27%
Assurance	69%	88%	19%
Empathy	68%	89%	21%
Trainer Competency	79%	95%	16%
Course Contents	75%	97%	22%
Average	72%	91%	19%

Table 5: Traditional Training Program versus Newly Develop Training Program

RESEARCH FRAMEWORK

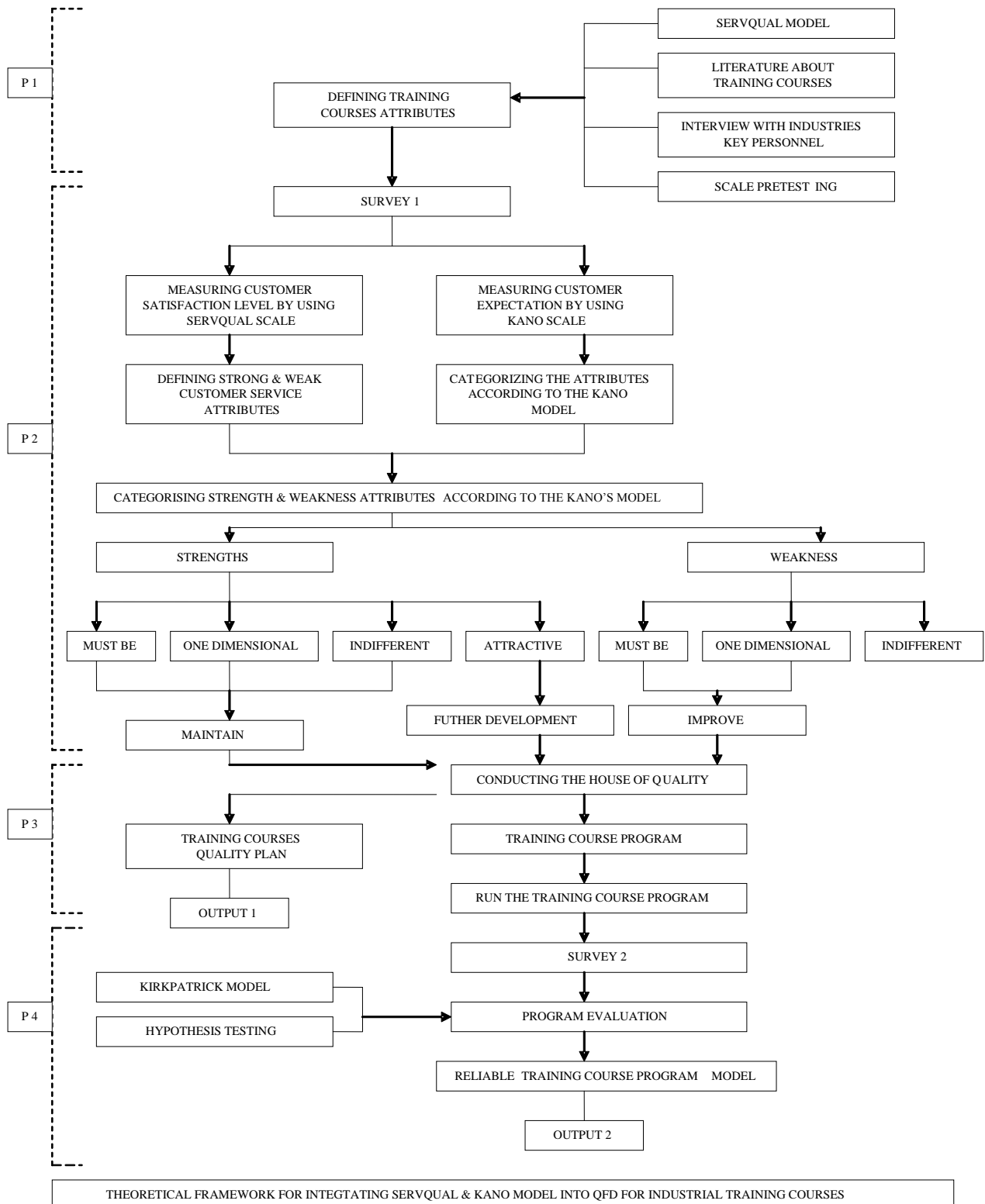


Figure 1: Integration of Kano Model and SERVQUAL into QFD to Construct Training Course Model

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STAFF'S ATTITUDE AND PARTICIPATION IN INTERNAL QUALITY ASSURANCE: A CASE STUDY OF INTERNATIONAL COLLEGE, SUANSUNANDHA RAJABHAT UNIVERSITY

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ABSTRACT

The purposes of this research were to study the level of attitudes about internal quality assurance and to study the level of participation in the internal quality assurance of personnel in International College, Suan Sunandha Rajabhat University. The samples used in this research were 57 personnel in International College, Suan Sunandha Rajabhat University divided into two groups, 37 academic staff, and 20 academic supporting staff. The instrument applied in this study was a questionnaire with five-point Likert Scale about attitudes and participation in internal quality assurance of personnel International College, Suan Sunandha Rajabhat University. For statistical analysis, the researcher applied descriptive statistics, frequency, Percentage, average, and standard deviation.

The researcher found that participants had attitudes toward internal quality assurance at a high level. Participation in the internal quality assurance of personnel was at a high level. According to the results of personnel's participation divided into four aspects, planning, performing, evaluating, and improving was at a high level in each aspect.

Keyword: Attitude, Participation, Internal Quality Assurance, International College

INTRODUCTION

International College Suan Sunandha Rajabhat University offers 5 undergraduate majors: Bachelor of Arts Program in Business Administration, Tourism Management, International Business Management, and Master of Arts Program in Mathematics Education With a commitment to be an institution and international academic services in Asia, International Colleges have developed themselves for the quality of teaching and learning in English. The college focuses on integrating teaching, research, and academic services Including student development activities, art, and cultural preservation. Also, the goal is to produce graduates with the academic knowledge, ability in work skills, creativity, and vision for moral social responsibility

To guarantee and ensure the standards and quality of education including other educational products, the college has a continuing education quality assurance program. Under the Higher Education Quality Assurance Policy of the Ministry of University Affairs and The National Education Act, BE 2542 (1999), as amended (No. 2) BE 2545 (2002), provides for the quality assurance system for education. To develop quality and standards of education at all levels, including "internal quality assurance system" and "external quality assurance system", requiring that "affiliated agencies and educational institutions provide quality assurance systems as part of the educational administration process. It is required a continuous operation: prepare an annual report to the agency. Relevant agencies and publicly disclosed (Tassanee Siriwan, 2560).

Education Quality Assurance is an activity or practice that starts with the planning process: to support facilities, implementation of the plan. To develop quality and standards of education at all levels, ensure that graduates with desirable qualities and standards meet the needs of the institution and society. This is to ensure that the learner is a parent. And those involved in the local society. In addition, the general public acknowledges the graduates of the educational institution (Kannika Yawanungkoon, 2005).

The researcher found that internal quality assurance is part of continuing education administration. International colleges have a systematic internal quality assurance system and appointment of the Quality Assurance Board to the policy. To promote and monitor college quality assurance, the self-assessment reports and the quality assurance of education standards are prepared. Researchers are interested to study this topic especially attitude and participation in internal quality assurance of International College personnel, Suan Sunandha Rajabhat University. This will be used to develop the quality assurance system for a college education with a systematic and appropriate mechanism.

Objective

1. To study attitudes toward quality assurance in the internal education of International College personnel, Suan Sunandha Rajabhat University
2. To study the level of participation in quality assurance in the internal education of International Colleges personnel, Suan Sunandha Rajabhat University

METHODOLOGY

This research is conducted with a quantitative method. The algorithm is as follows.

1. The population and sample used in the research.

The research population is staff from International College, Suan Sunandha Rajabhat University. There were 57 staff members, including 37 academic administrators and 20 academic staff.

Research samples the sample consisted of 57 questionnaires. The questionnaire was used as a research tool and sent to 57 questionnaires. Researchers have selected the complete version. It can be used in the analysis of 50 statistical data.

How to create widgets

The instrument used in this study was a questionnaire to investigate attitudes and participation in internal quality assurance of International College personnel, Suan Sunandha Rajabhat University. It was developed by researching documents and related research in the past under the guidance of experts. Research reliability is tested with coefficients.

Steps to Create a Research Tool Researchers have conducted the following steps: researching relevant theoretical concepts from articles and book, defining terminology components of research with related variables. The questionnaire is divided into 3 parts

Part 1 is a personal demographic factor of staff, International College, Suan Sunandha Rajabhat University is the gender, age, occupation and working experience. The characteristics of the questionnaire are chosen.

Part 2 is a questionnaire investigating attitudes toward internal quality assurance. Each factor consists of a questionnaire with a closed-end valuation model to give opinions, which has a degree of opinion, the highest, the lowest, the lowest and the lowest.

Part 3 is a questionnaire about participation in quality assurance in four areas: participation in planning, operation, performance review, improving operations. There are 5 questions in each sub-topic, a total of 20 items. Each factor consists of a questionnaire with a closed-end valuation model to give opinions, which are 5 degrees of opinion, the highest, the lowest, the lowest and the lowest.

Statistics used in the analysis.

Sample analysis Use descriptive statistics.

Frequency Percentage used to analyze personal factors, such as gender, age, the status of work and working experience.

Mean and the standard deviation was used to analyze data, attitudes, and participation in the internal quality assurance of internal education personnel, Suan Sunandha Rajabhat University

RESULTS

Research result

Research hypothesis 1 states that attitudes toward quality assurance the internal education of college personnel. Suan Sunandha Rajabhat University At the moderate level, the research found that attitude at a high level. The research hypothesis is consistent with research by Pacharanan Wongsing (2556). The study of knowledge and attitudes of personnel toward quality assurance in education. Rajamangala University of Technology Suvarnabhumi has at a high level and consistent with the research of Wuttichai Arak Puchong and Faculty (2013): the influence of perception, attitudes, and participation. For the performance, the operation of the autonomous university and supporting personnel, according to the internal quality system, the results showed that the level of attitudes at a high level.

Research hypothesis 2 states that participation in quality assurance in the internal education of college personnel, Suan Sunandha Rajabhat University is at the moderate level. The research found that the level of participation at a high level. The research hypothesis is consistent with research by Usa Noi Tim (2556). Attitude and participation in the internal quality assurance of internal education personnel. Faculty of Humanities and Social Sciences Nakhon Pathom Rajabhat University found that the level of participation at a high level.

The results of the study revealed that the research on attitudes and participation in the internal quality assurance of International College Personnel Suan Sunandha Rajabhat University, the results of this research are: respondents had attitudes toward internal quality assurance. At the high level, respondents were involved in internal quality assurance. It is highly noted that the quality assurance of internal education of the international colleges. As a result, the College has improved its approach. This includes the development of teaching and learning, research, academic services. Arts and Culture The quality assurance of education is effective and effective. It will lead to the quality of the graduates. Graduates are expected to complete the course in accordance with the quality standards specified in the course. And meet the expectations of society. They say that Quality Assurance in education can be a great quality to a college and acceptable to outsiders. The quality assurance of education will be able to work until the results are achieved. We need to get cooperation from all personnel. Executive supports Cooperation with faculty and staff starts with the participatory process of planning the implementation of internal quality assurance. Participation in the implementation of the internal quality assurance plan. Participation in Performance Review, therefore, the College should promote and support the operation of quality assurance in education in order to continuously improve the quality of educational institutions and to participate in the development of the quality of educational institutions and meet international standards.

Suggestion

Regarding research outcome on attitudes and participation in quality assurance in the education of personnel, International College, Suan Sunandha Rajabhat University, Researchers have suggestions as follows.

1. Suggestions to use the research results.

1.1 Training should be provided to train personnel in the unit to have knowledge and understanding in continuous education quality assurance.

1.2. Promoting personnel awareness and understand the role and function of quality assurance in education.

1.3 Focusing on the involvement of personnel in the planning, implementation, monitoring, and improvement of educational quality assurance. As a result, the development of quality assurance in education will continue to be more effective.

2. Suggestions for the next research.

2.1 The next research should study the factors affecting the educational quality assurance system within the educational institution.

2.2 The next research should study the role of personnel in quality assurance in education. The information obtained from the study and research to develop a quality assurance system of the institution to the quality and standards.

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FACTORS AFFECTING TO LECTURERS' PUBLICATIONS AND PRODUCTIONS: INTERNATIONAL COLLEGE, SUAN SUNANDHA RAJABHAT UNIVERSITY

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ABSTRACT

The purposes of this research were to: 1) to study on conducting research among the lecturer of International College, Suan Sunandha Rajabhat University (SSRUIC), 2) to discover factors influencing on conducting the research among the lecturer of SSRUIC.

The participants of this study were 36 lecturer worked at International College, Suan Sunandha Rajabhat University (SSRUIC) in fiscal year 2018. The samples were recruited by simple random sampling. The instrument of this research was a structured questionnaire. The data were analyzed by frequency, percentage, mean, standard deviation, Pearson's correlation, and multiple regressions.

Major findings were the following: 1) individual factors and motivation factors conducting research and whereas contributory factors toward the conducting research were at high level 2) the individual factors, the motivation factors conducting research, and the contributory factors toward the conducting research were positively correlated with the amount of 3 years ago researches, statistically significant at .01 and 0.5 level respectively 3) individual factors: aspect of research skill and attitudes toward conducting research, motivation factors conducting research: aspect of self-value, and contributory factors toward conducting research: aspect of environment of the conducting research were differences statistically significant at 0.5 level

Keywords: Factors Affecting, Lecturers, Publications, Productions

INTRODUCTION

Nowadays, education for developing quality person needs to adjust for changing. This education will focus on learning by themselves which can improve the potential of solving and analyzing the problems which the researchers are facing with. United State is interested to produce the education researchers who have high ability. They start from study the potential of the research and evaluation of the education only. Although, there are more of research, less of researcher. The standard and quality are different. It makes the limit of ability in researching in Thailand faces with many problems. For example, the personnel lack of basic skills to research, the operation is not followed the processes, lack of personnel who are the professional in research from the support of organization and do not bring the research to use beneficially.

The researcher wanted to study the factors affecting the production of the research work of the academic staff, as well as the problems and obstacles that resulted in the less research and do not achieve the goal. It is important for the development of research results to be information and guidelines for improvement and development of research personnel to propose to broad of directors of International College, Suan Sunandha Rajabhat University. This policy will be the policy of production to benefit to university and the nation.

LITERATURE

Literature & Theory

Analysis of the relationship between behavioral variables and productivity of graduate education personnel found that 1) The variables that have a direct impact on the production of research results are the willingness to produce research results and attitudes towards the production of research results. 2) Variables that have only

indirect effects on the production of research results are knowledge, stress, depression, and referral. 3) The variables that influence the production of research, both direct and indirect, are achievement motives in fundamentals of financial, time, social support and self-esteem.

Factors affecting the creation of scholarly research results of academic personnel of faculty of Humanities and Social Sciences, Prince of Songkla University, Pattani Campus, the research found that workload factor, research facility, information in research factors, knowledge in research factors, factors in seeking knowledge to undertake research, atmospheric factors in research are in high level. However, factors affecting research attitude, material factor and support tools are in low level. Budgetary factors have no problems. Compared to the factors that affect the academic research output of academic personnel classified by age, qualifications, experience found that the overall picture was not different.

METHODOLOGY

This research is a correlational research with the aim to study the factors influencing the research and academic work of academic personnel of International College, Suan Sunandha Rajabhat University. The target group of research is academic staff of International College, Suan Sunandha Rajabhat University in academic year 2560 in 5 majors, such as Airline Business, Hospitality management, Tourism management, International business and Mathematics.

The instrument used in this study was a questionnaire based on conceptual framework and the purpose of the research. The questionnaire was divided into 4 parts. Part 1: General Information Questionnaire, you choose the answers and it is open-ended questions. It contains questions about sex, age, education level, position, academic position, age, affiliation, why do you do research? Why do not you do research? Number of researches, research in progress, research methodology and research grants have been received. Part 2: Questionnaire on individual factors, including research skills, the duration of the research and attitude toward research. Part 3: The questionnaire about motivation in research consisted of self-esteem, the acceptance, responsibilities and the progress in the position. Part 4: The questionnaire about the factors contributing to the research consisted of the support from the internal departments, research funding, environmental research, materials and facilities.

Data Collection

Data collection used the quantitative data collection methods by survey questionnaire for lecturer of International College, Suan Sunandha Rajabhat University (SSRUIC), fiscal year 2018. Totally 36 peoples from Major Airline Business program, Hotel Management program, Tourism Management program, International Business program and Mathematics Education program with the approval of the Dean of SSRUIC and related person. The researcher collected 34 questionnaires (94.4%) to perform statistical analysis.

CONCLUSIONS

Analysis of general information of academic personnel of International College, Suan Sunandha Rajabhat University found that 34 people were more males than females. Most of them age between 31-40 years and 41-50 years old. Most graduates in master's degree. Most of them are the teachers. Most of them have the research for 4-6 or 30.5%. Based on the research results of the past 3 years (2558-2560), there were 1-3 researches or 66.7%, no research 16.6%, research in the progress for 1-3 or 91.7%, and no research is in progress at 8.3% of International College, Suan Sunandha Rajabhat University. Most research is 1-3 and the characteristic of research is the researchers, followed by the research group. (As project leader)

The analysis of the opinions of the academic personnel on the factors influencing the production of research results found that the reason that academic staff of International College, Suan Sunandha Rajabhat University do the research because they recognizes that it is a part of being a lecturer and want to do the work to apply for the promotion of academic. The reason that the academic staff of International College, Suan Sunandha Rajabhat University do not do research because there is too much teaching work, lack of knowledge and experience in producing effective research.

Recommendations

Researchers have suggested the guidelines for developing the policy to be research Plan, to develop the academic work properly, to encourage and promote the increase of research output. It also increased the amount of creative research that has been published both nationally and internationally or more beneficially as follow:

1. It should promote and support the development of knowledge and experience in the production of research results for academic personnel who do not have research results and should be advised by experts as mentors to conduct research.
2. Establishment of a College Research Advisory Board to enhance the role of faculty in the promotion of research skills by providing academic staff with a review of the research methodology.
3. Establish a clear research policy that focus on agility, organizing meetings to create networking parties, making a statement to instruct academic personnel to know the policy and practice clearly and publishing the news of the research continuously.
4. Reduce procedures and disbursement procedures for simpler research. Also, Research funding should be sufficient to support the number and needs of academic staff.

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SATISFACTION OF FIRST YEAR STUDENTS TOWARDS STUDENT ACTIVITIES AT INTERNATIONAL COLLEGE, SUAN SUNANDHA RAJABHAT UNIVERSITY

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ABSTRACT

The purpose of this research on satisfaction of first year students towards student activities at International College, Suan Sunandha Rajabhat University was to study the satisfaction and need of first year students towards student activities. The samples were 355 first year students at International College, Suan Sunandha Rajabhat University. The sample was selected on purposive sampling method. The instrument used to collect data in this research was questionnaires towards student activities at International College, Suan Sunandha Rajabhat University. The data analysis was provided in mean, percentage and standard deviation.

The research provides:

1.1 General data analysis of respondents: Most of respondents are female (61.01%) while male respondents are (38.99%). The rankings of the five activities are the interpersonal skills and responsibility (27.20%), knowledge-related activities (23.73%), ethics activities (22.61%), intellectual activities (17.24%) and communication and use of information technology (9.85%). For the reason to attend the events, 72.64% of participants were interested in the activities.

1.2 The satisfaction level of students towards the student activities: The overall satisfaction was in high level ($\bar{X} = 3.92$, S.D. = 0.84). Considering each of the activities, the students were highly satisfied in all activities, especially in the quality of activities ($\bar{X} = 4.00$, S.D. = 0.81), followed by the process ($\bar{X} = 3.96$, S.D. = 0.88), staff/ speakers ($\bar{X} = 3.96$, S.D. = 0.88), and facilities ($\bar{X} = 3.91$, S.D. = 0.81), respectively.

1.3 The need of first year students towards the student activities: the student need was found to be in high level ($\bar{X} = 3.98$, S.D. = 0.85). By looking into each element of the activities, need for activities are the staff/ speakers ($\bar{X} = 4.03$, S.D. = 0.87), quality ($\bar{X} = 4.02$, S.D. = 0.82), facilities ($\bar{X} = 3.99$, S.D. = 0.85), and process ($\bar{X} = 3.88$, S.D. = 0.88), respectively.

Keyword: Satisfaction, students, student activities, International College

INTRODUCTION

Nowadays, higher education has been forcing by Office of the Higher Education Commission (OHEC) that has a role to study and analyze for research to display higher education standard policy and to provide an higher education development plan according to expectation from National Economics and Social Development Plan. (Higher Education Commission, 2008: 89) Student Affairs is part of institution of higher education that can be develop perfection of students on academic, profession, knowledge, social, emotional, physical, and mental together with focus on expectation and interesting of students responsiveness teaching. This process prepare student through support them to be participate in extracurricular activities according to objective mission-based and direction of institution of higher education. International College has the responsibility to behave the process of Student Development Activities to follow the plan purpose with created 5 years Student Development Activity Action Plan (2016-2020) according to characteristics of students in graduate degree programs. And 5 standard qualifications to support characteristics of students in graduate degree programs are ethics and moral, knowledge, intellectual skills, interpersonal skills and responsibility, numerical analysis communication and technology skills.

Objective

1. To study first year student satisfaction level on student activities in International College, Suan Sunandha Rajabhat University follow 5 standard qualifications to support characteristics of students in graduate degree programs are ethics and moral, knowledge, intellectual skills, interpersonal skills and responsibility, numerical analysis, communication and technology skills.
2. To compare first year student satisfaction level on student activities in International College, Suan Sunandha Rajabhat University with classification by year and courses.
3. To offer guidelines for student activities of International College, Suan Sunandha Rajabhat University.

METHODOLOGY

First year student satisfaction level on student activities study process are;

1. Population and sample
2. Research Tools
3. Creating and finding quality of research tools
4. Data Collection
5. Statistic and Data Analysis

Data Collection and Data Analysis

Researcher has collected the data and sent it to each major in college as;

1. Asked for the cooperation from each 4 major to collected data of First Year Student
2. Researcher has followed and collected questionnaires for 5-7 days.
3. There are 318 items or 89.58 percent and then started to use it on data analysis.

Data analysis and statistics from questionnaires are quantity data that analyze with Frequency, Percentage, Mean, and Standard Deviation through computer program and quality data that analyze data from suggestion follow objectives.

CONCLUSION

Conclusion of this research classified by objective of research as follows;

1. Result of analysis general information of responders.

There are 194 female or 61.01 percent and 124 male or 38.99 percent with ranking of 5 activities found that the first rank is communication and responsibility skill activities from 142 persons or 27.20 percent. The second is knowledge Activities from 122 persons or 23.37 percent. The third is moral and ethic activities from 118 persons or 22.1 percent. The fourth is an intellectual skill Activities from 90 persons or 17.24 percent. And the last is numerical analysis communication and technology activities from 50 persons or 9.58 percent. From the result, 231 students or 72.64 percent are interesting to participate in an activity.

1. First Year Student have satisfaction on International College of Suan Sunandha Rajabhat University Student Activities result as high level ($\bar{X} = 3.92, S.D. = 0.84$) are quality of student activity ($\bar{X} = 4.00, S.D. = 0.81$), student activity procedure ($\bar{X} = 3.82, S.D. = 0.85$), staff and lecturer ($\bar{X} = 3.96, S.D. = 0.88$), and facilities ($\bar{X} = 3.91, S.D. = 0.81$). Satisfaction level of student in International College of Suan Sunandha Rajabhat University analysis student activity procedure, staff and lecturer, and facilities as following;

1. Student Activity Procedure part shows the satisfaction of students on activities that proper with gender and ages. Next is to gain knowledge, facts, and experience from activity procedure. Activities according to objective of student activity and the step to process activities or flexible service can be adapted and manage at the time.

2. In part of staff and expert found that there are satisfaction of staff on properly dress, personality, and service mind. Lecturer can provide the productive content of activities to adapt in daily life and lecturer have suitable knowledge and skill on activities. An example is to answer, clarify, and suggest the questions and problems.

3. In term of facilities found that there are satisfaction on join the activity and receiving helpful service and venue of activities is suitable and safe. Comfortable participation also is their expected.

4. Quality of student activities is satisfaction on activities that can use knowledge from participation with activities to adapt on daily life. Knowledge from activities also can be able to adapt into education and according to objective of activities.

The result from first year student's satisfaction on student activities at International College, Suan Sunandha Rajabhat University analysis. Overview of first year student's expectation on student activities at International College, Suan Sunandha Rajabhat University is in high level. ($\bar{X} = 3.98, S.D. = 0.85$) Considered result of activities in each term found that in every term of activities are in high level sort by level from high to low are; staff and lecturer part ($\bar{X} = 4.03, S.D. = 0.87$), quality of student activity ($\bar{X} = 4.02, S.D. = 0.82$), facilities ($\bar{X} = 3.99, S.D. = 0.85$), and student activity procedure ($\bar{X} = 3.88, S.D. = 0.88$)

Analysis result from expectation on student activities International College, Suan Sunandha Rajabhat University are procedure activity, staff and lecturer, facilities, and quality of student activity following;

1. Student activity process was found that there is expectation about knowledge from content of activities or experience from every step of activity procedure and student activity's publicity is clear and precise. Activity is proper with gender and ages of students and it is according to objective of student activity.

2. In term of staff and lecturer was found that there are expectation about staff on properly dress, personality, and service mind. Lecturers also have skill and knowledge suitable with activities such as their answer, clarification, and suggestion. And service staffs have service mind, fair, and non-discrimination.

3. In term of facilities was found that there are expectation about properly and safely activity venue. Other expectation is participation on comfortable receiving service and Activity was provided clearly sign show in activity point or service.

4. Quality of student activity is expectation to provide activity according to objective and support to work with team work and activity can be able to adapt knowledge into education and daily life.

Suggestion

From result of this research, researcher has suggestion following;

1. Ethics activities should provide field trip for increase student moral and ethics. Institute of higher education should provide moral knowledge for actual practice and to support student to be honest and have a good moral.

2. Knowledge-related activities should provide professional in teaching and providing knowledge both in theory and practical. Knowledge should be able to adapt with responsible work and profession.

3. In term of intellectual skills should support student to have problem solving skill with creative thinking and adapt it into their study, work, and daily life.

4. Communication and responsibility skills in activity should open mind to listen others and suggest their opinions. Institute of higher education should support student to have self-responsibility.

5. In term of numerical analysis communication and technology skills, activity should support student to have search and technology skill for their work or study. They should have knowledgeable and develop to keep up the changes of present technology. Institute of higher education should provide communication and teaching to student and they should use foreign language for communication.

Recommendations for further research

1. Researcher should study participation behavior of student of International College of Suan Sunandha Rajabhat University in every year.

2. Researcher should study properly pattern and characteristics of student activity which is according to desired characteristics of International College of Suan Sunandha Rajabhat university student.

3. Researcher should provide other research for compare activity with independent variables are social problems for example; violence in society, current technology, etc.

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A STUDY OF STUDENTS' BEHAVIOR AND PARTICIPATING IN SPORT CLUB OF INTERNATIONAL COLLEGE STUDENTS. SUAN SUNANDHA RAJABHAT UNIVERSITY

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ABSTRACT

A Study of Behavior of Participants in Club Sport Club of International College Students. Suan Sunandha Rajabhat University The purpose of this study is to study the causes of participation in the International Club of Sport Club. Suan Sunandha Rajabhat University To propose appropriate guidelines for organizing other club activities. Of International Colleges Suan Sunandha Rajabhat University To study the causes of non-performance of the Club's sport club. Suan Sunandha Rajabhat University

The study indicated that

1. Most respondents are male. Study in Airline Business And in the second year, the school is at 2.50-2.99 degree and the family has a trade. Earnings at 25,999 - 29,999 baht per day. Decided to join the Sport Club because they are interested in the club.

2. Respondents meet with members of the club one time a week and have persuaded their friends to join the club. Most clubs have never represented the college. Has a strong relationship with the club. And think of the benefits of participating in the event can be deployed in the future.

3. In joining the club Respondents think it is good to build relationships with friends. And think that apart from the club hours, there should be a meeting during the week. And think of participating in sports as important as learning.

4. In the field of driving the club. Most respondents do not often consult the club president. The problem was not resolved.

Suggestion

1. The interaction between members of the club should be increased.

2. The club should clearly define the roles and responsibilities of the members so that the operation of the club is smooth.

3. The presence of athletes in the Club Sport Club does not imply that the operation of the Club Sport Club is fulfilled. The club has a variety of functions to manage.

Keywords: Student Club, Behavior, student of International College.

INTRODUCTION

Student activity is an important educational process of higher education institutions that develops the potential of students to become perfect individuals in the fields of intellectual, social, emotional, physical and psychological. Collaboration between teachers And students in the activities of students. Make students warm. Learning Understanding of teachers and higher education institutions. (Samnao Khajornsilpa, 1999).

Student Activities It is an important activity. It is also necessary for the school to promote and support the student's activities. To train and enhance the skills of students while living on the fence of higher education institutions. By training as a team and after graduation. The student will be able to see the benefits of participating in student activities. (Korakoch Siri, 1993)

International College is an educational institution that aims to produce quality graduates according to the University's identity. Teaching extra-curricular activities is an important factor that motivates students' internal potentials to be fully utilized. Club activities are an important part to help students exchange and learn to understand the lifestyle outside the classroom. It also helps to create the skills that will enhance the potential of students to be diverse and strong.

The club has set up 5 clubs in 5 disciplines: 1) Por Piang Club 2) Public Speaking Club 3) Sport Club 4) Personality Club And Club English. In the past performance, Sport Club is a lot of attendees. But in terms of performance is not as prominent as it should be. The researcher needs to know about the behavior of joining the club and find out the cause of the problem is not outstanding. To take this research to find out how to organize activities for Club Sport Club, the results are in the right way and improve the potential of students participating in Club Sport Club.

Research Objectives

1. To study the results of activities that don't the goals of the club activities.
2. To propose appropriate guidelines for organizing other club activities. Of International Colleges Suan Sunandha Rajabhat University
3. To study the reasons for joining the International Club of Sport Club. Suan Sunandha Rajabhat University

METHODOLOGY

This research is an approximation. The research target is international college students. There are 200 club members who are members of the Sport Club. The reason is that they chose the Sport Club because the performance of the club in the academic year 2556 was not in line with the target. And the attendance of students in each activity is relatively low compared to the number of members in the club.

The instrument used in this research was a questionnaire. And observing the behavior of the club members each time the event. The researcher's questionnaire was developed based on the concept of human participation. The data were analyzed by SPSS program for the mean and the total questionnaire. Coupled with the findings and inquiries of the behavior of the club members from the researcher itself.

Data Analysis

In collecting data, the researcher distributed 200 questionnaires online via Google Form so that respondents were more comfortable answering. After submitting the questionnaire, the SPSS program was converted to SPSS for the average of the data.

RESULTS

The study of behavior of participation in Sport Club of International College Students Suan Sunandha Rajabhat University There are issues that can be discussed.

1. Personality testing The behavior of joining the Club Sport Club is as follows.

1.1 Different gender factors did not affect the participation behavior. The proportion of respondents between males and females was similar. When doing activities together, it is equally equal, can share the work to do.

1.2 Personal factors in the study year No effect on participation behavior. Because the number of second year students is the highest. There is a similar number of students in Year 1 and Year 3 students.

1.3 Personal factors in the field of study It was found that there was an effect on the participation behavior. The number of members from the aviation business is quite a bit higher than that of tourism management students. The format of the joint activities may differ according to the context of the subject matter studied.

1.4 The average cumulative score did not affect the attendance behavior of the Sport Club, as members paid attention to the sport. More than average scores.

1.5 Main career factors of the family It was found that there was no effect on participation behavior. Because of the professional status of the family, the participant will not be a major issue in the activity. Except for cooperation with the neck of the family, the main occupation of the family.

1.6 The net family income factor per month found that the monthly income of each family was different. Families with income in the range of 25,000 - 29,999 baht a month have a lot. Participation in activities may require funds to participate in activities. When the financial status of the family is in the middle. It may affect the consideration of the participant. It is considered by the parents of the students themselves.

1.7 On the part of those who entered the club, the club members decided to choose their own Sport Club, which could look back on their sporting interests. Or a sportsman himself. So decided to join the club. By the behavior of the club's selection of Sport Club is to persuade them to join the club.

1.8 Athletic Factors Have you ever played sports? It affects the decision to join the Club Sport Club when students have played. Or ever to compete. Register as a member It will help students to participate in activities within the club to drive the club to the full potential to enter the work world.

2. Testing the membership in the Sort Club. The results are as follows.

2.1 The attendance factor of most students remained at a good level. Students also have Good attitude towards club activities Can learn skills The process of practicing and bringing results to benefit themselves and those around them.

2.2 Sensory factors Behavior towards club activities. Still in the middle. Behavioral expression Feelings for the president or members are good for the respondents. Still very little importance. This will result in negative events inside the student club.

Table 1 Results of the analysis on membership of Sport Club

Issues	Mostly effect	Number (person)	Percent
1. How many times a week did you meet and interact with the members of the club?	1	88	43.3
2. You have persuaded friends. Are you a member of the Sport Club Club?	Ever	155	76.4
3. Since you have been a member of the Sport Club Club, have you represented the college athlete in a variety of events?	Never	184	90.6
4. Have you ever expressed any comments or suggestions regarding the activities of the club to the president or the club director?	Never	176	86.7
5. How much do you feel attached to and part of the Sport Club?	Medium	88	43.3
6. You can bring experiences. Have you been a member of the Club Sport Club for the benefit of your daily life?	Yes	149	73.4

Suggestion

1. The research found that. Participation in student activities is a good criterion. But lack of interaction within the club to organize activities within the club. This may result in various activities. The club is organized. I will not achieve my goals. As a result, the performance of the club. Or incomplete

2. Clubs should clearly define their rights and roles within the club. To administer the club. To be with The burden of doing work in the activities. The results of the assessment. The club's low level followed.

3. From the questionnaire about the sports background of the respondents. It appears that most members have been athletes or athletes before. It is predictable that. The results of activities. To be successful as well. The fact is, there are athletes in the club. It does not contribute to the satisfactory performance.

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ANALYSIS OF MARKETING COMMUNICATION TRAVEL WEBSITES: TOURISM AUTHORITY IN 10 ASEAN COUNTRIES

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ABSTRACT

This study was aimed to explore the main tourism products from tourism authority websites in 10 ASEAN countries. And compare the similarities and differences of tourism products from 10 ASEAN countries. This study was a qualitative research. Samples were the tourism authority websites in 10 ASEAN countries (Thailand, Laos, Cambodia, Vietnam, Brunei, the Philippines, Myanmar, Indonesia, Malaysia and Singapore)

Results revealed the following: Analysis marketing communications appearing on the website is divided into 12 issues, and from the analysis of tourism product, 80% found on the homepage of travel authority websites are present the core tourism products such as tourist attractions, beaches, etc. 50% focused on selling natural tourism products. It shows the tourist attractions of the beach and the sea. Traditional festival and the way of life is featured in Thailand (highlighting the festival of traditions) in Singapore (highlighting the lifestyle of people in the modern country.) Myanmar is the only country that has the religious tourism. Singapore and Malaysia focuses on man-made attractions, Singapore is highlighting the attractions that are not well known. Malaysia focuses on shopping destination. Brunei, Vietnam and Malaysia, focusing on tourism products as an eco-tourism destination. The sites that focus on cultural sites (archaeological sites) are Indonesia and Vietnam. Philippines is the only country offering World Heritage Tourism on the homepage of the website.

Key Word (s): Tourism Websites, Marketing communication, ASEAN

INTRODUCTION

Today, the Internet is the largest source of information in the world and one of the fastest ways to access information, therefore, there are many tourism websites that serve to meet the behavior and needs of the tourists in preparation for their travels (Nednapa, 2008). Tourists place importance on Internet media a lot as it is considered the most convenient way to search and manage their travels. Internet media also serve each individual some specific wants and needs for their travels. Moreover, tourists in Thailand and around the world use internet in a high level (Kingkeaw, 2008). Search engine has become an essential part of every tourist, the most common site is Google, tourists mainly search for popular tourist attractions, accommodations and restaurants in order to help in making decisions and also to make their travels smoother. Since the ASEAN Community in 2015 started, it creates more opportunities for the tourism industry in the region, more than 90 million tourists visited ASEAN countries last year. According to the World Tourism Organization (UNWTO), ASEAN has the highest tourist growth of more than 10 percent. In addition, with the continuous cooperation of ASEAN countries that help to promote ASEAN as a Single Tourist Destination. Meaning that tourists do not just travel to one country but to other countries in the ASEAN.

Study objective

1. To study tourism products from tourism websites and related authorities that promote tourism among the 10 ASEAN countries.
2. To compare tourism products from tourism websites among the 10 ASEAN countries.

Method used in this study

This study was done through qualitative research. Samples were the tourism authority websites in 10 ASEAN countries. The reasons of using the official websites from the tourism authority of every country it is because the data shows that tourists depend on online tools to manage their trips so the official websites could provide with good and reliable information that could be used further in the online marketing. The sample websites are:

1. Thailand <https://www.tourismthailand.org/>
2. Laos <http://www.tourismlaos.org/>
3. Cambodia <http://www.tourismcambodia.org/>
4. Vietnam <http://www.vietnamtourism.gov.vn/>
5. Brunei <http://www.bruneitourism.travel>
6. The Philippines <http://www.tourism.gov.ph/>
7. Myanmar <http://www.tourism.gov.mm>
8. Indonesia <http://www.indonesia.travel/gb>
9. Malaysia <https://www.tourism.gov.my/>
10. Singapore <https://www.visitsingapore.com>

In this study, Content Analysis is used to limit the scope of research information and tools for the researchers. The contents are classified into different tourism products in corresponding to the theory of Philip Kotler, John T. Bowen and James C. Mekens. In 2013, researchers develop on a basic concept of classification of tourism products which consist of conducting content analysis from the contents in the website such as topic, text, hypertext, image and menu.

Data collection and analysis

The data collection was done one website at a time, and each website took one week to gather all the information. This was done between the month of February and March. The process was done through web content analysis by sorting out tourism products that appear on the homepage of every website, analyzed the marketing communication content that appears on the homepage of the website and analyzed the presentation of tourism products.

Research result

On the homepage of tourism websites mostly consist of beautiful images and video clips that promote their countries. Every website has a clear directory for tourist to visit and to choose from and also provide search function to create more convenience to improve tourist experience while visiting the webpage.

1. Analyzing communication content on the homepage
Contents showing on the homepage consist of news and other information in the website. The following points are the similarities and differences of each website.
 - 1.1 The history of the country, the study showed that only four countries had their histories shown on their homepage which are Cambodia, Myanmar, Laos and the Philippines.
 - 1.2 Information about provinces and parts of the country. The study showed that three countries presented their tourism products according to the provinces and different part of the country which are Thailand, Laos and Vietnam.
 - 1.3 Calendar of tourism events, five websites showed clearly the date of events and festivals in their countries.
 - 1.4 Selling of tour packages, the study showed that three countries had tour packages on sell on the webpage which are Cambodia, Brunei and the Philippines.
 - 1.5 Customize itinerary, this allows tourists to plan their trips according to their preferences which this function helps to create more satisfaction for the tourists and also help to meet their needs and

wants. In addition, it creates an interaction between the system and the tourist (Two-way communication). The study showed that the three countries who had this function on their webpage were Laos, Indonesia and Thailand.

- 1.6 Suggested top destination, the study showed that four countries that suggested clearly the top destinations tourist should visit were Thailand, Indonesia, Myanmar and the Philippines.
 - 1.7 Guide on tourism investment, the study showed that the three countries that provided information about investment were Myanmar, Thailand and the Philippines.
 - 1.8 Visa information, three countries that provided visa information were Brunei, the Philippines.
 - 1.9 Tourism activities, the study showed that only Laos had their activities information stated clearly on the website.
 - 1.10 Social media, the study showed that in ASEAN countries, 70% of the people use Facebook, 30% use Instagram and 20% use Youtube, Twitter and Google Plus.
 - 1.11 Feedback section, in this section it allows the tourist to write or communicate with the webpage, the study showed that seven out of ten countries has this section on their websites.
 - 1.12 Website link, the study showed that 80% of the websites did not have hyperlink to the other tourism websites in the ASEAN countries. Countries in the ASEAN community should cooperate to promote tourism destination of the country members by providing links on the website. The result showed that only Laos had the hyperlinks to the other countries provided in the homepage.
2. Tourism products presentation
- Tourism products of all ten websites were organized and well presented. The details and information provided in the websites were very clear and user-friendly. Information were categorized into many sections for better users' experiences. Each country presented their products differently. Based on the study, 80% of the countries presented their core products such as places of attractions and beaches. Followed by supporting products such as accommodations and services, and this section took 20%. In addition, none of the websites presented their facilitating products such as logistics and transportation services. 50% of the ASEAN countries focused on promoting natural tourism products by displaying pictures of beaches and ocean. For Thailand, the country focused on promoting traditional festival and culture. Singapore focused on lifestyle, technology and hidden attractions in the country. Myanmar focused on religious tourism. Malaysia, Vietnam and Brunei focused on ecotourism. While Indonesia focused on historical tourism and lastly for the Philippines focused on promoting their World Heritage places.

Table 1 showing the highlight tourism product of each country

No.	Country	Highlight tourism product
1.	Brunei Darussalam	Contemporary travel
2.	Cambodia	Cheap tour packages
3.	Indonesia	Cultural tourism
4.	Laos	Activities and festival
5.	Malaysia	Natural tourism
6.	Myanmar	Religious tourism
7.	Philippines	World Heritage tourism
8.	Singapore	Man-made attractions
9.	Vietnam	Regional tourism
10.	Thailand	Calendar of tourism events

Recommendations

1. Recommendations for further improvement
 1. Should promote more and conduct more of an online marketing. As for today, the cost of investment is low.

2. Should continue to study the websites in order to further develop online marketing and also to increase convenience for the tourist.
3. Should add Chat Bot feature into the websites to create interactions between the tourists and the webpage and also to create more convenience.
2. Recommendations for further research
 1. Should study the behavior of the tourists who visit tourism websites and how they react to the products.
 2. Should study and compare tourism websites of ASEAN countries and European countries.

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SATISFACTION OF STAFF AND STUDENTS IN USING INTERNET SERVICE: INTERNATIONAL COLLEGE, SUAN SUNANDHA RAJABHAT UNIVERSITY

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ABSTRACT

Effective Internet services can be considered as one of the benefits to personal and students in the use of quality personnel and students in satisfaction of personal and students of International College, Suan Sunandha Rajabhat University in using the Internet. This research study the level of satisfaction of personnel and Students on use in internet services in International College, Suan Sunandha Rajabhat University and to compare the students' satisfaction in using the internet services the samples were from international students 200 population

The study indicated that Satisfaction of personal and students to use the internet service, International College, Suan Sunandha Rajabhat University aims to use the internet of international colleges, Suan Sunandha Rajabhat University has objectives. The Wireless Network of International College, Suan Sunandha Rajabhat University has objectives. Satisfaction was moderate. Facility and location is at the highest level Comparing satisfaction level in different age groups are satisfied with the use of Internet services of international colleges.

Recommendations from the research found that. International College, Suan Sunandha Rajabhat University aims to improve the stability of the network. Make the Internet service is comfortable

Keyword: Satisfaction, Service, Internet

INTRODUCTION

In the news of the society communication through a computer network makes sharing information easy a worldwide network of computers. Internet Networking is the network of computers that is the most important network in the age of social news. It is a source of information from around the world. It is a treasure trove of information that most people turn to the internet is the largest computer network in the world. It consists of many networks spread all over the world. Useful for education, business information, trade, news and entertainment. These data are stored as data files in the form of news databases from different subnets. In addition, the users can also contact the news and exchange information with other computer users on the Internet by the news or electronic mail this can be done quickly.

From the above phenomena, The use of the Internet of International College, Suan Sunandha Rajabhat University. There are problems in many aspects. Insufficient computer system to use the internet. Internet authentication login problem. The budget problem is not enough for the device for the internet. The Internet is not available at all and cannot be used speed of internet the spread of computer viruses these problems affect the quality of the Internet services of personnel and students. Therefore, the researcher wanted to study the problem of satisfaction of personnel and students of International College. Suan Sunandha Rajabhat University's. Use of Internet Services. This is a guide to the development of internet services in International College, Suan Sunandha Rajabhat University.

Objective

To study the level of satisfaction of personnel and students to use the internet service, International College, Suan Sunandha Rajabhat University.

To compare the satisfaction of personnel and students to Use of internet services, International College, Suan Sunandha Rajabhat University's.

To obtain the appropriate guidelines for the development of the internet resource management system of the International College, Suan Sunandha Rajabhat University.

METHODOLOGY

This research Satisfaction of personnel and students to use the internet service, International College, Suan Sunandha Rajabhat University's total number of respondents 200 population. The sample are personnel in International Colleges. Undergraduate students Study in the Airline business. Tourism Management Hotel and Restaurant Business and the International Business Administration Classes 1-3 of international colleges, Suan Sunandha Rajabhat University.

How to create widgets

The instrument used in this study was a questionnaire about the satisfaction of personnel and students to use the internet service, International College, Suan Sunandha Rajabhat University. Each factor was composed of questionnaires that were rated as closed-end valuation scales to give opinions, with 5 levels of opinion, the highest, the lowest, the lowest and the lowest.

Tools used in this study a questionnaire was constructed by applying the questionnaire used in this study was divided into 2 parts.

Part 1 To collect the basic information of three respondents, including personal factors, gender, age, and type of personnel.

Part 2 The question of the satisfaction of the personal and students use the internet service, International College, Suan Sunandha Rajabhat University

Statistics used in the analysis.

The sample used in this study was the satisfaction of the personnel and students to use the internet service, International College, Suan Sunandha Rajabhat University. The Taro Yamane formula was used to calculate the sample size research samples select from 120 simple random sampling.

Research result

The conversion of the satisfaction of personnel and students to use the internet service, International College, Suan Sunandha Rajabhat University. Based on the analysis of the data students to use the internet service of the 200 respondents, the results of two data analysis can be summarized as follows: Data Analysis and Sorting Table summarizes the importance of the satisfaction of the personal and students to use the internet service, International College, Suan Sunandha Rajabhat University.

The table shows the importance of each.

Summarize the importance	Rating	Average (\bar{X})	Standard Deviation (S.D.)	Conversion
Facility facilities	1	4.22	0.54	Most
Wireless Networking	2	3.38	1.18	Moderate

From the summary table, the importance of converting the value of the summary of the importance of satisfaction of the personnel and students to use the internet service, International College, Suan Sunandha Rajabhat University. Found that the facilities are ranked has the highest priority the average of 4.22 and the standard deviation 0.54 was followed by the wireless network. The second was the medium level. The average was 3.38 and the standard deviation was 1.18

Research to study the satisfaction of personnel and students to use the internet service, International College, Suan Sunandha Rajabhat University. Data were collected by giving questionnaires to the research sample. Selected from 200 simple randomized controlled trials. The researcher has set the level of significance at the level of 0.5 and 0.1.

The study of the satisfaction of personnel and students to use the internet service, International College, Suan Sunandha Rajabhat University. The results can be summarized as follows.

The sample was mostly male students than male students. The highest number of samples was in the age group of 20 year. Most of the samples were student to use the internet service, International College, Suan Sunandha Rajabhat University, while the satisfaction level of the personal and students. The wireless network of International Colleges, Suan Sunandha Rajabhat University most of them had moderate satisfaction.

In addition, the facilities in place. Most of them have the highest level of satisfaction. Based on the satisfaction test of personnel and students to use the internet service International College, Suan Sunandha Rajabhat University.

Suggestion.

Based on the results of the research, Satisfaction of personal and students in using internet service: International College, Suan Sunandha Rajabhat University. There are offers, comments and suggestions to be guided in the next time.

1. To make Internet use more effective.
2. It should be arranged to be more appropriate to use the Internet.

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STUDENT'S SATISFACTION WITH THE LOCATION AND FACILITIES: INTERNATIONAL COLLEGE, SUAN SUNANDHA RAJABHAT UNIVERSITY

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ABSTRACT

This study investigates student's satisfaction with location and buildings at International College, SuanSunandha Rajabhat University. It is aimed to figure out their satisfaction during semester 1/2018 and their expectation toward service quality from International College staff. The survey is categorized into 5 aspects: 1) cleanness 2) convenience and comfortability 3) safety 4) well-design and 5) facilities.

Major respondents are female from age of 20-29 studying bachelor degree at International College, SuanSunandha Rajabhat University.

The result shows that students rank safety as their first satisfaction ($\bar{X}=4.818$ S.D.=.379) thanks to well working elevator. Cleanness stands for the second ($\bar{X}=4.813$ S.D.=.402) because the buildings are cleaned every day by house keepers. Then, the third satisfaction is convenience and facilities($\bar{X}=4.766$ S.D.=.045); classroom, mock-up room, and library are well equipped. For well-design aspect ($\bar{X}=4.569$ S.D.=.0636); this ranks the fourth because public relation screen, posters, and announcement board are accessible. The fifth satisfaction is facilities ($\bar{X}=4.564$ S.D.=.0634); air conditions in classroom, mock-up room, meeting room work well.

Keywords: satisfaction, student, location and buildings

INTRODUCTION

Thai Government announces Thailand 4.0: policy focusing on economic growth by creativity, technology, and innovation. To move on Thailand, education is the key of success. The reform in this aspect should be enhanced for prosperous future (Asst. Dr. Krongthong, 2017: 1). Therefore, location and campus buildings are important as well to facilitate students and staff. The number of classroom, mock-up room, library, computer room, and canteen must be enough for them. Apart from this, furniture, stairs, toilets, fire system, alarm, corridors, and rest area must be well designed and maintained for effective study. Management board is responsible to provide these facilities to students and staff. This aimed to meet the standards required by Department of General Education (1999).

Thanks to above reasons, location and campus building are basic infrastructure for education in researcher's perception. The research is conducted to investigate personal satisfaction of international college students toward the location and buildings. The study tickles 5 aspects: 1) cleanness 2) convenience and comfortability 3) safety 4) well-design and 5) facilities (classroom, mock-up room, drinking water machine, and Internet access). The result is applied to improve buildings and atmosphere of International College, SuanSunandha Rajabhat University.

Research Objectives

1. To find out personal factors influencing student's satisfaction toward International Collegebuilding, SuanSunandha Rajabhat University

2. To investigate student's satisfaction toward International College building, SuanSunandha Rajabhat University

Scope of Study

1. Sampling group in this research is 400 students from International College, SuanSunandha Rajabhat University. Respondents are doing bachelor degree in Airline Business Management, Tourism Management, Hotel Management, and International Business Management Program from year 1-4.
2. To conduct research survey, the researcher divides questionnaire into three sections:
 - *Section 1*: the general information of respondent
 - *Section 2*: the level of student's satisfaction toward location and buildings which includes 1) cleanness 2) convenience and comfortability 3) safety 4) well-design and 5) facilities
 - *Section 3*: Further suggestion
3. Period of the study lasted from August 2017-July 2018
4. Chosen place of study is International College Building, Suan Sunandha Rajabhat University

LITERATURE REVIEW

To gather research data, theories and concepts to review are as following:

1. Demographic concept: this tickles the belief that exogenous factors drive behavior in human. Different demographic leads to different belief and behavior. Scholars stated that people's thinking and behavior led from their belief, social role, gender, education background, and interest. Social status also shapes the way they behave. This leads to different perception and thinking.

2. Satisfaction concept: many scholars define satisfaction concept. Baosuwan et al. (2007) explain that satisfaction is derived from a fulfilled mind with goal and expectation. Satisfaction can be both positive and negative. In this study, satisfaction is derived from great service and great benefit student gets from staff and campus facilities.

Research Process

The study is research survey whereas sampling group, sampling size, mechanism, mechanism test, data gathering, and data analysis are described as following:

1. Demographic and sampling group
 - Sampling group in this research is 950 students from International College, Suan Sunandha Rajabhat University. Respondents are doing bachelor degree in Airline Business Management, Tourism Management, Hotel Management, and International Business Management Program from year 1-4.
2. Research Mechanism
 - 2.1 Research mechanism is from literature review, related studies and theories
 - 2.2 Data is gathered from research survey. Dependent and independent variables are formulated from research keywords and hypothesis. The survey includes three parts:
 - *Section 1*: the general information of respondent
 - *Section 2*: 20 questions to weight the degree of student's satisfaction toward location and buildings which includes 1) cleanness 2) convenience and comfortability 3) safety 4) well-design and 5) facilities
 - *Section 3*: Further suggestion

3. Data analysis

To analyze data in section 1, frequency and percentage is used. Then, section 2 shows the degree of student's satisfaction is scaled in 5 degrees. Mean and standard deviation is used to analyze data in section 2.

- 1) \bar{X} 4.21-5.00 = absolutely agree
- 2) \bar{X} 3.41-4.20 = agree
- 3) \bar{X} 2.61-3.40 = neither agree nor disagree
- 4) \bar{X} 1.81-2.60 = disagree
- 5) \bar{X} 1.00-1.80 = absolutely disagree

Then, for section 3, the researcher analyzes suggestion attentively.

RESEARCH RESULTS

Section 1 Demographic Data

Majority of respondent are female students (60.5%) and male students are 39.5%. They are from age of 20-29 and doing bachelor degree year 1-4. Students from first year are 23.8%, those from year 2 are 26.8%, those from year 3 are 26.8% and those from year 4 are 20.8.

Respondents are from different study program: airline business management 59%, international business management 15.3%, hotel management 14%, and tourism management 11.8%.

Section 2

The result of each factors in student's satisfaction toward location and building survey are cleanness (\bar{X} =4.882 S.D.=0.337), waste management (\bar{X} =4.825 S.D.=0.393), clean and hygienic toilets (\bar{X} =4.812 S.D.=0.39), tidy and well equipped classroom, mock-up room, library room and computer room including teaching materials (\bar{X} =4.860 S.D.=0.354). Common space and multi-purpose area (\bar{X} =4.822 S.D.=0.382), enough parking lot (\bar{X} =4.810 S.D.=0.417), enough drinking water machine (\bar{X} =4.572 S.D.=0.648), safety in building and elevator (\bar{X} =4.925 S.D.=0.263), fire safety equipment such as fire extinguisher, fire hose (\bar{X} =4.825 S.D.=0.380), security check point at International College building (\bar{X} =4.775 S.D.=0.441), and trust on safety and security system (CCTV) (\bar{X} =4.75 S.D.=0.433). For well design aspect, major respondents are satisfied with public relation screen, posters, and announcement board (\bar{X} =4.582 S.D.=0.635), atmosphere and architect is greenery (\bar{X} =4.575 S.D.=0.596), well cared gardens and lawn (\bar{X} =4.575 S.D.=0.644). Well equipped classroom (\bar{X} =4.547 S.D.=0.669). For facilities aspect, they agree that equipment in classroom such as air condition works well (\bar{X} =4.672 S.D.=0.544), built-in toilets with good waste management (\bar{X} =4.565 S.D.=0.672). Noise and smell management (\bar{X} =4.542 S.D.=0.603). Lighting in classroom, operation room, mock-up room, and meeting room is enough to facilitate study (\bar{X} =4.480 S.D.=0.718)

Summary and Discussion

Respondents rank safety as their first satisfaction (\bar{X} =4.818 S.D.=0.379) thanks to well working elevator. Cleanness stands for the second (\bar{X} =4.813 S.D.=0.402) because the buildings are cleaned every day by house keepers. Then, the third satisfaction is convenience and facilities (\bar{X} =4.766 S.D.=0.45); classroom, mock-up room, and library are well equipped. For well-design aspect (\bar{X} =4.569 S.D.=0.636); this ranks the fourth because public relation screen, posters, and announcement board are accessible. The fifth satisfaction is facilities (\bar{X} =4.564 S.D.=0.634); air conditions in classroom, mock-up room, meeting room work well.

Suggestion

1) To conduct the research and gather data, it is better to ask for suggestion from responsible before formulating the research survey so that the result will be fruitful for building development.

2) The data from respondents is also the guideline for building development. Further research related to the same topic is recommended to another researcher in order to get result for building development. Lastly, students can benefit from better development in this aspect.

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FACTORS AFFECTING ORGANIZATION AND STAFF'S COMMITMENT TO INTERNATIONAL COLLEGE, SUAN SUNANDHA RAJABHAT UNIVERSITY

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ABSTRACT

The purpose of this research was to study 1) study the factors affecting the organizational commitment of the international colleges 2) to propose the management guidelines of the international colleges to be more appropriate.

The research sample was International College Staff Suan Sunandha Rajabhat University 56 students were selected by using specific sampling method. The research instrument was a questionnaire. The statistics used in the research were percentage, mean, standard deviation

The research findings were as follows: 1) Factors affecting the overall job commitment were at the high level. Most of the issues that you are responsible for knowledge. Your ability and aptitude. 2) The factors that influence the organizational style of the three issues are the supervisor colleagues. And the working environment. 3) The level of commitment to the college was at a high level. When considering each side, found that. Employees are most anxious to survive college.

Keywords : Factors, Engagement, International College

INTRODUCTION

At present, human resources are valuable and very important to the development of the organization. The organization can maintain human resource within the organization, it is necessary to engage the organization in which Steers (Steers, 1977) gave the definition of organizational commitment is a sense of worker's identity that is united with the organization. There is middle point of members in participating in the organization's activities and are willing to dedicate their physical strength and encouragement to perform the mission of the organization. This feeling is different from the typical organizational commitment.

Where with the membership of the organization usually corresponds to the behaviors of the employees who are truly committed to the organization and focus on the willingness to work to achieve the goals of the organization. In addition, satisfaction is the key to working successfully and the factors that make a human resource or an organization linked to the job as well. Maintaining human resources with the knowledge and ability to stay with the organization must create a commitment to human resources. It is well known that human resources are a valuable and important thing that organizations need to pay attention to whether government sector or private sector. Although modern technology is used to replace work, it does not mean that the importance of personnel is reduced. But there are more important because human resources will require both labor and brain to development control future technology. It can be seen that the study of factors affecting organizational commitment of employees of international colleges.

To know what is the factor that makes human resources in the organization engaging with the organization and to know the level of engagement with the organization. Moreover, to be used as a guideline in the administration of human resources in international colleges, to have the intention and dedication to work. Including enhancing and enhancing employees' commitment to the organization. To preserve these valuable human resources to remain with the organization for as long as possible.

This will eliminate the problem of staff turnover. To be enhancing the efficiency and effectiveness of international colleges, SuanSunandha Rajabhat University.

Objectives

1. To study the factors that affect organizational commitment of employees in the organization.
2. To bring the results of the study to guide the organization's management of international colleges to stimulate and motivate employees to engage with the organization and keep human resources in the organization.

METHODOLOGY

1. Population and Samples

The population of this research is International College Staff, SuanSunandha Rajabhat University. Divided into 27 academic staffs and 37 support staffs. For sample design, the researchers used a sample chart from Krejcie & Morgan. The proportion of interested population is 0.5%, 5% tolerance and 95% confidence level. The total number of samples are 56 persons.

2. Research tools

This study uses quantitative research. The instrument used in the research is a survey research conducted by questionnaire survey. To study factors influencing organizational commitment of employees of international colleges, SuanSunandha Rajabhat University. The questionnaire is divided into 5 parts.

Part 1. General information about the questionnaire about personal factors

Part 2. Questions on job characteristics

Part 3. Questions about organizational factors

Part 4. Organizational Commitment

Part 5. Other suggestions

3. Data Analysis

Data analysis was performed using the SPSS program for frequency and percentage analysis to describe the sample data and standard deviation to describe the distribution of data. Part in analyzing data from open-ended questions about problems, barriers, and suggestions using data analysis.

Data collection and data analysis.

The researcher collected data for this research by submitting a questionnaire based on the population of international colleges, SuanSunandha Rajabhat University. After the sampling, a total of 56 people. Received questionnaires returned, 56 people (100%). The researchers collected data from a sample to be analyzed and processed by a computer program achieved a statistical social science research using descriptive statistics.

CONCLUSIONS

Results / Conclusions

1. Job characteristics

The results show that job characteristics have a significant influence on organizational commitment. When considering each aspect, it is found that the most important aspect is the work that you are responsible for with your knowledge, abilities and aptitude. It can be explained that the employees of the international colleges have the opportunity to work with their abilities and aptitudes and to satisfy their work. Consistent with the concept of the elements that contribute to satisfaction in

the working. When satisfied with the job, the employees will continue to be attached to the organization.

2. Organizational Characteristics

2.1 The supervisor

The factors that affect the highest commitment are the caretaker's concern. The findings can be explained by the fact that supervisors have a strong influence on engagement in international colleges. If the supervisor cares for the employee, it gives employees an encouraging their work. Plus, a good relationship between the supervisor and the employees would make the working atmosphere is friendly, happy and bring about organizational commitment.

2.2 Colleagues

The most affluent factor is that you are willing to help your colleagues. And willing to be a consultant to colleagues show that working environment of international colleges is characterized by mutual support. And the staff who can help and mentoring other colleagues show the talent of that employee. Resulting in self-esteem when working at International College.

2.3 Working environment

The factors that affect maximum engagement are the availability of adequate and appropriate equipment for using. The results of this study are consistent with the factors that lead to job satisfaction. Due to the work environment with adequate equipment and proper use, it facilitates the smooth operation of the employees. This makes it satisfy and makes the staff feel willing to work. This factor can make staffs feel good about international colleges.

3. Corporate Engagement

The level of organizational commitment of the employees of the international colleges, Suan Sunandha Rajabhat University was at a high level. When considered individually, found that the highest average is that the sample are concerned for the survival and future of the International College. This study show that College staffs feel unity with the College. They concern for the survival of the college because of the feeling that they are part of the college. And if the college is experiencing problems, it's like they having a problem too.

Suggestion

The researcher has suggestions to guide the development of personnel management of international colleges, Suan Sunandha Rajabhat University as follow:

1. **Human Resources Development Policy** should focus on job satisfaction for employees. It will bring efficiency in the work and bring the commitment to the organization.
2. **Should encourage employees to plan progress in their career path.** When employees can see their career path clearly in the organization, it would make a commitment to the organization likewise.

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FACTORS INFLUENCING DECISION MAKING TO PARTICIPATE IN OUT-GOING STUDENT EXCHANGE PROGRAM: INTERNATIONAL COLLEGE, SUAN SUNANDHA UNIVERSITY

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ABSTRACT

This is a research that the study influencing decision making factors on participating in Out-going Exchange Student programs abroad: International College Suan Sunandha Rajabhat University

To study influencing decision making factors in Exchange Student programs abroad : International College Suan Sunandha Rajabhat University and to propose the ways to develop exchange student projects abroad come from the sample undergraduate students in Airline Business , Tourism Management , Hotel and Restaurant Business International Business from year 1-3

Based on hypothesis testing, personal factors are including gender, education level, and parental income.

That Influence the decision making on students from international Exchange Student program. The results show that the different levels of student gender affect factors influencing decision-making in international Exchange Student programs while parental income does not the influence factors on decision-making of Exchange Student program based on the analysis of the data in the Exchange Student program of the respondents 120 students. The results of the analysis of the factors influencing the decision to join the student exchange program in foreign countries in four aspects can be summarized as follows: analysis of data and priorities. One of the most important aspects of a university has a full scholarship to exchange. The mean score was 4.63 and the standard deviation was 0.64

Keyword: Decision, Exchange Student, Abroad

INTRODUCTION

Thailand is a developing country that aims to develop its economy, society, education and culture as the foundation of today's prosperity and development but the most important part is the development of human resources through continued support from the government. The country is addition to the current educational values. Interested to study abroad through the cooperation of both government and private agencies and international organizations to allocate and prepare students. who are interested in studying abroad to learn culture, values, traditions Overseas.

The main objective is to encourage young students to practice. Improve language skills, listening, speaking, reading and writing in the real environment learn to experience in addition to studying at university. Learn to accept yourself and self-responsibility teaching aimed at improving the skills needed for the new century.

Researchers are interested to study factors influencing decision making. Participate in Exchange Student programs abroad at International College Suan Sunandha Rajabhat University in order to bring the information to the development and find ways to continue the project to meet the interest. This is a good way to improve your skills.

The International Exchange Student Program is an alternative to the internationalization of educational institutions and benefits the participants, helping to develop the skills needed to live in the 21st century. Especially life and career skills. Students will develop social skills understand cultural differences. The worldview of international students

Objective

1. To study factors influencing decision making participate in Exchange Student programs abroad at International College Suan Sunandha Rajabhat University
2. To propose ways to develop Exchange Student projects abroad at International College Suan Sunandha Rajabhat University

METHODOLOGY

This research Factors influencing decision making participate in Exchange Student programs abroad at International College Suan Sunandha Rajabhat University total number of 120 respondents

1. Population and sample are undergraduate students study in Airline business, Tourism Management Hotel and Restaurant Business and International Business Administration at International College Suan Sunandha Rajabhat University Year 1-3
2. Storage location at International College Suan Sunandha Rajabhat University study the research was conducted between October - July 2018.

How to create widgets

Benefit to develop Exchange Student projects abroad at International College Suan Sunandha Rajabhat University to meet the needs and interests to give students the opportunity to develop their full potential

The samples used in the research were undergraduate. Students study in Airline Business, Tourism Management, Hotel Management and Restaurant Business, International Business , International Year 1-3 Suan Sunandha Rajabhat University .The instrument used in this study was a questionnaire, divided into 2 parts.

Part 1 The questionnaire about the personal factors of the student's checklist was gender, education level, and parental income.

Part 2 The questionnaire about factors influencing students' decision to join the Exchange Student program. International College Suan Sunandha Rajabhat University

The questionnaire consisted of five rating scales (highest, lowest, lowest, and lowest). The researcher divided the factors into 4 aspects.

- 1) The country to travel to exchange.
- 2) The duration of the exchange program.
- 3) Accommodation and surrounding environment.
- 4) University Scholarships

Statistics used in the analysis.

Statistics used in the analysis. Sample analysis was used for descriptive statistics. Percentage of frequencies used to analyze personal factors such as gender, education level, and parental income.

Meaning and standard deviation used in data analysis. Factors Influencing Decision Making to Participate in the Out-going Exchange Student Program at International College, Suan Sunandha University

RESULTS

This research aimed to study factors influencing the decision to join the international student exchange program at Suan Sunandha Rajabhat University. The questionnaire was used as a research tool and sent 140 questionnaires. Researchers have chosen the complete version. In this study, 120 samples were analyzed. The researcher set the statistical level at 0.5 and 0.1

Significance of Factors in Exchange Student Program

Based on the analysis of factor data in the Exchange Student Program of the respondents 120 students. The results of the analysis of the factors influencing the decision to join the Exchange Student Program in foreign countries of students can summarize the results of data analysis and priority.

Table 1 summarizes the importance of Factors Influencing Decision Making to Participate in Out-going Exchange Student Program: International College, Suan Sunandha University

Summarize the importance	No	average (\bar{X})	Standard Deviation (S.D.)	priority
1 . Factors in Exchange Scholarships for Exchange Students	1	4.23	0.54	Very Good
2. Factors in Exchange Student Program Accommodation and surrounding environment	2	4.22	0.48	Very Good
3 . Factors in Exchange Student Program The country will to exchange.	3	4.16	0.46	Good
4. Factors in Exchange Student Program in Time of Exchange Program	4	3.60	0.62	Good

The first important is to Factors in Exchange Scholarships for Exchange Students. The mean was 4.23 and the standard deviation was 0.54.

Suggestion

Exchange activities it should encourage a variety of activities. To stimulate interest and to bring about the effectiveness of learning in different ways. It should be organized between Thai and foreign students. This will help promote and develop students' potential and achieve the objectives of the project. It also provides free time for leisure and travel for a variety of life experiences.

In the public relations Exchange Student Program. Project managers should clearly and clearly detail the project for students to know and decide. The publicity through various media such as forums, public relations, social media. To stimulate student interest and motivate students to apply for the program.

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THE POWER OF MULTINATIONAL COMPANIES IN A GLOBAL WORLD

The focus of corporate governance and its impact on business ethics

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ABSTRACT

The aim of this work is to identify the conditions of globalization that have led to suppose that transnational corporations are economic agents that negatively impact on business ethics from the perspective of corporate governance. The method of study was based on a thorough theoretical and literature review and the results obtained confirm the negative impact, since the use of corporate social responsibility programs are strategies to increase profits and global power rather than to achieve social impact.

Keywords: Transnational firms, business ethics, globalization, corporate governance, corporate social responsibility.

JEL: D43, F02, F23, M14

Resumen

El objetivo de este trabajo es identificar las condiciones de la globalización que han llevado a suponer que las empresas transnacionales son agentes económicos que impactan negativamente sobre la ética de los negocios desde la perspectiva del gobierno corporativo. El método de estudio se basó en una exhaustiva revisión teórica y bibliográfica y los resultados obtenidos comprueban el impacto negativo, ya que el uso de programas de responsabilidad social corporativa son estrategias para incrementar su beneficio y poder global más que para lograr un impacto social.

Palabras clave: Empresas transnacionales, ética de los negocios, globalización, gobernanza corporativa, responsabilidad social corporativa.

1. INTRODUCTION

History has been a determining factor in the evolution of economic systems between nations as it is from this science, like all the nations in the world can turn to patterns that project and define their interests in the future. In such an event, it is important that developing economies over the years have been changing, as the markets in which they have been involved in a dynamic act, which involves a process of adaptation and integration by of each of the actors that contribute to these developments. These actors have been diverse and their intervention within the economic system has been remarkable, the degree of influence on economic policies, creating a diffusion of authority and the power centers of society.

At the beginning, the main actor was the nation-state. However, as a result of capitalism and globalization phenomena, actors from the private sector such as transnational corporations have had a significant intervention. This was done mainly by the conditions that the current economic system has given them to increase their power, such as the opening of trade markets, cross-border investment flows, changing financial schemes, development asymmetries between nations and the evolution of communications networks. So now the presence and mastery of various companies of this size have led to a significant impact on global society.

Therefore, the present study aims to identify the conditions of globalization which now have taken the TNCs to be considered power actors in the international system, in order to understand how this behavior has affected the business ethics and the welfare of society through corporate governance approach.

Content is integrated as follows: In the first instance there is an account of the background that gave rise to the phenomenon of globalization from the economic point of view, in order to understand how transnational corporations have been key players in the private sector that have entered the political sphere derived from their influence and power over various nations in the world. Secondly, this paper shapes the problem to be studied, which seeks to find the social affectations that power of transnational corporations has developed as a result of their global power, it makes a justification using statistics and data on the presence of

these companies in the global context in the last 20 years. Later, it is described these phenomena from the perspective of Global Governance regulation, starting from the external environment, using ethics as the key variable to understand the relationship of transnational corporations to society of the host country.

Finally, the results confirm the proposed course, since the impact of transnational corporations to society is negative, when it can be inferred that the nature of the owners along with the agents is to obtain greater wealth, so make use of ethics and social programs opportunistically to achieve that end. Consolidating its presence in the global environment and generating dependency for receiving states that have been unable to overcome the strategic actions and social impact developed by transnational corporations.

2. Background of the problem

Historically it was the breakdown of the bipolar East-West balance that happened after the fall of the Berlin Wall, which set the tone of the "New World Order" and thus, the dominance of the capitalist system, ushered in a period of great turmoil, since once toppled the communist system, the United States in 1944 through the Treaty of Bretton Woods presented to the other including European nations affected an image of a nation committed to ending authoritarianism and economic uncertainty around the world.

Initially it was presented the replacement of gold standard for a dollar standard and to regulate the change, it was created the International Monetary Fund (IMF), as well as World Bank (WB) to finance the war disasters and the General Agreement on Tariffs and Trade (GATT), leading to the proliferation of free trade areas (Aranda, 2008). Under the economic agreement described were the developed countries which became spear point to check the goodness of the capitalist system, a motive why lag countries were forced to join gradually, leading to the phenomenon of Economic Globalization

From the economic point of view, authors such as Friedman (1970), emphasize that globalization is a phenomenon characterized by technological innovation and its appearance in the world has been consolidated in stages. Although some scholars of the phenomenon cite the Industrial Revolution as the event that gave rise to this phenomenon, most state that consolidation occurred with a trade integration process dating from just about thirty years (Carbaugh, 2005). It was the nineties when globalization accelerated through the privatization of public assets. Privatization is the action in which a state sells public property, putting it in the hands of the free market (Eun, 2007). While privatization can be seen from different perspectives, it is a clear example of how this phenomenon transcends borders, contracting the national control to the economic benefits provided by foreign corporations.

Therefore, the presence of the private sector via multinational companies did not wait, because the conditions of global markets represent great improvement opportunities, on the one hand is allowed to install their production complexes anywhere in the world, powering comparative advantages through the use of resources and production factors, same as in their countries of origin do not allow them to minimize costs to consolidate scale productions. Another form of globalization promoted by multinational companies is foreign direct investment, action that over the years has driven economic growth in underdeveloped economies through job creation and technology transfer.

While it can be inferred that transnational corporations have been a private actor that has driven the economic growth of most nations in the world, also can be the development of global business. Not all companies in the world have the capacity, resources or adequate instruments for the system to act in their favor, in the detriment to the creation of competitive companies, that in large part because transnational corporations are seeking to meet one private gain leveraging market asymmetries and forgetting their social origin. Consequently, and due to the rapid changes that occurred after Globalization, from a critical perspective and specifically has been put into question the reliability and the positive impact of the system toward the behavior and ethics of multinational companies.

3. Definition of the problem

The distinguishing feature of transnational corporations compared to multinational companies is that the former have subsidiaries in different parts of the world without keeping a parent or residence, as it is the case and happens with multinationals. For the purposes of this research it makes use only of transnational corporations or TNCs's for short, since by its nature and structure, they have to develop a freer behavior in the global market, to the extent that the combined sales of the top 200 corporations in the world are much larger than a quarter of world economic activity (Anderson, 2005).

Whereupon, these companies have developed a capacity to influence the decisions or policies that governments create for the regulation of society, limiting control of formal institutions in the absence of regulatory schemes and dependence that TNC's created to the host country for perceived economic benefits, even if in a particular way TNCs, like any other business, are seeking to maximize their individual benefit, in most cases, under the exploitation of the resources of the host country.

This leads to ask the question, as research problem: How the power of transnational corporations attributed by economic changes of globalization has managed to influence business ethics?

The importance of this research is to infer the social impact transferred by transnational corporations on business ethics and how it has been misrepresenting to the individualistic nature of the capitalist system itself and the phenomenon of globalization. With what it must be remembered the theoretical underpinnings of welfare economics, as described by Friedman in 1970 "... the responsibility of the executive is to manage the business according to its owners, who generally want as much money as possible, not to mention compliance of the basic rules of society established both in law and those embodied in ethical custom. "

4. Justification

The economic power of transnational corporations is undisputed. It is only necessary to point out some facts: In 2000, there was an average of 40 000 transnational companies identified by the Global Policy Forum, which had more than 250 000 international subsidiaries (Anderson, 2005), while for 2008 the United Nations Conference on Trade and Development noted the existence of an average of 79,000 TNCs with over 790,000 affiliates (UNCTAD, 2008), suggesting an increase of almost 50% in just eight years, highlighting the involvement of oil companies, investment banking and manufacturing.

Speeches are common where it is mentioned how these companies have achieved higher economies than those achieved by some countries. For example, by 2000 it was estimated that of the 100 largest economies in the world, 51 are global corporations and only 49 are countries (Anderson, 2005). By 2009 their share rose to 44 companies in the top 100, however, their position in the ranking improved significantly, as the case of Wal-Mart who held the position 22, being the company with more economic influence even over nations like Sweden, Saudi Arabia and Venezuela (Malnight, 2010).

Among the most important transnational companies are from different sectors and nationalities, mainly, American, Japanese, German and English, to name a few. Although one should think that the TNC's management is diverse in its origins, it results being unique that derives from global environment in which they developed. This condition has allowed them to reduce entry barriers and reach different corners in the world, using their power to achieve their maximum benefit without trying many times the social impact that this measure may cause.

That is, since the beginning it was hoped that the phenomenon of economic globalization would generate social cohesion through the elimination of borders that isolate ideologies and the possibility of having more resources, technological and operational capabilities to the rapid flow of information. However, the results have been discovered in the eyes of the world and that on the contrary, it has been remarkable the social segregation perceived at the macro level in the presence of strong asymmetries or market failure, so it is considered to TNC's as actors key for the emergence of such behavior.

For example, in the financial sector, banks boast of new global banking facilities, because the 31 largest banks in the world hold assets totaling \$ 10.4 billion and perceive particular sales of more than \$ 800 million. Without considering the difficulties that most of the world's population face in obtaining a small loan. About 4.8 billion to 5.6 million people in the world still live in countries where the average GDP per capita is less than one thousand dollars a year, and only few of these people have access to credit from transnational banks (Anderson, 2005).

5. Theoretical assumption

The phenomenon of economic globalization has created a negative impact on society when transferring to TNCs a strong economic power. The assumption of this paper considers that catalyzing the mandated agents of the owners who control these corporations take business ethics as an opportunistic means to obtain higher individual profits.

6. The behavior of transnational corporations in the context of globalization and its impact on society.

The reality in today's economies is that they no longer need to promote an efficient allocation of natural and human resources in a way that is beneficial to everyone in society. Rather, so far the economy has been driven by transnational corporations and the insatiable desire of their owners to make money and increase market position. TRNs are ignoring this desire to the concealment of job creation and growth of national income in recipient countries (Jobson, 2006).

Therefore, in the table 1 below is a comparison of the effects caused by economic globalization, its impact on TNC's and their drive or detriment to society:

Table 1. Effect of economic globalization, ETN's impact and social impact in the host country.

EFFECT OF GLOBALIZATION	IMPACT FOR ETN's	SOCIAL IMPACT IN HOST COUNTRY
Opening of commercial markets	<p>Developing strategies of intra industrial trade (IIT, commercial interactions between subsidiaries).</p> <p>Trade regulations imposed by the WTO, have limited the ability of governments of less industrialized countries to modify the behavior of TNC's which operate in their territories.</p> <p>Two-thirds of world trade is carried out by transnational corporations and half of that trade is done via IIT (Diaz, nod.).</p>	<p>Intervention of oligopolistic structures that limit competition from small producers.</p> <p>Influence on local trade policies.</p>
Foreign direct investment (FDI)	<p>Are a source of FDI and its main growth has led major developing economies such as China and India.</p> <p>In 2006, global FDI flows reached, according to preliminary estimates, to 1.23 billion, representing an increase of 34% over the previous year (CEPAL, 2006).</p>	<p>Creation of jobs.</p> <p>Economic spill over in the host country.</p> <p>Exploitation of natural resources and exploitation of cheap labor</p>
Changes in financial schemes	<p>Diversification of risks associated with change domestic rates and interest rates.</p> <p>Development of the carry trade and arbitrage of change.</p> <p>To decrease tax burden.</p>	<p>Generation competitive disadvantage with local producers</p> <p>Development of footloose capital.</p>
Evolution of communications network	<p>Fast and efficient access to different regions in the world.</p> <p>Improve interactions with customers</p>	<p>Development conditional to economic growth on the host country.</p>

Source: Own elaboration

As can be corroborated by the results of the table above, the globalization from the economic environment has been a complex phenomenon, the net result of many different forces, some other integrative and disintegrative, mainly in the area where TNC's operate.

So on the one hand there is a convergence trend. When the effects such as FDI, boost the host country's labor activity and in turn to segregation when resources are exploited or limit the competitiveness of local producers or the way that these companies develop strategies based on economies of scope (interaction between

subsidiaries), leading to deficiencies in market structure. The development of global oligopolies generates dissemination of ethical principles in order to maximize their profits. Therefore, TNC's practices tend to converge to local corporate globalization model.

A. Who regulates transnational corporations?

As it was mentioned before, the ETN's have developed a major economic power, derived from the conditions created by globalization and the intervention of the development of economic policies of the developed nations for their very particular benefit, becoming actors with an impact on society. So the question in this issue would be who and what are the mechanisms to regulate them?

The Organization for Economic Cooperation and Development (OECD), has proposed in 1999, The Principles of Corporate Governance. These precepts are based on agency theory proposed by Ross in 1973.

Unlike suggesting neoclassical economics, in the sense that all agents involved in the market have complete information, i.e. know the state of technology, factor costs, quality of goods and market prices. It is appropriate to acknowledge that since markets are not perfect, largely profit-making depends on the ability to benefit from the information, which is generally incomplete and asymmetric information between agents, which leads to failure market. This can be defined Corporate Governance as the institutional, legal and economic context within which take place the distribution of control rights and cash flows to shareholders, managers and other stakeholders of the company (Eun CS, 2007).

That's why, that while corporate governance from a conventional perspective seeks to control, does not accurately reflect the conflicts of interest between owners, managers, workers and consumers. Thus, corporate governance must be interpreted in two areas: Internal through the problems that arise when the agent breaks the mandate of the owners or shareholders of generating greater economic benefits for the company for compliance with a particular interest, and the external environment as the impact of the organization on the global market trends, local politics or lobbyists (Denis, 2003).

The mechanisms that shareholders should use internally to control the agent are known as "monitoring costs" and may be referred to contracts or equity incentives. However, there is a gap in the external environment as a part of corporate governance has evaluated and created means of control for companies, especially large corporations, to address economic trends affecting its stability, while global level (emphasizing the nature of TNC's) have not defined the mechanisms to control these corporations to the social detriment generated.

Therefore, self-regulation is the key factor to understand the degree of power that currently economic units are reached through the reframing of their activities and the strategic use of the gaps created by the governments of the states in which have managed to. For example, one of the strategies employed by TNC's, has been the incorporation or establishment of nongovernmental organizations (NGO's) or cooperation with organizations of civil society, creating social interest groups who advocate common goals for the search of satisfaction of a social need, with the sole purpose of counteracting the caused damages.

Working with common goals to maintain order and human security of a nation, TNC's are reincorporating ethical principles that give rise to social welfare, taking advantage of the goal that the objective of any state political system is to support its causes to grow and consolidate, at the expense of incorporating various international links. That is, it must not forget that these tasks will continue to seek international links through trade and foreign investment to sustain their economic position. Only now these activities are framed by social causes such as the cultural and academic exchange strengthening internal cultural and educational institutions.

B. The ethical implications for TNC's

Based on the study of TNC's, a prominent element in its external environment are the interest groups, formed at the base by a hierarchical society of the host country who is harmed or benefited by the decisions made by the officials of those companies. With this, the ethics used turn effect, if agents fail to respect the rules and moral principles of the society in question. Therefore, it can be inferred that ethics is part of governance, because the morality of the agent, shareholders and board members can generate responsible practices with dual purpose, where on the one hand shareholders gain economic benefits and the process give back to the society through good deeds.

For compliance with ethical principles, the ETN's from the perspective of Corporate Governance has developed codes of ethics; principle created since the introduction of the Sarbanes-Oxley Act in 2002 to monitor U.S. companies listed on the stock and protect investors (Eun C. a., 2007). Since then the codes of ethics were identified as a separate written document, provisioned by the owners to a previous study of the environment, in order to be adopted on a voluntary basis and containing the ethical standards to guide the agent and the employee to correct behavior in national and international contexts (Schwartz, 2002).

Ideally, it could establish global codes of ethics, however, these codes do not stop being exclusive, putting as a condition for compliance regional characteristics, such as formal rules through legislation or even informal rules, culture or traditions. These codes are leaving transnational corporations the freedom to pursue particular strategies for the continuation of the company within the recipient country.

Once you understand the behavior of TNC's in the global environment, and the key concepts that define ethical practices, in order to understand the strategies according to the economic conditions of the system can incorporate TNC's, using their power and position to develop positive overall impact on society. In the next table it is presented the social practices based on ethical principles that have made the top 5 corporations around the world to improve their image and global presence. This list was taken from the International Monetary Fund in 2010 and his information was extracted from each of its web pages.

Table 2. Examples of transnational social work

TRANSNATIONAL	SECTOR	SOCIAL WORK AT GLOBAL LEVEL
WAL-MART STORES	Retail food sales	Environmental sustainability Hunger and nutrition Women's Economic Empowerment Veterans and military families Diversity and inclusion Ethical sources
ROYAL DUTCH SHELL	Oil	Shell eco-maratón Our neighbors Social investment Nigeria HIV and AIDS
EXXON MOBIL	Oil	Exxon Mobil Foundation Malaria Math and Science Economic opportunities for women Human rights Corporate citizenship
TOYOTA MOTOR	Automotive	CSR initiatives Environmental responsibility Corporate citizenship
ING GROUP	Insurance	Sustainability policy Social responsibility

Source: Own elaboration

C. Social responsibility and corporate citizenship. Social contribution or economic expansion strategies?

From the actions received in the above table can highlight social responsibility practices and the addition of corporate citizenship. Both have proved positive strategies for expansion and dominance of many companies with global features. On the one hand, social responsibility in most of the definitions is assumed as normative plus regarding legal obligations. That is, it claims to be following scrupulously the legal framework, so that social responsibility would be essentially a series of voluntary agreements that the company is committed to meet and generates added value for this (Hernández, 2008).

Regarding corporate citizenship is a term created by Klaus Schwab, founder of the World Economic Forum, in order for companies to generate organizational social support to regions with lower incomes. However, the term was coined by TNC's, with basic economic purposes, as a society poor or low income, is a

society that does not consume. Therefore the contributions that TNC's have done for social purposes take implicit in the generation of new consumers.

Therefore, currently many researchers in the field have struggled to define such concepts as a part both emanate from the intention to bring an action for the benefit of a social group in a vulnerable, yet its end as has already been demonstrated, goes beyond compliance, as companies driving the social programs have been used as strategic mechanisms to achieve better strategic and economic position as the ideal way to reduce the tax burden before performing a specific task proper of the state, making such actions in one trend of international marketing.

Thus social responsibility and corporate citizenship continues to be but a strategic leap forward in the model of economic relations between enterprises and society, with which, showing the "human face of global market" of which it spoke Kofi Annan, the TNC's has been able to convince everyone of the benefits of economic globalization (Ramiro, 2009).

7. Analysis of results

It is easy to describe the solution to social conflicts generated by polarization gestated in the free market system with words like cooperation or integration, which are only for the correct key principles solution to the problems facing our world today. However, the difficulty to generate important changes for the benefit of a better society lies in the ability to achieve collective action and widespread interest. This resulted in large part by the lack of own collective values of ethical principles.

Globalization thus is no longer a phenomenon to channel integration, welfare and prestige that demand any state al global level, as it omits many principles based on that community. In turn, the tide seems brash and with great difficulty due to some problems such as: conflicts over resources like water and fossil fuels that generate a daunting environment every day, a progressive increase overcrowding, excessive growth of poverty, an international system that responds to individual interests of private entities gain greater power each day as it is the case of TNC's.

As it has been shown throughout the present work, the initial assumption raised is met, thus it can be said that the effects of the phenomenon of globalization have caused a negative impact on society by being immersed in activities that TNC's develop daily for the sake of their benefit. Thus, it can be inferred three key results:

- A. The power of TNC's, stems from its false defense for the free market system, spare parts, and that this defense is essentially constituted by social programs that aim to create a mask solid to improve their public image. However, its real face is constituted by economic strategies that generate global structures benevolent to daily particular activity allowing extend their influence over governments and international institutions, including through reducing their tax burdens.
- B. The ETN's, influence usually in handling international policies to promote their activities profit-oriented from international organizations and within emerging economies whose economic conditions in most cases is less than that of such entities generating actions that hurt the country's society receptors, such as:
 - 1) Exploitation of natural resources.
 - 2) Capital pintails (short-term investments that exploit resources of a host country and then move to another country).
 - 3) Economy scope based strategies (intra-industry trade between subsidiaries).
 - 4) Gestation of oligopolistic market structures.
- C. The behavior, self-regulation and greed-driven practices of agents has repeatedly shown concern in their benefit and not the betterment of society, as stipulated in the corporate governance model based on the agency theory. Therefore, the laws and agreements created for its regulation are still intended for the exclusive use of the well-being of those entities.

8. Conclusions and recommendations

Despite the TNC's appetite for profit regardless of the cost, it must be recognized that the ETN's are instruments that are used for the good of society. Since they have access to a variety of resources and technologies that

improve the standard of living of millions of people, and better structured and more efficient than bureaucracy to handle certain social issues such as oil spills, natural disasters and distribution of food and medicines for the poor or people in vulnerable state.

The problem, however, is self-regulation of the activities of TNC's, its size that limits local competition, the development of scale economies favored by the exponential accumulation of wealth, the ability to move and their infiltration into the political arena that have allowed to evade any substantial regulations.

Therefore, it should be noted the shortcomings of corporate governance on the control to TNC's and manage some recommendations:

- A. No action mechanisms have been developed to balance the struggle for power, wealth and knowledge. This means that it has not been implemented strategies for competitive promotion that regulate the growth and concentration of oligopolistic market structure, as a priority state to provide the guidelines to follow for economic development. Although some strategies have increased the level of income of some nations, also generates conflicts with social decline, led by inequality, exploitation of the environment and poverty.
- B. The regulation strategies should follow four fundamental principles for corporate governance, comprised of responsibility, accountability, fairness and transparency. Responsibility for TNC's to bring the exercise to obey the rules without coercion, equity and accountability that go along the increased transparency that should be applicable not only to the public organization, but also to private companies derived from their influences and social impact and finally equity as a means of fostering competition. However, the TNC's behavior remains away from these principles

Therefore it is clear that in the absence of control mechanisms on the international stage, a new economic system is emerging as the dispersion of power and authority of the states have fostered the growth of transnational private entities in spite of their ultimate goals, engage in social and political movements, not only on a regional scale but globally. This is derived from the lack of action by public institutional means, achieving the empowerment of a network of activists that certainly can wrest control of conflicts arising at the state level.

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THE IMPACT OF E-COMMERCE TOWARDS HOTEL YIELD MANAGEMENT IN MALAYSIA

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ABSTRACT

The purpose of this study is to investigate the impact of e-commerce towards yield management in Malaysia hotel industry. This study will give significance benefits to the hotel industry in Malaysia since there is no research that has been done previously on the matter to investigate the impact of e-commerce towards hotel yield management.

Application of technology in the hotel industry includes e-reservation via global distribution system (GDS) and online travel agents (OTAs). Other technology that has been applied into the industry recently include mobile reservation via phone for online reservation and check-ins. Online reviews by customers can be an important in influencing to customers choose a hotel. Hotels sometimes invest significant amount of resources to entice potential customers to stay at their hotel. An attractive, interactive and intuitive website that is full of information to potential customers is also another factor to be consider.

An in-depth interview will be conducted with Revenue Manager of hotels in Malaysia about how each individual hotel implements e-commerce in the context of the hotel's website for purpose of online booking and how the manager set up online pricing on website in order to maximize the hotel revenue (yield management). From the interviews, authors will examine and analyze what is the booking trends in Malaysian hotels; either using more online bookings or offline booking. Questionnaires will be distributed to hotels to examine the impact of e-commerce practices towards the hotel yield management. Questionnaires will be design based on the interviews that will be conducting will Hotel Revenue Managers. Besides that, authors will be conducting website content analysis to evaluate the effectiveness of hotel website in Malaysia.

Keywords: E-Commerce, yield management, hotel website, online reservation and online travel agents (OTAs), internet.

INTRODUCTION

This research project proposes to explore the e-commerce elements in the hotel industry. E-commerce is a new paradigm for most businesses as a point of sales for their product and services via online. Internet is the medium of distribution channel to link the supplier directly with the customers. By offering 24 hours services, customers can perform online purchase whenever they want (Clemons, Hann and Hitt, 1999). Since technology has been fully adopted in hotel industry, most of the booking or reservation is done online as compared to offline and has since been a standard of practice in the hotel industry in the past decade. In mid 1990s, Expedia and Travelocity are the pioneer of online travel agents (OTA) that partnered with hotels and flights to offer online ticketing for both airlines ticket and hotel room direct to customers. (Caroll and Siguaw, 2003).

Online purchasing via internet is growing as this is one of the many elements of e-commerce. According to Forrester Research (2001), internet sales by customers via online purchasing totaled \$48.3 billion in 2000, and online hotel sales represented \$3.7 billion in the same year.

Hotels developing their own website in order to promote the product and services online since the introduction of internet are a good platform and the cheapest cost of distribution channel. (Kim, Ma and Kim, 2005). E-reservation is the most efficient booking via internet for the customers as it provides real time information as well the ability to offer a lower rate compare to other offline methods. (Kim and Kim, 2004).

Since online travel agents (OTA) are more popular amongst customers in order to purchase hotel rooms via online, hotels have created their own website so that, customers can make online reservation directly from the hotel's website. Hotel website's provides more information about the hotel as compared to online travel agents (OTA). This ensures that trust can be built between the potential customers and the hotels as trust is an important phase for an online purchase activity (Lee and Lin, 2006).

Previous researches of e-commerce in tourism and hospitality focus on hotel's website effectiveness (Baloglu and Pekcan,2006;Chung and Law,2003), the utilization of internet based technologies in the hotel industry (Siguaw *et al.*,2003,Wei *et al.*,2001);emerging trends in electronic hotel distribution (Carroll and Siguaw,2003); hotels' online pricing practices (O'Connor, 2003); differences in customer making hotel reservation using an online versus offline medium (Shankar *et al.*,2003).

The other few studies that focuses on yield management and revenue management in hotel are (Ishii and Koide, 2005; Badinelli, 2000; Lee-Ross and Johns, 1997). A few research study on hotel revenue management and the internet (Noone and Mattila, 2009).

This study will emphasize more on investigating on the relationship between e-commerce and yield management in the hotel industry. The authors choose Malaysia, as a study context as Malaysia is one of the most popular tourist destination in South East Asia and as a developing country, the local hotel industry will be facing a lot of challenges in adapting to the changes that comes with the fast moving trend of e-commerce.

All hotels practice revenue or yield management as the major indicator to evaluate the success or the failure of its operations. The internet era started in mid-1990s created a new platform for the hotel industry. The growing of internet as medium channel has significantly increased customer exposure to revenue management practices. (Noone and Mattila, 2009). Traditionally hotels will not reveal their room prices online but since the emerging of online booking and reservations, it is now a standard for them to release their prices either on their own website or on the online travel agents (OTA) sites to potential customers. This allows them to make comparison between a few different choices.

Most hotel chains and brand hotel develop their Central Reservation System (CRS) and it is link electronically to the online booking agents or Global Distribution System (GDS) and they are then required to pay booking and commission fees (Tang and Zong, 2008).

Although the trend of e-commerce is increasing worldwide, there is still a gap between developing and developed countries in the use of Internet and web technologies in e-business. According to a report of e-readiness research (Economic Intelligence Unit, 2010), which rates each country's preparedness for e-business, Malaysia ranks 36th out of 70 countries worldwide.

Internet infrastructure first started in Malaysia in 1995 but the growth of internet host in the country began around 1996. There were 17,723,000 internet users in Malaysia (representing 60.7% of the populations) at mid-year 2012, according to Internet World Stats (Internet World Stats, Dec 2012). Since the internet and web technologies is important and is becoming a direct marketing tool for improving the success of a business in the online environment worldwide, hotel industry in Malaysia should take full advantages to capitalize on this opportunity. The researchers proposed to investigate the e-commerce practices in Malaysia hotel industry and to study the percentage of yield management and revenue management of the hotel based on the online booking sources via hotel website, online travel agents (OTAs) and global distribution system (GDS). At the end, this research also evaluates the effectiveness of hotel website in Malaysia and the patterns of booking a hotel room by tourist in Malaysia recently.

Research Objectives

The aim of this proposed research is to investigate the relationship between the e-commerce and the hotel yield management. Specifically, the proposed of the research is to evaluate the effectiveness of the e-commerce practices in the Malaysian hotel industry and to identify how establish and efficient it is in the yield management system in its operations.

E-commerce gave significance impact on pricing over the internet. Online pricing allows customer to make their own comparison between different prices on offer thus creating an even more competitive business environment. Hotel rooms are a very suitable for product and services to be sold online via internet. (Yelkur and DaCosta, 2001).

Hotel industries adopt discounted pricing policies online or known as e-commerce before the booking date in case the room(s) remain unsold. This concept really attracts the customers since they will enjoy discounted price when purchasing the hotel rooms earlier or at last minute. Hotel will apply the policy of no cancellation or refund since the hotel room offers is very cheap compare to standard rack rate of the room. Using online payment and e-commerce helps the hotel to safe guard their margins for no shows or cancellation since customer(s) have already made the payment by using credit card and is a guaranteed payment (Koide and Ishii, 2005).

The purpose of yield management is to maximize the profit in the context of hotel is the number of rooms. Managers will try to manage the capacity in order to maximize profit and revenue since the operating cost is fixed. Overbooking is also another practice in most hotels and they hedge on no shows or cancellation to avoid losses in profit (Koide and Ishii, 2005).

Research Questions

The following are the research questions (RQ) that will guide this study:

1. What are the impacts of e-commerce towards hotel yield management?
2. How e-commerce will increase the hotel room revenue?
3. How hotel managers maximize the hotel yield management by e-commerce?

Significance of study

The proposed project will be highly significant as it represents the e-commerce and internet study on yield management practices in hotel industry. In addition, the research project will also refine new elements in e-commerce that should be adopted in the hotel industry in order to maximize the hotel revenue.

The adoption and usage of e-commerce in the tourism and travel industry has not been very uniform. The extent of adoption and usage has varied across the countries as well as among enterprises within a country. This adoption depends on the size of the enterprise and target market of the enterprise (Sahadev and Islam, 2005).

This research will contribute on the development of e-commerce practices and adoption in hotel industry in Malaysia since most of the hotel in the local industry in the country are still not aware of the impact of using internet and e-commerce in their business and how it will contribute to the revenue and work as a promotion tools to the audience which is customers.

E-Commerce in Hotel

Internet been described as interactive, connectivity and convergence which allows real time and online true interactivity which is extremely needed since most of business activity consist of interaction (Sigala, 2001). The growth of the internet ad worldwide has revolutionized the way hotel industry operated. Traditionally, reservation in hotel are done through travel agents and hotel chains call Centre, but nowadays generated online by individuals customers and corporate travel planners, who then uses online intermediaries as they contact the hotels or its chains directly (Carrol and Siguaw,2003).

Hospitality industry including hotel, travel agents and airlines have taken advantages offered by e-commerce by creating their own website for engaging business using an internet because internet very compatible channels compare to other distribution channel (Rayman-bacchus and Molina,2001).

Hotel as an example uses internet as a distribution channel for one of the effectiveness marketing strategies in this competitive business (Connolly *et al.*, 1998; Pernsteiner and Rausedo, 2000; Van Hoof, Ruys, and Combrink, 1999). Nowadays, customers prefer on purchase online since it less expensive compare to traditional booking via travel agent. Perhaps, customer can get best price on online booking since variety of online booking website compete to offer the best price.

Even hotel's websites introduces best rate guarantee on their website; if a customer is able to purchase and even better deal via a third party booking website, the hotels will match the price (Gazzoli *et al.*, 2008). Hotel takes effort on promoting and selling product online and fully utilize the website as effective tools and cheapest marketing strategies because not involve high costs. (Kim, Ma and Kim, 2006). E-Commerce and online internet booking reduce the cost such as no commission been charged to the customer since it purchase directly to the supplier (hotel). (Borbely and Vasudavan, 1999; (Kim, Ma & Kim, 2006).

Hotel websites not only provide information about the product and services provided by the hotel but the website function for influences the customer to book the property. This is because website is an important indicator of trust for purchasing online and in long term it generates revenue to the hotel. (Lee, 2002).

According to Starkov and Price (2006), the trends on booking a hotel room using internet are common. 33% of all hotel reservations will be made online in year 2007 and 33% of hotel booking will influenced by internet but booking offline. It also been estimated that end of 2010, 45% of all hotel bookings will be completed online.

Due to this, hotels have been creating and designing an even more effective website to increase their revenue. At the same time, their website works as an effective tool to gain a greater market share and it cost less as compare to other marketing tools (O'Connor, 2003).

Nowadays, when individual are looking for extra information, he or she will directly check on the hotel's website. For example, he or she checks on the hotel product and services. The hotel website is a virtual lobby as it create the first impression of the customer about the hotel. From the online visit, the customer will create their own opinion on the hotel based on what he or she seen through the hotel website. The website could be the pre-determined of the customers to book the room(s) or find another hotel instead (Musante, Bojanic and Zhang, 2008).

Most of the study about online booking shows that the trends on booking via internet are experiencing growth year by year. The internet booking is the most convenience way to purchase since individual can purchase it anytime and anywhere as long as they have internet access. It is a mind-set of a customer that if they booked a hotel room online, they will be getting the best possible deal. (Toh, Raven and Dekay, 2011).

Online travel agents (OTAs) are the most popular online booking avenue for hotel rooms, airlines, car rental that provide price and product comparison between suppliers. (Rao and Smith, 2005). When customers book online

via online travel agents(OTAs) such as from Expedia, Travelocity or Orbitz, he or she will be given booking confirmation number as guaranteed that the booking is confirm and as proof that arrangement already made between the online travel agents(OTAs) with the particular hotel.(Toh,Raven and Dekay, 2011).

Customer found that searching availability of hotel using the hotel website it quite hard and difficult especially if customers have limited time for booking. Online travel agents (OTAs) offer most convenience to the customers by easily search by location, price, star rating, length of stay and many more options. Customers will make their own decision by compare the price.

METHODOLOGY

Following an extensive review of the innovation and hospitality literature exploratory in depth interviews that will be conducted with the Revenue Manager of hotels in Malaysia. From the interviews, authors will gather as much information regarding the trends of booking in hotel. Author will interview the hotels that has their own website for online booking. The purposes are to know effectiveness of the website and how the manager set up the online rate to the customers. From the interview also, author will find out the impact of online booking towards hotel room revenue.

Besides in-depth interview which also known as qualitative survey, the quantitative survey will be the main method for this study. The questionnaire will be answer from selected person in the hotel whether Revenue Manager or Room Division Director only. Questionnaire will be distributed and be analysis to get result whether the implementation of e-commerce have impacts to the average occupancy room rate.

CONCLUSION AND FUTURE RESEARCH

This study will examine the impact of e-commerce towards hotel yield management in Malaysia. Basically, most of the booking of the hotel rooms are influences by the internet and most of the traveler usually will search on website before make a booking. The challenge for hotels in Malaysia are to upgrade the hotel website for the convenience of the users to perform the online booking. Consumers will be more confident to stay and book the hotel rooms if the hotel have their own website and the website is updated and fully functional. To ensure Malaysia to become one of the most popular destination in world, hotels play a vital role in tourism industry. The internet is widely used in the hotel industry globally especially in developed country such as United States, United Kingdom and Australia. In order to attract more tourist to visit the country, hotels should have their own website that not only work as a platform to promote their product and services but more importantly are able to work flawlessly and provide real time information, make online booking that consumers can made book, pay, modify and even cancel the reservation if needed.

There are few more areas in this research that is still open for future in-depth research. This is fuel by the fact that the internet and its functions are still rapidly growing in our daily life. There is also a chance that due to these changes in the future, hotel websites or Online Travel Agents (OTAs) will no longer be significance for online booking in the future. Hotel industry trends will change accordingly to technology expand globally. Future studies can investigate the new e-commerce technologies in hotel and the relationship with hotel yield management.

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A STUDY OF ELECTRONIC-BANKING IN INDIA

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ABSTRACT

Sound banking system is the backbone of economic as well social development and information technology in turn has become the backbone of banking activities. Technology which was playing supportive role became essential part of modern banking activities. The Indian banking system has undergone significant structural transformation since the 1990s. An administered regime under state ownership until the initiation of financial sector reforms in 1992, the sector was opened to greater competition and technological up-gradation by the entry of private banks and more liberal entry of foreign banks in line with the recommendations of the Report of the Committee on the Financial System (Chaired by Shri M. Narasimham).

In the present era of technology banks cannot imagine introducing and selling of products. Technology, especially information technology plays very crucial role not only to complete the activities with high efficiency but also has the potential to innovate and meet the future requirements. Information technology was primarily employed to automate the back offices of banks in the 1970s. Computer were introduced as ledger posting machines as, at the time ; many employee unions of government-owned commercial banks opposed any form of automation. Employee unions argued that such a move would lead to unemployment. IT has indeed been deployed in a variety of back-office and customer interface activities of banking. Even the government-owned commercial banks today are happy to call themselves fully computerized.

INTRODUCTION

There is no denying the fact that information technology has been the most rapidly changing industry in India, and the marriage of technology and banking has to occur for India to keep pace with changes in the global scenario. Looking back, the Narasimham Committee deserves mention in that it was instrumental in forcing Indian Banks to become to embrace technology and improve their level of customer service. Next, the Khan Committee was highly important in that it recommended the setting up of universal banks. Preference was given to financial institutions, which could provide a whole range of corporate financial solutions under one roof. But most importantly, The Verma Committee recommended the need of greater use of IT even in the weak Public sector banks. Actually, the nationalization of banks back in the 80s is providing to be a major obstacle in bringing about the required technological changes. Nationalization of the banking sector has led to occurrences of pseudo development activities for nurturing vote banks, loss of accent on performance and profitability, creation of unions etc to name a few.

The Indian banking sector was early adopter of e-banking and that way set an example to other industries, the need to opt for automation for taking full advantage of operational efficiency. E-banking through modern

banking technology ensures 24-7-365 services and marks the customers feel comfortable to undertake the financial transactions with plastic cards and transact from the home. Today, banks are not only automating their core banking operations, but also increasingly using information Technology for front-end customer intensive operations. This trend is expected to be strengthened over the next few years and spread from urban to rural areas and from foreign and Indian private banks to public sector, regional rural banks and co-operative banks.

E-banking is electronic banking or banking using electronic media. E-banking is a generic term for delivery of banking services and products through electronic channels, such as the telephone, the internet, the cell phone etc. The concept and scope of E-banking is still evolving. It facilitates an effective payment and accounting system thereby enhancing the speed of delivery of banking services considerably. While E-banking has improved efficiency and convenience, it has also posed several challenges to the regulators and supervisors. Several initiatives taken by the government of India, as well as the Reserve Bank of India (RBI), have facilitated the development of E-banking in India. The range of services offered by e-banking includes : Electronic Fund Transfer (EFT), Automatic Teller Machine (ATM) & Point of Sales (POS) Electronic Data Inter Change (EDI), Internet Banking, Tele-banking, Debit/Credit/Smart Cards and Anywhere Banking. E-banking provides competitive advantage with unlimited network to the bank is not limited to number of branches.

In India, too e-banking has taken roots. A number of banks have set up banking portals allowing their customers to access facilities like obtaining information, querying on their accounts, etc. Soon, still higher level of online services will be made available. Other banks will sooner than later, take to Internet banking.

However, from a technology perspective, banks in India have been confronted by two major challenges in adopting information technology both as a strategic tool and as an operational necessity. The first major challenge was the availability of a comprehensive centralized banking application system that could cope with the various operational requirements and control that are very specific to the Indian banking environment, by virtue of almost 30 years of strong government control. Most of the internationally recognized centralized banking application systems were built to meet the banking needs and practices particularly of the Western world and the Aisa Pacific region.

It is appropriate to mention here that some of the world-renowned software companies in India that have come of age in the last decade have built world-class centralized banking application systems in collaboration with banks in India. These solutions not only meet the requirements of Indian bank but are today among the best-selling core banking application systems across the world. The second major challenge was the difficulty in deploying a healthy data communications network that would connect the branches of the bank to the data center hosting the core banking application systems.

The large numbers of studies have been conducted over the various issues of banking such as NPAs, working capital management, role in development, performance, risk, assets liabilities management, etc. but less number

of studies have been conducted on e-banking, it is, therefore, decided by the scholar to conduct a study on various dimensions of e-banking in India.

A small discussion has been made e-banking has some challenges with expediency of banking. It is a vital need to have an in-depth evaluation of the impact of e-banking banking over the several dimensions of Indian banking. Hence, present study entitled “A Study of E-Banking in India : with Special Reference to New Private Sector banks” has been undertaken by the scholar.

This study is an effort to find appropriate benchmarking of E-banking of Indian Banking Industry from the national as well as global perspective. So that improvement in the operations and implementations of the inefficient which, are lagged behind in the deregulated economy arena can be made.

The study will cover following major objectives

1. To examine the impact of E-banking on development of Indian banking industry.
2. To find paucity of infrastructural facilities and to suggest for fundamental infrastructure facilities required for E-banking adoption.
3. To evaluate the current status of e-banking and identify potential areas, in banking industry based on available resources and draw up integrated development plans for each such area.
4. To scrutinize the hurdles before e-banking practices in various operations activities and suggesting suitable strategy.
5. To analyze the impact of e-banking on cost of transaction of customer as well as bank.
6. To identify international best practices on operational and internal control issues of e-banking and suggesting appropriate ways for adopting the same in India.
7. To find the factors responsible for e-banking backwardness in Indian banking industry.
8. To find the changing customer expectations from banking services in technological era.
9. To evaluate the impact of e-banking practices on performance of banks.
10. To suggest measures for raising the e-banking practices levels and standards for Indian banking.

METHODOLOGY

To carry out the study the following methodology will be adopted.

The Universe It consists of all New Private Sector Banks.

Data Collection The study will be based on primary as well as secondary data. The primary data will be collected through the personal contacts with the respective authorities and through the questionnaire containing relevant information. This will make the study more informative, effective and meaningful. The source of secondary data will be published and unpublished work from the government records, Published Annual Reports of the government of India and RBI. Various Books, Journals, Magazines and other published from Govt. and Non-Governmental bodies will also be collected for the use of the study.

Sampling In order to save time and money, the study aims to draw inferences based on samples, Convenience sampling method will be adopted in the research methodology because data/information related to economy

includes same type of operational activities in diversified areas. All this will be done with the assumption that the sample data will enable to estimate the required parameters. Samples so selected are truly the representative of characteristics of the item of the universe of the banking industry and it will result valid and reliable conclusion.

Tools and Techniques On the basis of the data/information so collected from the various sources the tabulation, analysis and interpretation will be made to make study more meaningful and complete. Mathematical and statistical tools such as averages, percentage, trend analysis, ration analysis etc. will be sued to complete the purpose of the study. The use of index, tables, charts, graphs and diagrams etc. will also be made where ever they will be needed and necessary for clarity of opinions, easy understanding and to make the presentations of research more profile.

Hypothesis The following hypotheses have been formulated. The hypothesis testing with the help of mathematical and statistical methods will conclude the strength of the assumptions made under the proposed study. The outlines of the hypothesis framed are as follows.

- (i) There is no significant change in the behavior of performance variables of banks on adoption of E-banking practices.
- (ii) It is assumed that E-banking has no direct impact over the productivity of banks.
- (iii) There is no significant change on the customer satisfaction created by E-banking services and level of existing services.
- (iv) It has been assumed that per employee profit is similar pre and post adoption of E-banking practices.
- (v) E-banking has no significant impact over the banking industry development in India.
- (vi) It has been assumed that bank employees have not recorded significant transform in job satisfaction on adoption of e-banking practices.

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THE RELATION BETWEEN LEADERSHIP BEHAVIOR WITHIN HOTEL MANAGER AND THE FUNCTIONAL SATISFACTION OF STAFFS

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ABSTRACT

The objective of this study is to be acquainted of reality of leadership behavior of hotels managers in Jordan from the staff point of view and relation of this behaving due to changes of sex and experience. also the effect of that on the activating role of leadership and consolidating the active fashion, and circulating its experiments the prescribed method has been used in its surveillance image for being suitable for the nature of this study. Also a supposed sample of (150) staffs male and female has been selected from the hotels in Jordan. This study shown that hotel manager behaving was within the negative range. Also the study has shown the existence of negative relation between the range of manager relation with staffs and the range of task and authority. Also there were no range of relation between the manager with the staffs and the ranges of expressiveness.

The searcher has presented many recommendation and the most important one was, is to consider the human relation inside hotel and a full cranes to achieve better degree of functional satisfaction within all the staff among their difference levels of management also the expansion of participation base in taking decision.

THE INVESTIGATION BETWEEN ACCRUALS QUALITY AND USEFULNESS OF BENEFIT IN COMPENSATION CONTRACTS BETWEEN THE FIRMS LISTED IN TEHRAN STOCK EXCHANGE

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ABSTRACT

One of the most important subjects in financial literature is the Accruals quality and relationship between usefulness of benefit in incentive contracting. Therefore, in this study we aimed to investigate the association between accruals quality and accounting benefit in order to determine compensation among the listed companies in Tehran Stock Exchange from 2002 to 2011, using SPSS and Eviews software applications. Results showed that a significant positive association between accruals quality and compensation contracts exists. In other words, increasing the accrual quality among reward directors also increases. On the other hand, the results show that regardless of discretionary and innate accruals quality, this item also has a significant effect on the quality of directors' reward accruals and innate accruals quality reward actually distributed among managers increases.

Keywords: the quality of Earnings, Discretionary accruals, innate accruals quality, Contract award

UNBUNDLING VERSUS FREE BUSINESS MODEL PATTERN: A CASE OF TAMAM IMPIAN JAYA ANCOL INDONESIA

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ABSTRACT

Business model of amusement or theme parks has strategic role in competing for loyalty of visitors. Therefore, this study investigated an application of business model pattern in the context of Taman Impian Jaya Ancol Indonesia (or Ancol) as an integrated recreation park in South East of Asia. An attempt is also purposed to describe the current business model of Ancol with its SWOT analysis, and then to compare of unbundling versus free business model pattern for Ancol. Business model canvas approach from Osterwalder and Pigneur (2010) is applied with 9 building blocks. The data are collected from secondary sources and it is also complemented by observation and interview with visitors of Ancol. Based on these approaches, a business model canvas of Ancol is depicted. Then, it followed by a SWOT analysis of Ancol's current situation. For sustainability of Ancol in deal with tightened competition with new entrants, this study also provided a simulation of two business model patterns: unbundling versus free. As an unbundling pattern, Ancol may focus on one of three areas: customer intimacy, product leadership, and infrastructure. Alternatively, Ancol may apply a freemium business model pattern with three options: free ads, freemium, and bait and hook. Results derived from this study will provide a wider perspective for management of Ancol in designing a strategy and anticipating many changes in recreation industry by prepare a modification of business model pattern.

CAPITAL STRUCTURE IN IRAN E-BUSINESS

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ABSTRACT

Structural capital has been described as more hidden part of intellectual capital and organizational knowledge. In spite of more clarity regarding the indicators of human capital, the first dimension of intellectual capital, structural capital sub-dimensions and indicators have been a challenging subject in intellectual capital literature. Clarifying structural capital indicators in e-business as more knowledge-based arena is also a missing topic of research in the literature. Despite the highly importance of intellectual capital in e-business success, few applicable research has been conducted in recent years. This research contributes to the literature and practices in using a two-step survey in order to discover the most influencing indicators in the success of e-business. The application of the analytic hierarchy process. (AHP) is utilized to extract weights for setting the priority among criteria.

Keywords: intellectual capital, structural capital, prioritization, e-business , analytic hierarchy process.

INTRODUCTION

E-business is defined as commercial or administrative transaction or information exchange made available over internet (Moodley, 2003; Wang and Cheung, 2004). In order to implement e-business successfully, organizations need to assess their knowledge. Knowledge shapes the foundation of firm performance, and this is a topic of fundamental importance, practically for e-business that often have few physical assets (Leadbeater, C., 2000). The rise of the knowledge-based economy has been attributed to the increasing importance of intellectual capital (IC), a main resource for companies as they seek to sustain competitive advantage (Moon and Kym, 2006; Sonnier *et al.* 2007; Tan *et al.* 2007). For traditional brick and mortar business models development, managers consider financial issues more. On contrary, in order to implement click and mortar business models or innovative pure ebusiness models, managers and stakeholders evaluate their intellectual capital requirement more than their financial capital aspects before any investment.

Unfortunately, current literature on both intellectual capital measurement and the development of e-business models does not adequately address the many complexities facing today's e-business initiatives and there is a great need for considering these two disciplines in the researches. Besides, the selection of intellectual capital measurement indicator is a multicriteria decision problem which requires resolutions involved with various stakeholders' interests [Han, and Han, 2004].

Despite the significant efforts and research into IC management, most companies do not identify core intellectual indicators in some areas that directly influence business value (Ittner and Larcker, 2003). A number of companies also tend to weigh a long list of awkward, complex, and unnecessary indicators equally with intellectual capital (Bontis, 2001; Reisinger et al., 2003). According to Kim and Kumar (2009) the inefficient use of indicators, therefore, frequently results in increasing a manager's confusion, unnecessarily complicating decision making; and damaging business performance by incurring significant costs of opportunities missed. In order to assist management decision making in selecting intellectual capital indicators for measurement and disclosure, this paper suggests a model that identifies the criteria reflecting decision usefulness and expected risk factors. Analytic hierarchy process (AHP) is utilized in order to prioritize intellectual capital indicators in the Iranian e-business has been delineated. Based on the criteria and their weights, this study identified each indicator's weights through an evaluation of two-steps expert's surveys of Iranian e-business managers and academics.

The aim of this paper is to evaluate the role of IC in success of e-business and proposing a framework for prioritizing intellectual capital indicators and for suggesting key improvement areas. To increase the reliability of results at first a survey is conducted to rank the existing intellectual capital indices and the second survey utilized AHP – that have been widely proven as among the best tools to weigh indicators (Pike et al., 2005a, b; Reisinger et al., 2003).

This paper is organized as follows. In Section 2, the concept of intellectual capital and its prioritization is discussed. Section 3 presents a research methodology. Section 4 demonstrates the results of two-steps survey and the proposed strategy map. Finally, the authors provide a conclusion of their findings in Section 5.

LITERATURE REVIEW

Intellectual Capital and Structural Capital

Botins (2001) believes that intellectual capital is the collection of intangible resources and the flows. Brooking (1997) states that intellectual capital is the differences between the book value and the market value. Although a large number of intellectual capital methods and models have been developed, only a few of them are approved in any specific industries or organizations (Bontis, 2001 and Moczydlowska, 2007), but according to Namvar *et al.* (2010) in spite of different categorization for intellectual capital, most of them have considered same indices for intellectual capital. The important point in all the taxonomies is that, all of them considered intellectual capital as a summation of human capital and some other intangible resources (Brooking, 1996; Edvinsoo and Malone, 1997; Roos *et al.*, 1997; Stewart, 1997; Sullivan, 1998; Bounfour, 2003; Edvinsoo, 2004; Moon and Kym, 2006; Bozbura and Beskese, 2007; and Namvar *et al.*, 2010).

Although all of the mentioned authors considered human capital as an independent part of intellectual capital, there are some different approaches for classifying its other parts. Mostly, the role of structural capital and its sub-components is a challenging phenomenon. Some authors clarified it clearly and named it “structural capital” (Edvinsoo and Malone, 1997, Roos *et al.*, 1997, Stewart, 1997, Bounfour, 2003, Moon and Kym, 2006, and Namvar *et al.*, 2010); however some other others mentioned it indirectly and named it with variety of expressions such as “infrastructure asset” (Brooking, 1997), “internal structure” (Sveiby, 1997), “intellectual asset” (Sullivan, 1998), “organizational structural asset” (Edvinsoo, 2004), and “organizational capital” (Bozbura and Beskese, 2007). Choong also in 2008 provides an extensive analysis of the literature for the identification and classification of intangible assets and suggests a categorization of intellectual capital into three categories; (1) human capital (i.e. knowledge, the experiences, the competencies, and the creativity the staff); (2) organizational or structural capital (include assets from organizational structure, management and information systems, etc.); and (3) Relational capital (relationships an organization deploys with its external environment).

Intellectual Capital Indices Prioritization

The intellectual capital models which are mentioned in the previous part proposed the structure and candidate indicators of intellectual capital (Brooking, 1996; Edvinsson, 1997; Stewart, 1997; Sullivan, 2000; Sveiby, 1997). The relevant list of indicators and several classification dimensions such as customer, process, innovation, and human capital have been identified as a basis for explaining the intellectual capital [Han and Han, 2004]. Therefore these models can't identify what indicators are efficient, and risk of disclosure for a specific industry or company circumstance because they don't include the weights of each indicator which assist the measurement decision processing. According to Mouritsen (2002) managers and researchers have experienced difficulties in conducting intellectual measurement due to the absence of a model which includes measurement priority among candidate intellectual capital indicators.

Recently some authors have conducted researched in order to prioritize intellectual capital in different industries. In 2004, Han and Han conducted one of the first researches for Prioritization and selection of intellectual capital measurement indicators using AHP for the mobile telecommunications industry in South Korea. They considered five selection criteria for intellectual capital indicators e.g. relevance, reliability, comparability, representational quality and risk.

Bozbura and Beskese in 2007 published a paper aiming at prioritization of organizational capital measurement indicators using fuzzy AHP. Their study defines a methodology to improve the quality of prioritization of organizational capital measurement indicators under uncertain conditions. Within their model, three main attributes; deployment of the strategic values, investment to the technology and flexibility of the structure; their sub-attributes and 10 indicators are defined. The results of their study showed that “deployment of the strategic values” is the most important attribute of the organizational capital.

Liu and Chen in 2009 tackled at digital capital prioritization in recruiting web sites. They considered three dimensions for digital capital – internet relational capital, internet customer capital and internet service capital - and utilized Fuzzy AHP to prioritize in recruiting websites. Lee in 2009 continued their work in Taiwanese

universities using fuzzy AHP to develop intellectual capital evaluation model for assessing their performance contribution in a university.

Kim and Kumar in 2009 stated that using AHP lonely for prioritizing intellectual capital could be risky and presented a framework for prioritizing intellectual capital indicators by using the Delphi approach and AHP. They evaluated they proposed framework in R&D sectors of South Korea.

Wu *et al.* in 2009 used a hybrid Fuzzy AHP to prioritize innovation capital within Taiwanese universities. In their research intellectual capital consists of Intellectual property (IP) and tangible assets (TA). IP itself consists of innovative preference, innovative culture and number of new ideas. Tangible assets regarding innovation capital include number of publications, financial support and research performance.

Finally, Asonitis and Kostagiolas in 2010 presented a methodological framework for the identification of a hierarchy among the three categories of intellectual capital, i.e. human capital, organizational/structural capital and relational capital, with respect to their contribution to the objective of improving a library's performance. They also provide a case study of Greek central public libraries.

RESEARCH DESIGN

This study is developed in three stages; intellectual capital indices extraction from the literature (stage one), ranking intellectual capital indicators using Freidman test (stage two), and giving weight to each indices of structural capital using AHP method (stage three).

First Stage

The objective of this stage is to determine a set of important intellectual capital indicators using literature review on intellectual capital. The output of this stage is a list of indicators that are weighted equally which will be used as for the next stage. As a result, 30 more referenced indices regarding two dimensions (human capital, structural capital) of intellectual capital are extracted from the literature.

Second Stage

The previous researches depended on only a single methodology, namely AHP analysis, without considering multiple methodologies. According to Kim and Kumar (2009) the single methodology might be risky. Parung and Bititci (2006) believe that AHP analysis even draws a few criticisms because of a limited theoretical background. So, before the AHP analysis in this stage we aimed at selecting the most influencing indicators for main analysis with AHP. As a result, during this stage a survey is conducted from 42 e-business experts. a questionnaire was designed which contained a list of 30 indicators of intellectual capital from previous stage. And the respondents were asked to evaluate the importance of each index in 5 point Likert-type from 1-not effective- to 5-strongly effective.

The results of this survey is analyzed using Freidman Test. Prior researches recommends that a manageable number of indicators should be 20-25 (Kaplan and Norton, 1996; Reisinger et al., 2003), so 20 high-ranked indices of intellectual capital were selected using this test. It is because the aim of this research is to prioritize structural capital indicators, 14 indicators of 20 indicators which are related to structural capital were chosen for the next stage. 6 high-ranked indicators after Freidman Test which belonged to human capital are omitted from the analysis.

Third Stage

Analytical Hierarchy Process (AHP) is a technique used for setting priority in a complex, unanticipated, multi-criteria problematic situation which been developed by Thomas L.Saaty in 1970s. In addition, AHP is used in applied science and various managerial and decisionmaking related assignments (Saaty, 1982).

“Elements in each hierarchy are paired compared with respect to their importance to the decision-making. AHP uses a verbal scale, which enables the experts to incorporate subjectivity, experience and intuition in a natural

way .A major strength of AHP is the pairwise comparison and the influence of the elements of a particular level over those of a lower level is measured. The comparison is based on an expert’s opinion and the experience gained from the observation and continuous learning of the system behavior “(Saaty, 1982,P.167). In this stage 14 high-ranked indices from the previous stage are taken into account for AHP analysis. 12 experts participated in this survey. The AHP analysis is conducted in two levels. At first, three dimensions of structural capital (customer capital, innovational capital and process capital) were compared pare wise using three questions. Then indices of each dimension of structural capital are compared together. Therefore, in the questionnaire 10 questions for comparing 5 indicators of customer capital, 10 questions for comparing 5 indicators of process capital and 6 questions for comparing 4 indicators of innovational capital were designed.

RESULTS

As mentioned in the previous part in this study two expert’s survey was conducted which would be explained more in the following.

First Expert’s Survey

In the first survey a questionnaire was conducted from 42 academic and industrial experts in the field of e-business. The questionnaire includes 30 questions which measures the importance of each of 30 intellectual capital indicators on the success of e-business. The respondents were asked to evaluate their importance in the five-point Likert scale from 1-not effective to 5-strongly effective. 25 of respondents were surveyed directly and the remaining ones were asked to fill in questionnaire by e-mail. Of the 42 respondents, 28% have PhD, 59% have Msc, and the remaining have Bsc. Also, %42 of them is top-level or middle-level managers.

Regarding the validity of analysis, 30 indicators which were embedded in the questionnaire are chosen from the literature, and then confirmed from three e-commerce professors. The research used Cronbach's α to investigate the reliability of each construct (see table 1). All of the coefficients were at least 0.707. In addition, the overall Cronbach's α was 0.952.

Dimension	Cronbach's α
<i>Human capital</i>	0.707
<i>Customer capital</i>	0.861
<i>Process capital</i>	0.852
<i>Innovational capital</i>	0.866
<i>All dimensions</i>	0.957

After the reliability analysis all the variable are taken into account for the Freidman Test. Thus a ranking of 30 intellectual capital indicators was achieved. Kaplan and Norton in 1996 stated that 20-25 measures are sufficient for firm evaluation. Therefore the first 20 highranked indicators after Freidman Test were chosen for the second survey.

Among these 20 chosen indicators 6 indicators belong to human capital, and 14 of them belong to three dimensions of structural capital (5 of them belong to customer capital, 5 of them to process capital, and 4 of them to innovation capital). Due to aim of this research which is going to prioritize the structural capital indicators, only 14 indicators that describe structural capital are taken into account for the next survey.

Second Expert’s Survey

In the second survey 12 experts were asked to fill in questionnaire which AHP analysis. 6 of them were university professors in e-business and information technology management areas. The other 6 experts were executive managers of e-business companies which had Msc in e-business.

First, respondents were asked to compare three main dimensions of structural capital (customer capital, process capital, and innovational capital) pair wisely. Second, the respondent compared 5 main indicators of customer capital together. Then, a compression between 5 indicators of process capital was done. Finally, 4 indicators of innovational capital were compared together.

Table 1

summarizes the overall weights of each indicator and their ranking regarding other indicators

Rank	Name	Overall weight	description
1	InC3	0.128542	Commercialization and usage of new ideas
2	CC5	0.102032	Customer satisfaction level
3	CC1	0.099431	Direct to customer and personalization
4	InC1	0.094072	Innovative services and products
5	CC4	0.092861	Market share
6	CC2	0.085507	Customer retention and churn avoidance
7	PC2	0.080451	Information systems
8	InC2	0.054670	Management support for innovation
9	PC1	0.053853	Products and services without errors
10	CC3	0.052025	New customer acquisition and new markets entrance
11	PC3	0.050908	Facilitating systems for communication within or outside the company
12	PC4	0.037713	Organizational structure
13	PC5	0.037292	The process of production and service
14	InC4	0.030642	Educational programs

CONCLUSION

This research contributes to the literature and practices in using a two-step survey in order to discover the most influencing indicators in the success of e-business. The application of the analytic hierarchy process (AHP) is utilized to extract weights for setting the priority among criteria. The two-step approach for prioritizing structural capital helped experts in the second stage to concentrate on few indicators and achieve a better comparison.

The first ranked indicator in this study is “Commercialization and usage of new ideas”. Iranian industries still suffer of many abundant innovations that have never been commercialized. In spite of so many patents that are registered every year, no one enter to the industry. This especially is more deterministic in e-business, due to highly need to innovation and its usage in amongst so many rival firms that are available in internet.

The results of the study highly indicate the role of customer capital in success of e-business. Amongst the high-ranked indicators *direct-to customer* and *customer satisfaction level* are a proof to the customer relationship management in internet environment. As the results of AHP analysis indicates direct to customer, which is one of the most critical functions of customer relationship management, would help companies to run their e-business successfully.

“Information system” is only indicator of process capital which has been placed in the highranked indicators regarding expert’s opinions. ndoubtedly, e-business will not exist without an integrated information system which includes all data of enterprise. The dependency of customer capital to information system is another reason for its critical role. A well-designed information system would prepare sufficient data for all customer analysis especially for data mining techniques. Recommender systems are a very popular function of direct to customer which more than any other thing depend on an integrated information system.

This research could be enhanced with some new approaches. First, a elphi panel could be run in order to have a more comprehensive expert’s pinion. Furthermore, due to interdependency of most of the indicators some other group decision making techniques should be utilized. Finally, a case study in an e-business company can be

done to evaluate the results of expert's opinion and to examine the affects of high-ranked indicators on the firm's Performance.

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THE EFFECT OF WITHIN-NETWORK TRANSACTIONS ON INFORMATION SEARCH BEHAVIORS AND SATISFACTION

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ABSTRACT

This research examines how transacting with a seller inside (vs. outside) a buyer's network can influence the buyer's information search behaviors and degrees of satisfaction. The results from three studies show that when buyers purchase from a seller inside versus outside their network, they are less willing to search for information before the transaction, but are more willing to search for information after the transaction. This research also shows that when buyers are given post-purchase information suggesting that the prior transaction was "in their favor," the perceived level of buyer satisfaction is not dependent on the type of seller. However, if the post-purchase information instead implies that the negotiation favored the seller, buyers are less satisfied with the purchase experience when the seller is inside their network.

Keyword: within-network transactions, social ties, information search behavior, satisfaction, trust

STUDENTS' CONFIDENCE IN PARTICIPATING THE TALENTED TEACHERS OF SCIENCE AND MATHEMATICS PROJECT

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ABSTRACT

This research aims to study the confidence in the production of science and mathematics talented teachers project of International Collage, Suan Sunandha Rajabhat University (SSRUIC) participants for promoting and supporting this project to achieve the policy, for encouraging the students whose took part in Bachelor of Science (B.Sc.) and for publicizing, making the selection criteria or the subtle detail about phase III of this project being understandable by the sample group of this research for confidence in the production of science and mathematics talented teachers project of International Collage, Suan Sunandha Rajabhat University (SSRUIC) participants whose are qualified and attended this project for 30 people. In this research, the author analyzes the character of the sample group by descriptive statistics such as frequency distributions, percentage, mean, and the standard deviation and test the differentiate of decision-making among the participants that have individual characteristics by using T-test.

According to the 3 fields of hypothesis: personal background (gender, age, career, salary), reputation of this project and curriculum which affect the confidence in the production of science and mathematics talented teachers project.

Based on the analysis of the confidence in the production of science and mathematics talented teachers project of 30 International Collage, Suan Sunandha Rajabhat University (SSRUIC) participants data, the result showed the level of confidence in the production of science and mathematics talented teachers project's mean is 4.54 and the curriculum's is 4.53 which are the highest level.

Keywords: Students' Confidence Participating

INTRODUCTION

Curriculum and instruction are challenging for all students. And take into account the differences between individual. The course will not focus on the textbook or fragmentation, as in the part. Education must change from the teacher's focus to the student's class. The focus of individual learning is to study together as a group. Change from content to inspirational challenge. Student confidence in participating the talented teacher of science and mathematics project. Awareness of the importance of quality teacher in the curriculum. And have agreed to be a master's degree in education. Office of the higher education commission 580 scholarships. The study is divided into 2 categories

type 1 of premium are 400 scholarship per year. The focus is on teaching teachers to teach physics, chemistry, biology, mathematics and computer for high school students. Social science class room in school under the office of the basic education commission.

And type 2 super premiums are 180 scholarship for either graduate study or master degree. Focus on creating teacher for physics, chemistry, biology, mathematics and computers. For high school student. Use English as a medium of instruction. Those who receive scholarship and graduation will be provided with teaching in international standard 500 school or English program school of OBEC. (office of the basic education commission)

International college, suansunandha rajabhat university is a university center that co-produces master of international program, 1 of 14 participating institutions. Researcher is interested in assessing the confidence of students interested in the project. To understand the preparedness, barriers and suggestions.

Purpose

To promote the policy to achieve the objectives.

To inspire students who are studying in the bachelor of science program.

To promote the understanding of the selection criteria.

METHODOLOGY

This research build confidence in the Student confidence in participating the talented teacher of science and mathematics project. For those interested in joining the international college Suan Sunantha Rajabhat university. Total number of respondents was 30 people.

Population and sample are candidate for the Student confidence in participating the talented teacher of science and mathematics project

Storage location is Suan Sunantha Rajabhat university , in Bangkok.

Data collection and analysis.

The research questionnaires was used as a research tool and 30 questionnaires were sent. The research has determined the level of significance at the level of 0.5 and 0. 1

Part 1 is the basic information of the respondents. There are 4 factors (gender , age , career , salary)

Part 2 is the confidence question for the project the production of talented teacher in science and mathematics. There are 10 items.

Characteristic analysis of descriptive statistics. Include , frequency distribution , percent , average and standard deviation. The test of difference of the decision of the sample with different personal factors by T-Test statistics.

Finding the relationship of confidence to Student confidence in participating the talented teacher of science and mathematics project. in this research. The data were analyzed using descriptive statistics such as percentage , average , standard deviation and inferential statistics. To test hypothesis by t-test , F-test to analyze the differences of the variables and the variable so the questionnaire can be reliability .

Discussion/Conclusion

This research can be used to stimulate the behavior of various tasks to meet the target to develop the reputation and increase the development of various potential to more interested participants. It also encourages operational communication in English. For those interested in joining the project and coordinating in the same direction. Efforts are being made to seek educational needs. Complementary to the development of multiple potentialities. Include English skills can be used for teaching are use in every life. The drive for creativity in public relation of the project to be more famous coordinate with relevant agencies in the field of effective information to achieve the ultimate goal of the work.

It can be concluded that those who are interested in participating in the project. Have confidence in the reputation project. Affect confidence in the project at the highest level. In addition, it was found that personal factors of students in gender , age , career, salary . No difference effect.

This research point out that those interested in joining the project. Overall , the importance in reputation of the project. The average of 4.54 at the highest level. And as for the curriculum, the average of 4.53 at the highest level. That affect the image of the university. Help build confidence in those who apply for the project. Can meet the candidates will receive. In addition, personal factors of the participants. Sex, age, occupation, income per month were not significantly different. It's easy to decide to join the project. The results of this research can be used as a guideline to promote the policy to achieve

the objectives. And inspire students who are studying in the bachelor of science program. Interested in continuing to study and participate in future project.

Suggestion.

The results of this research can be summarized as suggestions for further study. There are feedback proposal and suggestions to guide the next time.

Study more about classroom activities. In order to make the selected candidates learn more mathematical and sciences.

Invite students to graduate in student confidence in participating the talented teachers of science and mathematics project give advice to current student. To inspire student to go to super premium. To study abroad at famous institutions for a period of 1 year.

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SATISFACTION OF DISBURSEMENT SERVICES: A CASE STUDY OF INTERNATIONAL COLLEGE, SUAN SUNANDHA RAJABHAT UNIVERSITY

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ABSTRACT

The purpose of this research was to study the satisfaction level of disbursement services of employees in International College Suan Sunandha Rajabhat University and to study the factors that affect satisfaction of disbursement services of International College employees, Suan Sunandha Rajabhat University

This study was a survey study. The population used in this study was employees of the International College, Suan Sunandha Rajabhat University consisting of academic staff. There were 66 employees members. In this research the researcher used simple random sampling. Simple random sampling from 56 samples were applied for data analysis

The results showed that satisfaction of disbursement services in International College, Suan Sunandha Rajabhat University. The overall level of satisfaction was very high. According to considering each aspect, the researcher found that. The most satisfied employees were the loan to the government, and budget spending / transfer budget changes, followed by the receipt of money - pay, and disbursement Activities / Projects, and the least satisfaction of employees was the salary, position, monthly remuneration and the supplies Procurement, Procurement, Dispatch When it comes to the conclusion.

Keywords: Satisfaction Disbursement, Services

INTRODUCTION

The current budget has been set up for the first time in English. Around the 16th -17th centuries. This is a time when the House of representatives has succeeded. It reserves the right to approve government revenue and expenditures. Current budgeting is related to the evolution of government. In the part the budget has been introduced in many countries. For Thailand, the budgeting process was initiated by the government and later expanded to the subdistrict administrative organization, educational institutions, private agencies and other government. Both government and private organizations, whether local or national, need to manage their budgeting and disbursement. To use for the success of the organizations. Spend money according to the plan of the agency. In accordance with the research of Pairat Trakansirinon (2001). The expenditure shall not exceed the annual revenue of each fiscal year. Allocate to various government agencies to manage the authority and responsibility of each government. Budget is a plan to express the need of the agency. In the budget disbursement process, there must be a proper payment Process in accordance with the rules and regulations to ensure that the spending is in line with the objectives of the agency and most beneficial. In undertaking the activities of the budget disbursement, the satisfaction of the coordinators should be taken into account so that the achievement of the service. Objectives depends on many factors (characteristics of service, service process) It is important for the operator to be aware of how satisfied the service. Such as convenience, contact, human relations as well as the knowledge or advice of the right officials. Good service, most importantly come from the service staff. Provide service to be satisfied in the operation to work effectively.

International college, Suan Sunandha Rajabhat University is an international of higher education that provides various service such as education, finance, accounting and procurement. In order to achieve success,

we must have experience and expertise in the field of rules and regulations. To perform the task is neat and orderly. Researchers are interested in studying the satisfaction of the disbursement service in contact with finance. Because the disbursement is a part to complete the mission and must be careful and accurate in the operation.

Purpose

1. To study the satisfaction level of disbursement: A case study of International college, Suansunandha Rajabhat University.
2. To study factors affecting of satisfaction level of disbursement: A case study of International college, Suansunandha Rajabhat University.

METHODOLOGY

This research is a survey. The target group are case study of International college, Suansunandha Rajabhat University. (Academic staff and support academic staff)

There are 66 people in this research. The researcher used simple random sampling method 56 samples from the sample. Analyze data, by the percentage, average, and standard deviation. Presentation of data in table format with discourse.

Data collection and analysis

In the data collection, the researcher used a questionnaire as a tool to collect data. Data were collected from 66 respondents. The data were analyzed in 3 parts

1. General information of the respondents.
2. Satisfaction of disbursement service of International college, Suansunandha Rajabhat University. Divided into 5 areas: salary, wage, emolument, monthly remuneration. Receiving and disbursement on activities or project. Borrow money, procurement, disbursement and budget to perform an activity/project.
3. Recommendations of satisfaction level of disbursement : A case study of International college, Suansunandha Rajabhat University.

CONCLUSION

Most respondents were made between 31-40 years. Most academic staff and respondents have 1-5 years of working experience.

The overall, satisfaction of the employees was at the high level. When considering the most satisfying aspect is Borrow money and on budget spending, change budget. Second, receiving-pay and the disbursement of activities/project. And the least staff satisfaction is salary, wage, emolument, monthly remuneration and procurement.

The summary can be divided into 5 areas.

1. In term of salaries, wage, emolument, monthly remuneration. Overall, satisfaction of the employees was at a high level. Considering that the facilities document, forms, samples, document formats are most satisfying. Second is the polite, courteous, smiling and polite manner. The lowest level satisfaction of staff in international college was the overall quality of service.
2. In term of receive-pay money and disbursement of activities/project. Overall, satisfaction of the employees was at a high level. Considering that the facilities document, forms, samples, document formats are most satisfying. Second, service time is fast, suitable for activities/project are most satisfying. The lowest level satisfaction of staff in international college is knowledgeable in regulation and has been solved directly to the need.
3. In term of Borrow money. Overall, satisfaction of the employees was at a high level. Considering that the service time is fast, suitable for activities/project are most satisfying. The quality of service and the impression of service recipient and the lowest level satisfaction of staff in international college is facilitate, forms, samples.

4. In term of procurement and disbursement . Overall, satisfaction of the employees was at a high level. Considering that the quality of service are most satisfying. Second, the process is clearly defined and the lowest in international is document, forms, samples.

5. In term of budget spending/change budget. Overall, satisfaction document, forms, sample were at a high level. Considering that the process is clearly defined are most satisfying. Second, the impression of the service recipient . And the lowest in international college is service time is fast, suitable for activities/project.

Suggestion

1. There should be a comparative study satisfaction the service recipient of finance and parcels of other agency for comparative. Study results in each area.

2. Should study other factors, expected to affect satisfaction use of the service . To know the factors that have a real effect. And can be applied to other project . The same or similar for the future benefits of the agency.

3. To study the expectation of the service users on the performance of the deputies.

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DEVELOPMENT OF KNOWLEDGE ACQUISITION GUIDELINES FOR PERSONNEL PROCUREMENT, INTERNATIONAL COLLEGE, SUAN SUNANDHA UNIVERSITY

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ABSTRACT

This research aims to develop a knowledge-based approach on disbursement of personnel procurement at International College, Suan Sunandha Rajabhat University, in order to promote the system to be more effective and efficient. In this study, a quantitative approach was conducted through the use of questionnaires. The data was collected from 60 employees at International College. The analysis was conducted using descriptive statistics. The results show that the employees have a good understanding of the disbursement process of personnel procurement of less than 10,000 Baht. However, when it comes to the overall disburse procedure, the employees have an understanding at an average level. The guidelines for this is to promote a training program regarding disbursement to improve the understanding of the process among the employees. By doing this, it will develop the disbursement activities of the college and reduce the number of problems involving in the procedure in a long term.

Keywords: development guidelines, procurement problems

INTRODUCTION

Under the Public Procurement and Government Procurement Act, 2017 is a complex and detailed regulation that follows strictly defined and strict procedures. It includes scheduling procurement, determining the need for supplies, inventory planning, materials planning, procurement planning, disbursement, disbursement control, Maintenance and distribution.

Materials Management in Suan Sunandha Rajabhat University assign tasks and authority to colleges, divisions, offices, centers, and campuses to be able to manage responsibility, authorization and approval of use, maintenance of the project or work under various plans. An amount not exceeding 150,000 baht which is important factor in the organization's management to achieve the objectives set.

Procurement and inventory management must be documented, disbursed, borrowed, monitored, and maintained and distribution. Under the Rules, Regulations and Regulations under the Public Procurement and Government Procurement Act,2017. The process needs to be managed systematically and efficiently, saves time and cost-effectively as possible. Purchasing, materials management to define the aims, principles and issues disbursed procurement.

Develop approaches to educate the disbursement of the procurement for International College Staffs who willing to organize international college programs to gain knowledge and understanding under the Public Procurement and Government Procurement Act, 2017 for study the problem of materials purchasing management, then bring the problem to adapt with purchasing the development of knowledge acquisition guidelines, purchasing process to international colleges staff. In order to reduce the time to purchase and solve the problems of purchasing more accurately, quickly and efficiently.

Research Objectives

1. To develop a guideline to educating the disbursement of purchasing of international colleges staffs.
2. To offer the guideline of knowledge on disbursement and purchasing.

METHODOLOGY

Research Methodology

This research is a survey research. The research process consists of population and sample. The research instrument is data collection, data analysis and statistics

By surveying academic staffs and support staffs of International College, Suan Sunandha Rajabhat University, Fiscal year 2016. Total staffs are 64 persons. The sample used in this study determined according to the Taro Yamane method. There will be 55 participants in the questionnaire.

This study uses quantitative research. The instrument used for data collection in quantitative research is questionnaire survey to study the needs and develop the knowledge, disbursement, procurement of international colleges.

Creating tools and quality monitoring tool by identified problems in research from purchasing process according to their work practices. The researcher identified problems in creating questions. The researchers distributed questionnaires to 60 international college staffs. Then, the problem of procurement from the questionnaire was analyzed, synthesis to the question that will be created in the questionnaire. The questionnaire is divided into 3 parts as follows:

Part 1: Personal Facts Questionnaire It is a multiple choice (Check List) and open-ended questions. Contains questions about gender, position, working age. The sample will describe by use frequency statistic and percentage.

Part 2 : Questionnaire about development of knowledge acquisition, disbursement, employee purchasing includes questions about the purchase of materials and other analyzes by using statistical averaging (Mean) and standard deviation (SD) criteria and the rating analysis.

Data collection and analysis

Researchers distributed questionnaires to employees of international colleges. A total of 64 questionnaires were collected and analyzed. In the data analysis process, researcher used the SPSS program. The data were analyzed by open-ended questionnaire (The expectation and demand), content analysis (descriptive analytic) to present the data analysis.

CONCLUSION

Results / Conclusions

Research indicates that the development of educating in knowledge of disbursement and overall procurement. International College employees have a good understanding of purchasing in the amount that not more than 10,000 baht is high ($= 3.70$, $S.D = 1.17$). When considering the overall conclusion, the international college staffs had a good understanding of disbursement, purchasing at a moderate level ($= 3.34$, $S.D = 1.22$).

Assumption 1 International College staffs have good knowledge. Material disbursement and other disbursement. The average was moderate. The issue is that there are too many procurement procedures and documents. This may be because each purchase has a complicated operation procedure. And there are a lot of documents that need high resolution.

Each operation is a complex process. Importantly, it must comply with the Public Procurement and Government Procurement Act BE 2017. International College staffs have good knowledge and the average was moderate. This is consistent with the research results of Kanokrat Klaitongkam(1998) who studied the problems and solutions of materials management, Burapha University that found the administration of the material contains too many processes. And materials management worker give the suggestion for improve the instruction and including seminar setting for staffs who concern with materials management. In addition, the results of this study are consistent with the findings of Supanatee Suwanawan (2007) who study about materials management pattern of Bansomdejchaopraya Rajabhat University. And found that the procurement is improve university regulations in accordance with state regulations related to materials management. There are commission members who have specific characteristics. The process of supplying and disposing of power to lower levels

should be reduced. To educate all parties concerned systematically. This is based on the quality management theory of Deming (Prua Wadee Effect 2010) in the planning process. It is the way to work to achieve the goals. And the process of implementation (Do) is the education and training to understand how to work each process. In the view of the researcher, from the International College Staff have knowledge of procurement in moderate. This may be due to the lack of clear understanding of the rules and regulations of the Public Procurement Act and Public Procurement Act, 2017.

The results of the research concluded that International College staffs have knowledge and understanding of procurement, material disbursement, and other expense disbursements. Overall, it is concluded that the International College staff knowledge in the medium level. Developing a Knowledge-based approach will develop the International College staff to be knowledgeable in the procurement process. In order to reduce the time to purchase and to solve problems, the procurement was correct, faster and more efficiently.

Recommendation

Based on the findings of the study, the development of a knowledge-based approach about disbursement and procurement of International College staffs. There are comments and suggestions as follows:

1. Provide training to educate the disbursement of procurement. Under the Public Procurement and Government Procurement Act 2017.
2. Prepare A3 size tables or posters for procurement. Then put it in the master room. Then, professors can study the disbursement of procurement there.
3. Make a clear classification of the procurement.

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THE STUDY OF INTERNAL QUALITY ASSURANCE AT INTERNATIONAL COLLEGE, SUAN SUNANDHA RAJABHAT UNIVERSITY

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ABSTRACT

This study aims to Study of quality assurance in internal education. And compare the opinions of personnel regarding the implementation of quality management system. The results of the study will be used as a guideline. Improve and improve the quality assurance system for international education. Suan Sunandha Rajabhat University To be effective. The sample consisted of personnel working in international colleges. Suan Sunandha Rajabhat University The questionnaire was used as a tool to collect data. Then analyze the data. SPSS (Statistical Package for Social Sciences). Data analysis includes frequency, percentage, mean, standard deviation, t-test, and one-way ANOVA. The results of the study revealed that most of the personnel graduated from the bachelor's degree and above the bachelor's degree. Experience of 1-14 years. Most of the faculty are faculty and staff. The staffs had opinions on the quality assurance in internal education at a high level in all aspects.

Keywords: influencing factors, conducting research, lecturer

INTRODUCTION

Background and significance of the problem

At present, the development of educational quality had developed a systematic education by improving and developing of all levels of education to meet the standards, to accelerate the development of education, to have a unique identity and focus on the development of the University, the environment, progress, technology, society, economy, knowledge and skills in the future that the job market wants. Educational quality assurance is an important mechanism that promotes and encourages all levels of work processes and related personnel to work in corresponding with the system. International College of Suan Sunandha Rajabhat University realized the importance and necessity of quality assurance education followed by the national education act in 2542 and amended (No.2) in 2545 combined with Ministry of Education Regulatory Act in 2553. The International College is committed to improve the quality of higher education. It represents our commitment and responsibility to the society and the nation. The main task is the production of graduate, research, academic service to society and to maintain the arts and culture in accordance with the potential of international colleges and in the same direction across the University. We promote and encourage all levels of staff to participate in quality assurance and complete quality by distributing power and responsibility to individuals in college. The quality assurance process is a culture of college performance to promote and support learning exchange the cooperation for quality assurance in education and comparable performance (benchmarking) with internal and external agencies in the same group and leading to innovation or good practice or have the results of the college's quality enhancements lead to a global learning organization.

Objectives of the research

1. To study the condition of educational quality assurance in international colleges, Suan Sunandha Rajabhat University.

2. To compare the opinions of academic personnel and academic support staff regarding the implementation of quality management system for internal quality assurance of International College, Suan Sunandha Rajabhat University
3. To find ways to improve the educational quality assurance system within the International College, Suan Sunandha Rajabhat University.

Research Methods

This research of the problems of internal quality assurance in education of International College, Suan Sunandha Rajabhat University is quantitative research. Researchers have set guidelines for conducting research. The research is about the quality of education, management, participation of personnel and the internal audit and evaluation. This is a survey research using questionnaire as a tool to collect information about insurance. The internal quality of education was created using a metric scale called Likert Scale. The data were analyzed by SPSS (Statistical Package for Social Sciences)

Analysis of data and statistics used

After creating and testing the tool that was distributed to staff of the International College. There are 57 sets returned to the Suan Sunandha Rajabhat University, which collects data from the questionnaire to evaluate and analyze in program called Statistical analysis for the Social Sciences (SPSS) to find frequency, percentage, analyzing personal status of the sample, mean and standard deviation. Compare the opinions of personnel regarding the use of quality management system in insurance of the quality of education of international colleges. Two groups of variables used t-test and more than two groups of variables used One-way ANOVA and Scheffe's duality test.

Summary, Discussion the results and Recommendations

Results of the research

Found that the personnel of the International College, Suan Sunandha Rajabhat University has bachelor degree for 21 people or 36.84%, followed by 36% higher than the bachelors for 36 people or 63.15% and less than bachelor degree for 0 person or 0%, experienced and worked for 1-4 years was 36 people or 49.12%, followed by more than 5 years for 26 people or 26.31% and more than 10 years was 4 people or 24.56% Most people who work in university were teachers for 32 people or 56.14%, followed by staff for 21 people or 36.84% and manager for 4 people or 7.01%

Most personnel of the International College, Suan Sunandha Rajabhat University always participated for 36 people or 63.15%, most people were used to be training for 37 people or 64.91% and, most people were used to be relayed knowledge of internal quality assurance for 49 people or 85.96%

Opinions of personnel regarding quality assurance in International College ,Suan Sunandha Rajabhat University, overall of management was in high level, average was 3.84. The highest was having standard mechanism in internal quality assurance, average was 4.63 and the lowest was the training the knowledge of quality assurance to the personnel and they understood in education quality assurance, average was 3.62 Opinions of personnel regarding quality assurance in International College ,Suan Sunandha Rajabhat University, overall of participating of personnel was in high level, average was 4.06. The highest was creating the manual of quality assurance, average was 4.21 and the lowest was the board of directors who participated to give the opinions and recommendations, average was 3.96

Opinions of personnel regarding quality assurance in International College, Suan Sunandha Rajabhat University, overall checking and evaluating of internal quality assurance was In high level, average was 3.99. The highest was board of directors had the knowledge and ethics, average was 4.21, followed by focusing on the real operation more than crating documents, average was 4.19 and the assessor understood the measures and checking methods which were the same standard, average was 3.79

Discussion the results

The results of The Study of Internal Quality Assurance at International College, Suan Sunandha Rajabhat University has the important things that should discuss as follows

From the research found that overall of opinions was in high level. Management, participating of personnel and checking and evaluating internal quality had the high average that followed by assumptions. These were the results from the university that had the clear measure of education quality assurance and education quality assurance caused the changing of the place of education clearly. Therefore, the operation of quality assurance to make education efficiently depended on education quality assurance as well.

Recommendations to the next study

1. This study was conducted only for personnel in international colleges. Therefore, it should be conducted with other personnel as well.
2. Should have study that researches the factors that influence to personnel to have the attitude to quality of education without educational background, work experiences and status of working.

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TOURISM IMPACTS AND THE MANAGEMENT OF LOCAL COMMUNITY WISDOMS: A CASE STUDY OF THAKA COMMUNITY, SAMUT SONGKHRAM PROVINCE, THAILAND

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ABSTRACT

This study examined perception of local people on impacts of tourism development occurred in their community and direction of management by use of local wisdoms. The case study of this research was Thaka Community, Samut Songkhram Province, Thailand. The objectives were to study impacts from the tourism development and to explore main factors from tourism. The study applied mixed method. The quantitative method used questionnaire with 50 samples who were local people in order to obtain their perception towards the tourism impacts in local tourist attractions. In-depth interview was conducted with the leader of the community and local people to find out the community's impact management and implications of their wisdoms for sustainability. The management of Thaka Community on tourism impacts was found significantly effective by utilizing the dynamic of participation of the community's members and the locals' mutual understanding towards the development direction. The highlights of local wisdoms as the motor of tourism development include coconut sugar making tradition, handicrafts from coconut leaves and Thai local desserts.

Keywords: Local Community Wisdoms, Samut Songkhram, Thaka Community, Tourism Impacts

INTRODUCTION

Thaka Community is the community where the local people have simple life way of living. The canal is the important way for their transportation and their economic as there is the important market located in the center of the community, where people sell their local products. Later the market has become one of the tourist attractions of Samut Songkhram Province. Thaka Community is located in Amphawa District, Samut Songkram Province, 10 kilometres far from the centre of the district. The northern part is connected with Donmanora and Jompluak Sub-district of Bang Konti District; the southern part is connected with Bang Chang Sub-district of Amphawa District; the eastern part is connected with Klong Khuen and Nang Thakien Sub-district of Muang District; and the western part is connected with Bang Krabue Sub-district of Bang Khonti District. Thaka is characterized by low land with canals. Thaka or Sala Canal is the main canal used by water transportation. Establishment of houses in Thaka was influenced by the geographical shape of the canal. Most of houses are located on the riverbank, surrounded by coconut orchards and almost every house have the waterfront terrace. Villagers' wooden houses were built in traditional Thai style with high space under the house to prevent the house from floods. In the past, the level of water in the canal could be very high especially during July and August [1].

Tourism in Thaka Community has been more well-known than the past. Due to this arisen development, some of the local life style have changed through time. Moreover, expectation of visitors may influence local product patterns and their uniqueness [2]. An example is that in the past, the floating market was open only on the 2nd, 7th, and 12th waxing and waning moon nights but nowadays it opens every weekend to respond the tourism demand [3].

Therefore, the researcher studied impacts and explored main factors from tourism activities, both positive and negative sides, which affected local community, and to study the management of local wisdoms in the community.

LITERATURE REVIEW

Tourism impacts and the management in preserving the riverside community were studied in a wide range. Some of them were reviewed and discussed in this study.

A. Residents' Perception on Tourism

Normally, local people can feel of unwillingness to the impacts from tourism. An example are water and environment pollution and the socio-culture impacts that make the local people become unwilling to be part of tourism activities or in decision making for planning [4]. But the positive from tourism such as the positive economic effect can influence the local people to adjust their view points towards tourism and to support the tourism development to reach the goals, if they feel they are part of the tourism economic sharing. Therefore, this means perception and experience of impacts from tourism are related with level of participation among the community members [5].

B. Water Tourism Destination

Water tourism destination can provide activities along the river to attract tourists to visit the riverside area. The examples include enjoying views or activities related with river of the tourist attractions [6]. Local people can be participating with understanding in maintaining cleanliness of river surface and in how the river is important to their community. As well local people can make an understanding with tourists regarding the environment and local culture and life style.

C. Environmental Management on Riverside Community

Tourism in riverside community is important to develop the community and to preserve the culture. The tourism development plan is for increasing income and jobs for local people and exchanging the cultures for more understanding between tourists and local people. Therefore, community members and planners should have considerations in protecting river landscape to be pleasant and clean [7]. Community members and planners should have plans to work together with other concerned organizations to be involving in tourism activities within the common purposes and objectives. Balance of resources especially along riverside areas must be of high concern as unplanned and unbalanced tourism development along riverside and in communities near rivers can destructively affect living quality of local community.

METHODOLOGY

This research used both the quantitative and qualitative methods. The quantitative data was from questionnaires launched to 50 local people in Thaka Community. The qualitative data was from in-depth interviews with the leader of Thaka Community and 3 local people. The areas in the scope of this research were Thaka Community and Thaka Floating Market where local people normally gather for selling and buying. The questionnaire survey was conducted to study local people's perception on impacts from tourism development.

RESULTS

The study of the perception of local people on impacts from tourism development revealed the results shown in Table 1-3.

Table 1: *The respondents' perception on economic impacts from tourism*

Attributes	Mean	Std. Deviation
1. Tourism development creates new business opportunities for the local community	4.62	0.490
2. Tourism development has increased the standard of living of the residents	4.30	0.995
3. Tourism development appeals many investments into the community as a result of landscape improvement in the community	3.82	1.137
4. Prices of goods and services are increased in the community due to tourism development	3.54	1.581

Table 1 shows that the impact of tourism in creating new business opportunities for the local community gained the highest score (4.62). The second one was that tourism development increased the standard of living of the residents in the community (4.3), followed by the induced investment into the community as a result of landscape improvement (3.82), and increased prices of goods and services due to tourism development in the community (3.54).

Table 2: *The respondents' perception on environmental impacts from tourism*

Attributes		Mean	Std. Deviation
1.	Tourism has contributed to the implementation of preservation of natural areas	4.54	0.646
2.	Tourism has improved the ecological environment of the community in many ways	4.24	0.981
3.	The riverside constructions and homestays have destroyed the environment in the community	2.16	1.434
4.	Tourism caused environmental pollutions; air, water, and soil	1.54	0.762
4.1	Air Pollution	1.54	0.838
4.2	Water pollution	1.54	0.838
4.3	Soil pollution	1.84	1.201
4.4	Waste pollution	2.66	1.479

Table 2 reports the respondents' perception on environmental impacts from tourism. The results showed that tourism was perceived to contribute to the implementation of preservation of natural areas as the highest level (4.54), followed by the perception on improved ecological environment in many ways influenced by tourism (4.24). The rest of impacts showed very low score in the perception.

Table 3: *The respondents' perception on socio-cultural impacts from tourism*

Attributes		Mean	Std. Deviation
1.	Tourism development provides entertainment opportunities for the local community	4.02	1.220
2.	Tourism development provides opportunities to meet new people from outside the community	4.70	0.463
3.	Tourism development leads to increased tourist traffic in the community to be more crowded	2.00	1.355
4.	Tourism negatively contributes to social problems such as crime, drug use, prostitution, alcoholism, gambling, smuggling, and so on in the community	1.52	0.931
5.	Tourism has increased residents' pride in the local culture in the community	4.38	0.697
6.	Tourism development does not modify local culture and living style	3.26	1.614
7.	Tourism development is negatively altering the traditional beliefs and local cultural values in the community	2.00	1.212

Table 3 presents the respondents' perception on socio-cultural impacts from tourism. The most prominent impact in the perception was that tourism development provided opportunities to meet new people from outside the community (4.70), followed by tourism with role of increasing residents' pride in the local culture in the community (4.38), and tourism development providing entertainment opportunities for the local community (4.02). The impacts with significantly lower level of perception included tourism development leading to

increased tourist traffic in the community to be more crowded (2.00) and tourism negatively contributing to social problems such as crime, drug use, prostitution, alcoholism, gambling, smuggling in the community (1.52).

The results from the interviews addressed the good management of the community in dealing with conflicts, and local participation in community's activities such as the activity of cleaning canals twice a month. Future plan of community was found to support the green tourism plan and to show more culture and wisdoms of the community by initiating unique products. For example, the local wisdom is the traditional coconut sugar making in which liquid from top of coconut flowers is brought to boiling and stewing process with traditionally designed coconut sugar furnace; the process during which careful attention and monitoring is required. Another wisdom is making of crafted products such as hat or umbrellas to cover foods made with coconut leaves. Local people and the leader of the community use the local wisdoms and their resources in the community tourism. This helps promote the community's learning centre of Thai culture in the zone where there is plenty of coconut plantations.

CONCLUSION

The study found that tourism was perceived by the local residents for its creation of new business opportunities for the local community and the standard of living of the residents in Thaka Community. Tourism has contributed to the implementation of preservation of natural areas, and ecological environment of the community has been improved in many ways. There are not many impacts from tourism development in natural resources of Thaka Community. However, the highly perceived impact was waste problem. Yet the community has the rules in managing the problem, while leveling up themselves in terms of participation among the community members. In term of social and cultural impacts, tourism development provides entertainment opportunities for the local people and opportunities to meet new people from outside the community. This promotes exchange of ideas and more understanding of the local way of living. Most importantly, tourism development in Thaka Community was perceived to increase the local residents' pride in their local culture.

Discussion and Recommendation

Thaka Community is the community where the local people have the simple way of life. Most still live along the river and use canal as their mean of transportation. The economic is induced there, with the significance of the local resources and implication of the wisdoms. These elements are combined to become an attractive tourist attraction alternative to the Ampawa Floating Market. Moreover, the positive economic impact has brought to the realization of local people of how their local resources are essential and valuable, and must be preserved and safeguarded by their participation together. Thaka Community is therefore one of the communities that has good management in both natural and built environment of the community, in conservation and preservation. The factors to success with the management is that there must be communication between local government, members and leaders in order to have mutual understanding towards the same direction of development and to have willingness in participating the community's activities. Fair benefit sharing will gain satisfaction from all local people and will as a result encourage them to support tourism management and environmental preservation.

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THE LOGISTICS PROCESS OF PRODUCTION FRAGRANT COCONUT IN RATCHABURI PROVINCE.

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ABSTRACT

The research's objection is to study the logistics process of producing fragrant coconut in order to learn a new knowledge in the production of fragrant coconut. The information obtained is a guideline for improving the quality of exports. The population is a group of community enterprises that produce safety vegetables and fruits for export in Damnoen Saduak District Ratchaburi. By in-depth interview, Mr. Prayoon Visutipaisarn, Chairman of the Group. He has assembled a farmer's garden, registered the community enterprise named "community enterprise producing safe vegetables and fruits, Damnoen Saduak" and collect the output from the members shipped to the international market. Fragrant coconut growers in the year 2017 had a total area of 10,361 rai. The number of farmers was 82 with GAP standard of 60. The average planting time was 10 years. The sample garden is Prayoon Visutipaisarn, an area of 260 rais.

The logistic process of fragrant coconut production, upstream of raw materials, focus on the selection of good varieties which can be grown in all types of soil. Fertilizer will give way to root, organic fertilizer. Especially bat manure and chemical fertilizers are limited in scope to the requirements of Good Agricultural Practices (GAP). The pest control with Integrated Pest Management (IPM) and the water quality process for export to pay attention since planting. Maintenance planting will make it better than a garden because it is easy to water. Pest and disease control using natural methods (Downstream quality output). The standard has 1 to 10-20 results can be collected every 20 days. Preparations for export use strands (plastic) wrapped in clear plastic and packed in paper cartons. Market demand is in ASEAN countries such as Singapore, Malaysia, China and is expanding to the United States.

Keywords : Logistics Process, Production, Fragrant Coconut

INTRODUCTION

Fragrant Coconut is an economically important agricultural crop. It is a unique crop in Thailand that has a growing trend in the demand of overseas consumers. Thailand is one of the world's leading producers. More than 1.5 million hectares of planted area yield more than 1.4 million tons. Currently, Thailand is experiencing productivity problems. Because the production area decreased significantly as new farmers turned to other crops instead. During the past 1-2 years, the weather conditions have affected the coconut fruit less. The outbreak of insect pests has reduced the yield. Coconut price is higher.

Subcommittee on Strategy for Development of Thai Tree Planting Approved for Coconut Strategy FY 2012-2015 Budget 118 Million Baht Key Strategies. Is a fragrant coconut production in the original plantation 115,700 rai fragrant coconut promotion in 5 provinces: Ratchaburi, Samut Sakhon, Chachoengsao, Nakhon Pathom and Samut Songkhram (Area of 70,000 rai). The area is structurally suitable for planting, resulting in high quality coconut. Ratchaburi was selected as a province of this strategic plan. Damnoen Saduak District will have the largest area of 4-5 thousand hectares. Good soil contains water. Planting is done in the form of organic agriculture. Currently, the group of coconut flowers, Damnoen Saduak, GAP standard and Thai ORGANIC USDA leaves from America as more than 1,000 growers planted by ORGANIC to expand the market from Asia. To the world market, the researcher is interested in studying the logistics process of producing coconut perfume in Ratchaburi province to use the information obtained from the study to analyze and use as a guideline to improve the quality of production and reduce production cost of fragrant coconut. Thailand can export sustainably. This will make coconut farmers grow more perfume.

Research Objectives

1. To study the logistics process of producing fragrant coconut in Ratchaburi province for export.

METHODOLOGY

This research uses the area of community enterprises, producers of safe vegetables and fruits, toxins for export. Damnoen Saduak District Ratchaburi by focus on the study of logistics process activities.

Upstream Process, Raw materials are raw materials used to grow coconuts, including soil, water, fertilizer.

Midstream Process, Fragrant coconut production since planting and production

Downstream Process, Finish Goods Product of fragrant coconut

Collection and study of literature review and in-depth interviews Mr. Prayoon Visutipaisarn, the Chairperson to analyze planting overview Maintenance and the output is divided into two parts: 1. General information of farmers, fragrant coconut producers 2. Information about the logistics process of fragrant coconut production

Analysis of qualitative data by using the analysis and synthesis using Content Analysis techniques, the data will be analyzed and integrated into the study.

RESULTS

In a study of the logistics process of coconut production in Ratchaburi province, the purpose is to study the process of logistics, production of fragrant coconut for export. Based on a conceptual framework that guides the logistics process from upstream to downstream to produce quality fragrant coconut to export to foreign countries, the results are as follows.

Part 1: Information on coconut farmers in Damnoen Saduak District. 1) Tambon Ban Rai 2) Tambon Hua Hin 3) Bua Ngam 4) Tambon Tha Pai 5) Tambon Don Phai 6) Tambon Sopa) Don Subdistrict 9) Tambon Khunpitak and 10) Damnoen Saduak District The total area of 1,361 rai, the number of coconut farmers, 82 perfumes were GAP standard, and the average coconut was about 10 years.

Part 2: Information on the Logistics Process of fragrant coconut production.

The raw materials from the research results, farmers who provide information on raw materials will pay attention to the selection of good varieties. Planting in the garden is a dump as it can be grown in all types of soil. Fertilizer is provided to the root and focus on organic fertilizer, manure, compost, chemical fertilizer. In order to be limited in accordance with the Good Agricultural Practices (GAP), pest control Integrated Pest Management (IPM) is used. It is approved by the Department of Agriculture. Ministry of Agriculture and Cooperatives, and is a condition for export of coconut, perfume to foreign countries. Farmers will use their expertise in the raw materials to affect the quality of coconut, perfume, especially the manure.

The results of the research, the informant informs that the production process of fragrant coconut for export. Growing needs attention in the care since planting. Maintenance In the production process. Groove The fragrant coconut is better than the garden because it is easy to water. Fertilization, prevention and eradication of pests of plants and animals to produce were used in order to comply with the rules for the production of agricultural produce for export. Applying for Good Agricultural Practices (GAP) and Integrated Pest Management (IPM) from the Department of Agriculture Ministry of Agriculture and Cooperatives was used to certify the quality of produce.

The yield of fragrant coconut went on so well as the quality and standard of production in one bunch has an average of 10-20 coconut can be collected every 20 days. Preparations for export use strands plastic wrapped in clear plastic and packed in paper cartons. The demand for the market is in ASEAN countries such as Singapore, Malaysia and China are expanding to the United States.

Summarize and discuss the results.

A study of the logistics process of coconut production in Ratchaburi is purposed to study the process of logistics, production of fragrant coconut for export. It can be seen that every step in the process. Logistics is important from upstream to downstream. Accordingly to the consistency from the seed selection, planting, maintenance process to yield. It is consistent with the research of Somchai Wathayothin (2017) who conducted a research project on coconut breeding for export. The purpose is to achieve the good quality coconuts; the sweet and fragrant aroma is a requirement of the export market. The purpose is to achieve the coconut; the sweet and fragrant aroma is a requirement of the export market. The quality of coconut perfume is in the production of nutrient management in the production of fragrant coconut. Composting with chemical fertilizer does not affect the growth of fragrant coconut. The composition of the fruit is different, while the sweetness of coconut water. Composting with chemical fertilizers gives more juice than not fertilizing. This is consistent with the production of farmer groups that focus on chemical fertilizers and organic fertilizers. Especially bat manure. And research by Gintharakkarn (2015), which researches the potential of Thailand's fresh fruit export to Yunnan, China. The demand of fresh fruits from the Thai people of China is increasing as a result of the research; it is a good

opportunity to grow fruit export to the Chinese market. Chinese people have increased incomes in line with the size of the country's economy. As a result, the buying behavior of vegetables and fruits of consumers such as the purchase of vegetables and fruits in the supermarkets in department stores and modern stores are priced higher. The selection of Thai fruits is called "the noble fruit". Consistent with To improve the quality of coconut perfume to a good quality acceptable to consumers in foreign countries.

Suggestion

Forecast planning And to determine the amount of coconut production perfume each year to produce enough. And can be distributed to the consumer thoroughly. The logistics system is being supported to create better agricultural standards.

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PERFORMANCE APPRAISAL IN SERVICE SECTOR FOR COLLEGE OF LOGISTICS AND SUPPLY CHAIN

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ABSTRACT

This research studied on the performance appraisal in service sector at College of Logistics and Supply Chain. The purpose of this research was to evaluate the performance in the service sector at the College of Logistics and Supply Chain. In order to study requirements and the service recipients review on the services at College of Logistics and Supply Chain. Moreover, to study the problems and barriers and the problems solution, which related to the services at College of Logistics and Supply Chain.

The sample population was 100 people, including the general public, government officials, private agencies, students, lecturers and staff at College of Logistics and Supply Chain. The Data were analyzed by using the SPSS/FW (Statistical Product and Service Solutions for Windows Versions 22.5), to analyze: Frequency, Percentage, Mean and Standard Deviation (S.D.).

The results of the service showed that the service able to meet the service requirements and fast service, making confidence, the service recipients get the most benefit. Therefore, the service recipients satisfied on service was the first choices. Secondly, the facilities, staff/service personnel in which they have kindness and understanding for the service and listen to the problems or answer questions quickly. Additionally, process services / procedures that provide services clearly, in which it clarifies and guides the process and service on a timely basis. So, the service was the most impression to the service recipients.

Keywords: Evaluation/ Appraisal, Performance, Service

INTRODUCTION

Performance evaluation is an important process that drives the organization to achieve its business goals. It is the statement that associates the requirements of the organization to the goals of each employee. Moreover, this is a management tool that the supervisor is aware of the job performance. It also promotes the participation of supervisors and practitioners in targeting and performance indicators (KPIs). Therefore, the collaboration and good relationship between supervisors and subordinates. This will lead to the success of the organization.

College of Logistics and Supply Chain recognizes the importance of evaluating customer satisfaction. Due to the evaluation of customer satisfaction is an important tool in performance appraisal. The work's effectiveness, the results have improved, and the operation has implemented.

Performance appraisal of colleges of logistics and supply chain in order to understand the service quality to the users. Then to study the requirements and opinions of service recipients about the College of Logistics and Supply Chain's services. Including the operation problems and obstacles in the College of Logistics and Supply Chain. In the next opportunity, it able to use for development planning in the college of logistics and supply chain.

Objectives

1. To study the service recipient's requirements and opinions on the College of Logistics and Supply Chain services.

2. To study the performance appraisal of the College of Logistics and Supply Chain management.
3. To propose guidelines for solving issues related to the College of Logistics and Supply Chain service.

Research scope

This research is to evaluate the performance of the service of College of Logistics and Supply Chain. Details are as follows:

1.1 Content; the research team evaluated service performance of the College of Logistics and Supply Chain. In order to, identified the result of the evaluation by using the assessment issues were four major issues:

- 1) Process issues or procedures.
- 2) Issues of staff or service personnel.
- 3) Facility issues
- 4) Achievement of service

1.2 Area scope; proceeded performance appraisal on service of the College of Logistics and Supply Chain.

1.3 Sample population; the sample was composed of publics, government officials, students, faculty, and staff at the College of Logistics and Supply Chain. The 110 service recipients were classified as:

- (1) 10 publics
- (2) 44 students of the College of Logistics and Supply Chain
- (3) 56 lecturers and staff of the College of Logistics and Supply Chain

1.4 Time; operation time was from October 2017 to July 2018, 5 months in total.

1.5 Research variables:

1.5.1 Independent variables:

- (1) Gender
- (2) Age
- (3) Education
- (4) Occupation
- (5) Service time

1.5.2 Dependent variable is the efficiency and effectiveness of the performance of the College of Logistics and Supply Chain. There were 3 major issues to consider:

- (1) Service process or procedure.
- (2) Staff or service personnel.
- (3) Facility.
- (4) Service performance issues.

Research tools

The questionnaire used for collecting the data, which 5 rating scales were very satisfied, satisfied, merely, dissatisfied and very dissatisfied.

Processing:

1) Studied techniques and methods to create questionnaires from various researches on the factors or variables that influenced on the service recipients' opinions. In order to use as a guideline.

2) Information was used for creating the questionnaire which the book, journals, documents and publications were used.

3) The questionnaire consisted with purpose and consistent which the factors or variables used in this study. Creating the questionnaire draft then bring it to the experienced and expert to review and suggest defects for improving and revising. Finally, the complete questionnaire was printed.

4) The completed questionnaire was 3 parts as;

Part 1 the personal factors of the respondents: gender, age, education, occupation and service time. The question was closed-end which the respondents able to choose the answers that most closely match the identity of the respondents.

Part 2 the question about the opinions of service recipients on the service performance of the College of Logistics and Supply Chain. The evaluation issues were 4 major issues as process or service, the staff

or personnel, service providers and facilities. The rating scale was 5 levels as very satisfied, satisfied, merely, dissatisfied and very dissatisfied, 32 questions in 4 issues were:

- 1) 8 questions for processes or procedures
- 2) 8 questions for staff or service personnel
- 3) 7 questions for Facilities
- 4) 9 questions for service Achievement

In Part 2 was the rating score answer as following;

- 1) very satisfied stand for 5 scores.
- 2) satisfied stand for 4 scores.
- 3) merely stand for 3 scores.
- 4) dissatisfied stand for 2 scores.
- 5) very dissatisfied stand for 1 scores.

Part 3 comments and suggestions on public service. The open-questions were problems and obstacles in receiving services from the College of Logistics and Supply Chain and suggestions to improve the service.

Research Results

In general, the results found that 65.45% of the respondents were female, the age was between 20-30 years old and 70% was undergraduate education. There were almost the students. Second was the government or state enterprise. The service time was between 10.01-12.00 am.

Customer satisfaction service process / service procedures

Overall, there were satisfied on services processes and procedures which mean was 4.09 and standard deviation was 0.74. Considering the service process or procedure found that there were clarified either processes or procedures. Due to the clearly either clarification and instructions of service cause that the applicants were very satisfied. Mean and standard deviation were 4.38 and 0.51, respectively. They were very satisfied on the service time, which mean and standard division were 4.23 and 0.73, respectively. As the results it can be seen that the service process / service procedure has a clear service. It clarified and guided the process of providing clear services and able to complete the service on a timely basis. The service was impressed that was on the top level.

Satisfaction of service users with staff / service personnel.

Generally, there was very satisfied on staff / personal services, which mean was 4.23 and standard division was 0.91. When considering staff or personal services found that honesty in the performance of duties, such as not taking bribes, not benefiting inappropriately, etc., was 4.54 on mean and 0.78 on Standard deviation. The staffs were honor and always used the polite words and greetings. The mean of the sample was 4.54 and 0.97 was standard deviation. The staff has provided sympathy and understanding to the service recipient in which listen to the issues or inquiries of the service recipients reluctantly with mean value was 4.54 and standard deviation was 0.66.

Customer Satisfaction on facilities

Overall, the satisfaction of using the facilities. The service recipients were very satisfied on the facilities with the mean was 4.29 and standard deviation was 0.80. When considering on each factor found that the service facilities was very satisfactory. In terms of quality and modernization of equipment / tools in service. The mean was 4.62 and standard deviation was 0.65. When considering on the campus location, it was convenient to get the service with 4.54 on average value and 0.66 on standard deviation. The capability of facilities such as parking, bathroom, cafeteria and service area was significantly 4.31 on average and 0.95 on standard deviation. The adequacy of equipment / tools for service, mean was 4.31 and standard deviation was 0.85. Finally, the ability to make decisions was very quickly with 4.23 on mean and 0.60 on standard deviation.

The customer satisfaction on service achievement

Inclusive of the customer satisfaction on service achievement, it was very satisfied by service recipients with the average and standard deviation was 4.35 and 7.4, respectively. Regarding the service achievement, the respondents were very satisfied on service achievement when servicing by the College of Logistics and Supply Chain. In terms of service recipients, there was a positive attitude towards college of logistics and supply chain. The average was 4.69 and standard deviation was 0.63. The overall result obtained from the service of the College of Logistics and Supply Chain. The service values were 4.62 on and 0.65 on standard deviation. Therefore, it was able to meet the service recipient's requirement. When the service mean was 4.46 and service standard deviation was 0.78. The mean is 4.38. The recipients benefit from the service were 4.31 on average value and 0.63 on standard deviation value. The service valuable such as cost reduction and time reduction etc., there was 4.31 on service average and 0.85 on service standard deviation. The service recipients had confidence in the services of the College of Logistics and Supply Chain. The mean of service value was 4.23 and service standard deviation was 0.93. The College of Logistics and Supply Chain had a positive effect on the expenditures paid which the service values were 4.23 on average and 0.60 on standard deviation.

The 4 aspects of customer satisfaction

Generally, the satisfaction of using the services of the College of Logistics and Supply Chain in 4 areas was satisfactory, which the service average level was 4.24 and 0.80 on the service standard deviation. When considering each aspect found that the service average level and standard deviation of service achievement was 4.35 and 7.40, respectively. Secondly, service facilities were 4.29 on service average level and 0.80 on service standard deviation. Thirdly, staff / personnel service, it was 4.23 on service average level and 0.91 on standard deviation. Finally, service process / service procedure. The service average level was 4.09 and service standard deviation was 0.74.

Discussions

This research focused on service performance appraisal of College of Logistics and Supply Chain. This research aims to evaluate the service performance of the College of Logistics and Supply Chain. Therefore, to study the service recipient requirement and their opinions. Moreover, to study the problems and obstacles as well as to solve the problems in which related to the service. Largely, the satisfaction was at the high level of 3 aspects: service achievement, facility, staff / personnel service and the service process / procedure which it related to the research by Nisa Punaporn (2007). She studied on the service recipient behavior and satisfaction at Anghong Hospital. The results showed that the service recipients were very satisfied in general and all aspects such as health care service, tools / facilities, building, Location and service provider. The result by Yuwadee Yingchit (2006) was also associated, this researcher studied on services satisfaction provided by financial and accounting divisions of civil servants and personnel under the Royal Irrigation Department. The research found that government officials and personnel were satisfied with the service. The service recipients were very satisfied on service by the staff / service personnel.

Service process / procedure

Overall, the customers were satisfied on service process / service procedures. When considering each factor, there were clearly either service processes or service procedures for providing services. As results from their provided clarification and instructions on the service, the service recipients were very satisfied. Moreover, the service able to complete in the time-line and it was a major factor. This is reasonable that the service was impressed on the top rang. According to the results of the work by Phutchanee Somkamlung (2556), studied on the service requirement of the patients in Nakhonphanom Hospital. The study showed that the knowledge information was service requirement, which there were clearly explained on practical, health care, service procedure, expense and medical expenses.

Staff / personnel service

Service recipients were very satisfied on either staff or personal service in the College of Logistics and Supply Chain. When considering either staff or personnel service, there was honesty in the performance of duties, such as not accepting bribes, not exploited inappropriately, etc. Regarding to the honor, they were saying

greetings, calling their name and eyes contact with the recipients. Including, they had provided sympathy and understanding to the service and listened to the issues or questions of the recipients reluctantly. Petcharat Intratara et al. (2557), compromise and good coordination, and physically and landscaping were also clean. Consciousness in service made loyalty in personnel service. Providing services equality and meeting the requirement of the recipients was resulted in a great satisfaction of the service recipients. Kulvatee Srichun (2557) has stated that the quality of staff / personnel service was affected to the customer satisfaction.

Facility

Overall, there was high level satisfied on service providers from the College of Logistics and Supply Chain. The facilities available to the users, the materials, the quality and the modernity of the equipment / tools to serve. Location was conveniently and easily got to the service. The facilities were adequate, such as parking, bathroom, cafeteria, service area. Either Equipment or tools were suitable. Moreover, service providers were able to make decisions for solving the problems quickly. It was an important factor for the service.

Service achievement

In generally, the service achievement was mostly satisfaction on service providers from the College of Logistics and Supply Chain. The recipients were very satisfied. There were received good service and service quality. As the results, the service recipients have more positive attitude towards the service provider. In additional, it was able to meet the service recipient's requirement. Service recipients have benefit from service. The service was significance such as reducing costs, reducing time, etc. Consequently, the service recipients have confidence in service that provided by the College of Logistics and Supply Chain. The results were worth the budget.

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THE PRODUCTION OF SCIENTIFIC TOOLS FOR STEM EDUCATION IN BIOLOGY SUBJECT

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ABSTRACT

STEM is the integration of Science, Technology, Engineering, and Mathematics for teaching students in the schools. Students would be assigned to create projects from materials and tools that are available in the classes. They will use their mathematics knowledge to calculate the basic measurements. They would have a chance to design products to solve the problems from their daily life. That can improve the 21st Century Skills for students who are going to be the good workers or leaders in the future. The activities in the class will change from passive learning to active learning.

Chitosan is the polysaccharide composed of β -(1 \rightarrow 4)-linked D-glucosamine (deacetylated unit) and N-acetyl-D-glucosamine. It is made from chitin of shrimp shells. Fourty students in the junior secondary school were asked to divide into 10 groups. They were asked to fill 10 chitosan beads in the 50 ml of 0.25% potassium permanganate in 250 ml flasks. Flasks were shaken at 200 rpm using a shaker for 0, 5, 10, 15, 20, 25 and 30 min. Potassium permanganate was pipetted from flask to test tubes for each time interval. Students were asked to record the colour of potassium permanganate solution in their worksheets. Two chitosan beads were collected from the flask for each time interval. Students were asked to conclude the experiment from their colour data records of potassium permanganate and chitosan beads. They were asked to think of the suitable time to leave chitosan beads in potassium permanganate to give the best results. They were asked to think of benefits of chitosan to improve their local environment. From this study, students had the better attention to participate biology experiment compared with biology lecture without activities. They can apply their knowledge to improve their local environment problems.

Keywords : STEM, Biology, Chitosan, Scientific Tools, Education

INTRODUCTION

Stem education encompasses four academic disciplines that are science, technology, engineering and mathematics. Stem is an interdisciplinary education that integrated learning activities in order to improve student learning outcomes. Students are encouraged to create projects that are relevant with their daily life and interest. Science is the basic knowledge of understanding life and natural phenomena. Science is composed of biology, chemistry, physics, and mathematics. Technology is the technique or tool to transform knowledge to practical project. Technology is included Informative Technology, Internet of Things and Big Data. Students should be capable to design project and find data from internet. Engineering is the skill to build prototypes from student creation. School should provide facilities for creating prototypes e.g. wood and metal workshop. The shop should have a full-time supervisor and technician available for assistance students with STEM projects. Mathematics is needed to create scientific prototypes by using calculation and evaluation. The interdisciplinary education of four disciplines can encourage students to create scientific projects. The purpose of this study is to produce scientific tools for STEM education in biology subject.

LITERATURE REVIEW

Biology is the natural science that studies life and organism, including physiology, cell biology, molecular biology, plant tissue culture, natural resources and biodiversity. Thailand is rich in natural resources from agriculture e.g. crops, forestry, fishery and livestock. The export of fishery products produces a big amount of waste e.g. shrimp shells, crab shells and squid pen. Shrimp shell waste can be seen from frozen shrimp industry. Shrimp waste utilization is chitin and chitosan production.

Chitosan is a polysaccharide composed of randomly distributed β -(1-4)-linked D-glucosamine and N-acetyl-D-glucosamine. Chitosan has the chemical property to absorb dye efficiently (Lin, Chang, Chang, and Mammel, 2014). Chitosan is a good carrier to absorb dyes, heavy metal and proteins. Since chitosan has hydroxyl groups (-OH) and positive charges from amino groups (-NH₂) in the molecules that could absorb positive charges in metal ions, dyes and proteins (Grini and Giangiacomo, 2008; Minamisawa, Iwanami, Arai, and Okutani, 1999; Kawanura, Yoshida, Asai, and Tanibe, 1997; Chu, 2002; Liu, Haruki, Nishi, and Sakairi, 2002).

Objective of the Research

In this study, researcher aims to use chitosan beads to absorb potassium permanganate in order to demonstrate how to utilize waste from agriculture. That can be applied to use as the scientific tools for STEM education in a junior secondary school.

METHODOLOGY

Chitosan and Chitosan Bead Preparation

Shrimp chitosan was prepared by soaking shrimp shells in 4% sodium hydroxide solution for protein removal, 4% hydrochloric acid solution for decalcification and 40% sodium hydroxide solution for deacetylation reaction, respectively. Teacher should warn students to wear rubber gloves during doing chitosan preparation. Chitosan bead preparation was prepared by dropping 1.5% chitosan solution in acetic acid into 1 M NaOH and wash out alkaline solution by using distilled water for 2 times.



Figure 1. Shrimp shell waste (A) and Chitosan powder (B)

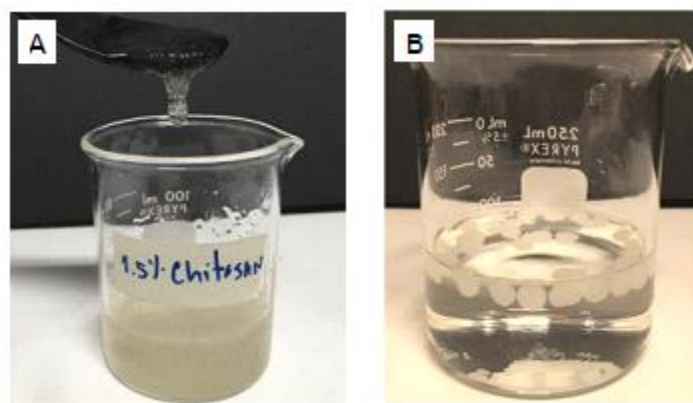


Figure 2. 1.5% chitosan solution (A) and chitosan beads (B)

Permanganate Absorption Activity

Ten chitosan beads were soaked into 50 ml of 0.025% potassium permanganate solution for 0-30 min. The colour of potassium permanganate solution was measured at wavelength 525 nm for every 5 min. by using a spectroscopy (Thermo). Chitosan beads were separated from the flask and put in the white plastic container for colour comparison in different time interval of absorption. Students were asked to plot a graph between absorption at 525 nm (y axis) and time (x axis).



Figure 3. Chitosan beads soaking in potassium permanganate solution

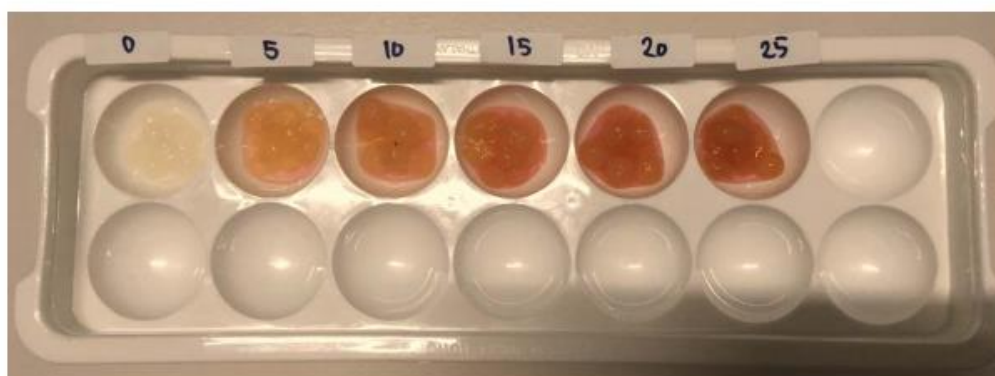


Figure 4. Chitosan beads at different soaking times

Absorption Percentage Calculation

Absorption percentage calculation was done as the following formula:

$$\text{Absorption Percentage (\%)} = \frac{(A_t - A_0)}{A_0} \times 100$$

A_t = absorption or amount of potassium permanganate at any time

A_0 = absorption or amount of potassium permanganate at the beginning

RESULTS AND DISCUSSION

From shrimp chitosan preparation activity, researcher found that students interested in chitosan preparation activity. Students learned how to prepared chitosan by simply using acid and base. From potassium permanganate absorption activity using chitosan beads, researcher measured color of potassium permanganate at wavelength 525 nm by using a spectroscopy (Thermo) From the results, we found that chitosan beads can absorbed potassium permanganate at 21.68 % when ten chitosan beads were soaked into 50 ml of 0.025% potassium permanganate solution for 30 min. However, the change of colour could not be differentiate by naked eyes. We would recommend teachers and students to leave chitosan beads in potassium permanganate solution longer (3 – 24 hr) in order to observe the colour by naked eyes.

Table 1. Absorption percentage of potassium permanganate at different soaking times

Time (min)	Absorption (A_{525})	KMnO ₄ Concentration ($\mu\text{g/ml}$)	Absorption Percentage (%)
0	0.587	25.28	0.00
5	0.520	22.34	11.62
10	0.501	21.51	14.92
15	0.488	20.94	17.17
20	0.475	20.37	19.43
25	0.470	20.15	20.30
30	0.462	19.80	21.68

CONCLUSION

Teachers can apply chitosan preparation and potassium permanganate absorption activities for teaching activities in Junior High School. The activities can promote student to learn how to use agricultural waste in daily life by using STEM education.

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COMMUNICATION ANXIETY FOR THAI STUDENTS WHO LEARN ENGLISH AS A SECOND LANGUAGE DURING THEIR LEARNING EXPERIENCE

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ABSTRACT

The purpose of this study was aimed to study the level of anxiety of the students who learned to communicate in English as their second language and to learn about the factors that affect their anxiety level when communicating in English during class. The samples were 200 students who attended English for communication course. This study used a survey method by rating scale questionnaire. Later on, the data was analyzed to obtain frequency, percentage, mean, standard deviation, and multiple linear regression.

The finding of this study showed that there is a moderate to high level of anxiety for the students who used English as a second language for communication purposes. Considering each aspect, public speaking shows the most anxious, followed by listening. The least anxious activity for the students is learning from non-human interactivity. In addition, male students and female students show no significant difference in the anxiety level. However, when it comes to speaking, some female students were significantly more anxious than male students. Most of the female students from this group were not confident, and they showed glimpse of it when they try to communicate. They worried about their use of grammars and kept thinking about it during their communication process. Lastly, the factors that affect their anxiety level includes background knowledge on English communication, their living conditions and whether the students are living with the family or not. The result showed that the students who lived alone had a significantly higher anxiety level.

Based on the finding and implication from this research, teachers, student, and parents can increase their awareness on this issue and reduce anxiety level for better English communication. There are ways to deal with foreign language anxiety and create an effective and enjoyable English learning experience.

Keyword – 1) ESL Anxiety 2) Learning English 3) Speaking Anxiety

INTRODUCTION

English language may not the most popular language in the world, however it is being used by around 400 million people throughout the world and it is the official language of 53 countries. English is one of the most important language for our generation. English language helps people to communicate with one another around the world. Despite the commonality of English and how it is being used by the people all around the world, a lot of Thai college student are having difficult time trying to learn it. It is mandatory for every Thai student to learn English in their high school and college education. The ability to communicate in English, whether be speaking, listening, writing or reading is crucial to the students and their academic development. Globalization has played a major role in our society today, therefore Thai native speakers needs to develop their English communication skill as we are falling behind compare to our neighbor countries, such as Singapore, Philippines and Malaysia.

Purpose of the study

The researcher wants to gather the fundamental information from the students and study them for any influence on their anxiety during their communication process in the classroom. The researcher wants to analyze this information and use it to develop a better learning experience for the students who learn English as a second language.

The following objectives of the study were set:

- To study the anxiety level of the ESL (English as a Second Language) students who learn English communication
- To compare and contrast the anxiety level of the student according to genders and how does gender affect their anxiety level during their communication process.
- To acquire and study any other factors that has an effect on the anxiety level of the students during their English communication learning process.

LITERATURE REVIEW

According to Oxford Dictionary, the word anxiety refers to “A feeling of worry, nervousness, or unease about something with an uncertain outcome”. Anxiety has tremendous effect on the English learning process for any non-English native speakers. Such behavior includes lack of confidence, lack of concentration, being moody, being sad, being nervous, sleep deprivation. Here are some of the definitions from academic scholars:

Ausubel, D. (1968: 245) mentioned that anxiety tends to cause a person to be lack of confidence in classroom situation.

Brown, H. Douglas (1994: 141-142), mentioned that in the Second language learning experience, anxiety is a big obstacle. The student would be constantly worrying about the unfamiliarity of the other language and distract them from the learning objectives. He categorize anxiety into two categories, 1) anxiety would help the student to achieve better result in their learning experience. It would encourage the student to study harder and concentrate on the learning process at hand. 2) anxiety would be an obstacle to the learning process, it can cause students to forget things, and be nervous, lack of confidence and decrease the person's ability to use other language.

Levitt (1967: 114-117) stated that whether anxiety would have an effect on anyone, it depends on the situation, it's stimulant and the persons themselves. Therefore, anxiety can cause you to perform better or worse on any particular task. A person can develop a way to respond to anxiety, however this response that a particular person has might not be the same with the other person who is also doing the same task. Moreover, the nature of the task and the person's awareness of the anxiety has direct effect on how the person deal with his/her anxiety. Levitt mentioned that there are two types of anxiety: situational anxiety and trait anxiety. Situational anxiety occurs to each person in a different situation. The level of anxiety is different from one another, this type of anxiety is short and intense. Trait anxiety happens in normal situation, the intensity is low but it is ongoing. The duration of this anxiety is really long, anxiety will become part of his/her personality trait.

Epstein (1972: 219-337) has concluded that there are three causes for anxiety: 1) anxiety from too much physical stimulus, 2) anxiety from inconsistency of thoughts, 3) anxiety which happens from the person incapability to response to the stimulus

Taylor (1953: 285-290) stated that anxiety can leads to dysfunctional behaviors on physical level (somatic symptoms) and mental level (cognitive symptoms).

Jantabutr (2530: 20-29) explained about the level of anxiety and categorize them into four levels, 1) mild anxiety, 2) moderate anxiety, 3) panic anxiety, and 4) severe anxiety. Mild anxiety will contribute to better performance in learning experience, moderate anxiety will cause the participant to focus on the subject and disregard on the environment, while panic anxiety and severe anxiety will greatly reduce the effectiveness in the learning experience.

Hypothesis

1. Among the ESL students who study English communication, there is a significant difference in anxiety level between genders (male and female).
2. There is at least one other factor that contribute to the ESL students' anxiety during the learning process.

METHODOLOGY

Participant: The samples were 200 students who attended English for communication course

The questionnaire is divided into two categories, the first part focus on the fundamental data of the participant such as gender, age, education institute, Grade point average on English course, family member, household information and etc. Second part focus on the anxiety which affect the student in their English communication learning process. The design of this questionnaire is in rating scale, which the participant can rate from one through five, with one being the lowest anxiety and five being the highest anxiety.

The process

- 1) study related documents and research on the anxiety and its effect on English learning process
- 2) design the research instruments according to the objectives
- 3) outline the conceptual framework according to the scope of the study
- 4) consult with the experts on this subject of study on the wording of the questionnaire, content validity and index of item objective congruence: IOC.
- 5) Take the questionnaire to other students who does not belong to the sample group to test out the effectiveness of the questionnaire.
- 6) carry out with the questionnaire, collecting the data and analyze for further investigation.

The data was being collected from the students enrolled on English communication course

Analysis and statistical used

- 1) The researcher checked on the completion on each questionnaire, incomplete questionnaire is not being used in this study.
- 2) The first part of the questionnaire about fundamental data of the participants is being analyze on their frequency and find the percentage for each topic.
- 3) The data regards the students' anxiety is being analyzed to find value information such as the means and standard deviation, according the research's objectives.
- 4) the results are being compare and contrast and analyze for their statistical figures and t-test
- 5) study the results to find other factor that contribute to the anxiety in English communication learning environment with multiple linear regression.

RESULTS

The majority of the participant are females, which is 65.5% of the total sample size, 46% of the sample size has their GPA higher than 3.00 during their high school education, 64.5% of the sample size has their GPA higher than 3.00, and 26.5% of the sample size are living by themselves.

The activities in the classroom is divided into six categories: speaking, listening, reading, writing, role playing activities and non-human classroom interaction. The scale rating is being one to five, five is being the most anxious and one being the lowest. The most anxious learning activity is speaking with mean of 3.76 (S.D. 0.62), while the lowest is non-human interaction with 3.02 (S.D. 0.54). The overall score from English communication classroom is 3.39 with S.D. of 0.44). The reason being the students feel that they need to use English later on to further their career development (4.18, S.D. 0.88).

	Score	S.D.	Result
Overall anxiety from using English	3.44	0.48	High
Anxiety from speaking	3.76	0.62	Very High
Anxiety from listening	3.52	0.55	High
Anxiety from reading	3.17	0.54	Medium
Anxiety from writing	3.17	0.64	Medium
Anxiety from role playing	3.12	0.55	Medium
Anxiety from non-human interaction	3.02	0.54	Medium

As we focus on the speaking sector due to it is the anxious part for the student, the most problematic one is worrying about their grammar during the speaking process (3.98, S.D. 0.76), Impromptu speaking rank as a second highest in their anxiety level with 3.92, S.D. 0.90. But they feel much better as they are having an English conversation with their mates (2.92, S.D. 0.98) as this is the one that rank the lowest on their anxiety level. The

runner-up section is the listening part, the students have the most problem with lecturer speaks long sentences consecutively (3.58, S.D. 0.89). The rest of the listening activity trail off with some distant from this one.

To compare the result between male and female on their anxiety level, the result shows that in overall there is not much difference in result for any learning activities except the speaking section. After the comparison between the genders, female students are more anxious than male students due to the lack of confidence and they worry about their grammar during a speaking process.

	Male		Female		t	P-values
	Score	S.D.	Score	S.D.		
Overall anxiety from using English	3.4	0.42	3.42	0.40	1.12	0.26
Anxiety from speaking	3.68	0.65	3.85	0.62	2.01*	0.05
Anxiety from listening	3.22	0.53	3.29	0.58	0.22	0.85
Anxiety from reading	3.19	0.51	3.17	0.53	0.55	0.51
Anxiety from writing	3.16	0.62	3.22	0.60	0.36	0.71
Anxiety from role playing	3.13	0.51	3.16	0.54	1.03	0.26
Anxiety from non-human interaction	3.03	0.62	3.07	0.62	1.08	0.70

Another interesting fact that the result has shown is that there are other factors that contribute to the anxiety level on the students. The result from analysis of the students' GPA, and the household member has shown statistically significant number that help us to predict the anxiety level of the students.

factor	B	Beta	S.E. b	t
GPA	-.118	-.154	.038	-3.131*
Living by himself/herself	-.155	-.170	.48	-3.187*
Living with the parents	-.103	-.114	.48	-2.147*

R=.226, R2 = .051, S.E. = .110, Constant = 3.716, Overall F = 7.105*

CONCLUSION

To conclude, the overall anxiety level during English communication learning process is considered to be moderate, which is normal in Second language learning experience. This reflects that the majority of the Thai ESL students does not feel too anxious during the learning environment, however they still do have anxiety, which can help them encourage the thrive to learn new language. Anxiety can act as a drive to help the student in a learning process. Anxiety awareness cause the person to be aware of their weakness and thrive them to develop themselves.

According to the data, the most anxious activity is the speaking part, which female students has more problem dealing anxiety than male students. Female student tends to worry about their grammar and lack of confidence when they have to speak to the classroom. Education background also play a role in this study, students with higher GPA tend to deal with anxiety better than the student with lower GPA. Their household member somehow contributes to their skill in dealing anxiety. They student might feel better when they have their parents support and thus building confidence within the student.

Recommendation

There should be more courses that focus on the speaking part of the language because speaking is the part where students are most anxious. Speaking a foreign language is not an easy task, one must try their best and try to get all help they can. As for the future work, the scope of the research should be expanded by studying the anxiety level and the cause of anxiety for high school and junior high school students. Moreover, it would be interesting to see how this group of students carry on with their English communication skill and how they cope with the anxiety, Further study on the same group of students in a couple of year time period.

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SELF-SERVICE TECHNOLOGY (SST) AND SERVICE PERSPECTIVES OF HOSPITALITY INDUSTRY IN THAILAND

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ABSTRACT

Abstract- This article aims to analyze the use of self-service technology (SST) and Thailand hospitality industries regarding the association between the SST adoption and service concept. The findings of this documentary research show that the SST adoption positively relates to consumer satisfaction in some service activities. However, there are some concerns of the SST use in terms of need fulfillment, emotion and service performance. Finally, a practical application of the SST in hospitality services is suggested.

Keywords: Self-service technology (SST), Service concept, Service industry

1. INTRODUCTION

Technology advances communication through the Internet. The Statista, the Internet's leading statistics database, reported that the number of internet users worldwide was 3.58 billion in 2017 [1]. Consumers nowadays can easily access the Internet via their smartphone anytime, anywhere. In Thailand, the number of smartphone users is over 24 million in 2017 [2]. The popularity of smartphone and its applications has changed the lifestyle of people living in Thailand dramatically along with the rest of the world.

Self-Service Technology (SST) can be defined as technology that allows customers to exchange data or service resources through intermediaries without having a direct interaction with a service provider [3]. The SST is widely used in tourism and hospitality businesses (e.g., hotel and restaurant reservation and luggage check in via automated machine at the airport) [4]. The SST adoption allows the businesses to provide services 24 hours a day, 365 days a year. This enables a service provider to meet consumers' need at their convenience. Service that exceeds expectation leads to customer satisfaction and creates valuable and memorable experiences [5]. However, the biggest challenge is that how service providers can achieve this desired outcome and be profitable. In this research, the author reviewed the relevant literature published in both international and Thai journals and a current situation of the SST adoption in Thai hospitality services and illustrated its challenges regarding service concept.

2. SERVICE CONCEPT

According to Walker [5], the philosophy of service is to create a sense of inner depth, inspiring and happiness. Value creation emerging from the depth feelings of consumers receiving services that exceeded their expectation [5]. Perceived value of services not only makes a good impression but also creates more repeat customers [6].

Parasuraman, Zeithaml and Berry [7] postulated the quality of service in five dimensions as following:

- Reliability is defined as the ability to fulfill what they promised to consumers accurately;
- Assurance is identified as competency and courtesy of a service provider to convey trust;
- Tangibility is referred to the physical aspect of service offered to consumers;
- Empathy is the ability of a service provider to understand and give attention to an individual consumer;
- Responsiveness is the attention and prompt service provision to consumers' need.

The Parasuraman, Zeithaml and Berry's [7] model of service quality assures that provided service matches the recipients' need and expectation. Service that meets the need and expectation leads to consumer satisfaction and retention, otherwise dissatisfaction will be taken place.

3. THE SST ADOPTION IN THAILAND

There are two types of services available in Thailand. The first one is services provided by people (human-based services) and another is services provided via electronic devices in which consumers service themselves to serve their need (self-services) [8]. Human-based service is considered as individualized service because a service provider can recognize an individual consumer's need and be able to respond to the need promptly and accurately. Thus, a personal interaction is the main essence for human-based services [9]. Self-service, on the other hand, is standardized to serve all consumers. Because of that, the cost of self-services providing through the self-service technology (SST) is lower than that of the services provided by persons (human-based services) [8].

Regarding the popularity of smartphone applications, hospitality businesses in Thailand have adopted the SST to provide a wide range of services such as hotel/restaurant/plane ticket reservation, food delivery order, self-check-in at the airport. The SST acts as a mediator to help service businesses providing services to their consumers faster, more convenient, and less time-consuming [10]. Studies showed that using the SST benefits the service providers. For example, Ohk, Park and Hong [11] and Wattanasat [12] found that customers were satisfied with restaurant services that offered pre-booking via a smartphone application. Similarly, Beatson, Coote and Rudd [13] showed that the SST can lead to consumer satisfaction and loyalty in hospitality businesses. Therefore, the SST use is recommended in hospitality service providers.

4. CHALLENGES OF USING THE SST IN HOSPITALITY SERVICES

Adopting the SST in service businesses may cause a service gap because of the absence of a face-to-face interaction between a service provider and receivers [14]. Using the SST as an intermediary to serve customers without any direct interaction reduces the ability of service providers to promptly respond to additional questions or requests during service participating. In this case, the service providers are not aware of the true need of customers in a timely manner. This raises some concerns about the SST service quality regarding reliability and responsiveness to fulfill consumers' need.

Added to that, research showed that ease of use is one of the key factors affecting consumers choose to obtain service through the SST [10][15]. Availability and understanding of technology may prevent customers from using the SST [10]. Hence, service providers have to assure that the SST application is easy to understand and use regarding their business nature. The quality of SST services ensures consumer satisfaction.

Performance of the SST is considered one of biggest challenges for service providers. Research has shown that human-based service is very important in the hospitality businesses (e.g., hotels and restaurants) because receiving service from a service-minded provider creates consumers' impression and appreciation [16]. The literature also suggests that hospitality services must be provided by trained staffs to deliver value and experience with care, reliability and accuracy to customers [16][17]. A human interaction is likely to impress customers more deeply than that of the technology interaction in service performance because the nature of human needs care and support from others [18]. Accordingly, it is still questionable whether the SST can foster positively emotional experiences.

In sum, the literature has shown that the SST can satisfy hospitality customers in some activities (e.g., pre-booking and check in/out). However, service providers need to overcome some issues of the SST use discussed above to serve consumers' need effectively and efficiently. Interruption and discontinuity of services caused by either technology or human errors can lead to customer dissatisfaction [19].

5. CONCLUSION

The adoption of the SST in service businesses suits lifestyle of consumers living in the digital world. Through the SST use, consumers can receive hospitality services without making any direct contact with a service provider; and thus is convenient and less time-consuming. Importantly, creating positive customer experiences is an essential part of services in hospitality industries. Service providers must be aware of customers' need and expectation in order to create desired service experiences. Accordingly, it is crucial to identify a suitable way to employ the SST and human-based services to deliver memorable service experiences to consumers in order to achieve a desired outcome. An example of a combination of the SST and human-based services in hospitality businesses (e.g., hotel businesses) is that the SST can be applied to serve specific activities such as pre-booking, checking in /out and making a service request via a smartphone application or

tablet. However, personal interactions (e.g., welcome and reception by well-trained staffs) are still essential to provide warm services that meet consumers' need physically and mentally. This combination of the SST and the human-based services will optimize consumers' perception of service quality, value creation and pleasant experiences.

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REVISTING CAUSALITY BETWEEN FINANCIAL AND ECONOMIC GROWTH

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ABSTRACT

This paper sought to examine the long-run relationship between financial development and economic growth, employing the panel data approach to utilize data in the most efficient manner, due to the added cross sectional dimension panels generally add power to cointegration tests. IPS (2003) panel unit root test, Padroni (1999, 2004) residual cointegration tests, and Johansen Fisher panel co-integration techniques were used to test in panel among the variables. In addition, to panel co-integration, generalized method of moments (GMM) technique developed by Arellano and Bover (1995), and Blundell and Bond (1998) was also used. The study focuses on a panel dataset of 40 countries (11 OECD, 16 Africa and 13 Asia) over the period of 1980-2010. The main findings of the results reveal that there exists a single equilibrium relation between financial deepening and growth. Although evidence in support of “demand-following hypothesis” subsists but the overall results of this study support the “supply-leading hypothesis

Keyword Financial Development; Economic Growth; Generalized Method of Moments

VALUE ADDED STATEMENT OF CORPORATE SOCIAL REPORTING

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ABSTRACT

Financial Analysts consider profit the most important measure of business performance. Profit may be expressed in terms of money value or it may be measured as sales margin percentage or it may be calculated as return of investment. These, in any form, are used as basis for measure of business performance. In recent years, considerable interest has been shown in the use of value added as an alternative or additional approach to measure the operational efficiency and profitability of a business. A lot of discussion has been going on about reporting the performance of an organization in terms of value added rather than conventional profit or loss. The information disclosed by the Statement of Value Added, based on Value Added Accounting and Reporting, is considered to be much more useful than that disclosed by the conventional profit and loss account in providing a realistic basis for measuring the economic performance of an organization. The concept has received great attention in accounting practices with the emergence of large corporations having significant bearing on the society and finally on the economy for multi-dimensional impact over and above the owners. Value added system is a very useful measure of judging the performance of an enterprise for managerial decision-making and for inter-firm comparison. But there are some controversial and problematic issues in preparing such statement. Moreover, value added was characterized by calculative diversity. The diversities in calculation of value added is compounded by varied style of formats used for the preparation of such statement, which in turn variety of captions, variations regarding the coverage of the period, mode of presentation of such statement. In the absence of uniform principles, policies and practices as regards to the preparation and presentation, such statements are subject to various anomalies and fallacies. The lack of uniformity in the preparation of such statement distorts the different information and ratios and also prevent proper inter-period as well as inter-firm comparison. Ultimately, the problematic effect of diversity in calculation call for standardization. But, there is no requirement for standardization and incorporation of such statement in the published accounts of the companies and format regarding such statement in India and other different countries excepting U.K. and some European countries. So an amendment should be made in the Companies Act of respective countries to make it obligatory to include this statement in the annual report and also a format should also be prescribed in this regard to ensure similarity in presentation.

AN INNOVATION APPROACH FOR IMPROVING PASSENGER VESSELS SAFETY LEVEL: AN OVERLOAD PROBLEM

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ABSTRACT

This study describes an innovation approach for improving the passenger ships safety level in the scope of the overload problem. There are a number of passenger death cases due to the overloaded passenger ship problem. For example, the overloaded ferry capsized was sinking after hitting rocks at Rajang River, Sawarak in May 28, 2013. The accident occurred when the owner of the boat, Expres Bakun Mas Boat carried 204 passengers instead of 74 passengers as per allowed (New Straits Times, 2013). As a consequence, 21 people were missing and death as a result of trapped inside the vessel. The latest passenger ship collision occurred due to the overloaded problem is at Pulau Lan, Bangkok in November 4, 2013. The boat carried more than 200 passengers on board and this is against the standard boat capacity. As a result, 6 persons were death including the tourist from China and Russia. In both cases, the ship owner aims to obtain higher profit margin by carrying a high number of passengers in one trip without taking care the passenger safety matter. Rules and regulations concerning the overloaded passenger ships have been developed by the international authority since 1906. However, due to the lack of enforcement by the local authorities, ship operators' awareness and non-compliance to the regulation, the total number of death due to this problem is slightly increased from time to time. Thus, the purpose of this study is to design an innovation overloaded sensor that can be used to detect and reduce the overload problem of passenger ships in Malaysia. Such an innovation technology incorporates both the elevator and air freight concepts using the Mass Air Function (MAF) sensor. The sensor will be installed at the entry point on the passenger ship and the minimum and maximum weights of passenger ships will be detected by the MAF when passengers enter the ship. If the minimum of capacity are detected, the first alarm warning will be appeared by a green light at the system. The alarm sound will active when the MAF sensor detects the overload burden at the maximum capacity. The sound alarm will only can stop if the load burden are removing. The scope of study will cover the two popular areas named Langkawi, Kedah and Belaga, Sarawak. These two areas are chosen due to the high demand of passenger ships as the mode of transport for transporting passengers from point A to point B. The outcome of this study is to reduce the number of passenger ship collisions due to the overloaded problem. By reducing the number of collisions of passenger ships, the total number of passenger deaths due to this problem will automatically be reduced.

Keywords: Passenger Ship; Overloaded Problem; Mass Air Function; Safety Enhancement; Collisions.

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RELIGIOUS COEXISTENCE BETWEEN MUSLIMS AND NORMANS IN SICILY

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ABSTRACT

Religious and cultural coexistence between Muslims and Normans in Sicily (1052 – 1194) At the beginning of the third century AH, Muslims conquered the island of Sicily, an Italian city located on the Mediterranean Sea, Norman tried to restore the city, by all means, until it fell into their hands in 444 AH / 1052 AD Many Muslims came out to the various Islamic countries and remained there for a number of other scientists, writers, poets and the general public. Muslims had great feats in various Italian cities such as of Palermo Sicily, Where the Normans impressed by what they saw in Sicily of progress in the Islamic civilization. Muslims have built huge buildings, mosques, and excelled in the means of trade and land reclamation and cultivation, And introduced multiple types of plants and animals. Normans were also impressed decoration of mosques, and other aspects of the progress of civilization of Muslims in public life. The Normans coexistence with Muslims, and influenced by Islamic civilization, rich in various arts, and excerpted of them. Sicily's rulers are affected by this new civilization, and were subjected to this civilization. King Roger I was tolerant, rapprochement with the philosophers and doctors Muslim. His Royal Court was eastern royal court. King Roger II was wearing clothes influenced by many Muslim habits, he was rapprochement with scholars and writers Muslims. Finally, Through the Islamic presence in Sicily, Normans, the people and Government, tried to take advantage of the Islamic civilization in various ways, was the most important religious tolerance and cultural coexistence. The working paper submitted for the conference will show it. Dr. Mona H. Al-Gahtani Assistant Professor of Islamic History Faculty of Arts – Princess Nora University Riyadh – K.S.A

CHEMICAL COMPOSITION AND CERTAIN COMPONENTS OF SEA SALT FROM SAMUT SONGKHRAM PROVINCE, THAILAND

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ABSTRACT

In the natural sea salts from Samut Songkhram contains substances and minerals that can be utilized in medical, cosmetic and preservation. While in the sea salt consumption it may have been compromised by contamination from heavy metals such as arsenic, cadmium(Cd), soluble calcium(Ca), chromium(Cr), copper(Cu), iron(Fe), Lead(Pb), soluble manganese(Mn), potassium(K), sulphate, sodium(Na), choride(Cl) by TIS 2085-2544 (2001) assay and iodine(I) by Iodometric titration assay contained in the salt the contamination of the sea area. The College of Allied Health Sciences, Suan Sunandha Rajaphat Universcity to study the properties of salt in the area of Samut Songkhram province. The objective to study the composition of sea salt. The study area is representative of sea salt from 3 areas, take sample 2 times per each area in March and April, 2017. The results of study was not deteched cadmium(Cd), iron(Fe) and arsenic, copper(Cu), Lead(Pb), sodium(Na), choride(Cl), iodine(I) of trace element values were lower than Thai community product standard.

Keyword : sea salt, Samut Songkhram, TIS 2085-2544 (2001) assay, Iodometric titration assay

INTRODUCTION

Samut Songkhram Province is located in central region of Thailand. Which is abundant from the fertile soil. It is also an important source of salt in Thailand. It is located in Amphoe Bang Kaeo and Tambon Lat Yai. The area is clay and saline soil. Due to the coast. It is easy to make salt in the area of about 5,000 rai. In the present, the salt industry has the capital to help increase the productivity. However, the salt price will fall. Accompanying the new generation have not inherited the business of salt production so it is not very developed as it should.

The sea salt is a product of sea water that contains many substances and minerals. It can be used in medical, cooking and preserve. The environmental problems, waste disposal may affect the contaminants of heavy metals in the salt. According to a survey conducted by Samut Songkhram, the community of salt producers in Samut Songkhram Province found that there were three groups of producers, namely soap, salt, scrub, powder, body lotion, etc.

The purpose of the study was to analyze the chemical properties and some components of salt from Samut Songkhram province. To identify contaminate the substance. It also helps to know the other values and

important minerals such as calcium, magnesium, potassium sulfate, and manganese and iodine, which will be used as a point of presentation on the special properties of salt from Samut Songkhram.

THE OBJECTIVE OF STUDY

Research Analysis of chemical properties and some components of salt from Samut Songkhram province. The purpose is as follows; 1) To analyze the chemical properties and some components of salt from Samut Songkhram province, 2) To compare the chemical properties and some components of salt from Samut Songkhram province from 3 sources of salt.

MATERIALS AND METHODS

Salt samples from three sources were collected in Samut Songkhram province, collected from 2 periods; 1) March and 2) April. The test samples and test methods are analyzed by the following test items: Calcium, Magnesium, Potassium, Lead, Arsenic, Chromium, Iron, Cadmium, Copper, Manganese, Sodium Chloride, Sulphate Iodine and moisture.

Sea salt was collected to test for various minerals and metal. The method is as shown in Table 1.

Table 1: Test items and methods used to test sea salt samples.

Test Item	Method
Arsenic	TIS 2085-2544 (2001)
Cadmium	TIS 2085-2544 (2001)
Soluble Calcium	TIS 2085-2544 (2001)
Chromium	TIS 2085-2544 (2001)
Copper	TIS 2085-2544 (2001)
Iron	TIS 2085-2544 (2001)
Lead	TIS 2085-2544 (2001)
Dissolved Magnesium	TIS 2085-2544 (2001)
Manganese	TIS 2085-2544 (2001)
Potassium	TIS 2085-2544 (2001)
Sulfate	TIS 2085-2544 (2001)
Moisture	TIS 2085-2544 (2001)
Sodium Chloride	TIS 2085-2544 (2001)
Iodometric	Iodometric titration

SAMPLE SOURCE

The researchers sampled two sampling sites in Samut Songkhram province in March. In April, 2017, the data were collected in three groups: 1) Community Enterprise Salt Herbal Group Lad-Yai Moo 4, 2) Bang Kaeo Salt Community Housewife Enterprise, 3) The Wisdom of Local Wisdom The Niracha School

DATA ANALYSIS AND INTERPRETATION

Data analysis is quantitative and qualitative data processing. Follow the steps; 1) Quantitative Data Analysis The results of the evaluation of satisfaction of salt and health products from Samut Songkhram province were developed. Data were analyzed by mean, 2) Qualitative data analysis. From the document, qualitative data obtained from questionnaire and observation form. To identifying and summarizing key issues. Content analysis is used to isolate the issues and bring them to the core of the framework of the literature (Convergence and Divergence) (Miles and Huberman, 1994).

RESULTS

Part 1: Analysis of Chemical Properties and Some Components of Salt from Samut Songkhram Province

From the entrepreneurial group is the sea salt from the Community Enterprise Salt Herbal Group Lad-Yai Moo 4, Bang Kaeo Salt Community Housewife Enterprise and The Wisdom of Local Wisdom The Niracha School was tested by 14 tests. The samples were collected twice: March 1, 2017 and April.

Table 2: The number of salt test items from Community Enterprise Salt Herbal Group Lad-Yai Moo 4

Test list	March, 2017	April, 2017	Average	Unit	LOD*
Arsenic	0	0.0050	0.0025	mg/kg	0.0030
Cadmium	0	0	0	mg/kg	0.010
Soluble Calcium	0.21	0.16	0.185	%(w/w)	0.01
Chromium	0	0	0	mg/kg	0.030
Copper	0	0	0	mg/kg	0.010
Iron	0	0	0	mg/kg	0.030
Lead	0.076	0	0.038	mg/kg	0.030
Dissolved Magnesium	1.26	1.19	1.225	%(w/w)	0.01
Manganese	0.262	2.110	1.186	mg/kg	-
Potassium	2,242	2,175	2,208.5	mg/kg	-
Sulfate	0.51	0.44	0.48	%(w/w)	-
Moisture	9.1	7.7	8.5	%	-
Sodium Chloride	87.3	91.6	89.5	%(w/w)	-
Iodometric	1.90	2.27	1.59	mg/kg dry basis	1.0

* LOD = Limit of Detection

From Table 2 that was found that salt from the Community Enterprise Salt Herbal Group Lad-Yai Moo 4 found that 14 of the test items did not find the four minerals: cadmium, chromium, copper and iron. The most common minerals are potassium, the average is 2,208.5 mg / kg. On monthly basis, arsenic was not found in samples collected in March but found in April 2017. Lead found in samples collected in March but not found in April, 2017, while other tests were found and / or were not found in the same month. Comparing March to April, the amount of arsenic manganese sodium chloride increased in April but other substances is lower.

Table 3: The number of salt test items from Bang Kaeo Salt Community Housewife Enterprise

Test list	March, 2017	April, 2017	Average	Unit	LOD*
Arsenic	0.039	0.048	0.044	mg/kg	0.0030
Cadmium	0	0	0	mg/kg	0.010
Soluble Calcium	0.20	0.44	0.32	%(w/w)	0.01
Chromium	0	0	0	mg/kg	0.030
Copper	0	0	0	mg/kg	0.010
Iron	0	0	0	mg/kg	0.030
Lead	0.055	0	0.028	mg/kg	0.030
Dissolved Magnesium	1.36	0.97	1.17	%(w/w)	0.01
Manganese	1.07	0.998	1.034	mg/kg	-
Potassium	2,005	1,492	1,749	mg/kg	-
Sulfate	0.52	0.45	0.49	%(w/w)	-
Moisture	10.7	5.0	7.9	%	-
Sodium Chloride	90.9	93.0	92.0	%(w/w)	-
Iodometric	1.48	1.48	1.48	mg/kg dry basis	1.0

* LOD = Limit of Detection

Table 3 shows that salt Kaeo Salt Community Housewife Enterprise showed that there were not found four minerals in 14 samples, namely cadmium, chromium, copper and iron. The most common minerals were potassium, an average of 1,749 mg / kg. On monthly basis, lead was found in samples collected in March but not found in April, 2017, while other tests were found and / or were not found for the same two months. Comparing March and April, the arsenic and sodium chloride content increased in April. While other substances. The rest is lower. Except iodine with the same amount.

Table 4: The number of salt test items from The Wisdom of Local Wisdom The Niracha School

Test list	March, 2017	April, 2017	Average	Unit	LOD*
Arsenic	0.0059	0	0.0030	mg/kg	0.0030
Cadmium	0	0	0	mg/kg	0.010
Soluble Calcium	0.09	0.16	0.125	%(w/w)	0.01
Chromium	0	0	0	mg/kg	0.030
Copper	0	0	0	mg/kg	0.010
Iron	0	0	0	mg/kg	0.030
Lead	0	0	0	mg/kg	0.030
Dissolved Magnesium	0.82	0.86	0.84	%(w/w)	0.01
Manganese	2.40	2.21	2.31	mg/kg	-
Potassium	1,397	1,076	1,237	mg/kg	-
Sulfate	0.31	0.29	0.3	%(w/w)	-
Moisture	10.2	3.4	6.8	%	-
Sodium Chloride	91.2	91.6	91.4	%(w/w)	-
Iodometric	2.01	1.37	1.69	mg/kg dry basis	1.0

* LOD = Limit of Detection

Table 4 shows the salt content of the local wisdom. There are no minerals found in the fourteen categories, including cadmium, chromium, copper and iron. The most common minerals are potassium, an average of 1,237 mg./ kg. On monthly basis, arsenic was found in samples collected in March but not found in April, 2017, while other tests were found and / or were not found in the same two months. Comparing March to April, the amount of soluble calcium dissolved Magnesium and sodium chloride in April increased. While other substances. The rest is lower

Part 2: Comparison of chemical properties and some components of salt from Samut Songkhram province from 3 sources of salt.

Comparing 14 test items of salt from 3 sources of salt; Community Enterprise Salt Herbal Group Lad-Yai Moo 4, Bang Kaeo Salt Community Housewife Enterprise and The Wisdom of Local Wisdom The Niracha School is the average of the number of test items.

Table 5: Compared the sea sale from 3 sources in March, 2017

Test List	Source			Average	Unit	LOD
	1	2	3			
Arsenic	0	0.0039	0.0059	0.0033	mg/kg	0.0030
Cadmium	0	0	0	0	mg/kg	0.010
Soluble Calcium	0.21	0.20	0.09	9.17	%(w/w)	0.01
Chromium	0	0	0	0	mg/kg	0.030
Copper	0	0	0	0	mg/kg	0.010
Iron	0	0	0	0	mg/kg	0.030
Lead	0.076	0.055	0	0.044	mg/kg	0.030
Dissolved Magnesium	1.26	1.36	0.82	1.15	%(w/w)	0.01
Manganese	0.0262	1.07	2.40	1.24	mg/kg	-
Potassium	2,242	2,005	1,397	1.881	mg/kg	-
Sulfate	0.51	0.52	0.31	0.45	%(w/w)	-
Moisture	9.1	10.7	10.2	10.0	%	-
Sodium Chloride	87.3	90.9	91.2	89.8	%(w/w)	-
Iodometric	1.90	1.48	2.01	1.80	mg/kg dry basis	1.0

* LOD = Limit of Detection

Source 1 = Community Enterprise Salt Herbal Group Lad-Yai Moo 4

Source 2 = Bang Kaeo Salt Community Housewife Enterprise

Source 3 = The Wisdom of Local Wisdom The Niracha School

Table 5 shows the 14 salt samples that collected in March, 2017 from 3 sources, not found four minerals: cadmium, chromium, copper and iron. Potassium of all sources is the highest. Minerals are similar. Except for the lead found in sources 1 and 2, but not found in source 3.

Table 6: Compared the sea sale from 3 sources in May, 2017

Test List	Source			Average	Unit	LOD
	1	2	3			
Arsenic	0.005	0.0048	0	0.0033	mg/kg	0.0030
Cadmium	0	0	0	0	mg/kg	0.010
Soluble Calcium	0.16	0.44	0.36	0.25	%(w/w)	0.01
Chromium	0	0	0	0	mg/kg	0.030
Copper	0	0	0	0	mg/kg	0.010
Iron	0	0	0	0	mg/kg	0.010
Lead	0	0	0	0	mg/kg	0.030
Dissolved Magnesium	1.19	0.97	0.86	1.01	%(w/w)	0.01
Manganese	2.11	0.998	2.23	1.77	mg/kg	-
Potassium	2,175	1,492	1,076	1,581	mg/kg	-
Sulfate	0.44	0.45	0.29	0.39	%(w/w)	-
Moisture	7.7	5.0	3.4	5.4	%	-
Sodium Chloride	91.6	93.0	93.6	92.1	%(w/w)	-
Iodometric	1.27	1.48	1.37	1.37	mg/kg dry basis	1.0

* LOD = Limit of Detection

Source 1 = Community Enterprise Salt Herbal Group Lad-Yai Moo 4

Source 2 = Bang Kaeo Salt Community Housewife Enterprise

Source 3 = The Wisdom of Local Wisdom The Niracha School

Table 6 shows that of the 14 salt samples collected in March 2017 from the three sources, no four minerals were found: cadmium, chromium, copper, iron and lead. Potassium of all sources is the highest. Minerals are similar. Except for arsenic found in sources 1 and 2 but not found in source 3.

Table 7: Compared the sea sale with Standard of Salt

Test list	Standard of Salt				Minimum – Maximum in sample	Unit
	TISI	TIS	Codex	MOPH		
Arsenic	≤ 0.5	≤ 0.5	≤ 0.5	-	0 – 0.059	mg/kg
Cadmium	-	-	-	-	0	mg/kg
Soluble Calcium	-	-	-	-	0.09 – 0.44	%(w/w)
Chromium	-	-	-	-	0	mg/kg
Copper	≤ 2.0	≤ 2.0	≤ 2.0	-	0	mg/kg
Iron	-	-	-	-	0	mg/kg
Lead	≤ 2.0	≤ 2.0	≤ 2.0	-	0 – 0.076	mg/kg
Dissolved Magnesium	-	-	-	-	0.82 – 1.36	%(w/w)
Manganese	-	-	-	-	0.262 – 2.21	mg/kg
Potassium	-	-	-	-	1,076 - 2242	mg/kg
Sulfate	-	-	-	-	0.29 – 0.51	%(w/w)
Moisture	fine ≤ 6.0 tablets ≤ 7.0	fine ≤ 6.0 tablets ≤ 7.0		-	3.4 – 10.7	%
Sodium Chloride	≥ 80	fine ≥ 94.0 tablets ≤ 93.0		-	87.3 – 93.0	%(w/w)
Iodometric	≥ 30	≥ 30	-	20 - 40	1.27 - 2.01	mg/kg dry basis

TCPS = THAI COMMUNITY PRODUCT STANDARD Sea Salt TCPS 11230/2549

TIS = Thai Industrial Standards Institute EDIBLE COMMON SALT TIS 2085-2544

Codex = Codex standard for grade salt CX STAN 1050-1985, Rve. 1-1997Amend.1999, Aminde.2-2001, Amend.3-2006

MOPH = Ministry of Public Health EDIBLE COMMON SALT 2011

From Table 5 and 6, all samples were analyzed without cadmium, copper, chromium, and arsenic were found in 4 samples while lead were found in two samples. Soluble calcium, dissolves magnesium, manganese, potassium, sulfate, moisture, sodium chloride, and iodine were found in every sample.

Table 7 shows that arsenic, copper, lead, moisture, sodium chloride, and iodine were not higher than the standard values for each type of standard, namely, THAI COMMUNITY PRODUCT STANDARD Sea Salt TCPS 11230/2549, Thai Industrial Standards Institute EDIBLE COMMON SALT TIS 2085-2544, Codex standard for grade salt CX STAN 1050-1985, Rve. 1-1997Amend.1999, Aminde.2-2001, Amend.3-2006 and Ministry of Public Health EDIBLE COMMON SALT 2011.

CONCLUSION

Samut Songkhram Salt samples were not found in Cadmium, Chromium, Copper and iron. Arsenic was found in 4 samples while the lead was found in 2 samples. Dissolves magnesium, manganese, potassium, sulfate, moisture, sodium chloride, and iodine found in every sample

Comparing the test items between salt and various standards which found that arsenic, copper, lead, moisture, sodium chloride, and iodine did not exceed the standards of each type of standard, namely, THAI COMMUNITY PRODUCT STANDARD Sea Salt TCPS 11230/2549, Thai Industrial Standards Institute EDIBLE COMMON SALT TIS 2085-2544, Codex standard for grade salt CX STAN 1050-1985, Rve. 1-1997Amend.1999, Aminde.2-2001, Amend.3-2006 and Ministry of Public Health EDIBLE COMMON SALT 2011.

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DEVELOPMENT OF ALGINATE MICROSPHERES CONTAINING *MICHELIA ALBA* FLOWER ESSENTIAL OIL USING FOR PERFUME BODY GEL.

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ABSTRACT

In general, natural volatile oil can be used in a short period as it is quickly volatile. To suppress its volatility, it is needed to be modified into the form of sustained release product. *Michelia Alba* flower essential oil, chosen as volatile oil, was encapsulated by alginate using ionic gelation mechanism to be used as perfume body gel for a longer period. The *Michelia Alba* flower essential oil bead were prepared by ionic gelation between alginate and calcium ions. The prepared emulsion was added dropwise into calcium chloride solution. The beads were collected and left dry at room temperature. The beads with *Michelia Alba* flower essential oil prepared at any conditions were spherical particles with an acceptable appearance. The stability study of the beads with *Michelia Alba* flower essential oil at 25 °C for 7 weeks revealed that the *Michelia Alba* oil still remained in the beads. It was assumed that these beads could be used as insect propellant body gel for longer period.

Keyword: *Michelia Alba*, microbead, encapsulation, sodium alginate, calcium chloride

INTRODUCTION

The present invention relates to Solid fragranced preparations in the form of microbeads or microspheres. These preparations allow the release of a volatile, or even highly volatile, aromatic raw material in a controlled manner and over a long period (persistence), and can be used even in an aggressive medium, and thus with many common cosmetic carriers or in household products such as body lotion.

Michelia alba, belongs to the family of Magnoliaceae. This higher plant, which is a native to tropical and subtropical Southeast Asia, is often cultivated by Chinese, Malaysia and Thailand for its fragrant and ivory-coloured flowers. The flowers are formed in clusters, star-like shape and have a pleasant and sweet floral scent. *Michelia* (cempaka) species is commonly known to produce high value essential oil. The popularity of the fragrance has resulted with many species of *Michelia* being grown all over the world. It was reported that the essential oil of *Michelia* has been used as a key topnote in Joy and J'adore, which are among the world's most expensive perfumes (Anon. 2000).

As Ghosh (2006) mentions, the terms "product" or "a component of a product" are insufficient to define microencapsulation, since it could only be described as a process. It could be defined as a process in which, small solid particles, liquid components or gaseous materials such as bubbles are coated by or entrapped within another inert shell material which isolates and protects the core material from environmental factors (Zhu et al., 2012; Kuang, Oliveira, & Crean, 2010; Ghosh, 2006; Desai & Park, 2005). The first applications of

microencapsulation were used in the paper industry where dyes were capsulated for copying purposes (Ghosh, 2006). It was no later than that microencapsulation was used in pharmaceutical production. However, only for the last couple decades, the applications of microencapsulation are employed in food and agricultural industries widely (Ghosh, 2006). In the literature, there are different expressions to define both the capsulated material and the material which is used to form the capsule (Zhu et al., 2012; Ghosh, 2006; McClements, 2012). The entrapped material is called active component, core material, active agent, intrinsic part, internal phase, payload or the nucleus (Kroschwitz & Seidel, 2005; McClements, 2012; Zhu et al., 2012).

Different terms used for the material in which the core material is entrapped are coating material, shell material, wall material, carrier, encapsulant, membrane or the extrinsic part (Ghosh, 2006; Kroschwitz & Seidel, 2005; Zhu et al., 2012). The matrix in which the core material is enclosed is also responsible from the release mechanism of the active component (Kuang, Oliveira, & Crean, 2010). Microencapsulation is a very advantageous technique for food processing, especially for the encapsulation of bioactive and fragrances (Zhu et al., 2012). The main advantages microencapsulation are protecting the susceptible and unstable materials from environmental factors, enhancing the processibility of them, controlling the release mechanism of the core materials by providing targeted and timed release, making it easier to handle the active compound by modifying the physical characteristics of it, providing a desired dilution or separating components from each other within a mixture (Kuang, Oliveira, & Crean, 2010; Ghosh, 2006; Desai & Park, 2005).

Microspheres are small spherical particles, with diameters 1 μm to 1000 μm . They are spherical free flowing particles consisting of proteins or synthetic polymers which are biodegradable in nature. There are two types of microspheres; microcapsules and micromatrices, which are described as, Microcapsules are those in which entrapped substance is distinctly surrounded by distinct capsule wall, and micromatrices in which entrapped substance is dispersed throughout the matrix. Microspheres are sometimes referred to as microparticles. Microspheres can be manufactured from various natural and synthetic materials. Microsphere play an important role to improve bioavailability of conventional drugs and minimizing side effects. Ideal characteristics of microspheres: 1) The ability to incorporate reasonably high concentrations of the drug. 2) Stability of the preparation after synthesis with a clinically acceptable shelf life. 3) Controlled particle size and dispersability in aqueous vehicles for injection. 4) Release of active reagent with a good control over a wide time scale. 5) Biocompatibility with a controllable biodegradability. 6) Susceptibility to chemical modification.

The microspheres containing *Michelia Alba* flower essential oil helps to improve the appearance of aromatherapy products. Currently, the use of essential oils in the form of spa, such as inhalation, oil massage, etc.

THE OBJECTIVE OF STUDY

Research development of alginate microspheres containing *Michelia Alba* flower essential oil using for perfume body gel. The objectives can be achieved by combining the volatile aromatic raw material with one or more meltable cosmetic excipients, and by a presentation in the form of stable solid microbeads of high persistence.

MATERIALS AND METHODS

In this study, sodium-alginate (medium viscosity) purchased from Sigma was used for a matrix preparation. Calcium chloride dehydrate was purchased from Analytika (Czech Republic) Follin-Ciocalteu, Na-carbonate and Na-citrate

Plant materials Fresh samples of *M. alba* flowers were collected from Pak Khlong Market Flower Market, Thailand. The flower samples were then cut separately into small pieces and weighed prior to extraction.

PLANT AND MATERIALS

Fresh samples of *M. alba* flowers were collected from Pak Khlong Market Flower Market, Thailand. The flower samples were then cut separately into small pieces and weighed prior to extraction.

EXTRACTION *M. ALBA* OIL BY STEAM DISTILLATION

The basic steam distillation set was connected and 1.0 kg of fresh *M. alba* flowers was extracted with 2,000 ml distilled water for six hours. The final extract was cooled and centrifuged to separate the fragrant oil; then the oil was kept for the analysis of its chemical composition.

MOCROSPHERES OF *M. ALBA* ESSENCIAL OIL

Microspheres of oil was conducted using emulsion extrusion technique. Where, sodium alginate was dissolved in distilled water to produce alginate solutions with concentration of 0.5, 1, 2, 4 or 8 w/v%, the solutions were left standing for 24 h to disengage bubble before use. Afterwards, sodium alginate solution (30 g) and *M. alba* essential oil (10 g) were homogenized into a 200 mL beaker with stirring at a speed of 300 rpm for 45 min by a magnetic stirrer. The oil was gradually added to the alginate solution during mixing until the desired oil loading was obtained. Fifty milliliters of alginate-oil emulsion was then dropped into a collecting water bath containing calcium chloride solution (0.125, 0.25, 0.5, 1, 2 w/v%). The resulting microspheres were allowed to harden in the CaCl₂ solution for 5, 10, 15, 20, 25 or 30 min. The oil-loaded alginate beads were collected from the cross-linking solution using a sieve. Finally, the microspheres were rinsed twice with distilled water, tissue paper was used to absorb the surface excessive water and oil onto the wet microspheres.

FORMULATION

This microspheres preparation may be used in a body gel, the composition of which is as follows

Table1

Table 1: Formulation of of alginate microspheres containing *Michelia Alba* flower essential oil using for ferfume body gel.

Component	weight%
Phase A	
Demineralized water	qs 100
Propylene glycol	3.5
Carbomer (Ultrez 10)	0.3
Triethanilamine	pH to 5.5
Phase B	
Microspheres containing <i>x</i> flower essential oil	1.0
Phase C	
Unigerm	1.0

EVALUATION OF TOPICAL GEL FORMULATION

Physical Evaluation

Physical parameters such as color and appearance were checked.

Measurement of pH

pH of the gel was measured by using pH meter

Stability Study

The stability study was performed as per ICH guidelines 6. The formulated gel were filled in the bottom and stored at different temperatures and humidity conditions, viz. 250 C \pm 20C/ 60% \pm 5% RH, 300 C \pm 20C/ 65% \pm 5% RH, 400 C \pm 20C/ 75% \pm 5% RH for a period of three months and studied for appearance and pH.

RESULTS AND DISCUSSIONS

Extraction by distillation, the highest yield of *Michelia Alba* flower oil was obtained from water distillation (0.225%) followed by water-steam distillation (0.119%) and steam distillation (0.120%) The physical appearance of the oils was a coloeless liquid with a boiled-flower odor.

The *Michelia Alba* oil ferfume body gel was prepared and subjected to evaluation of the various parameters. The *Michelia Alba* oil ferfume body gel was translucent in appearance and had a cool and smooth

feeling on application. pH also maintained constant throughout the study which was found to be 5.50 to 6.0. Further stability test for three months has been carried out and results revealed gel containing microspheres containing *Michelia Alba* flower essential oil showed satable stability.

CONCLUSION

Natural remedies are more acceptable in the belief that they are safer with fewer side effects than the synthetic ones. Herbal formulations have growing demand in the world market. It is an attempt made to establish the herbal gel containing *Michelia Alba* oil perfume body gel. The studies revealed that can used microsphericle for perfume body gel.

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FABRIC PRINTING PATTERN DEVELOPMENT FROM LAO SONG TEXTILE PATTERN OF SUPHAN BURI PROVINCE.

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ABSTRACT

The fabric printing pattern development from Lao Song textile pattern of Suphan Buri province was encouraging the next generation to learn the creating new pattern of printed fabrics from the concept of cultural art of designing Lao Song textile pattern of Suphan Buri province design development to be known widespread in both Thai and foreigners for the beauty of Lao Song textile pattern of Suphan Buri province by using knowledge that acquired from the study and the guideline of creating printed fabric pattern in this academic research to use for benefits and to use as the guideline for the next generation for creating and designing contemporary arts from concept, procedures, and designing of fabric printing development from Lao Song textile pattern of Suphan Buri province to beautifully design before developed into prototype product for various usage and became more interesting and suited for the ages and also improved the Thai textile industry to became more outstanding and widespread known.

The objectives were as follows, 1) to develop printed fabric pattern from Lao Song textile pattern of Suphan Buri province and 2) to study materials and techniques of fabric printing that the study processes were consisted of document study from the books which had related content about printed fabric pattern design and Lao Song textile pattern of Suphan Buri province and also the field studying by interviewing people in Lao Song community of Baan Don Manao, Suphan Buri province, in order to use the mentioned data as an applied guideline for creating and designing the printed fabric pattern development from Lao Song textile pattern of Suphan Buri province properly and gorgeously for the design circle of Thai textile industry.

Keywords— Lao Song, textile, Fabric printing pattern.

INTRODUCTION

The diversity of Thai local textile is the local knowledge that inherited from generations. Local textiles have differences in exquisiteness; colors, pattern, texture, and fabric depend on area or region that invented their own weaving style and procedures, for instance, Lamphun's Yok Dok woven fabric, Black Tai hand-woven fabric, Pak Thong Chai's Mudmee silk, Mae Jam's Sinh Teen Jok, and Kalasin's Praewa silk. The meticulousity in fabric and weaving processes begins with growing mulberry trees to feed silkworms with mulberry leaves, then reeling silk filament and dyeing silk, creating patterns, picking rigid heddle, and finally, the weaving. These weaving techniques need the proficiency that was passed on from generations to create the world-class Thai folk textile handcrafts but the meticulousity also cause limitations in creating these handcrafts by the production time and cost that would reach only niche consumer target while the mass market is focusing on various, affordable, convenience, and multi-occasion apparels.

The fabric printing pattern design is presently one of the popular methods to create fabric pattern by adding decorations on the fabric with printing technologies, for example, Silkscreen, Digital printing, and Transfer printing. These technologies are able to massively and easily print with lower cost and production time so the printing technologies as mentioned above are currently admitted and widespread in Thai fabric pattern design field.

The researcher had found an opportunity to create the work with new interesting idea for Thai textile market which is still unclear about creativity and applying identity in pattern design properly by combining various Thai folk textile designs with modern fabric printing technology to apply and create the fabric pattern design with identity, stylish, and perfect for daily occasions. The researcher also focuses on the identity, beauty, meticulousity of each Thai region culture and fabric design that was studied.

Lao Song, or "Song tribe" or even "Black Tai", is one of the Tai tribes with remarkable identity in culture, handcrafts and also the elegance with unique fabric design, such as watermelon sinh pattern, cosmos pattern,

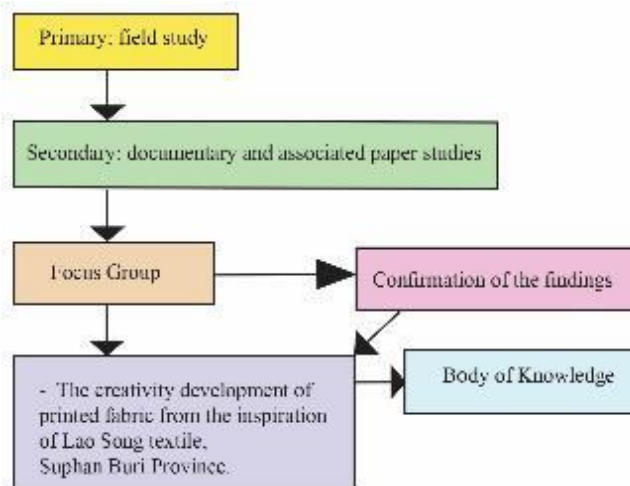
Ban Pad pattern, and Kor Gud pattern. These fabric patterns are Lao Song’s elegance patterns. Formerly, Lao Song settled in Sipsong Chu Tai along the Red and Black rivers in Vietnam. Although this tribe was called Lao Song but they had different ethnicity from Laos because there was the migration from Laos to Siam and most of Thai people called this tribe “Black Tai”. Black Tai peoples were scatteredly settled in many regions of Thailand but obviously gathered in the south of central region such as Suphan Buri province, Petchaburi province, Samut Sakhon province, and Ratchaburi province. In this research, the researcher decided to study Lao Song fabric design in Baan Don Manao, Song Phi Nong District, Suphan Buri province because of the cultural and art conservation in this community that included Lao Song traditional handcrafts and also encouraged the new generation to study and conserve the Lao Song fabric design methods.

From the importance and attractiveness of Lao Song textile, Suphan Buri Province, which has glorious identity worthy for preservation and inheritance to the next generation to witness, preserve, and more widely be known the beauty, neatness, and value of inherited wisdom textile pattern from generations. So the researcher had studied the concept and creation methodology of Lao Song textile also including the design technique in order to apply in the development of Lao Song pattern design for appealing and modern style by studying the style of pattern design technique according to the art composition and pattern creation from the inspiration of Lao Song textile to design with pattern design technology by using computer software in order to create value for more utility and wearing convenience that may be the alternative option of Thai textile printed pattern design industry that combines the creativity process between the original folks pattern design and modern pattern design technology through the proper and balanced creativity for usage and making benefits and values for future apparel textile design and Thai fashion industry.

METHODOLOGY

This is the qualitative research that the researcher has studied the primary data by field studying in order to study Lao Song fabric design in Ban Don Manao, Suphan Buri Province and the secondary data from documents and books associated with Lao Song fabric design, Suphan Buri Province in order to gather the data and apply in the creation of printed pattern design development from Lao Song fabric pattern properly for the benefit of art and culture encouragement and preservation and also be the guideline of precious and modern printed fabric design distribution for both future Thai and international textile and fashion industry.

Figure 1
Research Framework of the research



LITERATURE & THEORY

1.1. Field studying in order to study Lao Song pattern, Suphan Buri Province.

The field studying in order to study Lao Song pattern, Suphan Buri Province is conducted by interviewing Mrs. Kwanyuen Thongdonjui; the weaving group leader and chairwoman of Lao Song local weaving group at Ban Don Manao, Suphan Buri Province; to study about history, pattern, color, and style of Black Tai textile in order to create the creativity towards the development of printed pattern development from Lao Song textile studying. Mrs. Kwanyuen Thongdonjui had told the history of Lao Song textile that had carried on the original Lao Song customs and culture which is a group that used original Lao Song textile and apparel including

watermelon sinh, Hee shirt, or Biao cloth, etc. The pattern using in weaving and embroideries are inherited from the past such as Biao flower, Pad flower, Bo Khao, Bo Bua, Bracken Fern shoot, Bo Chan, circular bouquet, Dvaravati pattern, Bong Hu Song etc. But there may be also some modernized pattern development as well. The textile in this community emphasizes in fabric weaving and indigo dyeing in natural way but some area had used mixed fabric due to the lower cost and easier purchasing. But, Lao Song natural weaving method is preferred for daily usage. The main concept of Lao Song weaving tends to keep a hidden message as the Lao Song ideology that reflected stories or morals towards the tools, apparels, and textiles for the next generations to think, to use, and to live on the good way of life model.

Figure 2
Image of field studying at Lao Song community, Suphan Buri Province.



1.2. Studying pattern composition style of Lao Song, Suphan Buri Province.

From studying pattern composition style of Lao Song, Ban Don Manao, Suphan Buri Province, various Lao Song textile pattern styles are acknowledged that there are many patterns and most of them had applied the idea of pattern creation from nature as the Lao Song way of life. The geometric shapes are used in designing process to create simple shapes that are able to communicate and refer the origin as follows, **Watermelon sinh** is similar to sarong which has white or blue vertical lines. There are 2 types of line, single and double line. If it starts with double line which is thicker than single line, then the next line would be thin single line and follows by thick single line. These 3 types of line are switching along the cloth. There are names for each link pattern such as Ta Gu (Ta Ku) is the name for white two single line closing to each other and calls separated single line Ta Haang (Ta Gib or Ta Keeb) , Ta Yoi is called for double lines. In each regions would call this pattern with different names such as U Thong district, Suphan Buri province, calls this pattern “Giant Snakehead pattern” (Pla Chado). Most popular colors consist of black, blue, navy and white tone which are Lao Song’s popular color, **Biao flower (“Bo Biao”)** is the geometric-shaped pattern which consists of the ring from center expanding out along the radius axis coiling into circle shape with 2 pairs of rectangle end and 4 squared borders crossing each other into 8 triangle borders which is called Pad flower pattern or “Bo Pad” that are mostly laced at the Lao Song’s collar and shirttail shirt, **Pad flower pattern or “Bo Pad”** is the line and geometric-shaped pattern which consists of 4 squared borders crossing each other into 8 triangle borders which is called Pad flower pattern, **Lotus pattern (“Bo Bua”, “Bo Puah” or lotus stem pattern)** is the geometric-shaped pattern which consists of rectangle frame and composing both triangle and rectangle inside in different shapes in descending order with both equilateral square and square that are mostly decorated at belts, waist belt, placket, collar, and Lao Song’s hat, **“Na Lua” middle front placket of female Hee shirt** is the line and geometric-shaped pattern which consists of background with 4 squared frames that crossing each other into 8 triangle borders which is called Pad flower pattern or “Bo Pad” and places Na Lua line around inside every rectangle along with the radius axis that are mostly decorated at the middle front placket of female Hee shirt.

Figure 3

Studying pattern composition style of Lao Song, Suphan Buri Province (1) watermelon sinh or Tang-mo Sarong pattern, (2) Biao flower or “Bo Biao”, (3) Pad flower pattern or “Bo Pad”, (4) lotus pattern (“Bo Bua”, “Bo Puah” or lotus stem pattern), (5) Na Lua pattern.



1.3. 2018 – 2019 fashion trend composition studying.

2018 – 2019 fashion trend composition is studied for the creations that responded to the requirement of lifestyle fashion market in order to provide the designs that proper, modernized, and achieve the objective of mentioned printed pattern creation. The researcher had studied the fashion trend of Nelly Rodi spring – summer 2018-2019 which is widely accepted from international fashion industries and selected the NATIVE topic which conforms to the design guideline in ancient craftsmanship, local culture, and storytelling of travelling through the atmosphere of attractive, charming, and warmth of ancient folklore, beliefs, and rituals to study. The color tone represents to cultural mixture through the charming stories as follows; green from dreamcatcher, red pink from caravans, wooden brown from Incan wooden dolls, blue from Mexican tribes’ sculpture, yellow from relics, and brick red from ancient column ruins. The researcher had analyzed the mentioned fashion trend that it suits for the creative guideline and also be able to apply in printed fabric pattern design development in term of concept and color tone in order to allow the mentioned printed pattern design to be proper and exquisite that meet the requirement of fashion trend industry in both Thai and international.

Figure 4

Fashion trend of Nelly Rodi spring – summer 2018-2019



1.4. Fabric printing material and technique

From the purpose to create the printed fabric pattern design of Lao Song, Suphan Buri Province, this causes researcher to study the material and technique that appropriate for work creation as follows

1.4.1. Fabric printing material There are many types of material that suits for making printed fabric pattern including natural and synthetized fabric. Researcher had studied the fabric that appropriate for designing and print fabric technique which is the synthetized fabric cloth because this has better color absorption and contrast than natural fabric that decreases the contrast property in printing. But, most of local weaving fabrics are majorly made from natural fabric so researcher had decided to study mixed fabric cloth for the nearest

texture of original textile in printing process which are cotton-spandex fabric, silk satin fabric, chiffon silk fabric, and Cotton TC fabric etc. for both resembled texture and sharp color.

1.4.2. Fabric printing technique from the study, researcher had acknowledged that Digital printing technique is the fabric printing by using printer with the same principle as common paper printers but replacing from paper to fabric instead. The printing process by using digital printer is current fast and accurate that creates beautiful and detailed pattern. For printing process by using Digital printer, Pre-Treat process for fabric is required in order to increase printing efficiency and also the Finishing process after printing for printed ink adhesiveness on the fabric. Using the digital system is appropriate for natural fabric that makes color beautiful and durable while there is another technique that suits for fabric printing which is the Indirect Printing technique or Heat Transferring. These techniques print the pattern on the paper then pressed or ironed with heat. These techniques are also fast and also create beautiful and detailed pattern as well but better suit for synthesized and polyester fabric that make sharp color and meet the researcher requirement.

RESULTS

2.1. Creative pattern development from Lao Song textile pattern, Suphan Buri Province

Researcher had selected patterns from Lao Song textile pattern to apply in pattern development. For the guideline in pattern selection for designing, researcher had selected patterns that are significant, outstanding, popular, and widespread for various utilities of Lao Song textile such as weaving, cutting, or watermelon sinh patterns. These patterns are popularly used in making Song's clothes, sinh, Hee shirt or Biao shirt etc. For the studying from art composition in term of model, beauty, structure, and color that suits for pattern designing and creating widespread for utility fashion products, patterns that selected by researcher to create fashion product designs consist of watermelon sinh, Biao flower or "Bo Biao", Pad flower pattern or "Bo Pad", lotus pattern ("Bo Bua" or "Bo Puah" or Kha Bua, and Na Lua. The process of pattern development in designing is still using the original guideline of Lao Song by using geometric shapes in creating structure and details adding for beauty and sophistication by using art composition design. For the color tone adjustment, designing color tone is picked from the fashion trend of NELLY RODI SPRING - SUMER 2018-2019 to use in printed fabric pattern creation that met the next generation demands and follows the fashion trends properly. However, researcher still keeps the original color group that represents Lao Song partly for the combination to reflect the Lao Song atmosphere that remains its beauty and identity which are indigo, ebony black, shellac red, Pheka shell green, and Cumin yellow etc.

Figure 5

Creative pattern development from Lao Song textile pattern, Suphan Buri Province, (1) watermelon sinh or Tang-mo Sarong pattern, (2) Biao flower or "Bo Biao", (3) Pad flower pattern or "Bo Pad", (4) lotus pattern ("Bo Bua", "Bo Puah" or lotus stem pattern), (5) Na Lua pattern.



2.2. Printed fabric pattern design creation from the textile pattern development of Lao Song, Suphan Buri Province, 1st style

The printed fabric pattern design creation from the textile pattern development of Lao Song, Suphan Buri Province, 1st style by using fabric pattern design technique and art composition that studied in chapter 2 to apply in pattern design and appropriated colorful concerns about art composition in term of line, color, shape, balances, repetition, emphasizing, and unity for proper conformation and harmony. For the 1st style, using patterns consist of watermelon sinh, Biao flower, Pad flower, lotus pattern, and Na Lua pattern etc. The pattern designs of fabric are distributed decorated thoroughly by aligning patterns according to the art composition and beauty horizontally as well as sarong or sinh pattern alignment. Each layer has resized the pattern for various sizes properly according to the alignment composition. For the coloring, color tone that used is familiar to the color group that commonly used in Lao Song because of the requirement to remain the Lao Song identity and beauty while the color group from Nelly Rodi spring - summer 2018-2019 world fashion trend is also added for modernization and meet the demands of next generation consumers. The major color group are as follows; black, white, brown, brick red, orange, green, blue, indigo, yellow, and pink etc. but there may be some color tone adjustment partly for colorful and beauty that responded to the design for next generation and other fashion markets in both Thailand and international.

Figure 6
Detail of Printed fabric pattern design creation from the textile pattern development of Lao Song, Suphan Buri Province, 1st style.



2.3. Printed fabric pattern design creation from the textile pattern development of Lao Song, Suphan Buri Province, 2nd style

The printed fabric pattern design creation from the textile pattern development of Lao Song, Ban Don Manao, Suphan Buri Province, 2nd style by using fabric pattern design technique and art composition that studied in chapter 2 to apply in pattern design and appropriated colorful concerns about art composition in term of line, color, shape, balances, repetition, emphasizing, and unity for proper conformation and harmony. For the 2nd style, using patterns consist of Biao flower, Pad flower, lotus pattern, and Na Lua pattern etc. The pattern designs of fabric are distributed decorated thoroughly by aligning patterns according to the art composition. For the coloring, color tone that used is familiar to the color group that commonly used in Lao Song or Black Tai because of the requirement to remain the Black Tai identity and beauty while the color group from NELLY RODI SPRING - SUMER 2018-2019 world fashion trend is also added for modernization and meet the demands of next generation consumers. The major color group are as follows; black, white, brick red, dark red, brown, orange, green, blue, indigo, yellow, light blue, and pink etc. but there may be some color tone

adjustment partly for colorful and beauty that responded to the design for next generation and other fashion markets in both Thailand and international. This printed fabric pattern design feature suits for fashion product design such as scarf, shawl, or products with circular shape according to the mentioned pattern layout alignment.

Figure 7
Detail of Printed fabric pattern design creation from the textile pattern development of Lao Song, Suphan Buri Province, 2nd style.



RESEARCH CONCLUSION

In this research, it is the research for the development of printed pattern design from Lao Song fabric pattern, Suphan Buri Province. Researcher had studied from the history, popular patterns, material, and color of Lao Song textile pattern at Ban Don Manao, Suphan Buri Province, through the pattern printing material and technique. For both 2 created patterns, researcher had designed appropriately according to the art composition in beauty and emphasized on the pattern that suits for utilities. Therefore, because the researcher intends to represent people who interests in this research for the guideline in pattern development from the art of pattern design of this beautiful Lao Song textile, Suphan Buri Province and topping up in the development of printed fabric pattern or other various lifestyle fashion products properly and also encourage the development of Thai and international designing industry by applying various local textile patterns from each regions in Thailand in further designs.

SUGGESTION

In this research, researcher had created and developed the printed fabric patterns from the studying textile patterns of Lao Song, Suphan Buri Province that the patterns and decorations of Lao Song have various styles and colors. Each of them has their own identity of shape and color. In this research, researcher had selected only some part of Lao Song textile patterns that most of them are popular and widespread known. Also, researcher had seen that the mentioned patterns are interesting and suit for printed fabric pattern design which are applied in the design development creation only 5 patterns as follows; (1) watermelon sinh, (2) Biao flower or “Bo Biao”, (3) Pad flower pattern or “Bo Pad”, (4) lotus pattern (“Bo Bua”, “Bo Puah” or lotus stem pattern), and (5) Na Lua pattern. So, there are still many patterns in Lao Song textile that are able to apply in pattern designing which suits for people who interest in order to create beautiful and appropriate work or other lifestyle fashion products in the future.

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THE ART OF THE CONTEMPORARY EMBROIDERY DESIGNS, BY THE STUDY OF PERFORATED WOODWORK PATTERNS IN THE GINGERBREAD HOUSE STYLE AT VIMANMEK MANSION IN THAILAND

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ABSTRACT

The objectives of this research are to study, analyze, and process knowledge about the patterns of the perforated woodwork patterns in the Gingerbread House style at Vimanmek Mansion, Thailand, create 3 designs of contemporary special occasion outfits for women. This research used qualitative methods. The primary data was collected from the field studies at Vimanmek Mansion and the secondary data was gathered from related books and documents. The study found that, with reference to the 7 photographs of the perforated woodwork in the Gingerbread House style at Vimanmek Mansion, the patterns of the wood work emulated from nature, such as vines, leaves, and flowers. The patterns are placed in many ways, usually with symmetry and a horizontal repeat, and are limited within a clear cut frame. The data was then used to develop designs for contemporary embroidered openwork patterned fabrics and special occasion outfits for women.

Keywords--Pattern Design, Embroidery Fabrics, Perforated Woodwork Pattern, Vimanmek Mansion

INTRODUCTION

People of current generation usually not inherit prides or tastes from their predecessors. The influence of Western cultures during the era where Thais imitate foreigners associates Western tastes with modernity. This mindset could gradually damage the glorious of Thai architectures especially artists from Gingerbread wooden stencils found in historic palaces, and raise the challenge on the preservation of this type of fine arts.

The Ginger Bread Style House uses the prototype of the Victorian house found in England. This style became popular in Thailand as foreign influence grew beginning with the reign of King Rama IV. Foreigners built houses in the style that they were accustomed to all over the country and locals appreciated the beauty of carved wood. Thus began a trend of using the Ginger bread style decorations in Thai houses, beginning with the palace, houses of lords, wealthy people, barons, and even temples. (Sompup Rojanaphan,2009,P.112)

Figure 1-3

(1) The Ginger Bread Style House1; (2) The Ginger Bread Style House2; (3) The Ginger Bread Style House3



Although the Ginger Bread House style derives from the West, it does suit Thailand's weather since the carved wood serve as ventilation. It also suits the Thai aesthetic, with many houses often adapting the carving pattern to incorporate Thai traditional patterns, which add to the original beauty. Vimanmek Mansion is also built according to the Victorian style, influenced by the European style, but adapted to suit the Thai aesthetic seamlessly. The throne is shaped like an "L" and is 60 meters in length and 20 meters in height. The building has 3 floors, except for the royal residence, which has an octagonal shape and has 4 floors. The first floor comprises of brick work and cement. The other floors are built using golden teak wood painted with a cream color, with a red roof in an adapted Thai style. The building also has patterns on the windows and perforated ventilation air ways in the Ginger Bread House style. (Tanakom Bunkij, 2006, P.34)

Figure 4-5

(1) Vimanmek Mansion1; (2) Vimanmek Mansion2



The beautiful perforated wood work at Vimanmek Mansion is not only a valuable architectural piece, but also reflects the fusion of culture, traditions, livelihood, and the beliefs of Thai people and Western people in a harmonized way, worthy of preservation. For this reason, the researcher emphasizes the perforated wood work in the Ginger Bread House style at Vimanmek Mansion, which is worthy of preservation and conservation to be passed along to the new generations. The author foresees the importance of Gingerbread wooden stencils in Vimanmek Mansion which should be maintained and preserved for the next generations. The author has studied style patterns and the production of Gingerbread wooden stencils in Vimanmek Mansion which were crafted by artisans from old days and apply to the design of fabric patterns to meet customer demands; which could also be used to enhance product development, subsequent researches and design further.

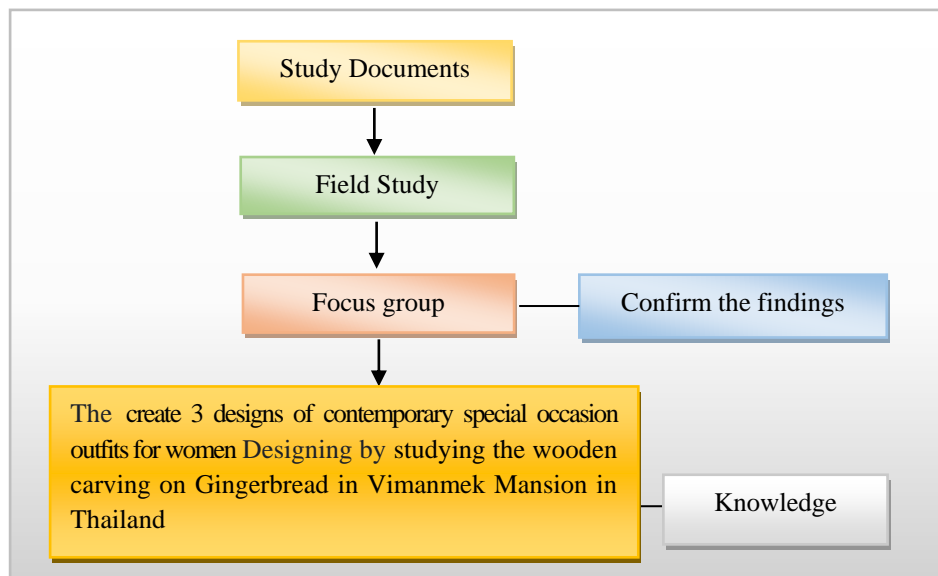
METHODOLOGY

I. Data Collection

This research is considered as a pure research that was conducted to study and seek for academic knowledge in order to build knowledge on "The Arts of Contemporary Embroidery Designs, by the Study of the Perforated Woodwork Patterns in the Gingerbread House style at Vimanmek Mansion in Thailand".

Conceptual Framework

Figure 6 (Conceptual Framework)



II. Data Analysis

The researcher has collected data from the field studies, referring to the 7 photographs of the perforated wood work in the Ginger Bread House style at Vimanmek Mansion. The criteria for analysis are: Shape, Color, Material, and Decorative Purpose. The data is then used to develop creative designs for the create 3 designs of contemporary special occasion outfits for women for in the next stage.

Figure 7
Photograph sample 1



Table 1
Table Analysis of Sample 1

Shape	Color	Decorative Purpose
Using lines and curves, the patterns are taken from natural motifs, such as flowers, leaves, integrating the patterns together in a continuous motion and repeating patterns.	Only one color is used throughout the pieces, with a darker concentration of color as the frame to draw attention.	The piece is used to decorate stairs banisters, covering the whole length.

Figure 8



Figure 8

Table 2
Table Analysis of Sample 2

Shape	Color	Decorative Purpose
Leaf pattern and motifs are assembled together into geometric bouquets. The pattern within the frame is horizontally symmetric.	The piece uses a contrasting color to the frame, which is light brown and green, which is a color pairing inspired by nature.	The piece is used to decorate the area above doors and used as ventilation through the perforated patterns.

Table 3

Photograph sample 3



Table Analysis of Sample 3

Shape	Color	Decorative Purpose
The pattern is similar to grass flower. The design is vertically symmetry and repeating horizontally.	The color is mixed between brown and pale orange which creates natural feeling and contrasted by dark brown color, which is a color in the same tone, to help make the stencils more visible.	This is used for the decoration of upper part of doors and allowing air flow through the glamorous stencils

**Figure 9
Analysis of Sample 4**



Table 4

Shape	Color	Decorative Purpose
This is the use of curves from natural patterns such as vines to create continuous and repetitive patterns.	White color contrasted by dark brown help make it more noticeably.	This is used for the decoration of upper part of doors and allowing air flow through the glamorous stencils

Photograph sample 4

Table

**Figure 10
Photograph sample 5**



**Table 5
Table Analysis of Sample 5**

Shape	Color	Decorative Purpose
Using lines and curves, the patterns are taken from natural motifs, such as flowers, leaves, integrating the patterns together in a continuous motion, vertically symmetric, with a horizontal pattern placement.	Only one color is used throughout the pieces, with a darker concentration of color as the frame to draw attention.	The piece is used to decorate the guard rails on the balcony, covering the whole length.

Figure 11
Photograph sample 6

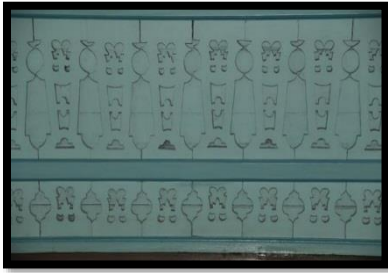


Table 6
Table Analysis of Sample 6

Shape	Color	Decorative Purpose
This is the mix of curves and straight lines cuddling together in a continuous manner. The pattern is repeated horizontally.	This is the mix of curves and straight lines cuddling together in a continuous manner. The pattern is repeated horizontally.	The texture is rough and shiny. This is used for terrace decoration by covering all areas, in contrast to the use of alternate pattern at other stairs.

Figure 12
Photograph sample 7



Table 7
Table Analysis of Sample 7

Shape	Color	Decorative Purpose
A motif of cascading flowers is used to make a horizontal pattern.	Only one color is used throughout the pieces, with a darker concentration of color as the frame to draw attention.	The piece is used to decorate the roofs.

RESULTS

The researcher designed 3 costumes of women apparel dressed in special occasions for women with the age ranged from 25-35 years based on contemporary patterns of embroidery lace fabric by studying on ginger-bread pattern on Vimanmek Palace as follows:

Design 1

Figure 13
The contemporary special occasion outfits for women design 1



Photograph sample 3



Photograph sample 7



It was a white dress with bow tie collar, front buttons, and A Line shape. Its length was knee level with 1 layer of shoulder support and long sleeves with cuffs. Black patterns as shown in Figure 3 and 7 were embroidered on the front area of the dress.

Design 2

Figure 13
The contemporary special occasion outfits for women design 2



Photograph sample 2



Photograph sample 3



It was a white dress with round-neck collar, A Line shape, waistline, and long sleeves. Its hem and shoulder were decorated with ornamental fringe. Its front bodice and the edge of its hem were embroidered with black patterns as shown in Figure 2 and 3.

Design 3

Figure 14
The contemporary special occasion outfits for women design 3



Photograph sample 2



Photograph sample 3



It was a white dress with boat neck collar, sleeveless, A Line shape, and ornamental fringe lashes on side seam. It was decorated by black patterns as shown in Figure 2 and 3 on its front bodice from neck to shoulder.

DISCUSSION

From studying on the art of design for creating textile patterns based on ginger-bread pattern on Vimanmek Palace, it was found that most patterns imitated nature, especially vine and floral patterns. Patterns were continuously positioned in various manners but preferred patterns were symmetric patterns with repetition from left to right on materials with gross surface switched with matt surface and decoration in the area with clear frame. Although patterns were used in full area, space technique of was applied for preventing uncomfortable feeling. For positioning of utilization, it could be used for decorating upper parts of buildings or any location with repetition for showing patterns clearly, for example, edges of roofs or hand rails of verandahs. After applying to textile patterns for designing women apparel dressed in special occasions, it was necessary to modify patterns to meet with costume structure by positioning ginger-bread pattern on apparel with repetition of identical or similar patterns along edges of apparels. Colors used in this design were black and white and this idea was developed as design of 3 costumes of women apparel dressed in special occasions for women with the age ranged from 25-35 years. The obtained costumes were beautiful with attractively contemporary patterns and colors.

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THE IMPACT OF REAL EXCHANGE RATE ON ECONOMIC GROWTH: THE CASE OF SOUTH AFRICA

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ABSTRACT

This study investigated the impact of real exchange rate on economic growth in South Africa. Quarterly time series data is used for the period of 1983:Q1 to 2014:Q4. The study employed the Johansen cointegration and vector error correction model to determine the impact of real exchange rate on economic growth in South Africa. The explanatory variables in this study were government expenditure, gross fixed capital formation, inflation and real exchange rate. Results obtained revealed that government expenditure, gross fixed capital formation have a positive long run impact on the South African economy, whereas real exchange rate and inflation affect the economy of South Africa negatively in the long run. Undervaluation of the currency stabilize economic growth, as it is noted from the long run regression results. South Africa needs to maintain fiscal policy.

Keywords: Economic Growth, Real exchange growth, South Africa

INTRODUCTION

The impact of the real effective exchange rate and economic growth is certainly an important issue, from both descriptive and policy prescription perspective (Tarawalie, 2010). South Africa has undergone a serious transformation since its democratic transition in the year 1994, with an average rate of 1.2 percent per capita Gross Domestic Product (GDP) growth (Rodrik, 2006). However the South African economy has expanded at a significant positive pace in the fourth quarter of 2014, with real Gross Domestic Product rising at an annualized rate of 4.1 percent which is almost double the rate of increase recorded in the preceding quarter (South African Reserve Bank, 2015).

According to Walter and de Beer (1999) real exchange rate, is explained as the nominal exchange rate adjusted for inflation differentials between countries, and is basically calculated as: $(\text{Real exchange rate} = \text{nominal exchange rate} \times \text{domestic prices} / \text{foreign prices})$. The real exchange rate that is (the inflation differential adjusted nominal exchange rate) that is often used to reflect the countries' relative competitive position in international trade, and plays an important role in determining the growth of a country's cross border trade by influencing the distribution of spending and production in the domestic economy between foreign and domestic goods (Domac and Shabsigh, 1999). In the literature, the real exchange rate serves as a better international price for determining the competitiveness of a given country than the nominal exchange rate. Management of the nominal exchange rate depends on the real exchange rate, which is influenced by, the nominal exchange rate (Montiel, 1997).

According the South African Reserve bank quarterly bulletin SARB (2015) Economic activity in South Africa expanded at a significantly firmer pace in the fourth quarter of 2014, with real gross domestic product increasing at an annualized rate of 4,1 per cent – almost double the rate of increase recorded in the preceding

quarter. This acceleration largely reflected a rebound in the goods-producing sectors of the economy as conditions normalized after severe strike-induced labour disruptions earlier in 2014. Mining production, which contracted notably in the first half of 2014 due to prolonged industrial action in especially the platinum-mining sector, increased at a moderate rate in the third quarter of 2014 before picking up pace in the fourth quarter as pronounced increases in the production of platinum group metals and diamonds more than offset decreases in the production of coal and other mining commodities. At the same time, the pace of increase in the real value added by the agricultural sector slowed somewhat, mainly as a result of lower growth in field crop production.

The South African Reserve Bank further mentioned manufacturing sector as part of growth as it states that, in the manufacturing sector, growth in real value added rebounded strongly in the fourth quarter of 2014, following strike-induced contractions earlier in the year. Growth in the construction sector also picked up in the quarter concerned as civil construction activity maintained its underlying momentum, underpinned by increased activity in the residential and non-residential building subsectors. By contrast, growth in the services sector moderated following a marginal contraction in the real value added by the commerce sector, offsetting a steady pickup in the output of the transport and finance sectors.

The focal point of this paper is based on a few essential explanatory variables perceived to weigh the level the equilibrium real effective rate. Contribute to the available empirical literature on the impact of Real Exchange rate misalignment on economic performance in South Africa. It thus depicts on prior efforts to estimate an equilibrium path of the South African real effective rate by striving to quantify the extent of the misalignment of the effective exchange rate from its long-run equilibrium value (SARB, 2012).

Accuracy for analysis of the real exchange rate is more critical for resources dependent economies where they often experience large shocks to their currency their terms of trade and relative productivity differentials. So, their currency values may experience extreme instability, and the equilibrium level should thus be monitored constantly (Spatafora and Stavrev, 2003).

Schnabl (2007) indicate that exchange rate firmness and correct alignment is necessary for countries in the emerging economies. The same inspection is held by Ndhlela (2010) and Kumar (2010), who came up with the solution that exchange rate stability and correct alignment is imperative for economic growth mostly in developing economies.

This study investigates how real exchange rates have impacted on economic growth in South Africa during the period between 1980:01 and 2014:04. The study provides an overview on the relation that subsists between exchange rates and economic growth. According to Sibanda (2012) the relation between real exchange rate and economic growth is seemingly a broad and interesting study to work on. It is on this basis that this study adds value to the ongoing discussion on exchange rates and economic growth. The results of this study will hopefully make a contribution towards policy planning and formulation at all levels of government, in the banking sector, the business community, as well as labour unions.

LITERATURE REVIEW

Theoretical background

The primary theoretical papers that explained the effects of exchange-rate risk assumed that, in the absence of any mechanism to decrease this risk, volatility will lessen the volume of trade. Ethier (1973) explains that, if traders were indecisive as to how the exchange rate affects their firms' revenue, the volume of trade will be reduced. This indecision could be improved, however: Clark (1973) notes that while risk-aversion among traders might depress the volume of a country's exports, perfect forward markets might reduce this effect. Baron (1976) discovers that forward markets may not be adequately developed, and traders may still be uncertain of how much foreign exchange they want to cover. Hooper and Kohlhagen (1978) added outline the theory behind risk aversion in assessing the effects of exchange-rate volatility on trade prices and quantities, incorporating both supply and demand effects.

The determination of the effect of exchange rate volatility and misalignment on economic growth in South Africa has been the object of a number of studies. These studies analyze the effect of real exchange rate volatility and misalignment on exports and foreign direct investment (Takaendesha, Tsheole & Aziakpono, 2006; Sekantsi, 2008; Raddatz, 2008) and conclude that exchange rate misalignment negatively affect exports and foreign direct investment.

These findings have been used to imply a negative relationship between exchange rate misalignment and economic growth. This study differs from the identified studies as it investigates the effect of exchange rate volatility and misalignment on economic growth, using the Gross Domestic Product (GDP) growth as a proxy for economic growth. The use of GDP permits the capture of the total production of an economy as it is a comprehensive measure of a country's output of goods and services. Other studies that investigated the link

between exchange rate and economic growth in South Africa employed panel data covering the apartheid and post-apartheid era (Gala and Lucinda, 2006; MacDonald and Vieira, 2010; Aguirre and Calderon 2006). The use of panel data fails to capture the country specific effects of exchange rate volatility and misalignment on economic growth. Inconsistent exchange rate policies during the apartheid and post-apartheid era may have influenced the results of these studies. In order to avoid the disadvantages of using panel data and to minimize the specification problems that may emerge as a result of the change in the exchange rate policies of South Africa from those of earlier years, this study covers a period which was characterized by an almost consistent application of the exchange rate policy.

Given South Africa's outward looking economic policy, the determination of the effect of exchange rate volatility and misalignment is essential for developing countries an exchange rate policy that is supportive of economic performance. This study will provide empirical evidence which can be used as a guide in the development of an exchange rate policy that encourages economic growth.

Empirical review

Given that the real exchange rate is one of the most important relative prices in an economy, the variable has received a lot of attention in both developing and developed countries. Most empirical studies suggest that misaligned RER has had an undesirable effect on economic indicators, such as economic growth and export performance. Various empirical works done in developed countries include that of Razin and Collins (1997), Aguirre and Calderon (2005), and Sallenave (2010) whereas studies from developing countries include the following; Domac and Shabsigh (1999), Rodrick (2008), Yol (2010), Toulaboe (2010) and Munthali, Simwaka and Mwale (2010). These studies investigated the effect of exchange rate misalignment on economic growth by specifying economic growth models that included exchange rate misalignment variable and other control variables such as output gap, ratio of investment to GDP, exchange rate volatility, terms of trade, population growth, gross secondary school enrolment, human capital, trade openness, price instability and currency crisis.

In their prominent paper, Razin and Collins (1997) examined the relationship between exchange rate misalignment and economic growth for a sample of 93 countries over the period 1975–1992. Their major role is that they developed and adopted an RER misalignment indicator based on an IS-LM model of an open economy. Razin and Collins found that exchange rate misalignment is negatively associated with economic growth, and concluded that very high overvaluation has a negative and significant impact on economic growth, while undervaluation has no significant effect.

According to Sibanda (2012) the misalignment of the exchange rate was calculated as the deviation of the exchange rate from its equilibrium level. The models used to estimate the equilibrium level of the exchange rate included the Fundamental Equilibrium Exchange Rate (FEER), the Behavioural Equilibrium Exchange Rate (BEER) and the Purchasing Power Parity (PPP).

METHODOLOGY

Data

The methodology used in this research is based on theoretical perspective and empirical work reviewed. The research make use of quarterly time series data covering the period 1980:01 to 2014:04. GDP, Gross Fixed Capital Formation and Government Expenditure figures are obtained from Quantec; data on inflation (CPI) is obtained from SARB.

Research tests and method

The main objective of this study is to examine the impact of the real exchange rate on economic growth (GDP), by using Engle and Granger as well as Johansen (1988) and Johansen and Juselius (1990). This approach applies maximum likelihood estimation to a vector error correction (VECM) model to concurrently determine the long run and short run determinants of the dependent variable in a model. Time series has to be integrated of the same order. To attain this, unit root tests is employed to examine stationarity of data sets that has to be carried out. In investigating the unit root properties of the time series data, the variables shall be subjected to the Augmented Dickey- Fuller (ADF) and Phillips-Perron unit root test.

Model specification

In determining the impact of real exchange rate on economic growth in south Africa the explained variable is gross domestic product (GDP) followed by the explanatory variables government expenditure(GE), gross fixed capital formation on expenditure (GFCF), consumer price index (CPI), and real exchange rate (REER).

This study adopts the basic IS-LM output growth model for an open economy (Gali, 1992, Yu Hsing, 2005), according to Gali (1992), and Yu Hsing (2005) the model has an advantage of tracing the impact of the real exchange on economic growth.

The purpose of this study is to examine the impact of the real exchange rate on economic growth. An output model is specified by adding gross fixed capital formation (GFCF) to the set of explanatory variables. The

explained variable for this study is growth that is gross domestic product (GDP), explanatory variables are government expenditure (GE), gross fixed capital formation (GFCF), consumer price index (CPI), and the main explanatory variable (REER).

The model is specified as follows:

$$Y = \beta_0 + \beta_1 GE + \beta_2 GFCF + \beta_3 CPI + \beta_4 REER + \mu \dots\dots\dots 1$$

β_0 =The constant

$\beta_1, \beta_2, \beta_3$ and β_4 =Coefficient of the explanatory variables

Y =Real output economic growth

μ =Stochastic error term

GE =Government expenditure

$GFCF$ =Gross fixed capital formation

CPI = Consumer price index

$REER$ = Real exchange rate

Findings/Results

Table 1 stationarity test results for Augmented Dicker-Fuller test

Augmented Dickey-Fuller				
Order of Integration	Variables	Intercept	Trend & Intercept	None
Level	LGDP	-3.764366***	-1.375111	1.043408
1 st difference	D(LGDP)	-1.750050	-3.376199*	-1.023790
Level	LGE	-3.649812***	-3.102002*	3.741619
1 st difference	D(LGE)	-5.120320***	-6.256214***	-2.035774**
Level	LGFCF	0.127356	-2.070958	3.000267
1 st difference	D(LGFCF)	-4.900530***	-4.918608***	-3.748000***
Level	CPI	-1.491340	-2.829044	-1.083333
1 st difference	D(CPI)	-5.682087***	-5.657348***	-5.678877***
Level	LRER	-2.445344	-4.113793***	-1.210616
1 st difference	D(RER)	-10.44348***	-10.43611***	-10.38124***
Values marked with *** represent stationary variables at 1% level of significance, ** represent stationary at 5%, and * represent stationary at 10% respectively.				

Source: Authors 2015

Table 2 stationary test results for Phillips-Perron test

Phillips-Perron				
Order of Integration	Variables	Intercept	Trend & Intercept	None
Level	LGDP	-5.506508***	-1.585787	10.31394
1 st difference	D(LGDP)	-13.34070***	-18.50382***	-8.952088***
Level	LGE	-4.638271***	-2.794201	8.169234
1 st difference	D(LGE)	-17.19435***	-21.78057***	-12.64123***
Level	LGFCF	0.371293	-2.435905	4.280357
1 st difference	D(LGFCF)	-14.55061***	-14.59861***	-13.11499***
Level	CPI	0.371293	-2.435905	4.280357
1 st difference	D(CPI)	-14.55061***	-14.59861***	-13.11499***
Level	LRER	-2.537079	-3.244156*	-1.146983
1 st difference	D(LRER)	-10.45297***	-10.44163***	-10.40539***
Values marked with *** represent stationary variables at 1% level significance, represent stationary at 5%, and * represent stationary at 10% respectively.				

Source: Authors 2015

Table 1 displays the Augmented Dickey-Fuller results. The test has a null hypothesis of unit root. The calculated value of ADF was compared with the critical value. The actual rule is that; if the calculated value is greater than the critical, we then reject the null hypothesis that the series have unit root, therefore confirm that the series are stationary. For variables in levels, the test in intercepts shows growth (GDP) and government expenditure (GE) are stationary at 1% level of significance; all other variables are non-stationary. Almost all the differenced variables are stationary at 1%, significant level except growth; thus the null hypothesis of unit root is rejected. For the test under trend and intercept and trend and no intercept data series revealed stationarity to some variables, whereas others were non-stationary in levels but became stationary at 1% significant level when first differenced.

Table 2 presents the Phillips-Peron results. PP tests are similar to ADF tests, but they incorporate an automatic correction to the DF procedure to allow for auto correlated residuals (Brooks, 2008). For variables in levels, growth (GDP) and government expenditure (GE) were stationary, there rest were non-stationary. All differenced variables on intercept were stationary at 1% significance level.

On trend and intercept all variables were non-stationary in levels, except real exchange rate but all variables on trend and intercept were stationary at 1% significance level when first differenced. For the test under no trend and no intercept, all variables in levels were non-stationary. When first differenced, that is when all the variables became stationary at 1% significance.

Both techniques utilized to test for stationarity significantly revealed that the data series were mostly non-stationary in levels and stationary when first differenced. Therefore, the series are integrated of the same order I (1).

Table 3 Engel Granger Cointegration test

Variables	Coefficient	t-statistic	Probability
CONSTANT	2.979660	-	-
LNGE	0.814802	38.63313	0.0000
LNGFCF	0.143091	6.395511	0.0000
CPI	-0.009463	-5.399337	0.0000
LNRRER	-0.117239	-3.195052	0.0018
R-squared	0.998081		
Adjusted R-squared	0.998018		

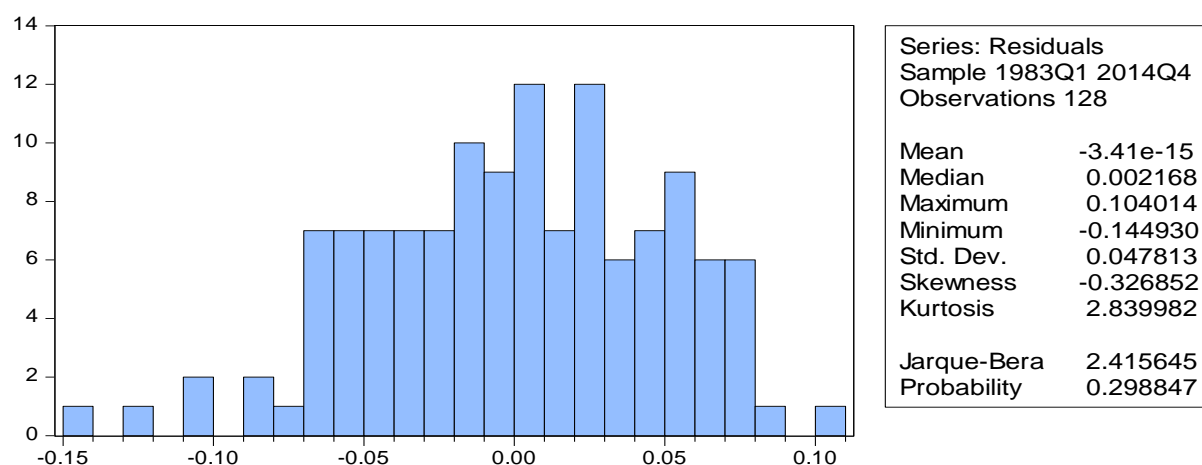
Source: Authors 2015

Table 3 represent the long run impact of real exchange rate on economic growth. The long run equation is presented as follows:

$$GDP = 2.980 + 0.815GE + 0.1431GFCF - 0.009CPI - 0.117RER \dots \dots \dots 2$$

Equation 2 shows that GE, and GFCF have a positive long run relationship with GDP. Conversely, CPI and RER indicate a negative long run relationship with GDP. All the variables are statistically significant in explaining economic growth because they have absolute t-values which are greater than 2. The results assume that a 1% increase in GE increase economic growth in the long run by approximately 0.815, and 1% increase in GFCF result in a positive long run effect in economic growth by 0.143 investment in private and public infrastructure such as roads, plant and equipment expands the country's production capacities. Whereas a 1% increase in CPI reduce economic growth by 0.01 and a 1% increase in RER reduce growth as well by 0.117.

Figure 1 Normality test results



Source: Authors & EViews 2015

The above results for normality test as presented in the table below indicate that residuals are normally distributed with a probability value of 0.298847, which is above 5%. The rule of thumb is that the Jarque Bera must range between 1.5 and 2.5 to showcase stability, as a result it can be concluded that the JB outcomes are statistically significant.

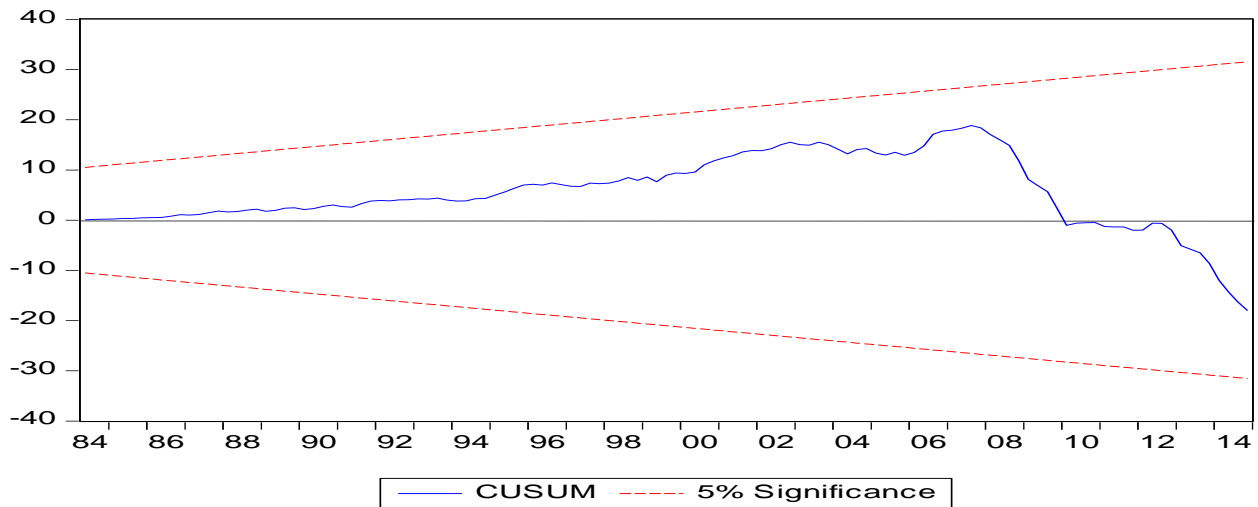
Table 4 Residual and diagnostic tests summary

Tests	Null Hypothesis	t-statistic	Probability
Normality test	Residuals are normally distributed	2.415645 (Jarque – Bera)	0.298847
Serial correlation (Breusch-Pagan)	No serial correlation	12.00898	0.0025
Heteroskedasticity test: White	No Heteroskedasticity	31.43127	0.04800
Ramsey reset test	The model is correctly specified	1.309487	0.2525

Source: Authors 2015

Results from Table 4 show that the test for normality produced a test statistic of 2.416 with a probability value of 0.299, therefore it is clear with a probability of below 5% that we fail to reject the null hypothesis and finalise that the residuals are normally distributed. Serial correlation with a t-statistics value of 12.009 and probability value of 0.002. It is concluded that there is no serial correlation. Heteroskedasticity test show the F-statistics value of 31.431 and the probability value of 0.0480 the null hypothesis of no heteroskedasticity is accepted, therefore the residuals are heteroskedastic. The last diagnostic checks performed is the Ramsey reset test with a probability value of 0.2525, and the probability value of greater than 5% is a clear indication that the model is correctly specified and stable too.

Figure 2 *Cusum test*



Source: Authors 2015

Figure 1 represent Cusum test and the estimated line is statistically significant from 1984 first quarter up until the last quarter of 2014, as it is evident by the solid line being within the 5% significance. This is a clear indication of a good and stable model; which can be used for forecasting without and doubt.

Table 5 *Error Correction Model*

Variables	Coefficient	Std. error	t-statistic	probability
D(LNGE)	0.039616	0.045750	0.865904	0.3883
D(LNGFCF)	-0.035935	0.031766	-1.131235	0.2602
D(CPI)	0.000204	0.001701	0.120066	0.9046
D(LNRER)	-0.105628	0.038857	-2.718356	0.0075
ECT(-1)	-0.230144	0.057693	-3.989094	0.0001
R-squared	0.230400			
Adjusted R-squared	0.198598			
Durbin-Watson stat	2.117814			

Source: Authors 2015

The error correction model in Table 5 shows that there is short run relationship between the explained variable and explanatory variables. The short run model has a speed adjustment which is acceptable both in the short run and long run as it has a residual which has a negative coefficient (-0.230144) with a statistically significant probability value of (0.0001). This model has a low adjusted R-squared of 0.198598 which is below 50%, therefore there is only 20% variation between the explained variable which is growth and the explanatory variables. Durbin-Watson statistics is 2.118 and this indicate that the model is good and stable.

CONCLUSIONS

The purpose of this study was to econometrically assess the impact of real exchange rates on economic growth in South Africa, employing the Johansen cointegration technique for the period 1984Q1-2014Q4.

After review of literature both theoretical and empirical, it became clear that real exchange rate is a substantial variable that explains the changes in economic growth. Theories considered in this study had various basis and assumptions, nonetheless the fundamental idea in all of them was that policy makers can utilize real exchange rate as an instrument to attain higher level of economic growth. Most of the theories mentioned reveal that there is a positive relationship between real exchange rate and economic growth. Empirical literature reviewed revealed that real exchange rate has an effect on economic growth.

Furthermore, ADF and PP tests disclose that most variables do not have unit root at first difference with the use of a quarterly data from 1984:1 to 2014:4. Long-run results revealed that GE, and GFCF all had a positive and significant effect on growth (GDP), whereas CPI and RER had a negative effect on growth. Diagnostic checks

were performed to help with identification of a stable model, as well as short run dynamics. The model was simulated, as a result of that it was demonstrated graphically the changes that took place on the explained variable as to observe the trend or behaviour at which the graph takes.

Policy implications and recommendations

Results obtained in this study have a number of policy implications. This unit divides them into investment policy, exchange rate and fiscal.

Investment policy

Estimation results in this study disclosed that gross fiscal capital formation of which form part of investment expenditure has a positive significant on the economic growth of South Africa more importantly in the long-run, as a result a one percent increase in gross fixed capital formation leads to a 0.143091 increase in economic growth. According to the implication policy, government must spend more on investment so that the country's economic growth can be improved. Factors that government should invest on are; hospitals, schools, roads, plants equipment and infrastructure. In order to reach high levels of economic growth in the country, government should invest more.

Exchange rate policy

An increase in undervaluation will boost economic growth just as well as a decrease in overvaluation (Rodrik, 2008). This relationship holds only for developing countries because of poor financial institutions and markets failures. Empirical review presents a mixed conclusions based on the impact of economic growth on real exchange rate. The long run findings in the previous chapter showed that real exchange rate have a negative effect on economic growth. Real exchange rate misalignment is found to be significant and to have the expected negative sign on economic growth. The coefficient of the long run regression denotes that a one percent increase in South Africa's real exchange rate results in a decrease of 0.117 in economic growth.

Still on the case of exchange rate policy, for a country like South Africa to see its economic growth accelerating, the policy of devaluating the currency may only be applicable in the short run.

With regard to the short run correlation, depreciation escalate growth however that can be perceived as a quick fix that has negative outcomes in the long run. Because in the long run depreciation decrease economic growth.

In this regard, for South Africa to increase economic growth, the policy of devaluating the currency can only work in the short run. Based on the short run relationship, depreciation increases growth but this can be seen only as a quick fix that has negative consequences in the long run. In the long run a depreciation/ devaluation can only reduce economic growth; hence depreciation/devaluation works well in the short run but has negative consequences in the long run. Based on these finding the policy of depreciation to increase exports and employment in the economy might not be the best policy for South Africa. In order to avoid misalignments (overvaluation or undervaluation of the rand) the best policy is to leave the determination of exchange rates to the forces of demand and supply, were the rand exchange reverts to its own equilibrium.

Fiscal policy

Fiscal policy is the deliberate adjustment of government expenditure, taxation or borrowing to help the country achieve desirable economic objectives. Estimation results revealed that government expenditure has a positive influence of the economy of South Africa in the long run, the long run equation shows that a one percent increase in government expenditure will to 0.815 increase on economic growth. Fiscal policy is therefore applies as a solution to stabilise debts and begin to rebuild fiscal space. Government expenditure plays a crucial role in the economy of the country as, government spend its money to; supply goods and services that the private sector would fail to supply, achieve the supply side improvements in the macro-economy and lastly reduce negative externalities.

The 2015 implements government's commitments to narrow budget deficit, stabilise debt and begin to rebuild fiscal space (SARB, 2015). A combination of a lower expenditure ceiling and higher taxes will narrow the deficit to 2.5 per cent of GDP by 2017/18. With provision of current weak economic conditions, the suggestion to restrict the diminishing effect on economic growth.

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EFFECTIVENESS OF COLLABORATIVE AND TRADITIONAL TEACHING ON STUDENTS' MATHEMATICS ACHIEVEMENT AT 8th GRADE

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ABSTRACT

Collaborative teaching (CT) has several advantages over the single teacher's teaching. It has proved its effectiveness in many countries like USA, UK, and China etc. The present study was aimed at comparison of the effectiveness of CT and traditional method of teaching in improving students' mathematics scores. An experiment was conducted on 118 public school mathematics students of 8th grade in district Sargodha by using Solomon Four-Group experimental design. A collaborative mathematics teaching module was developed by the researchers in algebra and geometry to apply the CT intervention. It consists of 20 lessons, and each lesson was carried out in 60mins. The teaching module was validated by two subject matter experts. Achievement of students was measured by using an achievement test of mathematics. A national institute NEAS had developed the items of the test. The statistical techniques like average, standard deviation, and t-test were applied to analyze the data. CT was found to be more effective than single teacher's teaching in enhancing students' achievement score in algebra and geometry.

Keywords: *Algebra, Collaborative Teaching, Geometry, Mathematics, Students' Achievemen*

INTRODUCTION

Mathematics is kind of subject which provides foundations to study other science subjects for example Physics, Chemistry etc. It is also helpful in studying business subjects like Economics, Statistics, and Accounting etc. It is a unique subject with specific language and signs of mathematics. Many Mathematics students face problems in learning mathematical concepts because of its abstraction.

Researchers like Russell (2006), Maeroff (1993), and McDuffe, Scruggs, & Mastropieri (2007) had explored that mathematics students faced learning problems due to single teachers' teaching as compared with co-teaching. They found that teaching of Mathematics in collaborative settings produced better results than single teachers' teaching. Single teachers' poor handwriting, weak focus on students' questions and some time no reply due to busy on using black board, same teaching style, fast writing speed, weak mathematical concepts, poor classroom management of large number of students creates problems for students to learn Mathematics effectively. Teachers overcome their feeling of isolation when teaching in collaborative settings (Robinson & Schaible, 1995).

Mostly, one way teaching of Mathematics with deductive method is being used by single teachers in the Pakistani classroom settings at grade 8. Students usually sit in the class separately and do not collaborate with each other. They do not work in groups or in collaboration. Their task is to just to note down the answers of what teacher writes on the blackboard. Teachers do not focus on the understanding of concepts rather just solving mathematics exercises given in the text books. They dictate Mathematical formulae first and students are supposed to memorize those formulae to solve Mathematical exercises. They are hesitant to discuss concepts with colleagues. Thus students' low achievements in Mathematics persist.

So, co-teaching or collaborative settings teaching with many benefits can be better alternative to traditional deductive method to teach Mathematics at 8th grade level in Pakistan. Researchers conducted their studies on student-student interaction rather teacher-teacher interaction in Pakistan for example, Iqbal (2004), Khan (2008), Ahmad (2014), and Akhtar, Perveen, Kiran, Rashid, & Satti (2012). No research has been conducted to investigate the effectiveness of co-teaching on improving scores of grade 8 students' in Mathematics. Thus, examining Mathematics teaching with different collaborative settings in relation to improve students' scores is vital.

Literature Review

What is Co-Teaching? Collaborative settings are the main characteristics of this kind of teaching. Teachers with equal qualification and experience can involve in teaching together with varies role but with common goals (Sperling, 1994). The basis of collaboration lies in the philosophy of constructivism. John Dewey was the founder of this approach in which co-equal individuals construct new ideas. Parrott (n. d.), described collaborative settings for teaching in five elements shown in figure a.

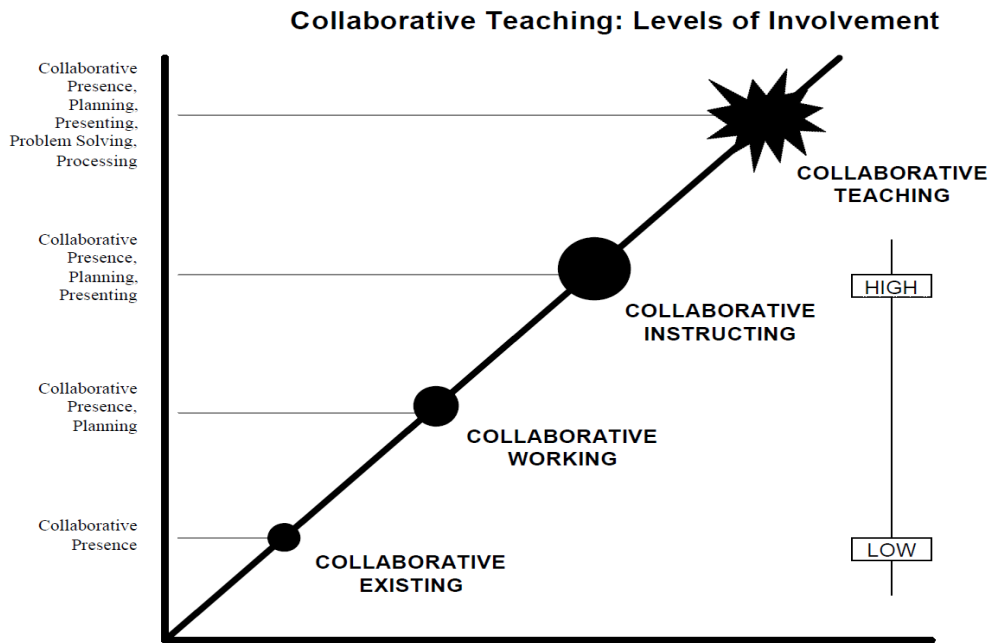


Figure a: Collaborative settings levels

Co-teaching Vs Team Teaching

There are different settings of collaboration between the teachings with unique characteristics. Table 1 is showing the details of both teachings (co-teaching and team teaching) in collaborative settings.

Table 1

Co-teaching Vs Team teaching

	Co-teaching	Team teaching
Student-teacher Ratio	30: 2	30: 1 OR 25: 1
Teachers	Two	More than one
Responsibilities	Distributed	Distributed, but both teachers teaches simultaneously
Presence of teachers	Same classroom	May or may not be in the same classroom. Some are may be busy in planning
Teaching lesson	May or may not teach the same lesson together to the same group	Simultaneously. For example one is discussing topic the other is showing related charts
Lesson	Assistance of more persons is required in classroom	Lengthy and in-depth material
Leadership	No leader	There is a leader

Researches on Teachers' Collaboration

Many research studies conducted internationally for example, Jang (2006) used quasi experimental design to examine team teaching's effect on the achievement scores of grade 8 Mathematics students. In the study two teachers collaboratively teach mathematics for six week period. Significant difference was found students' achievement scores taught through team teaching and traditional teaching in mathematics. He suggested using true experimental design. Similarly, Parker (2010) conducted an experiment on 10th grade mathematics students to investigate co-teaching effectiveness to increase students' scores. Students' achievement was measured by achievement test. Significant difference was found in students' scores taught through co-teaching and without co-teaching. Further, Goddard, Goddard, & Moran (2007) explored the relationship between teacher-teacher interaction and mathematics students' achievement. The data were collected from US schools at elementary level. It was revealed that high scores were obtained by the students where collaborative teaching was used in schools. Moreover, Witcher and Feng (2010) compared mathematics co-teaching with single teachers' teaching effect to enhance 5th grade students scores. Two 5th grade classes were participated in study. They applied inferential statistics such as independent samples t-tests to compare students' scores. It was concluded that that co-teaching was better alternative to single teachers' teaching. Last but not the least, Almon and Feng (2012) conducted study with the same purpose. It was conducted on 4th grade students. A test was used to measure students' achievement in the topics such as numbers, mathematical operations i.e. multiplication & division. Mixed results were found. For example In the mathematical operation of multiplication, students taught through solo teaching showed better scores than co-teaching; While the order of better teaching was reversed in numbers.

Models of Co-teaching

There are five models of teachers' collaboration. In the first co-teaching model i.e. one teaches one observes, one teacher teaches the students and in the same time the other teacher observes the students in the same class. The next model is one teaches and one assists. In this setting for collaboration, one teacher gives instruction to the students and the other teacher assist the students in learning mathematics by reaching them in the class at the same time. The second teacher may assist the first teacher in delivering lesson by helping him in managing charts and activities (Friend & Cook, 2000). The best advantage of this model is that one teacher will

remain free to help students and teacher (Wilson & Martin, 1998). The 3rd model named is station teaching. Both teachers are involved in imparting instructions in this kind of collaborative setting. Students are supposed to move from one station to other station for learning. The students moved in pre-planned stations while teachers provide pre-planned instructions. Parallel teaching, 4th model, process starts with the division of a class into two equal groups. Each group of students receives instructions independently (Friend & Cook, 2000). It is appropriate to use this model when there is need to meet diversified students (Cuellar, 2011). Alternative teaching includes two groups in the class. One is larger group than the other. The teacher usually takes remedial classes with small group. The teacher teaches different topic to the small group.

Following objectives were the focus of the study:

1. Design teaching module for the mathematics teachers at grade 8 using co-teaching.
2. Compare the impact of co-teaching and traditional teaching on students' achievement in algebra and geometry with proficiencies like understanding of mathematical concepts, knowledge of mathematical procedures, and mathematical problem solving.

Null Hypotheses

The hypotheses were as follows:

H₀₁: Mean scores of grade 8 mathematics students in control and experimental groups do not differ significantly in understanding of mathematical concepts in algebra.

H₀₂: Mean scores of grade 8 mathematics students in control and experimental groups do not differ significantly in knowledge of mathematical procedures in algebra.

H₀₃: Mean scores of grade 8 mathematics students in control and experimental groups do not differ significantly in solving mathematical problems in algebra.

H₀₄: Mean scores of grade 8 mathematics students in control and experimental groups do not differ significantly in understanding of mathematical concepts in geometry.

H₀₅: Mean scores of grade 8 mathematics students in control and experimental groups do not differ significantly in knowledge of mathematical procedures in geometry.

H₀₆: Mean scores of grade 8 mathematics students in control and experimental groups do not differ significantly in solving mathematical problems in geometry.

METHODOLOGY

An experimental research study was designed to investigate co-teaching effectiveness in enhancing 8th grade students' scores in mathematics. An achievement test of mathematics was used to measure students' mathematical proficiencies. True experimental design i.e. Solomon Four Group was used in this study. According to Cresswell (2002), all the groups receive post-tests. The subjects were assigned randomly to all the groups. Fraenkel and Wallen (2006) stated that it is essential in true experimental design that subjects must be selected and assigned to groups randomly. According to Best and Kahn (2008), the internal validity threats can be best control by this design. The experiment was conducted for 37 days and it was appropriate when compared with given time allocation on the Punjab schools website. One lesson was allocated 60 minutes in this research study. It was happened by combining two consecutive class periods i.e. 30 minutes each.

One school from public sector was selected on convenient basis from Sargodha. Prior permission from the head of the school was taken. Students' studies at 8th grade i.e. 118, were included in this study. Two teachers who were teaching mathematics at 8th grade participated in the experiment voluntarily. They were qualified as M.Sc. mathematics with B.Ed. the first researcher with same qualification also participated as co-teacher in this study. The collaborative settings used in this research were team teaching, one teach-one assist, and alternative teaching. The detail of co-teaching settings and traditional classroom setting were given in the figure 1 & 2.

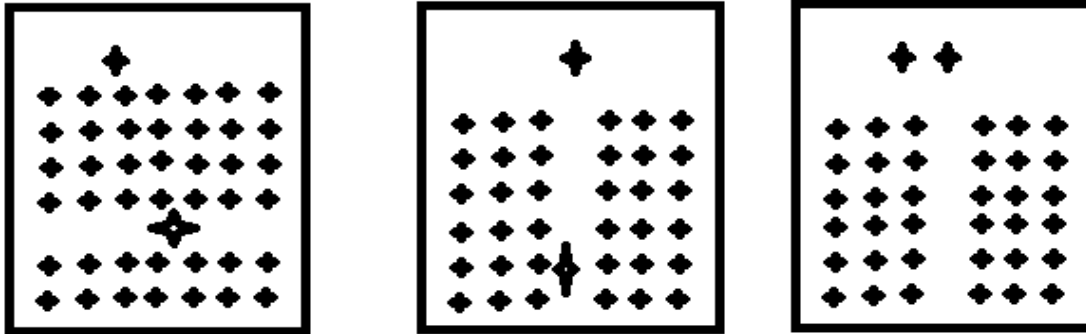


Figure 1. Collaborative teaching settings i.e. alternative teaching, one teach- one assist, and team teaching

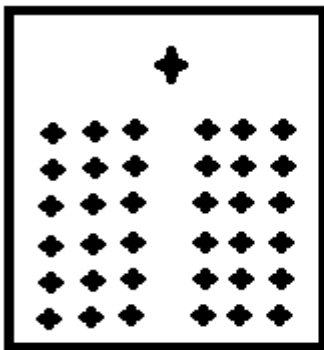


Figure 2. Traditional teaching i.e. single teacher teaching

Training of Volunteer Mathematics Teachers

Two days training with two mathematic teachers was held before starting the experiment. The time for the sessions were two hours each day. On day1 researcher introduced himself to the sampled teachers. He told to the volunteer teachers about the objectives and syllabus to be covered. He shared with them the schedule of classes that includes time and topics. Both teachers were requested to be regular and punctual. On day 2, first researcher separately explained the co-teacher about co-teaching settings that how will the co-teaching take place? What measures should be taken before applying teaching in collaborative settings?

Co-teachers Collaboration

In this research study both the teachers met regularly on daily basis for one hour for planning, developing lessons, decisions about collaborative settings, time management of teachers, and students. Matters relating to the availability of classrooms, suitability of time table, related facilities, and schedule of extra classes were discussed informally during school working. Change in classes schedule was made earlier.

Research Instrument

An achievement test of mathematics was used in this study as a measuring tool. It was MCQs type based on four options. The items had been developed by the NEAS, a National institute for educational assessment. Mathematics content had divided in to five strands such as arithmetic, algebra, geometry (measurement and construction) and probability. There weightages in the national mathematics curriculum in 2000 were in 43%, 32%, 20%, and 5% respectively. According to textbook of mathematics at 8th grade these strands were having related outcomes 12, 6, 5, and 3 respectively. This research included only two strands i.e. algebra and measurement geometry having 6 and 3 learning outcomes in accordance with national mathematics curriculum respectively. Further, mathematics textbook of grade 8 addressed three students' proficiencies in mathematics i.e. understanding of mathematical concepts (CU), knowledge of mathematical procedures (PK), and solving mathematical problems (PS). Content of textbook with respect to proficiencies were found to be 30%, 40%, and 30% for CU, PK, and PS respectively.

Table 2
Table of Specification

Content Strand	Learning Outcomes	items	Items	items	Total
		CU	PK	PS	
Algebra	algebraic expressions	1	3	-	4
	Solve equations	1	1	-	2
	Derivation, and application of formulae	2	1	-	3
	Factorization	1	2	-	3
	Solution of linear equations	1	1		2
	Problem solving exercises	-	1	6	7
Geometry	Pythagoras' theorem	4	-	2	6
	Sphere and cone (Area and volume)	-	1	-	1
	Area of rectangles	-	3	1	4
Total		10	13	9	32

Table 2 shows that there were total 32 test items (10, 13, and 9 items for CU, PK, and PS). On the basis of Point-Biserial and items difficulty level researchers selected initially 52 items out of 280 items developed by NEAS. These were 35 items from Algebra and 17 items from Geometry. Secondly, subject matter experts of mathematics gave their opinions on 52 items about proficiencies addressed in mathematics textbook. Items i.e. 49 out of the 52 were selected on majority decision. Lastly, researchers finalized 32 items out of remaining 49 items based on Point-Biserial Correlation and difficulty index for good items.

Teaching Module of Mathematics

Mathematics at 8th grade is compulsory subject. It is being taught using traditional teaching method employed by a solo teacher. Alternative to that co-teaching approach has many characteristics such as development of mutual trust and respect among co-teachers, develop interest of students in mathematics due to versatile styles of teaching Mathematics teachers in Pakistan are still using traditional method of teaching instead co-teaching, having many advantages. In Pakistan, Directorate of Staff Development (DSD) Lahore and United Nations Educational, Scientific, and Cultural Organization (UNESCO) had developed some modules of mathematics teaching for grade 8. Those modules were developed for single teachers' teaching. There are some gaps in those modules DSD developed modules for arithmetic and geometry only. They did not use collaborative teaching settings to teach mathematics instead employed lecture and drill methods. For the same grade UNESCO developed module which covered both algebra and geometry, it addressed only few areas of both content strands. Those module used inductive and drill method to teach mathematics at grade 8. No co-teaching module has developed yet in Pakistan for teaching of 8th grade mathematics. Lesson plans were developed in this study module. It has covered only algebra and geometry. Three co-teaching settings were employed in the module such as one-teach one-assist, team and parallel teaching. Further, with these collaborative settings some methods for example inductive, activity based, and problem solving methods and techniques like verbal question answers, tests, worksheets were used. The module was organized as algebra at first and second geometry as per order of curriculum and textbook of grade 8 mathematics.

Ethics for this Research

List of research ethics followed in this study were: permission was taken from the NEAS to use items from pool of items, punishment was avoided and students were treated with care, polite and in respectful way, volunteer participation of teachers in the experiment was done, secrecy of the data was ensured and kept confidential, anonymity of the respondents were ensured (Cohen, Manion, & Morrison, 2007), results were not deceptive, permission was taken from the school headmaster to conduct the study

Control of Variables

The detail about the control of confounding variables was as follows: Co-equal teachers with respect o qualification and teaching experience were selected for conducting that experiment. They all were M.Sc. Mathematics and B.Ed. Pre-test and treatment interaction was measured by Factorial ANOVA, and was controlled using Solomon Four-Group research designs. Long duration experiment was conducted to control the effect of pre-testing. Random selection and assignment also helped to control this variable. With the same argument (i.e. long duration of experiment) novelty effect was controlled, validity and reliability of test items were ensure by NEAS Pakistan. Students' attendance was marked on daily basis and the scores of students were dropped for final data analysis whose attendance was less than 75%.

Results

Q-Q-plot was drawn to check the normality of data. Figures 3 and 4 showed date on straight line. So, data collected through test was distributed normally. Data of both experimental and control groups were shown normal.

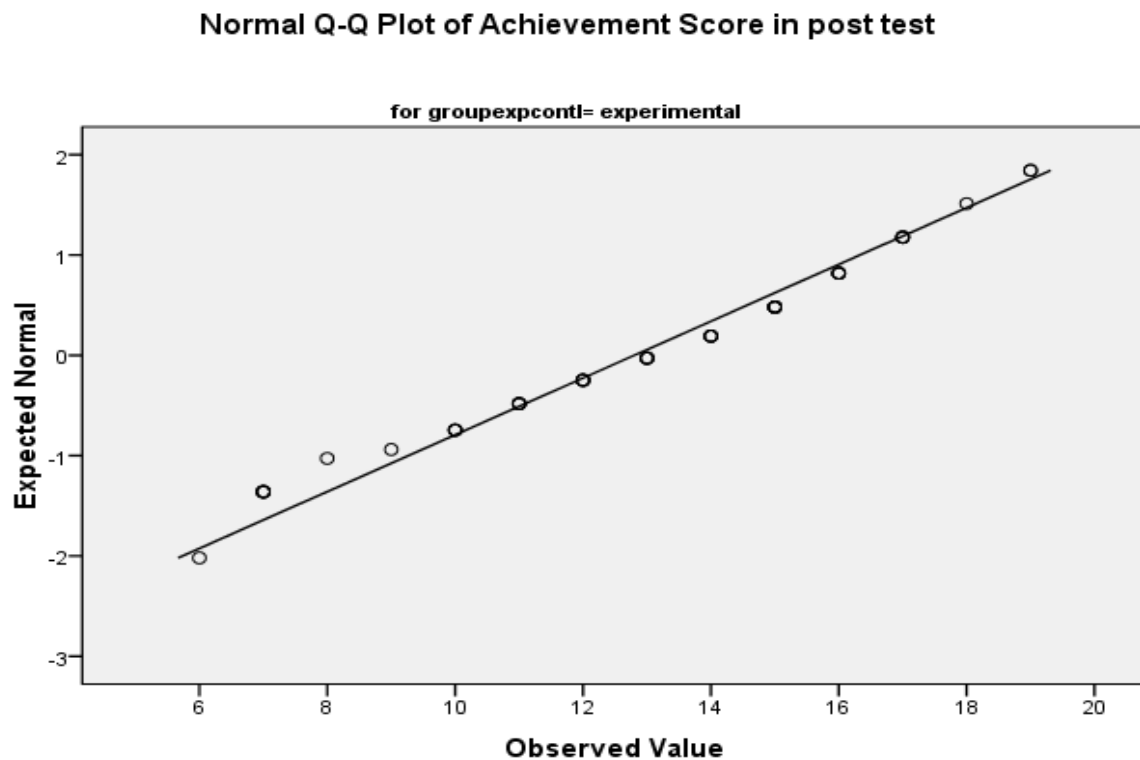


Figure 3: Q-Q plot for experimental group

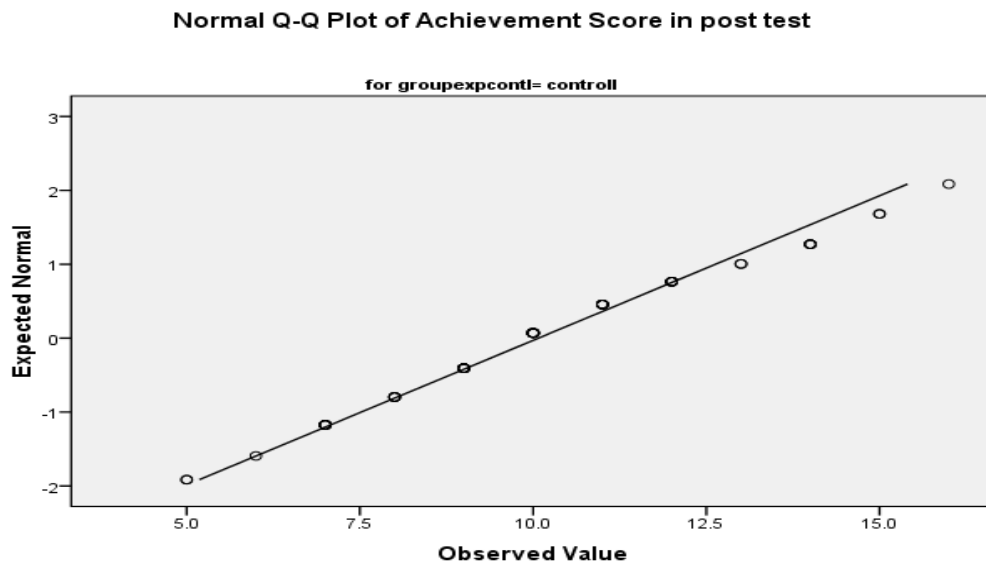


Figure 4: Q-Q plot for control group

Q-Q-plot was drawn to check the normality of data. Figures 5 and 6 showed data on straight line. So, data collected through test was distributed normally for both pre-tested and not pre-tested groups.

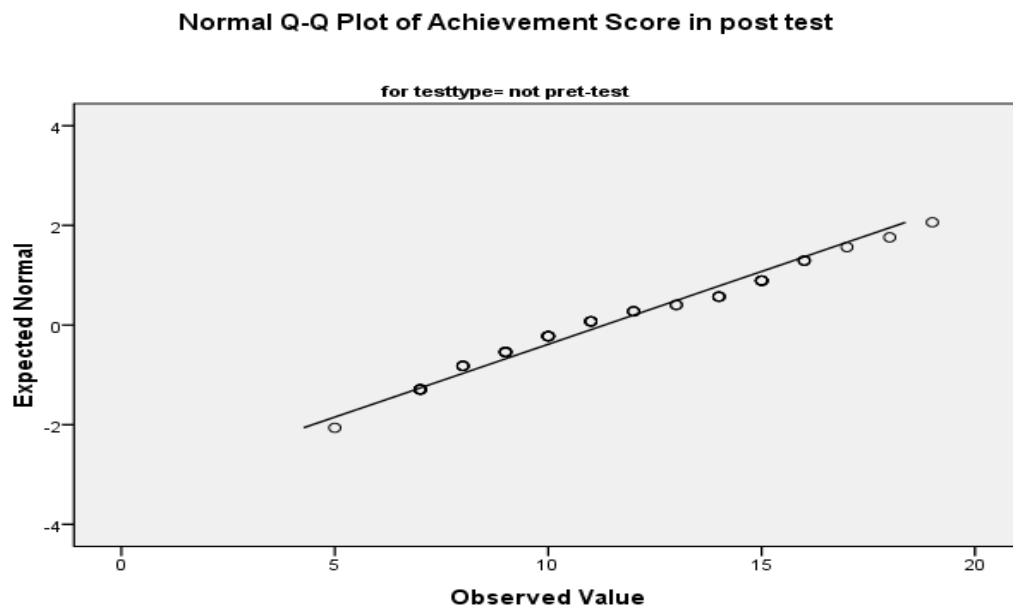


Figure 5: Q-Q plot for subjects without pre-test given

Normal Q-Q Plot of Achievement Score in post test

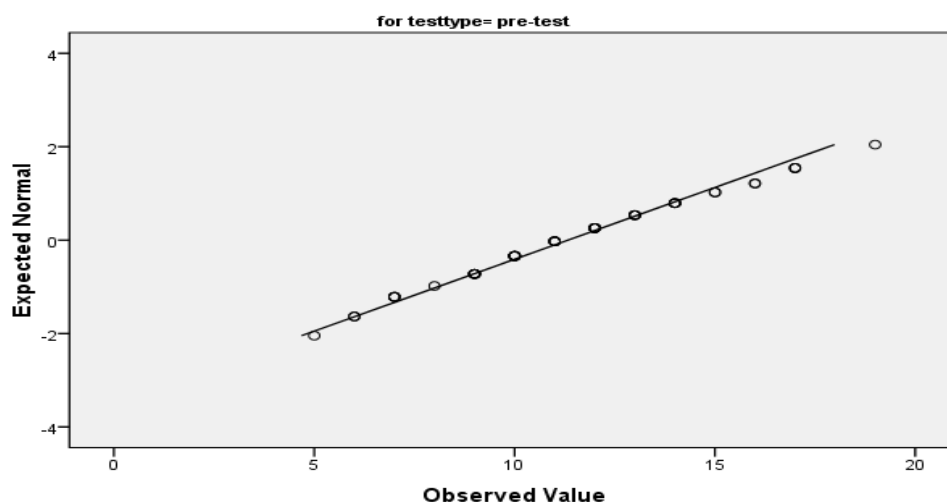


Figure 6: Q-Q plot for subjects with pre-test given

Students’ Scores in Algebra and Geometry with Mathematical Proficiencies

Null Hypotheses were tested by using independent sample t-test. There were two groups in the study i.e. experimental and control. The means scores were shown in table 3.

Table 3

Mean Scores of Experimental, Control with and without Pre-test

Groups	With Pre-test	without Pre-test	Total
Ex	12.29	13.38	12.80
C	10.38	9.83	10.08
Total	11.33	11.32	

Note. Ex=Experimental and C=Control

Table 4

Difference between Groups Mean Scores

	Sum of Squares	df	Mean Square	F	P
Groups (Ex & Co)	180.86	1	180.86	19.504	.000
Groups (with and without pre-test)	1.78	1	1.78	.191	.663
Groups *Conditions	16.19	1	16.19	1.75	.190

Table 4 showed that significant value $0.000 < 0.05$, hence students' means scores of groups i.e. experimental and control were significantly different. Scores of students' taught through CT were higher than other group students' scores i.e. 12.80 and 10.07 respectively.

Table 5

Comparison between students' achievement scores of experimental and control groups on proficiencies i.e. understanding of mathematical concepts, knowledge of mathematical procedures and solving mathematical problems on items from Algebra

Note. CU= understanding of mathematical concepts, PK=knowledge of mathematical procedures and PS=solving mathematical problems, Ex=Experimental, C=Control
 $p = .05$ (df = 96)

No significant difference was found in collaborative and single teacher teaching groups students' mean scores on the problem solving items related to algebra in the achievement test with significant value $p = 0.78 > 0.05$. But significant difference was found in students' mean scores taught through CT and traditional single teacher teaching on conceptual and procedural knowledge algebra items with significant values 0.001 and $0.001 < 0.05$. The mean achievement scores of students indicated that experimental group students performed better on test items related to conceptual and procedural knowledge items of algebra than control group students. Details are shown on figure 7.

Table 6

Comparison between students' achievement scores of experimental and control groups on proficiencies i.e. understanding of mathematical concepts, knowledge of mathematical procedures and solving mathematical problems on items from Geometry

Note. CU= understanding of mathematical concepts, PK=knowledge of mathematical procedures and PS=solving mathematical problems, Ex=Experimental, C=Control
 $p = .05$ (df = 96)

Content Strand	Proficiency	Group	n	\bar{X}	SD	d f	t	Sig.
Algebra	CU	C	53	2.16	1.28	96	-3.54	.001
		Ex	45	3.1	1.27			
	PK	C	53	2.73	1.19	96	-3.59	.001
		Ex	45	3.8	1.61			
	PS	C	53	1.7	0.91	96	-.28	.78
		Ex	45	1.8	1.09			

No significant difference was found in collaborative and single teacher teaching groups students' mean scores on the conceptual understanding, and procedural knowledge items related to geometry in the achievement test. The significant values 0.21 and 0.27 were greater than 0.05 respectively. But significant difference was found in students' mean scores taught through CT and traditional single teacher teaching on problem solving geometry items as the value of $t_{96} = -2.06$, $p = 0.04 < 0.05$. Figure 7 were showing the details.

Content Strand	Proficiency	Group	n	\bar{X}	SD	d f	t	Sig.
Geometry	CU	C	53	1.52	0.75	96	-1.27	0.21
		Ex	45	1.71	0.66			
	PK	C	53	1.37	0.97	96	-1.10	0.27
		Ex	45	1.60	1.03			
	PS	C	53	0.57	0.75	96	-2.06	0.04
		Ex	45	0.9	0.80			

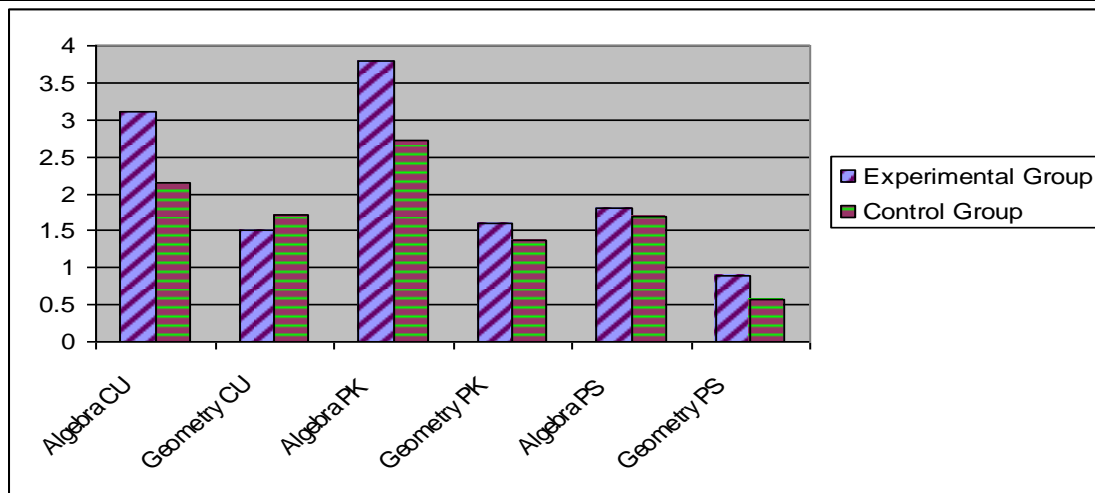


Figure 7: Students Mean scores on mathematical proficiencies in Algebra and Geometry

Conclusions

The conclusions were based findings of this study. Effectiveness of co-teaching was explored in this study in Algebra and Geometry. It was concluded that co-teaching a better alternative to single teachers teaching (with deductive method of teaching) in Pakistan. Moreover, it was concluded that for algebra co-teaching was better alternative to single teachers' teaching to improve students' scores in understanding of mathematical concepts and knowledge of mathematical procedures but not for students' problem solving ability. Furthermore, it was also concluded that for geometry co-teaching was effective teaching approach as compared to single

teachers' teaching to improve students' scores in problem solving but not for improving students' scores in understanding of mathematical concepts and knowledge of mathematical procedures.

Discussion

Co-teaching is being used as an alternative approach to teaching of mathematics with traditional teaching. The studies at international level in developed countries showed its effectiveness to enhance students' score (Mcduffe et al., 2007). In this study, it was found that co-teaching was effective in the understanding of mathematical concepts and knowledge of mathematical procedures in algebra but not in problem solving proficiency. This result was due to teaching of mathematics in English language as directed by National Educational Policy (2009). Earlier, Urdu was the medium of instruction in public schools of Punjab province. Additionally, the test items were also developed in English. Due to low command on English students studying at 8th grade in public schools got low scores in problem solving items of algebra. As this new approach to teaching of mathematics was exposed first time in schools, they might have adjustment problems. The result of the study opens new ways to adapt new approach of co-teaching in Pakistan.

Suggestions and Recommendations

Based on the results of this research it was suggested that public schools may adapt co-teaching, a new approach to teach mathematics at grade 8. The study was based on true experimental design with controlling many confounding variables, so it may be replicated. It was recommended that included co-teaching as a course to teach mathematics during the training of prospective teachers. A teaching module may be developed covering all content strands of mathematics. It may be extended to different grade levels and by using different collaborative settings for mathematics teaching.

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FACTORS THAT AFFECTING CONSUMER'S BEHAVIOR OF HONDA CIVIC IN BANGKOK METROPOLITAN AREA

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ABSTRACT

In this day and age, human are always using the car for they diary life, no matter if it's their own car or public car. If looking into Bangkok metropolitan area, there are over fourteen millions people are lived and for last ten years the Japanese car are very famous and the most using in Bangkok such as Honda and Toyota, people always support this two brand and if they had re-purchase they will buy Honda and Toyota car. If look back in this era, the car from Europe are coming and it has a good response from consumers in Bangkok, together with some of Europe car are already has manufacturing hub that will make the price cheaper and along with the preference of consumers thinking it a luxury car. The most Europe car using in Bangkok are Mercedes-Benz, BMW, Audi and Mini Cooper. If we looking at Japanese car market in the next five to ten years, what is the sales are going to be?

This research is a quantitative research and it's a survey research. The method of collecting data the questionnaire from the target group, who are using Honda Civic in Bangkok by distributing at parking lot of department stores amount of respondents are 50 person on 27th – 28th April , 2018. The questionnaires will be statistical analysis was performed using the SPSS program.

The demographic factors from the sampling group, the result shows that, most respondent is male 32, 61 percent. 30-40 years old, which is 26, 50 percent. Single, which is 24, 46.3 percent. Bachelor's degree, which is 32, 62 percent. Freelance, which is 17, 33 percent. Income around 30,001-40,000 Baht, which is 16, 30.76 percent.

Keyword: Cars, Honda Civic, Decision making, Consumer's behavior, Marketing Mix

INTRODUCTION

In this era, automobile is a very important factor for diary life because in everyday human has to commute from some places to other, so automobile is the one of most used. Especially in big urban areas with continuous growth, while the mass transit services of government are insufficient. Therefore, it stimulates of consumers with high demand to have personal cars even the situation with oil price is non-favor. Dominant customer behavior on the automobile market is to buy compact cars (C-segment) include Honda Civic (Sedan Hatchback, engine 1498-1799 cc.) what is the kind of most popular car in Thailand by consumers opinion and choice.

Figure 1

Sales of compact car rank in 2017 in Thailand (source: Headlightmag, 2017)

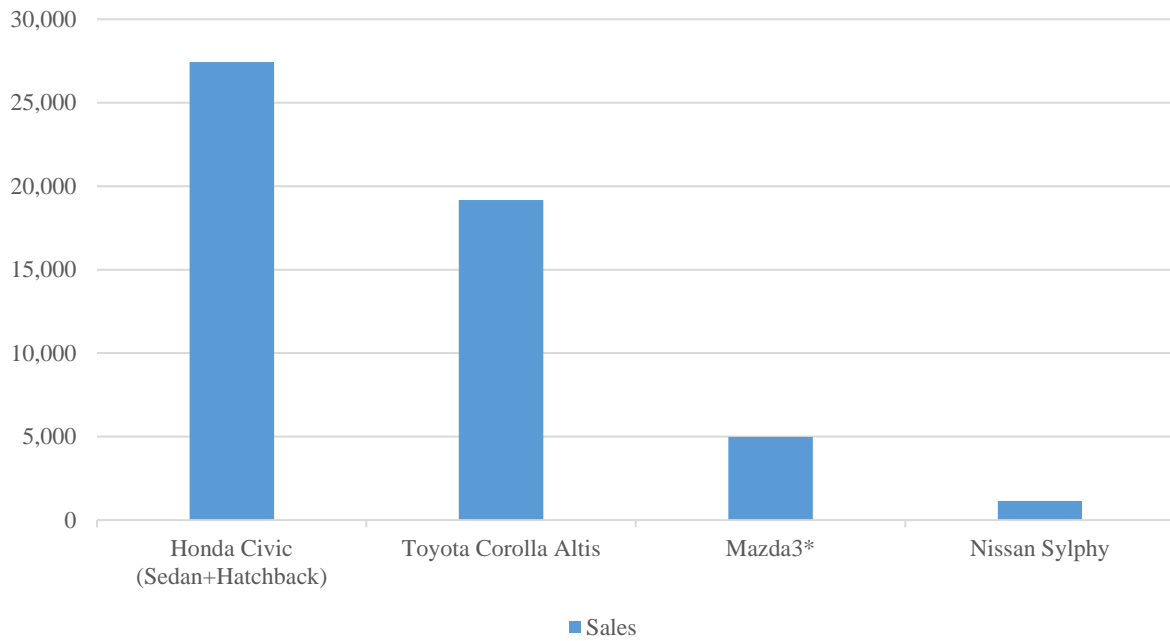


Figure 2

Sale of European cars in 2016-2017 in Thailand (source: Headlightmag)

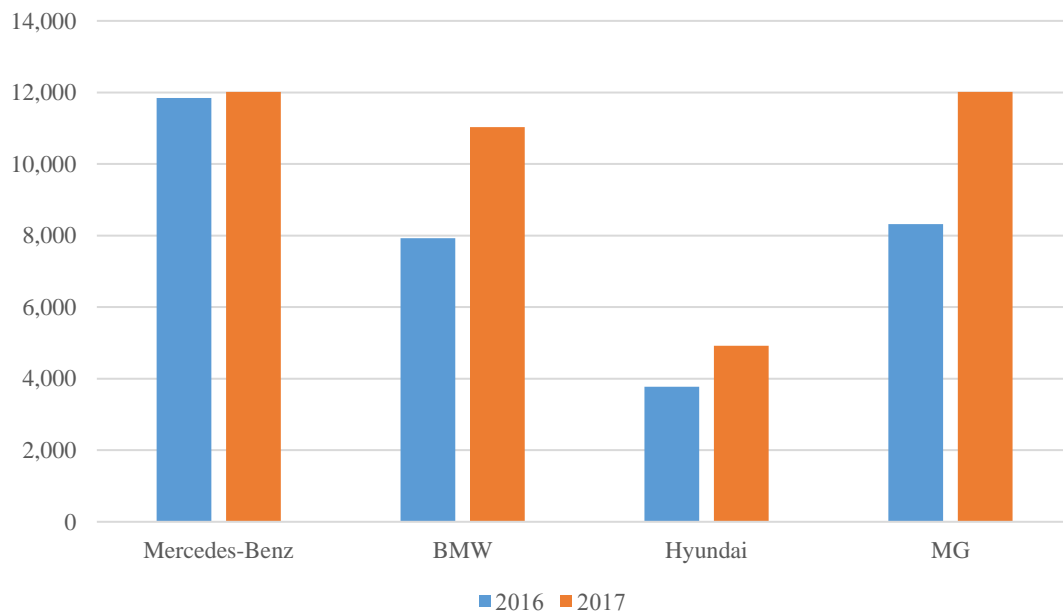


Figure 3

Most popular car models of Honda (source: Thailand Autobook)

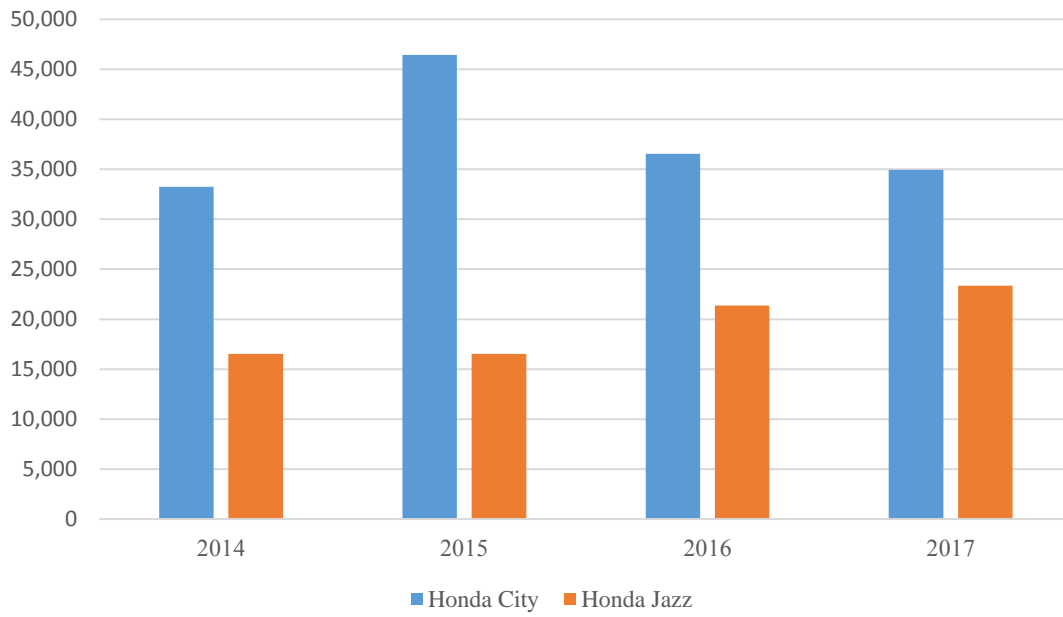


Figure 4

The net sales of Honda by business (source: world.honda)

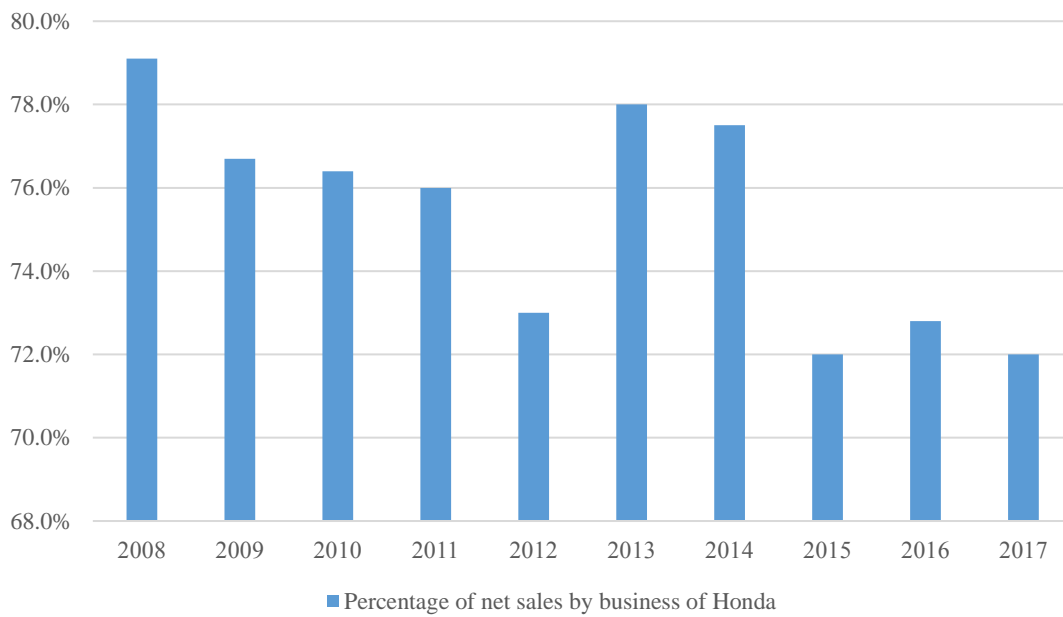
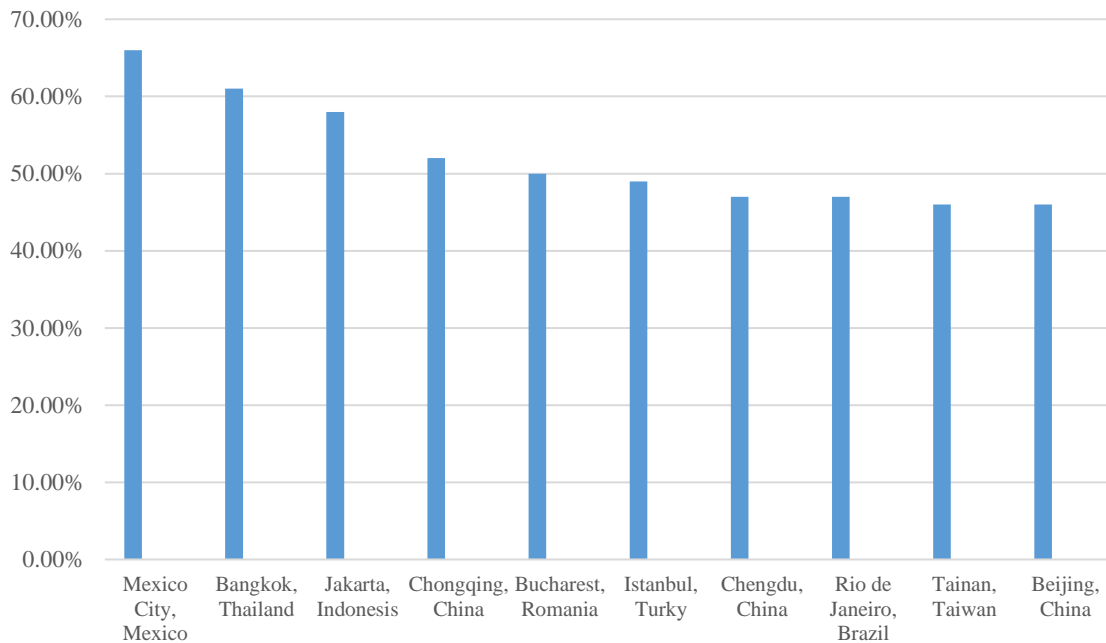


Figure 5

The top traffic jam cities in the world in 2017 (source: BusinessInsiderUK)



1.1 Objectives

1.1.1 To analyze gender, age, status, education, occupation, and income of Honda Civic buyer's in Bangkok metropolitan area.

1.1.2 To consider the marketing mix product, price, place and promotion of Honda Civic buyer's in Bangkok metropolitan area.

1.1.3 To analyze relationships between personal features and patterns of consumer's behavior of Honda Civic buyer's in Bangkok metropolitan area.

1.1.4 To correlate corporate priorities of Honda company with current trends of Thai car market.

1.1.5 To give recommendation on Honda Civic promotion in Thai market.

1.2 Purpose

Based on the survey of Honda Civic consumers' behavior to make recommendations on Honda automobile quality features and marketing mix improvement.

1.3 Problem Setting

Bangkok Metropolitan area, is a place where over fourteen millions people live and move every day. Auto traffic in Bangkok grow up significantly [Figure5]

For last ten years Japanese car are very famous and the most using in Bangkok (such as Honda and Toyota). Bangkok people also support this two brands, if they want re-purchase. Reasons why Bangkok people choose Honda car are price, services for order some details, credit line and so on. Cars from Europe are coming to Bangkok market got good response from local consumers, Moreover some European car are already manufacturing in Thailand (BMW, Thailand, Rayong) car sales it makes car sales price cheaper. The most

European car using in Bangkok are Mercedes-Benz, BMW, Audi and Mini Cooper. If we look at Japanese car market in the next five ten years, what the sales are going to be? Based on forecasting of modern trends we can suggest decreasing of Japanese car market share together with increase of Thai people wealth income and preferences to buys European cars. Taking into account that Japanese cars sales decrease can negatively impact factories that are mostly located in Thailand (decrease of income, work places, tax payment and so on). The problem of supporting the high level of sales on Thai market of Honda care is very significant and relevant.

HYPOTHESIS

Hypothesis 1: Honda Civic car is not really popular among younger (less than 30 years old) customers of Bangkok.

Hypothesis 2: Consumers care with vary hi-tech gadgets and additional technical value.

Hypothesis 3: Female do not prefer Honda Civic.

Hypothesis 4: Bangkok consumers prefer to buy high fuel saving and eco cars.

Hypothesis 5: Thai consumers makes decision to buy Honda Civic car due to aggressive advertisement campaign and reasonable discount.

LITERATURE REVIEW

Jurairuk Jansriharaj (2010) that studied about the influence of corporate image on consumers trust and loyalty of Honda Automobile (Thailand). The results show that corporate image of Honda Automobile includes services, security systems, car specifications, eminence and responsibility to social and environment.

Siriphong Preuthipan (2004) depicted consumer's satisfaction is the heart of marketing process of the company that have to measure in a systematic about level of consumer satisfaction because the satisfaction is the important factor to lead to the job to be successful. In addition, executives must make their employees satisfied their work and also must make the consumer satisfied too, because the service progress is an important factor are number of users, so that the manager should to study the factors and element of employees and consumers satisfaction for being beneficial for company.

Thanachai Chalermchai (2015) considered about factors influencing the selection of purchasing luxury cars of people in Samut-prakran province. The research results revealed that most of the questionnaire respondent had used the luxury cars mostly in the brand of Mercedes-Benz and had owned two cars.

Careeya Bhoopat (2008) analysis of factors affecting consumer's buying behavior of Toyota New Vios in Bangkok metropolitan area. Despite the results that consumers with different age, different status, and different education level. That have different decision making behavior to select and purchase it, and also the marketing mix factors in term of product, price, place, and promotion have a relationship with consumer's decision making behavior to select and purchase Toyota New Vios.

Julin Pudtanlek (2002) indicated factors influencing decision to buy passenger car in Bangkok. The study indicated that consumer's value includes safe driving, saving fuel, easy to find parts, warranty, the car design, also includes distribution channel such as reliability, good service and service center maintenance.

Teerapong Thephassadinnayudhya (2015) classified of factors affecting the decision to purchasing the ecology car (eco-cars) of the consumers in Bangkok. Despite the most respondent are female, with Bachelor's degree, five members in family. The use of cars most selected eco-cars brand was Toyota. Distribution channel were the sales galleries or showrooms and the payments were made by loans or installments from the financial companies. Most respondent decided to purchase the eco-cars for their first car. The samples overall rated the marketing mix factors at the highest level. Most of them ranked the people factors as the first priority, followed by product, price, place, and promotion.

Jurairak Jansriharaj (2010) the results show that corporate overall, the level are very loyal. When considering each factors, she found that consumers will tell the good thing that get Honda to someone. If

someone that need to buy some new car they will recommend Honda. Next time, if they want to buy some new car will high tendency to buy Honda car again. All of this consumers aspects are very good but consumer's aspects of consumer loyalty to Honda are average.

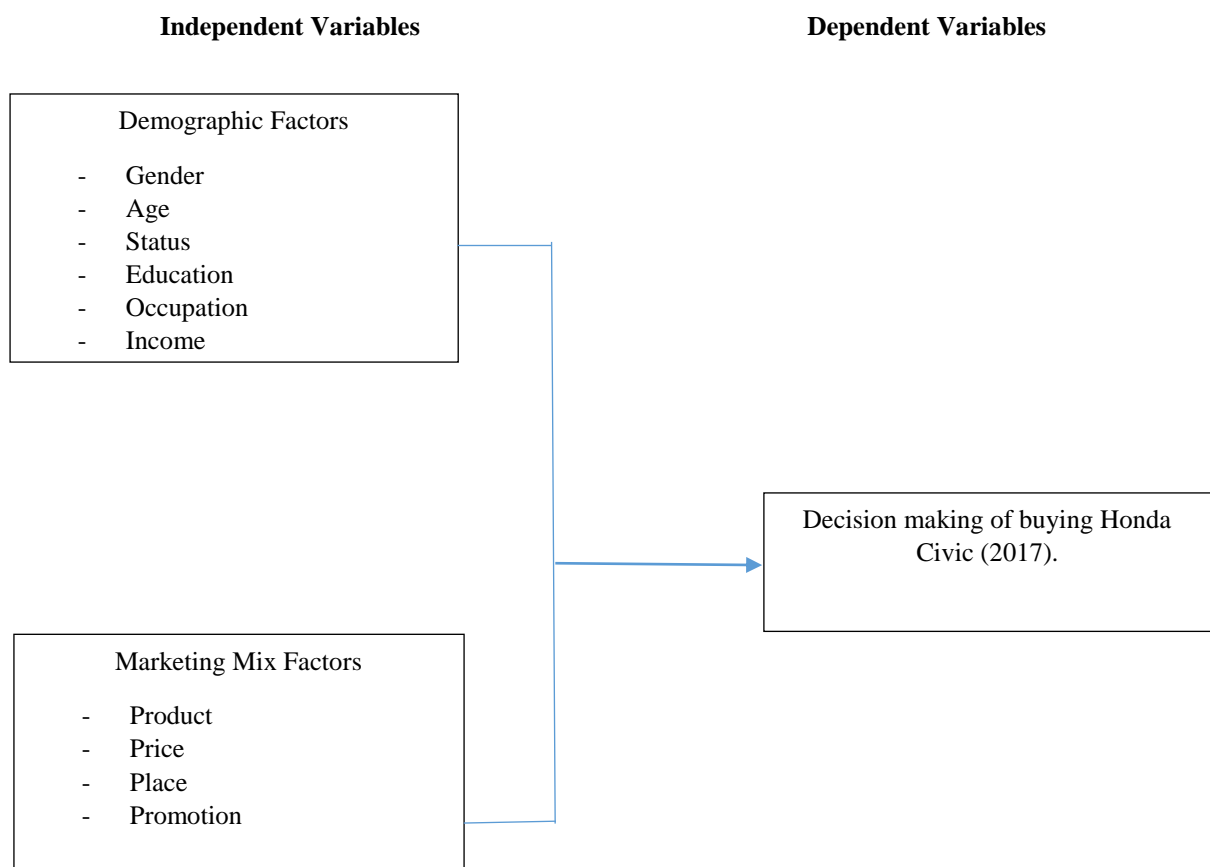
Hill and Alexander (2000) have explained consumer satisfaction is measured that all product can response what level of customer needs. The satisfaction will occur when people can response their needs by reducing their stress and it's what happens to people who are based on basic needs that will relate with the results.

Nita Ditboonchern (2010) the studied about the factors affecting eco car buying decision of consumers in Bangkok. The results show that the demographic factors includes age, education, occupation, and income are having relationship with consumer's behavior buying decision to buy eco cars , except gender do not have relationship. The marketing factors including product, price, place, and promotion do not have relationship with consumer's behavior buying decision to buy eco car.

Siritar Sumnienglum (2010) concluded of factors affecting consumer's behavior of Honda and Toyota in Bangkean, Bangkok area. The data show that most of respondent are using Toyota car as new car and the type is compact car via themselves is most influencer to buy. For about the marketing mix factors including product, price, place, and promotion are the influence for consumer's behavior of Honda and Toyota.

THEORITICAL FRAMEWORK

From the study of different theories and concepts, involve literature review, the researcher can use the data to be a theoretical framework. For being a guideline to conducting research in topic "Factors Affecting Consumer's Behavior of Honda Civic on Bangkok Metropolitan Area".



METHODOLOGY

This research is a quantitative survey. The method of collecting data is a questionnaire. Primary data was aggregated and analyzed by using software program such as SPSS, methods of lankest scale and grouping correlation were used.

Survey was conducted in Bangkok metropolitan area on 27th -28th April 2018, 72 questionnaires were distributed on parking lots of department stores (Central Plaza Pinklao, The Mall Bangkhae), and 52 questionnaires were received back and fulfilled correctly.

RESULTS

Table 1

Personal data of surveyed persons (made by author)

Personal Data		Frequency	Percentages
Gender	Male	32	61
	Female	19	36
Age	<20 years old	4	7.7
	20-30 years old	20	38.8
	30-40 years old	26	50
	40-50 years old	2	3.8
Marital Status	Single	24	46.3
	Married	19	36.5
	Divorce	3	5.7
	Not specify	6	11.5
Education	Vocational Certificate	6	11.5
	Senior High School	6	11.5
	Bachelor Degree	32	62
	Master Degree	7	14
	Not specify	1	2
Occupation	Student	7	13
	Government Official	14	27
	Employee/Banker	5	10
	Own Business	9	17
	Freelance/Constructor	17	33
Income	<10,000 Baht	2	3.8
	10,001 – 20,000 Baht	10	19.3
	20,001 – 30,000 Baht	11	21.15
	30,001 – 40,000 Baht	16	30.76
	40,001 – 50,000 Baht	6	11.53
	>50,001 Baht	7	13.46

By distributing 52 questionnaires, the result shows that: the most respondent are male, age 30-40 years old, almost single, has bachelor degree, a freelance and constructor and has income 30,001-40,000 Baht.

Table 2

Factors impacted on surveyed consumer's decision making (made by author)

Product	Strongly disagree	Disagree	Moderate	Agree	Strongly agree
Appearance of the design, outside and inside of the car	0	0	3,6%	10,19%	39,75%
Use additional gadgets and security system	0	0	4,8%	27,52%	21,40%
High fuel saving	0	0	3,6%	27,51%	22,43%
The engine has an acceleration rate	0	0	37,71%	9,17%	6, 12%

By distributing 52 questionnaires, the results shows that the most respondent is making decision by themselves, which is 32 persons, 61.6 percent.

Table 3

Product analysis by surveyed persons (made by author)

By distributing 52 questionnaires, the result shows that the most respondent of appearance of the design, outside and inside of the car is strongly agree. There are 39 people, which is 75 percent. The most respondent of use additional gadgets and security system is agree. There are 27 people, which is 52 percent. The most respondent of high fuel saving is agree. There are 27 people, which is 51 percent. The most respondent of the engine has an acceleration rate is moderate. There are 37 people, which is 71percent.

Table 4

Factors	Frequency	Percentage
1. Myself	32	61.6
2. Got car from parent	18	34.6
3. Got car from company	2	3.8

Why you make decision to buy by surveyed persons (made by author)

By distributing 52 questionnaires, the result shows that: the most respondent of good after sales services is moderate. The most respondent of term of payment is agree. The most respondent of showroom and service center has convenient location is agree. The most respondent of premium and discounts are also suitable is moderate. The most respondent of public media advertising are through is agree. The most respondent of experimental driving makes it possible to make precise decisions is moderate.

CONCLUSION

Hypothesis 1: Honda Civic car is not really popular among younger customers of Bangkok – Accepted.

The results of surveys show that [Table 1] the most respondent are 30-40 years old and made decision to buy by themselves. We can explain it that young people just do not like Honda Civic by quality features or by price. But young generation is very important segment of consumer market because there is a tendency that customer buy the same cars brand even more expensive one if grow up or get additional income. For example 20 years old customer buys second hand Toyota Yaris (cheaper voucher) for 250,000 Baht, when he grow up and get better job or credit line, he would like to buy Toyota Camry for 1,500,00 Baht. So for Honda supporting sales in youth segment is important right now.

Hypothesis 2: Customers care more hi-tech gadgets [Table3] than engine features. – Accepted.

The results show that the most respondents values cars technology system, design, security system. We can suggest that people in urban area have no ability to shoe or to diary use power of engine or advantages of high speed driving so they mostly care convenient design, comfortable seat, TV, Music system, system, security system, technology systems, navigators, Bluetooth, Wi-Fi and also safety.

Hypothesis 3: Female do not prefer Honda Civic. – Accepted.

Because most of respondent is males [Table1]. We can suggest that Honda Civic looks more aggressive

	Strongly disagree	Disagree	Moderate	Agree	Strongly Agree
Good after sales services	0	17,33%	23,44%	8,15%	4,8%
Term of payment	0	2,3%	20,39%	17,33%	13,25%
Showroom and service center has convenient location	0	4,8%	8,15%	23,44%	17,33%
Premium and discounts are also suitable	0	4,7.9%	21,40.3%	19,36.5%	8,15.3%
Public media advertising are through	0	1,2%	20,39%	23,44%	8,15%
Experimental driving makes it possible to make precise decisions	2,3%	12,23%	18,35%	13,25%	7,14%

has big size and not convenient for ladies driving and parking, mostly associated with mainly more rude image. But ladies today are big share of driver in Bangkok who also have income enough to make buyer decision. So we can assume that Honda has to be more concentrated on work with females.

Hypothesis 4: Bangkok consumers prefer to buy high fuel saving and eco cars. – Accepted.

High oil price increase popularity of save fuel care, also eco trends support demand on green cars. It gives new opportunities for Honda to increase market share in Bangkok in long term.

Hypothesis 5: Thai consumers makes decision to buy Honda Civic car due to aggressive advertisement campaign and seasonable discount. – Rejected.

As survey shows Thai people prefer to buy Honda Civic because they high value in aggressive advertisement campaign and seasonable discount.

Living in the big city increase the value of time, so it's absolutely normal that people in Bangkok want to save money and to get lack of problem after car sales. Other side aggressive advertisement in big city is not effective because people lives in aggressive information environment.

RECOMMENDATION

Based on conclusion and finding we can recommend some tools of popularity and sales share of Honda Civic increase in Bangkok in long term.

1. Honda Company has to focus on younger Thai customer making more fashionable design and promoting fashionable image (like Mazda zoom-zoom or Mini cooper). Young generation everywhere prefer unusual up normal, out of tradition good thing and valued. Honda Civic can apply making cars able for tinny, color change (by rapped), internal design flexibility. Also Honda Civic needs to design sport city cars to attract young customers.
2. Modern city car has to be initially fully equipped by lots of gadgets such as navigators, Wi-Fi, Bluetooth, TV, Music, or Camera record. Honda has to explain advantages of fully equipped cars comparing with "empty" cars with lower price. For example the discount of payment or the upgrade insurance.
3. In addition, if we look into the design and size of the car are response the needs of male customers. And what about the female customers, Honda should design the car are suitable for a girls such as new pink colors, small size of cars or Honda Lady Club is a club exclusive for female such as has an only women, when they wait for car services will provide girls magazine or have some beauty activities like nails coloring, spa or salon.
4. Honda should doing more some CSR campaign for make something save the environment such as Isuzu: Gives water for life, Toyota: Reduce the heat with our hands.
5. Honda have to emphasize on high saving in promotion because of the trends of saving the fuel and saving the time in urban life time is very important like time is money. Honda should making more promotion on TV and more in online channel.

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