

IMPROVING ACHIEVEMENT, COMPOSED OF MULTIPLE TASKS BY SIMULATING CRITICAL AND REFLECTIVE THINKING IN A BLENDED LEARNING CLASS

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ABSTRACT

The main purpose of the study is to assess the efficiency of blended learning for improving students' critical and reflective thinking skills and to analyze their relation to academic achievement in the final grade, composed of the performance in a class project, several assignments and a final exam in a MOODLE based blended course. The sample consisted of 254 teacher candidates in the faculty of education in a university in Turkey. Several performance tasks, one course project and a mid-term and a final exam were applied to the students. Thirty percent of the scores reflected their performance on a classroom project, 20% came from several performance tasks on the course topics and 50% reflected their performance on a multiple choice test. California Critical Thinking Disposition Inventory (CCTDI) and Reflective Thinking Scale (RTS) were applied to determine the relation of these skills to academic achievement. It is a pre and post test design study, students mid-term exam results served as the pre-test and final scores' (composed of several component) served as the post test scores. The differences in achievement scores were investigated through dependent t-test and the results were significant in favor of final scores. Additionally, Pearson correlation coefficient between critical and reflective thinking was significant. Our findings indicated that these two constructs were related to each other, as expected. However, neither was found to be related to students' final composite score. In terms of the differences by the department, ANOVAs revealed that the differences in critical thinking levels were in favor of math and science teacher candidates, suggesting a logical advantage for the students from these departments. Therefore, we concluded that students' course achievement was increased through the use of extra-curricular activities, supporting critical and reflective thinking. The study indicated that the blended learning was an effective way to provide students with more opportunities, stimulating these skills.

Keywords— Achievement, Blended Learning, Critical Thinking, Reflective Thinking.

INTRODUCTION

Critical thinking, as a higher order thinking skills is an essential qualification for successful academic career, since it encourages students to produce new ideas and solutions (Ralston & Bays, 2015; van Vliet, Winnips & Brouwer, 2015). Critical thinking is one of the most important strategies for reaching deep knowledge on an academic level (van Vliet, Winnips & Brouwer, 2015). It helps managing the complexities of knowledge and that is suggested as a required skill for future leaders (Hilton, 2008; Brotherton, 2011). For developing a comprehensive approach for teaching and assessing, critical thinking skills is a challenge for

educators (Schafersman, 1991). In recent years, integration of information technologies into educational environments has assisted educators by leading students to develop critical thinking skills (Doganay, 2000). Especially online learning, which provides continuous education to students, has unique advantages and is mostly used to develop students' critical thinking skills (Saritas and Yilmaz, 2009). Lovelace, Eggers and Dyck (2016) assessed the utility of the web-based simulations for developing critical thinking skills and analyzed the relation of critical thinking to simulation performance with undergraduate students. They used pre and posttest data to test the students' critical thinking skills. Posttest data were used to assess the relationships among critical thinking, simulation performance, and the problem-solving approach. Their results indicated that participation in the simulations was an effective way to improve students' critical thinking skills. The system of online learning has been widely used in higher education, and a lot of studies have been completed discovering both its strengths and weaknesses (Pohl, 2004; Markovic, 2010). Many higher education institutions today have multiple modes such as on-campus, at a distance, online or a blended learning for teaching (Taylor & Newton, 2013; Wang, 2010; Yuen, 2010).

Reflective thinking is also a crucial skill for students to acquire. The use of reflective thinking activities might be a precursor to stimulate critical thinking (Choy & San Oo, 2012). To have students take their individual responsibility while learning and be more aware of their cognitive processes, recent studies suggest reflective thinking activities in technology-based learning environment (Buzdar & Ali, 2013; Chang & Lin, 2014; Uzunboylu, Bicen, & Cavus, 2011). MOODLE is an online learning environment which supports the construction of information (Yilmaz, 2010). It provides students course resources online. In addition, communication services in the content of MOODLE such as; forums, blogs, chats and messages give students opportunity to share their ideas and discuss on the topics of the course between the instructor and students and students and students (Ozcinar and Ozturk, 2008). Being an open-source facility, teachers can share new assignments/homework/announcements and it could be done as often as it is needed. Additionally, in these environment students' assignments, homework, and communications can be recorded, as it is necessary.

Since technology provides different kinds of applications compared to traditional classroom environment, educators are eager to integrate these facilities into their course design. By open-source learning management systems, such as MOODLE, it is possible to provide continuous education to students via readily available online sources (Cavanaugh, Hargis & Mayberry, 2016; Clark & Barbour, 2015). Blending technology into teaching is commonly applied to a course where all learners meet with the teacher in the class, in which the course includes a parallel self-study component as a CD-ROM or access to web based materials (Sharma & Barrett, 2007; James, 2016). An overriding objective of the portal is to provide interactive teaching tools and to support improvements in evaluation and assessment, as well as teaching methods and curricular development to create a high-quality education. In this environment, students have the opportunity to engage in interactive and collaborative activities with their peers in online setting (Batardière, 2015). It is expected in general that portal's electronic teaching programs would train teachers on how to develop self-learning skills among their students, and enable interested members of the public to extend their knowledge through distance learning and virtual classrooms (James, 2016). The success of blended learning depends on the content and the materials used and how students interact with each other in the learning process (James, 2016). In their study, van Vliet, Winnips and Brouwer (2015) found that blended learning environment, focusing on flipped classroom, enhanced students' critical thinking, task value, and peer instruction. Batardière (2015) investigated the educational experience arising from the use of an online discussion forum in an undergraduate blended learning environment and focused on the type of cognitive processes that students experienced during a computer-mediated collaborative task and explored the potential causal relationship between the instructional strategies and students' cognitive activity. Results of the study indicated that 'teaching presence' had a significant indirect influence on the outcome of online intercultural interactions (Batardière, 2015).

In the current study, we proposed to assess the efficiency of blended learning for improving critical

and reflective thinking skills and to analyze their relation to academic achievement in the final grade, composed of the performance in a class project, several assignments and a final exam in a MOODLE based blended course. Additionally, the differences in students' critical thinking levels and reflective thinking levels by the department were also explored.

METHODS

The sample consisted of 254 teacher candidates from four departments (math and science, teacher counseling, information technologies teaching, Turkish literature teaching) in the faculty of education in a mid-size university in Turkey. The study was conducted by the instructor of a MOODLE based blended measurement and evaluation course which was offered to several departments in the faculty of education. Several assignments expecting students to construct variety of measurement tools such as an essay exam, a multiple choice test, a true-false exam, a matching question format, a learning grid and a diagnostic tree. They were also provided control lists to make them able to check their missing points or mistakes. as a class project, students were expected to implement their multiple choice test to 10 people, and analyze the results by hand and through a test analysis program called TAB (Test Analysis Program). At the end of the semester, students were given California Critical Thinking Disposition Inventory (CCTDI) and Reflective Thinking Scale (RTS) in order to determine the relationship between these variables and the composite final score. The participation was voluntarily and students filled out the scales online through the course portal. CCTDI has 51 items under six subscales as analyticity, self-confidence, inquisitively, maturity, open-mindedness, being systematic, and truth seeking. It was developed by Facione and Facione (1992) to measure students' critical thinking intentions and adapted to Turkish by Kokdemir (2003). Reflective Thinking Scale has four subscales: Habitual Action, Understanding, Reflection, and Critical Thinking, developed by Kember in Hong Kong in 2000. It was adapted to Turkish by Basol and Gencel (2014) and found to be a valid and reliable instrument to measure students' reflective thinking skills in a course. Until the mid-term exam, the classes were delivered mainly through the traditional approaches. After the mid-term exam students submitted their performance tasks and the test project. These were graded through the use of an analytical rubric designed in the light of the control lists. In the study, 30% of students' final scores gathered from their performance on a classroom project, 20% from several performance tasks on the course topics and 50% came from their performance on the final exam (a 25-item multiple choice test).

RESULTS

The differences in students' scores from the mid-term to the final score was investigated through a dependent t-test. The findings were provided in Table 1.

Table 1
The results of the differences from midterm to final score

	Dep.Var	n	\bar{X}	Sd	sd	t	P
	Mid-term	116	59.62	11.10	115		
Pair	Final score	116	76.31	5.77		14.65	.001

According to Table ,1 the difference from mid-term to final score was significant in favor of the final score ($t(115)= 14.65, p< .001$). Since final score was composed of the performance works, course project and final exam, we can conclude that blended learning environment supported students' achievement through stimulating critical thinking and reflective thinking skills through the activities.

The Pearson Correlation coefficients indicated low to medium level correlations ranging from .33 to .60, all significant at the scale and sub-scale levels between total critical thinking scores and reflective thinking subscale scores, suggesting a close relation between these two constructs. The correlation coefficients between the students' final composite score and critical and reflective thinking levels were not significant both at the scale and subscale levels. In terms of the differences by the department, ANOVAs revealed that the differences in critical thinking levels were in favor of math and science teacher candidates ($F_{(3, 244)}= 10.18, p< .001$). For the reflective thinking levels, it was also in favor of math and science teacher candidates in all comparisons. Not surprisingly, math and science teacher candidates were also the ones who gathered more points from the project and the assignments according to ANOVA by department in final composite score. According to results, Bonferroni Post Hoc Tests indicated that the results were in favor of math and science teachers. Therefore, we suggest activities to improve students' critical thinking skills as a way of supporting their reflective thinking abilities. Directing children to math and science in small ages can also be beneficial in the long run considering the math and science students' higher ability in critical thinking and reflective thinking skills.

CONCLUSION AND FUTURE WORK

The importance of the study is driving attention to the relevance of critical thinking and reflective thinking to academic achievement in a blended learning environment. Even though there were not a direct relationship of the two and the academic achievement, they were related to each other, which suggest the use of either to improve the other. By designing proper learning activities reflecting to real life situations, students are encouraged to think critically and using real life scenarios in the performance assignments can lead students to reflect their learning to real life situations.

In the current study, the differences in critical thinking and reflective thinking skills were in favor of math and science teacher candidates. It is essential to design the lessons to improve these skills in every student at an early age. It could be interesting to explore the ways to improve critical thinking and reflective thinking skills at kindergarten level and study the nature of the relationship between two.

The current study is important for providing students homework assignments, a comprehensive class project, for improving their critical thinking and control lists for improving their self-evaluation skills, therefore reflective thinking skills. These interventions are provided through a blended course design which is also known for supporting critical and reflective thinking skills. Although it is not in the scope of the current study, blended learning environment is more of an interest of self-regulated students (Basol & Balgalmis, 2016), which is one of the building blocks for improving autonomy.

It is essential to use a wide range of assessment tools unlike the classic a mid-term and a final exam approach. In the current study, students took the opportunity of several measurement assessments, which provided them an early experience as teacher candidates. They had better understanding of what they were expected both in the assignments and the test project through the control lists. We thought that through these interventions, the teacher candidates will be more qualified as it is expected to be easier for them to reflect their learning to the real life situations, compared to a teacher candidate who does not have any chance to experience. In crowded classrooms (50 students in each) it is difficult to collect the weekly assignments in time. Blended learning systems can be used to collect the assignments online. On the other hand, hands in

submissions made us provide timely, instant feedback which helped our students see their mistakes and correct it immediately.

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AN OPERATIONAL EVALUATION OF THE SUCCESSFUL CULTURAL ENTREPRENEURSHIP AND BUSINESS

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ABSTRACT

This paper presents the Operational Evaluation of successful small village entrepreneurs whose products the Small and Medium Enterprises. The SMEs entrepreneurs from border province; Samutsakhon, Samut Songkhram, in central Thailand were surveyed using a structured questionnaire. The result from content analysis shows that success factor of entrepreneur causes from their initiative and close family related younger generations and government support. However, the SMEs entrepreneurs still are starting period and completely in production skill that cannot complete in free market. The next step for them has to fulfill in the managing and marketing skill.

Keyword-Operational Evaluation, Small and Medium Enterprises

INTRODUCTION

Small and Medium Enterprise becomes an important business in Thailand. The main objectives of the projects are to create jobs and income communities, to promote the communities development using local wisdom and self-reliance. SMEs product is based on local materials and creativities. Under this project, there were totally 15,438 SME Producers and 5,281 products in the products championship contest in 2006 (Micro Enterprise Strategies Department, 2011). The government has been a major supporter of the products from provincial product development to global product distribution. The product standard is classified as 1-5 level which has a strong potential in terms of marketing. However, a huge number of the same products are poured into the market. This drives the price and the margin of product lower. A number of the SMEs entrepreneurs struggled to compete and some eventually failed. The failure possible caused by the entrepreneurs themselves who couldn't discover their own identity and produce as a distinct product. Although the economic structure of the province will focus on industries related to fishing. Or frozen seafood industry, as well as Samut Sakhon. But on the other hand, Samut Songkhram famous for its ecotourism. Or in the form of eco-tourism. As a result, the growth in terms of accommodation, food, souvenirs, etc. tourism in the area and the surrounding area. Which is still growth opportunities to continuously further the vision of a province that is not defined. The city is the hub of seafood and shrimp fruit safe from toxic chemicals. And leisure center Ecotourism, the national waterway. People love the land of origin. Environmental and cultural beauty. The objective of this study is to investigate An Operational Evaluation of the Successful Cultural Entrepreneurship and Business the common characteristic of

successful SMEs entrepreneurs and business related-community using two central provinces as an investigation object.

METHODOLOGY

1. Entrepreneurs sampling concept of SMEs

The This study was an integration of quantitative and qualitative research by employing questionnaires to collect data from 357 accredited Small and Medium Enterprises and a schedule interview to collect data from 3 administrator and officials responsible for supporting.

2. Focus group concept of SMEs

To obtain details about their Model, the groups of entrepreneurs are investigated using questionnaire. The result was analyzed using content analysis to find out the best practice. Later, the four best entrepreneurs were further investigated with in-depth interview. The topic of interviewing consisted of four sections; business background, business and community relationship, product development approach and success factor. The data were analyzed to find out the Model of success case that related to the original community.

RESULT

1. Overview of the Respondent

To Business Background: The respondents were selected from the registered SMEs entrepreneurs whose. The frequency and percentage of respondents in each product categories were shown in table 1. The majority product categories are food (40.5%), decorative items and souvenirs (27.2%), herbal products (13.7%), followed by beverage and fabric (9.5%). In term of the business type, there are 35.8% of community based-enterprises (CBEs), followed by 33.6 % of single owner enterprises and private company or partnership enterprise. For the financial source of respondents, there were 3 type of capital as private (51.7%), partnership (36.8%) and private and loan (11.5%). The term of operation were 6-10 years, 1-5 years, 11-20 years and over 20 years length accounted for 39.8%, 26.3%, 20.1% and 14.8% respectively. For the length of registered and engaged under SMEs project, there was 11-20 years (44.1%), 1-5years (30.6%) and 6-10 years (25.3%).in Table 1.

2. Business and Community Relationship

To study characteristic of community, the study focused on the original community's occupation; in that community such as agricultural community, fishing communities, coconut farming communities. It was found that, mostly the community of entrepreneur still maintains the original occupation as previous (88.5%). Regarding product and community relative it was 93.7% of product distinctive when 45.4% both product and community were distinctively. About 45.4% still maintain the production process as previously. Consider the motivation for starting new business; it is divided to 5 types, related experiences, family business, previous job, training and special interested. It was found that the new business was family business (63.2%), related experiences (62.2%), special interested (47.4%), training (31.6%) and previous job (22.1%). It was noticed that there was one entrepreneur got all types of the starting business in Table 2

Table 1
Business Profile

Province	(%)
Samutsakhon	86.7
Samutsongkhram	13.3
Total	100
Type of Business	
Single owner enterprise	33.6
Community based-enterprises (CBEs	35.8
Private company / partnership enterprises	30.6
Total	100
Term of Operation	
1-5 yrs.	25.3
6-10 yrs.	39.8
11-20 yrs.	20.1
>20 yrs.	14.8
Total	100
Type of Product	
Food	40.5
Beverage	9.5
Fabric	9.5
Decorative items and souvenirs	27.2
Herbal products	13.7
Total	100
Financial Source	
Private	51.7
Partnership	36.8
Private and loan	11.5
Total	100
Length of Registered SMEs Project	
1-5 yrs.	30.6
6-10 yrs.	25.3
11-20 yrs.	44.1
Total	100

Table 2**Business and Community Relationship**

Physical Character of Community	(%)
More than 50%	88.5
Less than 50%	11.5
Physical Character of Community	10.5
Total	100
Product Methodology	
To remain the process less than 50%	54.6
To remain the process more than 50%	45.4
Total	100
Product and Community Relative	
Distinct Product	93.7
Distinct community	0.0
Product and community Distinction	6.3
Total	100
Business Starting	
(Respondent can select more than 1 choice)	
Related experiences	62.2
Family business	63.2
Previous job	22.1
Training	31.6
Special interested	47.4

Production and Marketing: In the product development, most entrepreneurs, 45.5%, investigated and processed by themselves, 41.9%, self-development and further development from others and 10.6%, only further development from others. The number 15 out of 19 cases or 79.7% used the fifty percent of raw materials from local. With regard to labor, it was found that about half of entrepreneurs or 56.8% hired workers. For marketing, all entrepreneurs used the official channels as SMEs city and marketing by themselves.

Success Factor: Factors affecting success were divided into 3 main factors; the characteristics and personality of the owner, production, and marketing. It was found that the personality of the owner was checked by the 10 lists that relates to the success of the business. The most common characteristic of entrepreneur was experience (85.3%), followed by creativity (69.3 %), diligence (9.3%), and patient and attempted (62.1%). In the production, most entrepreneurs concerned about quality control (85.3%) and continuity of new product development (69.3%). All entrepreneurs have been receiving support from the government.

3. Success Case Study

To study Four success cases were selected; food, beverage, fabric and decorative items and souvenirs producer. The data was analyzed 5 parts: business profile, the original community, business operation, success factor, goals and objectives in the future and characteristics of entrepreneurs. The issues can be summarized as follows.

Business Profile: Successful entrepreneurs were a single owner enterprise or community-based enterprise. The dominant trend was found that the administration was quite possible in a single owner enterprise. In community-based enterprise was shown the group management performed by the leader. The leadership was necessary. The decision depended on the leader. All entrepreneurs had an experience in the business before engaged the SMEs projects. The period time of business operation was excess 10 years. Nevertheless, all business was a first generation or pioneer age.

Original Community: all communities have distinguished in the physical appearance and grouped the same occupation. It was clear that the business related with the original community. There were the serving of raw material from the community as skill labor and product raw material. One case, there was only group of skill lab our in the family for setting the community-based enterprise. In addition, the cluster of business owners could more systematically organize community than the SMEs business owners did due to a number of members. Although working process of the SMEs business owners was unsystematic.

Business Operation: The beginning of the business was retrieve from the owner's relevant experienced such as a family business, previous job. There was trend to pass the business to the next generation. Only one case, the business was started by training. To consider in supporting factors, the respondent had a strong characteristic of entrepreneur, handed on business with the second generation and continuing support from the government. The most successful are often located in or near sources of raw materials. This might be associated with low production costs. To search in original community for developing its commercially need to focus on raw materials and develop to an unique product. If community wasn't the source of raw material, skilled worker as handicraft could lead to business development as well. The investment in the production, all used the personal funds. In the first stage, it may be raised by members. After business grown, the funding is required. It was found the loaning from financial institutions and In human resources management, the cluster of business owners would select the employees from their experience, capability and domicile, while the SMEs business owner would choose those by their qualifications which proper to each position. the few employees made it controllable and could reduce cost.

In the case of a success story, all of them focused on quality throughout the production process since the selection of raw materials, production and delivery to customers and taking into account both the quality and time. For product development, all entrepreneurs must be creative in developing their own and flexibility to customize the products according to customer needs. All entrepreneurs can define their identity, understanding about the products or their products as well and also bringing strength of product to the trade. In the event a success that the use of aggressive marketing. The market, it was found that all entrepreneurs had the use of aggressive marketing and seriously marketing by themselves.

Factors of Success: several factors including the personality of the owner, characteristics associated with the production and characteristics related to market and cooperation. The personality of the owners was an important. All entrepreneurs were clear and contained with essential characteristics of entrepreneurs such as outstanding, relevant experience, strong leadership, vision and creativity, patience, diligence, integrity and commitment etc. These characteristics might cause from the acquisition of personal habits, experience difficulties in the past, training or work experience.

All successful cases were located near the sources of raw materials. If the area hadn't raw materials, the skill workers were necessary. All cases focused on quality first and deal to continuing develops their own products. Tracking trends in order to adapt to customer needs, quality control concerning and the packaging development. All cases were able to analysis of potential customers, the positioning of the product to target group has been done, to set appropriate prices according to customers. The key driving force in business was to have a family/ descendant to handle business together. In the case of the community-based enterprises, characteristics of leader, leadership, sacrifice and vision in marketing, business income is distributed appropriately were necessary. The benefit of community-based enterprises will allow the government to support it.

Focus group concept of SMEs To obtain details about their Model, the groups of entrepreneurs are investigated using interview. The result was analyzed using content analysis to find out the best practice. Later, the four best entrepreneurs were further investigated with in-depth interview. The topic of interviewing consisted of four sections; business background, business and community relationship, product development approach and success factor. The data were analyzed to find out the Model of success case that related to the original community.

In solving problems and increasing the efficiency on An Operational Evaluation of the Successful Cultural Entrepreneurship and Business in Samut Sakhon and Samut Songkhram Province, there are 9 recommended ways as follows:

- 1) Lack of expertise in.
- 2) Planning, management plan and financial plan account. There are no plans to review and update

Waste of time to craft apprentices

- 3) Lack of skills development continued.
- 4) Costs, expensive raw materials and non-standard.

High production

- 5) Lack of cash flow and financing, low interest loans.
- 6) Lack of Available
- 7) There is a lot of competition
- 8) The goods are counterfeit, this lack of knowledge.
- 9) In order to promote the market. Lack of knowledge about the development of products and

packaging. And pricing There is not a business succession

Goals and The Goals for the Future: All entrepreneurs are enthusiastic and never stop doing business. Nevertheless, a long-term business plan has not found. Only short-term business plan (1-3 years) was provided that based on current market trends. However, all entrepreneurs have provided to transfer the business to their descendants. Planning, management plan and financial plan account. There are plans to review and update.

DISCUSSION

They arranged training courses on the basic element of production technique development and supported the private business to participate in disseminating the product information. this concurred with Thammarak Srimarut (2015). They also monitored and followed up the operational evaluation of the accredited community enterprises consistently. Moreover, the members of the community enterprises were truly determined to develop the product's quality as they participated in attending the meetings, giving opinions, and initiating the new products resulting to the accreditation of Community Product Standard. skills development continued By Amit, R., & Schoemaker, P. (1993). Brunninge, O., Nordqvist, M., & Wiklund, J. (2007). The entrepreneurs of the community enterprises in Samutsakhon and Samutsongkhram Province confronted problems and obstacles in processing for the accreditation of Community Product Standard in several respects this concurred with Karl-Heinz Leitner. (2010). In terms of production, raw materials were inadequate and could not be stored for some time; products required for the new design development; and the production cost was increasing. this concurred Withthaya Mekhum (2007) the goods are counterfeit, this lack of knowledge. Regarding marketing, product pricing depended on the middleman; products were over supply; there was no support for sale promotion in an international market; there was a price war; and there was a product imitation.

With respect to the management, there was the lack of industry grouping; and the community enterprises were not competent to produce timely due to the orders. In personnel/labor aspect, they lacked the local laborers and product designers. this concurred Withthaya Mekhum, et.al. (2013). In terms of the capital, it was difficult to get the loan from financial institutes and the financial institutes had the high interest rate. With regard to other aspects, there was the lack of public relations and knowledge in design, production and new products development. Withthaya Mekhum (2007). Suggestions: There should be a study on other risk evaluation method which might be more suitable for accidents and environment at work. There should be a record and transfer of local wisdom. There should be another study on using local wisdom to produce metal handicraft using Rattanakosin local wisdom to prevent from extinction. The information from the interview should be published in journals or other types of publication. problems on lighting, noise, dust, and heat which affected the work results. Finding that there was a problem in work environment in household industry. The problem included work repetition, working posture, fatigue muscles, etc.

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REHABILITATION OF POSTPARTUM MOTHERS BASED ON THAI TRADITIONAL MEDICINE IN NAKHON PATHOM PROVINCE, THAILAND

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ABSTRACT

Abstract- The rehabilitation of postpartum mothers based on Thai traditional medicine helps mothers after giving birth to have a good health or recovery rapidly. The purposes of this study are to examine the postpartum mothers' attitude toward rehabilitation of postpartum mothers based on Thai traditional medicine and to study methods of rehabilitation of postpartum mothers based on Thai traditional medicine. The sample used to study was drawn by using the simple random sampling with the number of 30 persons from the population of postpartum mothers in Nakhonpathom Province. The data was gathered between March and July, 2016 by using in-depth interview and group discussion. The techniques used for analyzing were frequency, percentage, mean, and Content Analysis. The research findings are that the postpartum mothers had positive attitude toward rehabilitation of postpartum mothers based on Thai traditional medicine at the highest level ($\bar{X} = 4.3$). The attitude toward the expectation about an advantage of Thai traditional medicine was the highest level ($\bar{x} = 4.5$) followed by the attitude toward the perception about benefits of Thai traditional medicine as the second rank ($\bar{X} = 4.4$). The appropriate methods of rehabilitation of postpartum mothers based on Thai traditional medicine were taking medicine for pushing lochia out, taking an herbal-water bath, using hot bag, and following instructions of Thai traditional medicine.

Key words: Rehabilitation Based on Thai Traditional Medicine, Postpartum Mothers

INTRODUCTION

The rehabilitation of postpartum mothers based on Thai traditional medicine has been treated from the past to the present time. In the ancient time, it was called Yoofai. Because its steps involves in a method of heat. The purpose of Yoofai is to help postpartum mothers rehabilitate rapidly. At present, most postpartum mothers decide to yoofai because of expecting to usefulness of its methods in order to rehabilitate mothers' body, such as helping to push lochia out, helping involution of uterus rapidly, helping more lactiferous, relieving body's pain, helping better circulation of blood, helping fresh and bright skin, and not being chilly in cold weather. The several methods of Thai traditional medicine are body massage, being pressed by fomentation-hot pack, herbal incubation or sauna, and being pressed by salt-pot.

At present, the public health has available places to serve postpartum mothers based on Thai traditional medicine. But most of the services are served in the form of combination according to a privilege of the Office of the National Assurance which consists of 5 steps: body massage, herbal incubation or sauna, being pressed by fomentation-hot pack, being pressed by salt-pot, following instructions of self-treatment (Ministry of Public Health, 2013:81). According to the data of Thai Traditional Medicine Services of Public Hospitals in Nakhonpathom Province: Year 2015, there were 5,078 postpartum mothers. But only 214 postpartum mothers (4.20 %) had rehabilitation based on Thai traditional medicine (Office of Public Hospital in Nakhonpathom Province, 2015: 82). It is obvious that the service had not obtain the goal according to the

national health consensus which needs to develop Thai traditional medicine and alternative medicine as a system of the main health service of the country in parallel with the modern medicine (Office of Public Hospital in Nakhonpathom Province, 2009: 5). Hence, the researchers were interested in studying the attitude of postpartum mothers toward rehabilitation of postpartum mothers based on Thai traditional medicine and examining the methods of rehabilitation of postpartum mothers based on Thai traditional medicine.

THE PURPOSES OF THE RESEARCH

1. To study the attitude of postpartum mothers toward rehabilitation of postpartum mothers based on Thai traditional medicine.
2. To examine the methods of rehabilitation of postpartum mothers based on Thai traditional medicine.

THE SCOPE OF THE RESEARCH

This research had been studied only the attitude of postpartum mothers toward rehabilitation based on Thai traditional medicine, as well as examining some methods of rehabilitation based on Thai traditional medicine, such as taking medicine for pushing lochia out, taking an herbal-water bath, using hot bag, and following instructions of Thai traditional medicine. The sample had been drawn from the population who live in Nakhonpathom Province, Thailand. The period of collecting the data was between March and July, 2016.

THE RESEARCH METHODOLOGY

With regard to the rehabilitation of postpartum mothers based on Thai traditional medicine, it was divided into 2 parts as follows:

1. The Data Collection

1.1 The characteristics of societies where postpartum mothers lived had been studied from related literature, maps and geographical materials including studying their ways of life.

1.2 The sample used to study was drawn by using the simple random sampling with the number of 30 persons from the population of postpartum mothers who had been rehabilitated at Nakhonpathom Hospital, Muang District and Hooi-ploo Hospital, Nakornchaisee District, Nakhonpathom Province. The data was gathered between March and July, 2016. For the in-depth interview and group discussion, the sample was divided equally into 3 groups. Each group had 3 meetings. After that, the sample had been selected purposively in order to be in-depth-interviewed based on a questionnaire.

1.3 The techniques used for analyzing were frequency, percentage, mean, and Content Analysis.

THE RESULTS

1. Population Structure, Family and Economy

Most postpartum mothers had the ages of 20-24 years followed by 25-29 years (40.00 and 33.30, respectively). The minimum age was 17 years; the maximum age was 35 years. The characteristic of their household was mostly an extended family (76.70%). Half of them had adequate income, but they could not save it. Most of the postpartum mothers graduated from high school (43.30%). Their occupation was mostly a housewife followed by an official (40.00 and 26.70%, respectively). Everyone milks their babies by themselves. Only 40% of females in their families experienced Yoofai after giving birth. The postpartum mothers received Yoofai information from people in their families the most (66.70%) followed by the Internet. (53.30%). The least source of Yoofai information that the postpartum mothers received from was public health personnel (16.70%) as seen in Table 1.

Table 1
Population Structure, Family and Economy (n=30)

Population Structure, Family and Economy	Number (n=30)	%
Age		
• Less than 20 years	4	13.40
• 20-24years	12	40.00
• 25-29 years	10	33.30
• 30-34 years	3	10.00
• 35 years and over	1	3.30
Characteristics of Family		
• Extended family	23	76.70
• Nuclei family	7	23.30
Adequate Income of Families		
• Inadequate income and no savings	15	50.00
• Adequate income and savings	10	33.30
Level of Education		
• Primary Education	9	30.00
• Secondary Education	13	43.30
• Vocational Ed., Higher Vocational Ed.	5	16.70
• Bachelor Degree or Higher	3	10.00
Occupation		
• Agriculturalists	4	13.40
• Workers	6	20.00
• Officials	8	26.70
• Housewives	12	40.00
Type of Feeding Child		
• Milk the child themselves	30	100
• Not milk the child themselves	0	00.00
Person in the Family Experienced by Yoofai at Postpartum		
• Yes	12	40.00
• No	18	60.00
Source Received Information about Yoofai at Postpartum (can choose more than 1)		
• Person in the family	20	66.70
• Internet	16	53.30
• Friend	12	40.00
• Public health personnel	5	16.70

2. The Attitude toward Rehabilitation of Postpartum Mothers based on Thai Traditional Medicine

As a whole, the attitude toward rehabilitation of postpartum mothers based on Thai traditional medicine was at the high level ($\bar{X} = 3.69$). More specifically, it was found that the postpartum mothers had the attitude toward expectation of the advantages that they would happen to them at the highest level ($\bar{X} = 4.5$) followed by the attitude toward perception of the benefits of rehabilitating postpartum mothers ($\bar{X} = 4.4$). That is, they thought that Yoofai method helps involution of uterus rapidly ($\bar{X} = 4.8$). Moreover, it helps body to be fresh and skin-bright ($\bar{X} = 4.7$), as well as helping more lactiferous ($\bar{X} = 4.6$) and pushing lochia out

(\bar{X} =4.4). The attitude toward fewer complicate steps, methods and expenses were at the moderate level (\bar{X} = 3.8) as shown in Table 2.

Table 2

The Attitude toward Rehabilitation of Postpartum Mothers based on Thai Traditional Medicine (n=30)

The Attitude toward Rehabilitation of Postpartum Mothers based on Thai Traditional Medicine	Mean (\bar{X})	Level of Attitude
The attitude toward perception of the benefits of rehabilitating postpartum mothers based on Thai traditional medicine		
1. Helping involution of uterus rapidly	4.8	Highest
2. Helping body to be clean, fresh, and skin-bright	4.7	Highest
3. Helping more lactiferous	4.6	Highest
4. Helping to push lochia out	4.4	Highest
5. Helping better circulation of blood	4.2	High
6. Helping to relieve body pain	4.1	High
7. Good for body and mind	4.0	High
Grand mean	4.4	Highest
The attitude toward fewer complicate steps and methods of rehabilitation		
1. Having convenient steps and methods	4.4	Highest
2. Having steps and methods in accordance with the way of life	3.5	High
3. Being worthwhile with more expenses	3.5	High
Grand mean	3.8	High
The attitude toward safety		
Steps of rehabilitation of health for safety	4.3	Highest
Methods of rehabilitation of health for safety	4.3	Highest
Grand mean	4.3	Highest
The attitude toward expectation of the advantages		
involution of uterus rapidly	4.6	Highest
More lactiferous	4.5	Highest
Recover to be in good shape rapidly	4.5	Highest
bright skin	4.5	Highest
Not being chilly when being in cold weather	4.4	Highest
Grand mean	4.5	Highest
As a whole (Total mean)	4.25	Highest

3. Methods of Rehabilitating Postpartum Mothers based on Thai Traditional Medicine

The methods of rehabilitating postpartum mothers based on Thai traditional medicine that hospitals did not provided for them include taking medicine in order to push lochia out, taking an herbal-water bath, use of a hot-water bag, taking medicate liquor and following instructions as shown in Table 3.

Table 3

The Methods of Rehabilitating Postpartum Mothers (n= 30)

The methods of rehabilitating postpartum mothers	Number (n=30)	%
Take medicine in order to push lochia out	25	83.30
taking an herbal-water bath	20	66.70

Using a hot-water bag	18	60.00
Taking medicate liquor	12	40.00
Following the instructions (answer more than 1 item) (n=22)	22	73.30
• Not drink iced or cold water	22	100.00
• Eat food for enhancing lactiferous	22	100.00
• Drink herbal water	20	90.90
• Eat hot food	20	90.90
• Not stay outdoors on sunny or windy day	15	68.20
• Not lift heavy things	13	59.10
• Not go up or go down stairs	12	54.60

CONCLUSIONS AND FURTHER STUDY

As a whole, the attitude toward rehabilitation of postpartum mothers based on Thai traditional medicine was at the high level ($\bar{X} = 3.69$). More specifically, it was found that the postpartum mothers had the attitude toward expectation of the advantages that they would happen to them at the highest level ($\bar{X} = 4.5$) followed by the attitude toward perception of the benefits of rehabilitating postpartum mothers ($\bar{X} = 4.4$). That is, they thought that Yoofai method helps involution of uterus rapidly ($\bar{X} = 4.8$). Moreover, it helps body to be fresh and skin-bright ($\bar{X} = 4.7$), as well as helping more lactiferous ($\bar{X} = 4.6$) and pushing lochia out ($\bar{X} = 4.4$). The attitude toward fewer complicate steps, methods and expenses were at the moderate level ($\bar{X} = 3.8$). This is because rehabilitation of postpartum mothers perceived and felt positively toward the methods of the principle of Thai traditional medicine. Hence, they decided to get services in order to rehabilitate their health at postpartum period which is in accordance with Norman, Mun, L., (1971) who states that attitude is people's feelings and opinions toward things, persons, situation, institution and any points of view in the way they accept or refuse which affect them to be ready to react or respond the same behavior at all times. Furthermore, the findings are in accordance with Prueksachart Toppa (2005) and Ounprasertpong, Ladaval (2005) who studied the local wisdom for taking care of postpartum mothers' health in Prasart District, Surin Province, Thailand. He found that drinking hot water and hot herbal water, taking warm-water bath, Yoofai, and eating herbal food help rehabilitate postpartum mothers' better circulation of blood and pushing lochia out rapidly. Besides the methods of rehabilitating postpartum mothers provided by hospitals, taking medicine to push lochia out, taking an herbal-water bath, using a hot bag, eating food for enhancing lactiferous, drinking herbal water, and following instructions of the principle of Thai traditional medicine are alternative science which apply for rehabilitating postpartum mothers in order to recover as soon as possible. These methods have also been in accordance with Thai culture and tradition for a long time. They are good not only for postpartum mothers' rehabilitation, but also for helping affections among family members and neighbors. Hence, the methods are outstanding characteristics of Thai traditional medicine which are not excluded from families and societies where postpartum mothers live.

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EFFECTS OF AEROBIC HULA HOOP EXERCISE ON WAIST CIRCUMFERENCE AND BLOOD HDL CHOLESTEROL IN HEALTH CARE PERSONNEL

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ABSTRACT

Objective: This quasi-experimental research used a one-group pretest-posttest design. It aimed to test the effects of aerobic hula-hoop exercise on, waist circumference, and blood lipid levels HDL cholesterol in health care personnel. The research was based on the concept of regularly exercise will be fat burning especially in abdominal fat. Hula-hoop exercise has the specific characteristic of using waist movement. While the hoops are spinning to impact abdominal muscles, thereby resulting in metabolism of abdominal fat and reduce waist circumference. Exercise will stimulate blood circulation and cause the coronary arteries to function efficiently.

The sample group comprised of health care personnel. A total 31 people of group exercised with an aerobic dance and hula-hoop exercise for 40 minutes 3 times a week for 12 weeks. The experimental equipment was standard hula-hoops. Which had a weight of 1.2 kilograms of cloth instead of water, a diameter of 105 centimeters (41.5 inches), a size of 12.5 centimeters (5 inches) and a circumference of 352 centimeters (138 inches), CD music and projector. Statistical analysis was used Paired t-test.

The results showed that the post-test average value of waist circumference was statistically significantly less than the pre-test average ($p < .01$). The post-test average value of HDL cholesterol level was statistically significant greater than the pre-test average ($p < .001$). Study finding indicate that aerobic hula-hoop exercise can be reduced waist circumference and increase HDL cholesterol level. So Aerobic hula hoop exercise is a type of exercise that we can choose for reduce abdominal fat and good for group exercise. Anyway before using hula hoop exercise people should be well train for the optimum benefit and reduce side effect. Another concern is selection of the appropriate size of hula hoop for preventing back injury.

Keywords-- aerobic hula-hoop exercise, waist circumference, HDL cholesterol

INTRODUCTION

Obesity is a significant health problem in the United States, affecting close to one-third of all adults¹. Although genetics can play a role in the likelihood that a person will become obese, the condition occurs when the amount of calories consumed exceeds the amount of calories expended over a long period of time. Excess calories are stored as fat in the body, and with long-term caloric excess, an individual eventually becomes obese. Exercising regularly and eating a healthy diet are ways in which to combat obesity. Obesity has also reached alarming levels in the Asean Economic Community and especially in Thailand, where 32 percent of the population are overweight, pushing the country into second place in terms of prevalence of obesity after Malaysia at 44 percent and ahead of Singapore at 30 percent². There are many factors behind the fast-growing epidemic in Thailand. In simple terms, there is a huge imbalance between the promoters of healthy lifestyle, who include medical personnel and a few laudable stakeholders, and the pro-obesity advertising forces driven mainly by fast food companies and some influential media. Future obesity trends are exacerbated by food companies' ads, which intentionally target all age-groups including the most

influential individuals, young children. In addition, the publicity materials often display speedy meals or snacks with a smiling person quickly swallowing huge portions of food without taking the time to masticate.

Obesity is a medical condition in which excess body fat has accumulated to the extent that it may have a negative effect on health¹. People are generally considered obese when their body mass index (BMI), a measurement obtained by dividing a person's weight by the square of the person's height, is over 30 kg/m², with the range 25–30 kg/m² defined as overweight¹. Some East Asian countries use lower values². Abdominal obesity, also known as central obesity, is when excessive abdominal fat around the stomach and abdomen has built up to the extent that it is likely to have a negative impact on health. There is a strong correlation between central obesity and cardiovascular disease⁴. Visceral and central abdominal fat and waist circumference show a strong association with type 2 diabetes⁵.

Abdominal fat causes the increased fat cells accumulated in the abdominal area to secrete increased amounts of various hormones from fat cells into the bloodstream. Which is result in abnormal blood-cholesterol levels in which triglyceride levels are high, High-Density lipoprotein (HDL) cholesterol levels are low, blood-glucose is high and blood pressure is high. Therefore, the main goal of care and treatment is reducing risk factors of metabolic syndrome, e.g. weight loss, reducing abdominal fat and decreasing blood-cholesterol levels to a normal level⁶. At present, medications are used to reduce weight. These medications activate the central nervous system with the effect of suppressing appetite. The side effects are rather severe, i.e. stimulation of the central nervous system accelerates heart rate and raises blood pressure, while causing moodiness and insomnia and putting patients at risk for addiction to the medication⁷. As for patients treated with medication to control blood-cholesterol levels, the side-effects of medication are chest tightness, nausea and diarrhea. In some cases, the medication can cause hepatitis⁸.

Studies have found the use of medication together with behavior modification can minimize risk factors for the occurrence of metabolic disorder⁹. Exercise is an activity involving movement of the body or muscles and causes the muscles to contract and relax. Furthermore, exercise triggers changes in the muscles and blood-glucose levels. Exercise of moderate to hard intensity is required, i.e. exercise aimed at achieving a pulse rate of 55-69 percent of the target rate. Recommendation of American College of Sports Medicine [ACSM]¹⁰, target pulse rate during exercise can be calculated as follows: 220 – Age (Years). At least once every 40 minutes with a frequency of no less than three times per week on a regular basis over a period of 12 weeks and more. And the addition of regular exercise can prevent the occurrence of cardiovascular disease¹¹. Exercise can be reducing blood cholesterol and increase HDL cholesterol¹². Although exercise has numerous benefits, most hospital personnel have been found lack of exercise and exercise very little¹³. According to studies on the exercise activities of the practical nurse of Maharaj Nakorn Chiang Mai Hospital, most of the personnel walk at an average of 2.67 hours per week while engaging in exercise activities to improve muscles/exercise to enhance aerobic metabolism/aerobic exercise activities at an average of 0.78 hours per week¹⁴. Therefore, promotion for healthcare personnel to have accurate and sufficient exercise in line with exercise principles will help reduce risk factors for metabolic syndrome.

There are numerous exercise methods, e.g. swimming, running, aerobic dancing, fitness, etc. However, hula-hoop exercise to promote health is currently popular in Thai society. Hula-hoop exercise has the specific characteristic of using waist movement, while the hoops are spinning to impact abdominal muscles, thereby resulting in metabolism of abdominal fat. Hula-hoop exercise can consume energy at 7.0 kilocalories

per second while aerobic dancing consumes energy at 5.9 kilocalories per minute¹⁵. This research intervention was aerobic hula hoop exercise for 40 minutes total energy consumes 504 kilocalories. Therefore, the researcher believes that while the hoops are spinning to impact abdominal muscles, thereby resulting in metabolism of abdominal fat and reduce waist circumference. Exercise will stimulate blood circulation and cause the coronary arteries to function efficiently. At the same time, hula-hoop exercise and aerobic dancing also increases the firmness and strength of abdominal and lower back muscles, which are the central muscles of the body and will help reduce back pain¹⁶. Although hula-hoop exercise is widely popular in Thailand, there have been no studies to confirm the outcomes of hula-hoop exercise. Hence, the researcher was interested to study hula-hoop exercise aimed to compare waist circumference, blood lipid levels HDL cholesterol of healthcare personnel before and after aerobic hula-hoop exercise.

METHODOLOGY

This study was quasi-experimental research with a one-group pretest-posttest design. The selection of the samples into the experimental group for this study used purposive sampling according to inclusion criteria. Sample size was set by using power analysis by setting power at 0.90 with statistical significance level of .05. Next, Cohen's power table for effect size was used to obtain a sample group size of 36 samples. This study considered an attrition rate at 40% and acquired a sample group of 50 subjects. The sample was selected purposively according to inclusion criteria. The female and male sample should have waist circumference above 80 cms and 90 cms respectively, blood lipid HDL cholesterol of less than 40 milligrams/deciliter in men or less than 50 milligrams/deciliter in women, willing to participate, no contraindication for exercise and no spinal problem.

The instrumentation for this study was divided into two parts comprising data collection instruments and research instruments. The data collection instruments comprised of the demographic data questionnaire, the form for recording data from physical examinations, physical examination instruments, in hula-hoop exercise and the form for recording daily food intake. The research instruments comprised standard hula-hoops size, which had a weight of 1.2 kilograms, a diameter of 105 centimeters (41.5 inches), a size of 12.5 centimeters (5 inches) and a circumference of 352 centimeters models, hula-hoop exercise leaders, hula-hoop exercise videos, music CDs and projectors.

Data Collection at one week before the experiment, the sample was trained to perform hula-hoop exercise in order to achieve accurate exercise skills. Hula-hoop exercises were scheduled every Monday-Friday for forty minutes per session from 5:00 to 5:40 p.m. Participants were able to exercise at the set dates and times to achieve the required three times per week for a total of twelve weeks. During the exercise, music provided rhythm by playing CDs and using LCD projectors. Each exercise was divided into three phases comprising the following: Phase 1 – Warm Up, which took five minutes; Phase 2 – Hula-Hoop Exercise; which took approximately thirty minutes and Phase 3 – Cool Down and Muscle Relaxation, which took five minutes. After 12 weeks of aerobic hula hoop exercise measured waist circumference and blood test for HDL Cholesterol level.

The Ethics Committee of Ramathibodi Hospital, Mahidol University approved the study. We obtained written informed consent from the study participants at the selected day for recruitment. Patients were informed about the aim of the study and also about being free withdraw from the study. Moreover, we ensured them that their personal information would be managed confidentially. Patients were also ascertained that their participation in or withdrawal from the study never affect their course of treatment.

Data was analyzed by computer program package. Basic data for the sample group presented in form of descriptive statistics, amount of percentage. Comparison of difference in mean of waist circumference and level of HDL blood Cholesterol in pretest and posttest was analyzed by paired t-test.

RESEARCH FINDINGS

This study had a total of thirty-one samples because nineteen samples were unable to participate in exercise according to the program during the research, thereby causing the researcher to exclude nineteen samples from the study. The demographic data of the sample group comprised three parts covering the demographic data, health problem data and data on personal hygiene habits with food intake behaviors and the following details: Demographic Data – Of the thirty-one samples, 90.3% were females with an average age of 42.55 years. The samples had bachelor’s degree educational attainments (58.1%) and average monthly incomes of 22,340.6 baht. Health Problems – The samples were found to have hypertension and high blood lipids equally at 12.9%. According to the pretest blood lipid examinations, HDL cholesterol was found at 12.9% and triglycerides were found at 19.3%. Personal Hygiene Habits – Most of the sample group spent their free time watching television (58.1%) and reading (41.9%). Most of the samples did not exercise (77.4%) and exercised less than three times per week (16.1%). Food Consumption Behaviors – Most of the sample group were found to prefer sweet, fatty and salty foods (58.1%). The types of food most frequently preferred were processed foods (58.1%) and fried foods (54.8%). Moreover, most of the sample group was found to prefer sweet beverages (61.3%).

The result of t test showed before and after 12 weeks of aerobic hula hoop exercise can be reduce waist circumference with statistical significance ($p < .001$) as shown in Table 1.

Table 1

Comparison of Waist Circumference Pre Test and Post Test at week 12nd Measurement (n = 31)

Time	Waist Circumference (cms)			t	p
	Min - Max	Mean	SD.		
Pre test	82-120	92.92	8.46	9.55	<.001
Post test	74-115	85.58	8.25		

At twelve weeks after hula-hoop exercise, data analysis from thirty-one samples in the experimental group, the mean pretest score for HDL cholesterol was found to be 49.77 with a standard deviation of 10.70 and the mean posttest score for HDL cholesterol was found to be 53.29 with a standard deviation of 11.16. The mean posttest score for the HDL cholesterol was found higher than the pretest score with statistical significance ($p < .01$) as shown in Table 2.

Table 2

Comparison of Pretest and Posttest Mean Scores for HDL Cholesterol after 12 weeks by Using Paired T-Test Statistics (n = 31)

Time	HDL Cholesterol Level (ma/dl)			t	p
	Min-Max	Mean	SD.		
Pretest	29-84	49.77	10.70	2.864	.008
Posttest	36-86	53.29	11.16		

DISCUSSION

According to the comparison of the pretest and posttest waist circumferences at the twelfth weeks after aerobic hula hoop exercise, the mean posttest waist circumference was found to be less than the pretest with statistical significance ($p < .01$) (Table 1). This findings can be explained in the fact that

when the samples performed hula-hoop exercises, they used abdominal and waist muscles to keep the hoops up while massaging and affecting abdominal fat which helped burn the fat off and made the abdominal muscles firm and reduced waist circumference finally.

According to the findings, the mean posttest score for HDL cholesterol was found to be higher than the pretest score with statistical significance ($p < .001$) (Table 2). The mechanism by which exercise increases HDL is not fully understood but is believed to be related, at least in part, to increased expression of lipoprotein lipase (LPL).¹⁷ LPL activity is well known to be positively associated with HDL levels.¹⁸ and exercise is known to increase LPL activity. Although the mechanism for reduced HDL catabolism with exercise was also thought to be related to LPL activity, it is possible that exercise has other physiological effects that influence HDL turnover and that these effects may differ depending on metabolic factors, such as visceral adiposity, insulin resistance, and TG levels.¹⁷ Anyway from this study indicated that aerobic hula hoop exercise can be increase HDL cholesterol.

CONCLUSION

Study finding indicate that aerobic hula-hoop exercise can be reduced waist circumference and Increase HDL cholesterol level. Aerobic hula hoop exercise is a type of exercise that we can choose for reduces abdominal fat and good for group exercise. Anyway before using hula hoop exercise people should be well train for the optimum benefit and reduce side effect. Another concern is selecting the appropriate size of hula hoop for preventing back injury.

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CHRONIC TREATMENT WITH THE WISDOM OF FOLK DOCTOR: CASE STUDY OF MR. IN KUSOLLAM, PATHUM THANI PROVINCE, THAILAND

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ABSTRACT

The research study of wisdom of folk doctor intellect in case study of Mr. In Kusollam in Pathumthani province. Its objective is to compile the knowledge and wisdom of folk doctor in the aspect of diagnosis chronic disease, methods and forms of treatment, outcomes or result of treatment, including studying the factor of folk healer in existence, and further study in depth by means of collecting information such as interview, participating observation, questionnaire and involved document study from the books in traditional scripture. All informations are gathered to content analysis. The result is found that Mr. In Kusollam has the age of 85, grade 4 education, living in Norngsamwang District, Amphour Norngsua, Pathumthani Province. He began learning traditional medicine in the age of 15 from followed his father to keep herbs at the forest and observed the preparation of herbal medicine for patients at a time, and can heal themselves.

Role of folk healer existence depend on the folk healer. Because the father is the original folk healers. It has been trusted by patients, come to many treatments. By opening their home for treatments and did not treat it, in addition patients, will make a donation. In addition to treatment, and treatment with medication. May use drugs to their patient to supply or take by themselves, boiled to eat at home. By the way, and eat carefully.

The diagnosis method, Mr. In has to checking medical history, checking body, asking and seeing the patient. When there is the result of a diagnosis from the hospital, he will be composed. The treatment of chronic diseases such as cancer, blood pressure, diabetes, nephritis will use herbal drug is common, in addition some diseases such as smallpox, breast cancer, shingles, Pleasanton wind sprints is treated with holy water, magic and more.

Outcomes most will cure all diseases. Some of the patients come to the hospital and then incurable such as cancer, Mr. In cured and then hundreds. Patients with kidney dialysis, eat a pot of herbal decoction 2 - 3 it is a relief. Do not need kidney dialysis again. Some diseases, new diseases such as AIDS, the world is searching for a cure. But then a lot of cure.

Key words: Folk Doctor, folk healer, Pleasanton wind sprints, holy water, prayers, Buddhist commandment, Indigenous

INTRODUCTION

Health problems are an important issue that affects people's lives and has broader impact on society, economy, education and national development. Health problems are a national level problem that affects the wellbeing of the people. To maintain good health, people need to be strong and fit, have good immunity, be

free from disease and have good mental health. However, diseases and health problems seem to be ever more prevalent. Some of the most significant and common diseases these days fall into the category of non-communicable diseases (NCDs), such as cardiovascular and cerebrovascular diseases, cancer, emphysema, hypertension, diabetes mellitus and obesity. These 6 diseases are among the most common causes of death.

NCDs are not caused by infection from a microbe or pathogen. They cannot be passed from one person to another through contact or body fluids, nor spread by another disease vector. They are mainly caused by internal factors in each individual, and are usually associated with lifestyle choices that are risk factors, such as smoking, drinking, over consumption of high-fat food, high-sodium food, and sugar, lack of exercise, stress, and even bad posture.

The most common NCDs with high mortalities are

1. Diabetes Mellitus
2. Cardiovascular & Cerebrovascular Diseases
3. Emphysema
4. Cancer
5. Hypertension
6. Obesity

The World Health Organization (WHO) warned that NCDs are a serious problem that is becoming more severe. Statistics from 2009 showed that NCDs were the cause of death in 63% of cases when the world population was taken as a whole. More importantly, more than 80% of people who died from NCDs were people living in developing countries. Worldwide statistics show that 17 million people a year die from cardiovascular and cerebrovascular diseases, or 48% of the deaths from NCDs. Cancer accounts for 21% of the deaths from NCDs, while emphysema, asthma and chronic lung diseases account for 12% (4.2 million people a year) and diabetes accounts for 4% (1.3 million people a year).

The latest statistics from Thailand show that 14 million people suffer from NCDs, and NCDs are one of the major causes of death. In 2009 more than 300,000 people died from NCDs in Thailand, or 73% of total deaths. This equates to economic losses of an estimated 200 billion baht a year from NCDs. The figures also show that the percentage of mortality from NCDs in Thailand is higher than the world average, and it appears likely to continue rising in the future.

A survey of adults in Thailand in 2009 found that

- 21.4% had hypertension, and the percentage of people who were aware they had the disease, had access to treatment, and were able to control the disease was quite low;
- 6.9% (3.2 million people) had high blood sugar, especially males, while 56.7% were aware they had the disease but only 27.1% were able to control it to an acceptable level;
- 19.4% or almost 9 million people had high blood cholesterol, especially females;
- Almost one in three were overweight and 8.5% were obese, and the percentage of obesity in males had risen by 4 times in the period 1992-2009.

Thai traditional medicine is interdisciplinary, using mixed methods including herbal treatments, massage, and prayers or incantations following ancient intellectual traditions that were developed and passed down through the generations. Thai traditional medicine is used to prevent and treat diseases and health problems. Thai traditional medicine practitioners have long experience in treating NCDs. You could almost say they consider NCDs to be common and relatively easy to cure. By contrast, treating NCDs through western or

modern medicine can be extremely costly, involving complicated procedures, high-cost equipment and expensive, long-term medication, when the outcome is often not even a satisfactory cure. On top of that, there is a shortage of modern doctors to treat all the patients with NCDs.

MohInKusonlum, 85, is a traditional Thai medicine practitioner in Nong Sam Wang Sub-district, NongSuea District, PathumThani Province, Thailand. He has more than 50 years' experience working as a community doctor. He is widely known and well respected as a traditional Thai medicine practitioner who has the knowledge and ability to treat patients, especially those with NCDs. Thus, he is a valuable resource person for studying the body of knowledge of traditional Thai medicine, which is a part of the intellectual heritage that is difficult to find. The researcher thus thought it was important to record, analyze and systematically organize this body of knowledge before it disappears from Thai society. The information gathered may be useful for the development of health care alternatives.

OBJECTIVES

1. To study the history, role and factors of success of Thai traditional medicine practitioners
2. To systematically collect and compile the body of knowledge of MohInKusonlum about traditional Thai medicine, including diagnosis, treatment methods, recipes and herbal ingredients.

METHODOLOGY

The research covers the history, body of knowledge, and local intellect of MohInKusonlum about diagnosis, treatment, use of herbs, and disease treatment.

This was a qualitative research with the intent to obtain holistic and reliable data. The researcher collected data in the community for 12 months, using the methods of in-depth interviews and participatory observation. The concepts and body of knowledge of MohInKusonlum about traditional Thai medicine were studied, along with his treatment methods. Data were also gathered about the way of life, customs, and beliefs of the people in the community to gain a deeper understanding of the context.

Study population

1. One traditional Thai medicine practitioner, MohInKusonlum, who was interviewed about his background, personal history, body of knowledge, learning process, methods of diagnosis and treatment, and the types of herbal medicine he prescribed.
2. 50 patients who had received treatment from MohInKusonlum

Selection of the study area

The study area was chosen through purposive sampling because it was the community where MohInKusonlum lives and works, in Nong Sam Wang Sub-district, NongSuea District, PathumThani Province, Thailand.

Type of research

Qualitative research methods were used. Data were collected in the community to obtain holistic and reliable data. Data were collected on MohInKusonlum's history and treatment methods as well as data about the way of life of people in the community, the local geography and society, local customs and culture, people's beliefs, attitudes towards traditional Thai medicine, and their faith in traditional medicine practitioners.

Research methodology

1. For the review of the literature, data were collected from documents, journals, books, and research reports about NCDs and Thai traditional medicine
2. Data from MohInKusonlum, his patients, and people in the community were collected through interviews and informal questioning as well as participatory observation
3. The research tools were an audio recorder, digital camera, and notebooks to record data and notes from the interviews, informal questioning and participatory observation

Data analysis

1. Facts were checked and data was summarized to meet the research objectives
2. Data were analyzed
3. The conclusions were printed and reports distributed to the target audience

RESULTS

MohInKusonlum was the third child of his parents, born on 5 August 1932, and was 85 years old at the time of the study. For formal education, he completed fourth grade. He lives at house number 35/7 Nong Sam Wang Sub-district, NongSuea District, PathumThani Province. His father was named YooKusonlum and his mother was named Foy Kusonlum. They had three children and the other two have died now. Moh In's father was a traditional Thai medicine practitioner, who had learned the profession from his father.

Moh In's grandfather was from Vientiane, Laos. He married Moh In's grandmother, who was a Thai lady from UbonRatchathani Province. Moh In's grandfather learned traditional medicine from practitioners in Laos and Cambodia, and taught his methods to his son (Moh In's father). Moh In started to learn about traditional medicine practice when he was 13. His father took him along to go and find herbs in the forest. He learned which kinds of plants can be used to make medicine, and memorized their names and properties. After a collecting expedition, he would help his father separate out the herbs, clean them, chop or grind them, and prepare them for use as medicine. His father taught him and closely advised him up until the time he died.

When Moh In was 21, he became ordained as a Buddhist monk for 3 years. After he left the monkhood he went to learn more about traditional medicine from his uncle, MohChomKusonlum. He gained the knowledge and ability to treat patients, diagnose diseases, select herbal remedies, and give appropriate prescriptions. From then on, he was able to work as a traditional Thai medicine practitioner on his own.

Dr. In's daily schedule

Moh In wakes up at about 4:00 a.m. every morning and prays and then meditates. He says that meditation makes his mind calm and gives him more mental power to treat patients, so that he is able to identify what disease each patient has, and whether it is due to karma, black magic, or physical decline. He is able to know not only the cause of the disease but also whether or not it is curable. After praying and attending to personal business, Moh In will sit on his porch and wait for patients to come in. He will treat every patient that comes until there are no more patients, but does not feel tired at all. He says he never needs to take a nap during the day, and attributes his stamina to his meditation practice.

Continued practice and relationship with patients

In the past, traditional medicine practitioners were very accepted and well respected by the public. People in the community relied on them for medical treatment. However, after western medicine came to Thailand, the popularity of traditional medicine practitioners began to decline. Large numbers of people went to modern hospitals to get modern medical treatment, because they had better equipment for diagnosing diseases and more advanced treatments like surgery. Nevertheless, as previously stated, modern medicine does not provide all the answers for people suffering from NCDs. That is why some people still turn to practitioners of traditional Thai medicine for treatment of NCDs.

Moh In said the strong point of traditional medicine practitioners is that they have a close relationship with their patients. They are neighbors living in the same community. The patients come to see them at their own house. The practitioners have plenty of time to give their patients. They have a very warm and friendly bedside manner, treating their patients like relatives. They welcome everyone hospitably. Another point is the expense. Moh In does not charge his patients anything except a minimal consultation fee of only 12 baht for each visit. He gives all this money for charitable donations without keeping any for himself. Usually, after a patient is cured, he or she will want to give a voluntary extra payment to Moh In, but it is entirely up to how much they can afford.

Besides treating patients at his home, sometimes Moh In will be asked to make a house call at another location, but this is not often. Sometimes former patients from the community ask him to go with them to treat one of their relatives in another place. The other duties that Moh In performs on a regular basis are to officiate at ceremonies to set up spirit houses, lay the foundation pillar for a new house, open a new place of business, or do Feng Shui consultation. These requests are fairly frequent, about 4-5 times a month.

As for his professional ethics, Moh In follows the rules passed down to him by his father. The main ones are

1. Never violate the third Buddhist commandment (no sexual misconduct), which means never getting involved with anyone's daughter or wife
2. Do not charge for medical services. Serve the poor for free.
3. Welcome all patients and their relatives on an equal basis.
4. Treat patients to the best of your ability and do not conceal any knowledge.

Diagnosis methods

To make a diagnosis, Moh In will ask the patient about his or her medical history, details about all the symptoms, how long they have had them, their lifestyle, profession, diet, and the medical history of their family. He also asks if they have been to any other doctors for treatment before, and if so, what treatment they were advised to take. Then he will do a physical check to determine the cause of disease so that he can decide on the best treatment.

Treatment methods

After he is sure of the diagnosis, Moh In will inform the patient and his or her relatives what the problem is and what treatment he plans to use. If they give consent, then he will proceed with the treatment, which is either a herbal prescription or another traditional method. He will explain how to use the remedy, what they should do when they get home, and if there are any activities or foods they should avoid for a speedy recovery.

Number of patients

Moh In treats both male and female patients of every age. Most of his patients are local people from the community and some from other areas of the province. A few come from other provinces, because they went to clinics or hospitals and were not cured, but they heard about Moh In through word of mouth. Throughout his years of practice, Moh In has treated thousands of patients.

The majority of patients that have been treated by Moh In have recovered from their diseases. The number one disease is cancer, or about 28% of cases, followed by migraines (16%), diabetes and psoriasis (12%).

For treating cancer, Moh In uses a universal herbal treatment for most forms of cancer, such as liver cancer, lung cancer, colon cancer and cervical cancer. This will kill the disease at its root so it will not recur. The ingredients used include cobra bone, sarsaparilla (*Smilax glabra* Wall. ex Roxb.), *Smilax cerbularia*, white siris (*Albizia procera* (Roxb.) Benth.), heartwood of ebony tree and others. The ingredients are boiled and the patient drinks one cup of the concoction three times a day before meals. After finishing three to five pots full, the patient will usually be better and cured.

As for breast cancer, Moh In gave the opinion that it is not actually cancer as most people believe, but it is a lymph node inflammation. For treatment, he chants an incantation on a cup of liquor and then sprays it on the infected breast, then applies red lime paste while saying another prayer. After getting this treatment once a day for three days, the patient will be cured. The exception is people who have previously received radiation therapy from a modern hospital; they cannot be cured. Moh In said if his memory is correct, he has cured more than 100 cases of breast cancer. Two of them died, one because she had received radiation and the other because she died of old age at 99 years of age.

For treating diabetes and hypertension, Moh In prescribes a herbal infusion made from seven leaves of Queen's flower tree (*Lagerstroemia speciosa* (L.) Pers) boiled in water. After consuming seven pots of this infusion, the patient will be cured. This is consistent with a finding of modern science, which reported that Queen's flower tree leaves contain corrosive acid, which has a similar property to insulin for lowering blood sugar and controlling the blood sugar level. It can be used to treat diabetes and hypertension.

For abdominal obesity Moh In uses nutgrass (*Cyperusrotundus*L.), which is dry cooked to brown and then used to make tea. After a few days of taking it, the patient's excess fat will be shed through the urine and sweat until they no longer have a fat belly.

Moh In also has a traditional medicine remedy for kidney disease. Some patients who were told by modern medicine doctors that they have to go in for dialysis were cured of their kidney disease after taking Moh In's treatment, and no longer had to go in for dialysis.

For migraines, some patients suffered from them ever since they were teenagers up until they were middle aged and were never cured, but when they went to Moh In, after they took his infusion and finished drinking just two pots full, they were cured and the migraines never came back. The infusion has only three herbal ingredients: spiderflower (*Cleomaviscosa* Linn.), hoary basil (*Ocimumcitriodorum*), and heartwood of *Senna siamea*Lam.

For emphysema, chronic pulmonary disorder and asthma, garden spurge (*Euphorbia hirta* L.) is boiled with frangipani flowers (*Plumeriasp.*) and the patients drink the infusion three times a day before meals. Moh In used this treatment on himself to treat asthma, and he has been cured for a long time.

Moh In also treats many other diseases, including other NCDs, paralysis, AIDS, bone fractures, herpes, herniated disks and heart disease. Most of them are treated with the herbal remedies he learned from his ancestors. Only some diseases require prayers and incantations. Some diseases can also be cured with incantations only and no herbal remedy. Moh In's knowledge of traditional medicine should be studied and recorded for the benefit of health care.

Table 1
The diagnosis of the patients in the sample of 50 cases

Diagnosis	Case (n = 50)	%
Cancer	14	28.0
Migraine	8	16.0
Psoriasis	6	12.0
Diabetes Mellitus	6	12.0
Nephritis	5	10.0
Cardiac problem	4	8.0
Hypertension	4	8.0
Obesity	3	6.0

CONCLUSION

Indigenous health care knowledge and practices from others because of their interconnected nature. It can be contrasted with the medical knowledge and practices that arose in Europe over the last two hundred years or so and in recent times of speed on over the world in the form of modern, western, scientific medicine. In Thailand exiting indigenous knowledge evolved as a result of hundreds of years of experience and adapted to local social and environmental conditions.

Modern medicine has had a considerable impact across the world the last few decades, and has led to many rapid changes including health care benefits; but because of modern medicine's different philosophical basis, it has also lead to much social dislocation and little success in solving mental disorders. We see that modern medicine has been shaped by "mechanical" scientific thinking, in which the body is seen to function like a machine, distinct from the mind. The job of the doctor is to fix the broken machine by focusing on the parts that have problems. In contrast, most traditional indigenous medical theories are more holistic and see all parts of the body, the mind and even the spirit as being interconnected. Moreover, humans are considered to be closely connected with their environments. Evidence of such a way of thinking can often be found in the rural areas where the modernization process has had less effect and people suffer fewer psychological problems.

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BEHAVIOR OF AUDIENCES OF THAI PREMIER LEAGUE FOOTBALL MATCHES IN BANGKOK AND VICINITY

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ABSTRACT

This research was aimed to study the behavior of audiences of Thai Premier League football games in Bangkok and vicinity. There were 2 variable aspects studied, which were personal characteristics and behavior of audiences. Samples were 400 audiences of Thai Premier League football matches in Bangkok and vicinity. Data were collected using questionnaire technique, and respondents were chosen using convenience sampling technique by randomly distributing questionnaire forms, and collecting them from voluntary respondents until reaching the preset number. Statistical analysis tools in use were percentage, mean, standard deviation, and Chi-square analysis using SPSS application software.

Findings revealed the following:

1. Most audiences were male with age range of 31 – 40 years old, holding bachelor's degree, and earning monthly income of 10,001 – 15,000 baht. Most were business owners, followed by students, and governmental/state enterprise officials respectively.
2. Their behavior in viewing Thai Premier League football matches in Bangkok and vicinity was found that most had related news and information from Internet/Websites with frequency of twice a month, spent 500 baht on average each time. Objectives of most audience in viewing those matches were for entertainment from the competition, and enjoyable moments with friend or fellow football club fans, and most went to view the matches with their team being home team.

Keywords-Audience behavior, Thai Premier League Football

INTRODUCTION

Thai Premier League is the football competition in Thailand that establish and manage by Thai Premier League Company where under control of Thailand Football association. In now a day, Thai Premier League has more international standard because has a lot of fan club who following this competition that showed they can sing a football club song, shouting for cheer up them team in every stadium both with home team and visitor that showed almost of Thai people were interest more Thai Premier League. In the present, Thai premier league is popular that fanclub always following them team, surely, each football club more increase income until progress and success in leader league.

From reason on above that make me interest to study "Watching Thai Premier League Behavior in Bangkok and Perimeter" that help the stakeholder with Thai Premier League apply to solve any factor of competition for develop Thai Premier League more interesting and can be develop to Thai Premier League later.

Football in Thailand has history more than 100 years ago but has national football league in 1984. Thailand Football Association under The Royal Patronage was created Thailand Soccer League that rely with England Football League but specific only team from Bangkok and perimeter because all team of Bangkok are ready more which use fair lawn to competition only. Later in 1985 can not competition because are not ready in any factors until in 1996 Thailand Football Association was created Football League competition again under main sponsor is name "Johnny Walker Thailand League" Although established national football league but is not popular among Thai people because administration system of each football club are on standard. Also to Thailand Football Association still specific only team from Bangkok and completion in fair

lawn only that make un popular in the local like league in any country where popular in the local too until aware about income from the business system (RangsanThanapornpan,2001, P : 89)that influenced to Thailand from satellite broadcast.

RESEARCH OBJECTIVE

1. For study basic personal character also to behavior of watching football Thai Premierleague both with Bangkok and perimeter.
2. For study opinion level about Mix Marketing factor that affected to watching football behavior.

Research Scope

Content Scope

1. Population factor which are Gender, Age, Education, Salary per month and Occupation
2. Watching Football Behavior Factor such as The Competition Recognition, Frequency to watching, Payment, Expectation and Following or cheer up reasonable.
3. Mix Marketing Factor which are Product, Price, Distribution Channel, Promotion, Personal, Process and Physical Character.

Population Scope

Population scope in this research is Thai Premier League audience both with Bangkok and perimeter, The sampling for 400 people.

RESEARCH METHODOLOGY

This research study with process that

1.Population

The sampling in this study is Thai Premier League audience both with Bangkok and perimeter, The sampling for 400 people.

2.The sampling

The sampling in this research focus on Thai Premier League audience both with Bangkok and perimeter that calculate the sampling number from the formula (Kanlaya Wanitbancha. 2002: 26)

$$n = \frac{P(1-P)Z^2}{e^2}$$

Represent

N is the sampling Number

P is Population Proportion that still random .50

Z is Confidence Level 1.96 on confidence 95 Percentage level 0.5

E is Mistake Level

This research population proportion is 0.05 Formula that determine Confidence Level 95 percentage and Tolerances level 5 percentage

$$P = 0.50$$

$$Z = \text{Confidence Level} 95\% \text{ So that } Z=1.96$$

$$e = \text{Mistake Level} = 0.05$$

$$\text{Represent } n = \frac{(0.5)(1 - 0.5)(1.96)^2}{(0.05)^2}$$

$$= 385 \text{ people}$$

So that, there are sampling 385 people but for protect the mistake will adding more 15 people that total are 400 people.

Data Collective

Mix Marketing factor and travel behavior of Thai tourist in Donwai Floating Market, Nakhonphatom Province was collected data that

1. Secondary Data from Academic Books, Article, Dissertation, Related Research, Journal and from Internet.
2. Primary Data from Questionnaire paper from 400 sampling people was collected with methodology and place until completely.

Data analysis

Data Analysis with computer program which are

1. Descriptive Statistics
 - 1.1 Data Analysis with part 1 in questionnaire paper that the sampling characteristic are Gender, Age, Education and Salary per Month to be frequency identification also to show the result in percentage for study the general behavior of the sampling.
 - 1.2 Data Analysis with part 2 in questionnaire paper with mean also to standard deviation. Score Evaluation rule from the Class Interval data measurement.
2. Inferential statistics for hypothesis test which are
 - 2.1 t-test (Independent t-test) to test the difference of two group populations mean that independent such as Gender
 - 2.2 Chi-square

RESEARCH RESULT

1. Almost of the sampling is male who has age between 31 - 40 years old also to graduate in bachelor degree and has income between 10,001 - 15,000 baht. Almost is owner business, later is student, official and government personal.
2. Thai Premier League watching football behavior both with Bangkok and perimeter found that almost of the sampling receive information and news from internet or website about 2 time per month also to pay for ticket about 500 baht per a time. Almost of the sampling expect to watching each match for funny and have new group of friend and fan club. Moreover, almost of the audience usually watching home match only.
3. Mix Marketing factor found that almost of Thai Premier League audience aware about physical character, later is price, distribution channel, promotion, process, personal and product.

RESEARCH RESULT DISCUSSION

Watching Thai Premier League Behavior in Bangkok and Perimeter can be discuss that

1. Almost of the audience is Male who has age between 31-40 years old also to graduate in bachelor degree. Moreover, they are has salary about 10,001 - 15,000 baht that almost is business owner, later is student, official and government personal.
2. Thai Premier League watching football behavior both with Bangkok and perimeter found that almost of the sampling receive information and news from internet or website about 2 time per month also to pay for ticket about 500 baht per a time. Almost of the sampling expect to watching each match for funny and have new group of friend and fan club. Moreover, almost of the audience usually watching home match only that rely with research of Akenarong Panpong (2011) found that Thai Premier League watching football behavior both with in the stadium and on television. Before watching is about plan and ready to watching also to payment and activities too. Mean while watching is about doing any activities also to reply with cheer up. Moreover, after match is about activity that the audience were created such as achieve that match result.
3. Mix Marketing factor found that Thai Premier League audience aware about physical character for the most, later is price, distribution channel, promotion, process, personal and product that rely with Phamseuk Huanphapai and Natcha Phasook (2015) found that Thai premier league audience aware about mix marketing, price, promotion, distribution channel, process, personal and product in highest level which rely with research of Sirinkarn Phongpasert (2007) found that Mix Marketing need of Thai Premier League audience in the high level

RESEARCH RECOMMENDATION

Watching Thai Premier League Behavior in Bangkok and Perimeter can recommend that Mix Marketing factor found that Thai Premier League audience aware about physical for the most, later is price, promotion, distribution channel, process, personal and product. So that, the stakeholder should apply research result to progress them football club to be effectiveness more for support successful in Thai Premier League later.

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THE ROLE OF ONLINE AND OFFLINE FACTORS IN RETAIL BANKING: THE CASE OF KUWAIT

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ABSTRACT

In a modern world, the majority of adults has bank accounts and use banking services. In most countries, consumers are faced with a choice regarding which bank they will use and banking industries operate as commercial entities in deregulated sectors. In these circumstances, the issues of market share and comparative attractiveness become key considerations for banking executives. Purpose: This study builds on previous work which has sort to examine factors that impact the perceptions of consumers toward individual banks. Many of these studies have analyzed the role of either online factors or offline factors for predicting customers' perceptions toward retail banking services usage. However, there is also a need to study the influence of both online and offline factors on customers' perceptions toward using retail banking services. Hence, the purpose of this study is to capture a more complete picture of the complicated relationships of both online and offline factors that influence customers' perceptions toward retail banking services usage. Methods: An online survey is designed and data collected through convenient sample consisting of retail banking customers from 5 different Kuwaiti banks. SPSS and AMOS were used to test the hypothesized relationships. Results: Customers' perceptions towards retail banking services usage is relatively associated with the trust, image, and delight of customers that can be easily achieved through online and offline factors. Conclusion: Customers' perceptions is directly associated with the improvisation of offline and online factors.

THE COOPERATION AND COMPETITION OF TECHNOLOGICAL DEVELOPMENT: THE CASE OF TFT-LCD

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ABSTRACT

The study aims to find the players of technological cooperation and competition from the perspective of ego firms. The research applies the method of Network Constraint Index to analyze the network of technological diffusion. The higher the constraint value of a certain firm is, the more constraint it would stop the linkage from technological connection. On the other hand, the lower the constraint value of a certain firm is, the less connection it is with the others, which means more chance to obtain the intermediate benefit. The firm with constraint trait might be the bridge the connection of the others and control the important resources and advantages among other firms. By this way, the purpose of this study is to identify the players of technological cooperation and competition for firms and help them to make a complete portfolio of technology development.

Keywords—Competition, Cooperation, Patent, Constrain, TFT-LCD

INTRODUCTION

Patents are the fight weapons behind the business of the industry. It is not only as the core threat arms but also the last defend walls. Because patents are regarded as the core products on research and development, it is the competitive battlefield since always until now. Many world-known research institutions, such as International Institute for Management Development (IMD) and World Economic Forum (WEF), view patents as a key indicator in evaluating a national research and development (R&D) position. Patent are an important intangible asset of the firms, it not only regards as the core competitiveness but also enable firms to generate revenue by selling them.

The study focuses on TFT-LCD industry to explore the changes and developments of the technology. From the end of the 1960's, the technology of LCD (Liquid Crystal Display) used to be initially applied by U.S. Radio Corporation of America (RCA). On account of the characteristics for thin and power-save, TFT-LCD becomes the main applied products on display industry. Once when the Japan firm TOSHIBA employed TFT-LCD on the Notebook screen, it has spread widely on consuming electronic product like GPS, digital camera, NB, etc. It is to say that TFT-LCD is on behalf of progress on technology market that is due to the technology of TFT-LCD has reached the maturity period and could be explained for the developing history. By exploring patents analysis is the way to overview.

The traditional method only could regard from the bilateral side to overview the relationship and even have no way to understand the ego side, and the clusters side of the variety within them. As the rapidly change of the technology, the innovation process becomes much complex, the product life cycle comes to be terminate, and the demand of the market turns the environment competitive. There is much important to possess the up-to-date, the correct, and the abundant patent information to make the complete patent portfolio for the companies to fight against. There are few researches on both patent transaction and patent citation together at the same time. The research constructs the transaction matrix and citation matrix to discuss the characteristics they act. Under the cost and capability conditions, how to acquire the advantage by technology transferring is the important issue that business needs to conquer to. Focus on the case TFT-LCD industry, this study aims to develop a method to identify a certain company's cooperation and competition from the ego perspective to

help its decision-makers for a better strategy making.

LITERATURE REVIEW

2.1 Technology Market

As the progress of the technology, the fast time the products launch, the short term the product life cycle changes. For many businesses, the new products and service are much important for the companies especially for the technology-imploded firms [1]. In order to launch the competitive products, business usually put lots of efforts on the innovation technology. However, for limitation of the resource, they focus on the development capability they are expert in and acquire those not much important technology from the other firms. Meanwhile, they might gain profits by offering their technology-owned capability to the others reversely. Business eager for the most profits that they provide their own technology and acquire the external technology at the same time.

Technology transfer means the process of technology exports and imports between the nations, the regions, the industries, and the organizations. Ryan [2] denoted from the aspect of management, business first consider what resource and capability should acquire, and how to transfer the merits to the allies when entering the technology market. The complete mechanism on technology market makes an important influence for the activities in the market. That is to say the high efficiency of technology market plays the key character [3]. If the information is not as ample as the normal standard, there may occur to the asymmetric transaction when searching the cooperation. Implied three characteristics of the market: the market safety which influences the trust of the anticipants and the authenticity of the products; the market thickness that relates whether the both sides efficiently interact or not in the market; and the lack of congestion for urging the transaction activities process with the reasonable speed. Therefore, the patent system fulfills the demand of the market safety that makes technology information open without caring the imitation by the others. In other words, the implement of patent rights is the key factor decided on the licensing and effectiveness in the technology [4]. Due to the rebuild feature for transferring and delivering that patent makes the professional technology be current in the market [5]. The key for business to enter technology market or not is based on the process of buy and sell [6]; therefore, not only the patents and technology of products but also the approach of transferring and the interaction of players are the important factors influence the technology market.

2.2 Co-opetition

Brandenburger & Nalebuff [7] discussed business is cooperation when it comes to creating and competition when it comes to dividing it up. In other words, business is war and peace occurring at the same time. The former CEO of Novell, Ray Noorda created the word “co-opetition” which is contained cooperation and competition together in the nineteenth century. The combination makes for a more dynamic relationship than the words “competition” and “cooperation” suggest individually. In fact, there are some concepts about the above relationship: strategic alliance, joint venture, game theory, and etc. By estimating the strategy arrangement, it is urged to find the suitable respond under the competition.

The early topic for competition is about the zero-sum game, the benefit to one side is from the deficit of the other side. Furthermore, the theory game is separated into two parts: the rule-based games and the freewheeling games. That the freewheeling games emphasized on how to create the added value but not focus on how much profit it takes from the others. This kind of game must need the most power gathering everyone's efforts together to enhance the whole value of all that is respect to the early cooperation. Subsequently, the world known theory “Prisoners Dilemma” brought out by Nash [8] interpreted that there's may be the relationship of cooperation and competition simultaneously for the both sides as long as when they reach the equilibrium point.

The research on the TFT-LCD industry faces much difficult and seeks for strategic alliance that would help each other share resource and increase their core competitiveness. The main idea is to combine the specific advantage of each other for the complementary and make the best synergy of all. Contractor & Lorange [9] indicated the demand-poverty might gain the prior position if cooperated with the local business partners from the research on strategic alliance and joint venture. The strategic alliance is the embeddedness of the organization in the network [10] that extends the cooperation and competition in the free market. The main categorizations of strategic alliance are the embeddedness of interdependence which is similar like the citing

and cited relationship in the network and the cross-organization. Gulati [11] denoted there are three types of embeddedness: the embeddedness of relationship which is symbolized the cohesion in the network that means the interconnection between people and people; another one is the embeddedness of structure that is corresponded to the structural equivalence in the network focused on the opposite side is on the same structure place as it is; and the other one is the embeddedness of position which is according to the base of centrality degree that regarding the role-player it is in the social network.

The concept of cohesion is about the clusters that implies the actors with the strong, direct, frequent relationship in the network. Festinger & Kelly [12] defined cohesion is the result that forming the most power to maintain the clusters. That is meant the high degree of the cohesion is much consistency than the low degree one. Cook & Whitmeyer [13] considered the social structure is the mechanism of the relationship between the egos. And the ego side could exchange the tangible objects and intangible information and profits as in the strong cohesion network. As for structural equivalence is another concept explaining the process of the society. That is meant if the two actors substitute with each other without changing the structure of the whole network that it is to regarded the two as the equal relationship. Burt [14] considered that the players in the same cluster might act as the similar as they are for the likely conducts and behaviors. Moreover, the firms with structural equivalence are by observing and imitating with each other to decline the risk when developing the technology and even to cost down for the higher profits.

METHODOLOGY

The research focuses on the TFT-LCD industry and selects some specific firms as the research objects to find out the interaction and qualification within the all. As the technology change rapidly, all the firms pay much attention on how to get the priority power and status in the competitive environment. In order to acquire the full information about the relationship of the firms in the TFT-LCD industry, this study adopts Social Network Analysis method to make an observation for the patents.

3.1 Research Data

USPTO (United States Patent and Trademark Office) is the branch organization under the United States Department of Commerce to manage the patents application and offer the service on searching the patents. It makes open to the public of the full-text search service of patents. The database update once every Tuesday [15] The database involves patents from 1976 to now. Most of the countries establish the organization for controlling the intellectual property. For instance, Japan for JPO (Japan Patent Office), Korea for KIPO (Korean Intellectual Property Office) and China for SIPO (State Intellectual Property Office of the People's Republic Office). While U.S. has the most market and connect with almost every country all over the world that the USPTO symbolize the important index as the source to research retrieval.

The way to categorize the data is by UPC (Universal Product Code). Owing to it is the represented for the U.S. and also has the better complete information than the IPC (International Patent Classification). Moreover, within the 122 patent players list, the data come from US up to 59 firms that even almost be the half of all.

The research uses the tool PatentGuider2008 by LearningTech Corp. to collect the data from USPTO (U.S. Patent and Trademark Office). For the research objective refers Hsieh's analysis [16] word strings on the technology interaction and connection of the TFT-LCD firms. The searching word strings are: ABST(tft or lcd or tfr-lcd or "thin film" or "liquid crystal")and not ABST (tn or stn or st or "twisted nematic" or "super twisted nematic" or "super twisted" or "supertwisted" or "supernematic"). ABST means the scope of the patent. There are three kinds of the LCD monitors: Twisted Nematic:TN), (Super Twisted Nematic; STN) and (Thin Flim Transistors; TFT). The development of LCD monitors comes from the beginning period TN-LCD to the later period TFT-LCD, and for its improvement on contrast ratio and resolution ratio, the TFT-LCD becomes the universal types in today's market. Therefore, the search removes the two exclusive types on TN-LCD and STN-LCD. In addition, the research data duration is from announced date 1976/01/01 to 2012/12/31. By this way filtered out 59855 data for patents of all.

3.2 Indicators

Burt [17] denoted that if some nodes situated as the linked points in different clusters which also play an important roles to be the brokers, it is to say the node defines the "structural holes" characteristic. This kind of relationship between two players represent "unredundant" linkage that means the node on the position could

control the benefit as the brokerage role between unrelated clusters. Structural hole enables break through the constraint within the networks and obtain distinct information so that it might create much possibility for the innovation. Structural hole in the network has the qualification for variety and non-repetitiveness [18].

Hierarchy. For the most popular is Constraint which means a node owns the power in the network. This research is using structural hole the patent data and try to find out whether being as broker could control much resource that is meant it is owns decision-making power than the others and additionally benefit from them.

In the case of notebook, Hargadon & Sutton [19] showed that if the central firm as the structural hole positions that link with others on the unrelated linkage could get the profit from each other. That because in other firms could only get information from its own, and the broker shows up to connect the individual ones and earn from them. Cao and Nee [20] found that by the power conversion thesis in market transform case, it is known the politicians use the advantage in information to obtain the self-profit. That's the example of owning the control power by structural holes.

The research adopted Constraint Index as the measurement, and the equation Network Constraint Index for Structural hole is below:

$$C_B(n_i) = \sum_{j=1}^l \sum_{k=1}^l \frac{g_{jk}(n_i)}{g_{jk}} \quad , \quad i \neq j \neq k \quad , \quad i \cdot j \cdot k \cdot l = 1 \cdot 2 \dots$$

It's the sum value that denotes the degree links to other node from the ego side. Network Constraint Index is the directly or indirectly closeness degree of one firm with others. The more constraint degree means the more linkage that the firm is hard to control the flows within other firms and there is appearing much constraint between each other. In the other hand, the less constraint degree the firm is, it is located the overlapped position over the others and has more power to control the connection from each other. That's the brokerage makes profit earned from in this kind of structural holes characteristic network.

RESULTS

In order to figure out that the problem only could regard from the bilateral side to overview the relationship, Burt [21] denoted the concept of Structural Holes that would solve the above difficulty and it has the characteristic to look through with over the three actors' network relationships. The study is from the ego perspective to explore the phenomenon of structural holes. Structural holes implies on the market position as the mediator between the unconnected one with each other; so that it might get profits for being as broker or gatekeeper. Comparing with others, the actors with structural hole is much possible to contact the diversity message and create more innovation by absorbing the information it obtains.

The research applies the method Network Constraint Index to discuss the network. It is to know the higher the constraint value is, the much constraint it would stop the linkage from connecting that would lost the power of controlling. This is meant the firm connects densely with others then it shares the information within the linked ones and might prevent the new ideas from entering in. On the other hand, the much lower the constraint value it is, the little connection it is with the others that might appearing the chance to obtain the intermediate benefit. On account of being the overlap position the most firms they are, they would be lack of the linkage with others and without any interaction. The firm with constraint trait might be the bridge to connect the side to side and control the important resource and advantage for the intermediary of all.

4.1 From the View of Citation Matrix

In citation matrix, the most great constraint value is 0.94 for JNC, which is meant it is located on the multi-connected place. Though it links with others much densely and duplicated for obtaining technology easily, it would not appear the phenomenon of structural hole so does not have the chance to get profit from the position-advantage. On the other hand, the least constraint value is 0.156 for ROCKWELL_TECH, which it could get much benefit from the others linked with each other much and be with overlapped without interactions.

4.2 From the View of Transaction Matrix

In transaction matrix, the most great constraint value is 0.992 for TOPPOLY, which is meant it is located on the multi-connected place. Though it links with others much densely and duplicated for obtaining technology easily, it would not appear the phenomenon of structural hole so does not have the chance to get profit from the position-advantage. On the other hand, the least constraint value is 0.243 for INDUSTRIAL,

which it could get much benefit from the others linked with each other much and be with overlapped without interactions.

4.3 Co-opetition

The study expects to find out the players of cooperation and competition from the ego perspective to help the decision-maker for a better strategy. Because there are two kinds of matrix of citation and transaction, the research sets up a four-grid standard for measurement. The analysis model is below:

Table 1 The co-opetition model

		TRANSACTION	
		CO	OPETITION
CITATION	CO		
	OPETITION		

The operation is to fill the overlapped firm into the columns for four parts, the both sited at transaction with cooperation and citation with cooperation, transaction with cooperation and citation with competition, transaction with competition and citation with cooperation, and transaction with competition and citation with competition. By this way, the purpose is to distinguish whether the other players is on the side as the ally or the competitor and help to make a complete patent portfolio for the management.

Above all, the study would select some players out for the advanced analysis that for the international players, the Taiwan local players, the players as legal entity, and the players as patent trolls. As the DisplaySearch Institution shows that LG PHILIPS and INNOLUX are the represented firms on the TFT-LCD industry that the study takes them as the analysis examples. Furthermore, player HITACHI is with the most degree centrality of all that is suitable for the discussion. For the legal entity, player UNIV_TOKYO is represented the international firms in Japan while INDUSTRIAL is as the Taiwanese target. In Taiwan, the player CHIMEI and are the benchmarking to be considered as the examples for the study analysis. There is still one kind of the player called patent troll, which is the identity to earn the profits from the others by the patent litigation while always being calling into questions for the proper behaviors. According to the report *Exploring the Business Model of IP Holding Company in the U.S.* of Ministry of Economic Affairs shows there are two companies- ACACIA and GUARDIAN as the patterns to be the patent troll examples.

Table 2 The International representatives-HITACHI

HITACHI		TRANSACTION	
		CO	OPETITION
CITATION	CO	CANON/FUJITSU	FUJITSU/MATSUSHITA/ TOSHIBA
	OPETITION	CANON	MATSUSHITA

The player HITACHI is the greatest of both in-degree and out-degree that it is taken as the example for the analysis. That is to know all the players within the relationship with HITACHI are all come from Japan, so does HITACHI. For CANON, FUJITSU, MATSUSHITA that they are with the cooperation and competition with HITACHI; only the player TOSHIBA toward HITACHI is cooperation in citation while is competitive in transaction. It is the important task for HITACHI to understand the condition and make the best solutions to confront these key players with different roles in the both competition and cooperation.

Table 3 The International representatives-LG_PHILIPS

LG_PHILIPS		TRANSACTION	
		CO	OPETITION

CITATION	CO	CHIMEI/ CHISSO/ HANNSTAR/ INDUSTRIAL/ KONINKLIJKE /MATSUSHITA/ ROCKWELL_TECH/ TDK/ TOSHIBA	CHIMEI
	OPETITION	ROCKWELL_SCIENCE/CHIMEI/ INDUSTRIAL/MATSUSHITA	CHIMEI

LG_PHILIPS is the international business comes from Korea, and it is made up with the business LG from Korea and PHILIPS from the Netherlands together while is now under the patent company LG since 2008. From the analysis result is denoted that the player CHIMEI is the most influential one for LG_PHILIPS over all. On account of CHIMEI is the key business in Taiwan and LG_PHILIPS represents the Korea business as well. These two players are both focus their resource on TFT-LCD manufacturing around the world that they might be the rival and ally at the same time.

ROCKWELL_SCIENCE, INDUSTRIAL, and MATSUSHITA are still the players that LG_PHILIPS should take care of that they are all with cooperation in citation and transaction while with cooperation in transaction and with competition in citation. There is much easier to cope with the key actors like CHIMEI in every phase; however, the instances like INDUSTRIAL or MATSUSHITA are difficult to confront that they sometimes as the ally while being as the rival at the other hand immediately.

Table 4 The Taiwanese representatives-CHIMEI

CHIMEI		TRANSACTION	
		CO	OPETITION
CITATION	CO	CHISSO /HANNSTAR/INDUSTRIAL /KONINKLIJKE/LG_PHILIPS /MATSUSHITA /ROCKWELL_TECH /TDK/TOSHIBA	HANNSTAR/LG_PHILIPS/INDUS TRIAL
	OPETITION	HANNSTAR/INDUSTRIAL/ROCK WELL_SCIENCE	HANNSTAR/ INDUSTRIAL

CHIMEI is once as the “Panel Five Tigers”¹ in Taiwan in the 2002 though it is emerged into INNOLUX now. From the analysis results are shown the player HANNSTAR, and INDUSTRIAL are occupied the whole possibilities with competition and cooperation in citation and transaction; furthermore, the two players are both come from Taiwan that so does CHIMEI. HANNSTAR was the member of Panel Five Tigers that CHIMEI was as well that they came through the tough stage being ally and rival with each other since always till now. Another example INDUSTRIAL is the institution set up by Ministry of Economic Affairs in Taiwan. Though it connects with CHIMEI such frequent that they are not as the same relationship with each other as HANNSTAR with.

Table 5The Taiwanese representatives-INNOLUX

INNOLUX		TRANSACTION	
		CO	OPETITION

CITATION	CO	ADV_TECH/ HIMAX/ INNOCOM	
	OPETITION	DAEWOO	

INNOLUX is the key firm in the later stage as the Taiwanese representative. It makes the more cooperation with ADV_TECH, HIMAX, and INNOCOM in both transaction and citation while faced to DAEWOO, the Korean company, it changed to become competitive with it in citation network. For the result, it is indicated that INNOLUX is suitable to seek more cooperation opportunity than set the rivals fight against for.

Table 6 The Legal Entity representatives-UNIV_TOKYO

UNIV_TOKYO		TRANSACTION	
		CO	OPETITION
CITATION	CO	SKC	
	OPETITION		

UNIV_TOKYO is an academic institution in Japan that is regarded as the legal entity. For the characteristic of the university, it is less possible to struggle the resource like ordinary business do that the analysis result agrees with the statement. There is only one player SKC for the both cooperation in citation and transaction. Therefore, UNIV_TOKYO could find the assistance from SKC as the matter when it has the necessary in the future.

Table 7 The Legal Entity representatives-INDUSTRIAL

INDUSTRIAL		TRANSACTION	
		CO	OPETITION
CITATION	CO	CHIMEI/CHISSO/ HANNSTAR/ KONINKLIJKE /MATSUSHITA/ ROCKWELL_TECH/TDK/ TOSHIBA	KONINKLIJKE/CHIMEI
	OPETITION	HANNASTAR/ KONINKLIJKE/ ROCKWELL_SCIENCE/ TOSHIBA/ XEROX	KONINKLIJKE

The player INDUSTRIAL is the institution set up by Ministry of Economic Affairs in Taiwan that it is not seeking the chance to conduct battle with others but focusing on the possibility is could enhance the development of the industry in Taiwan. As the result appeared, KONINKLIJKE is the influential player toward INDUSTRIAL over all in the network. KONINKLIJKE is for Koninklijke Philips Electronics in the Netherlands organization that would like to collect useful information to strengthen its capability that might be conflict with INDUSTRIAL.

Table 8 The Patent Troll representatives-ACACIA

ACACIA		TRANSACTION	
		CO	OPETITION
CITATION	CO	HOECHST	
	OPETITION		

For ACACIA which is considered to be the patent troll that it prevents from seizing the resource directly but using another roundabout way. It is shown that ACACIA do not with any competitive relationship with the others while only being cooperation with the player HOECHST. This is the peace way for ACACIA by unnecessary losing too much cost to obtain its final purpose.

Table 9 The Patent Troll representatives-GRARDIAN

GUARDIAN		TRANSACTION	
		CO	OPETITION
CITATION	CO		
	OPETITION	MITSUBISHI	TPO

Different from ACACIA, GUARDIAN would like to take the fierce artifice to acquire the advantage. In the condition that cooperation in transaction and competition in citation corresponds to the player MITSUBISHI which is indicated GURARDIAN would fight against with MITUSBISHI in the citation phase while seek to be cooperated with MITUSBISHI when taking the transaction behavior. On the other hand, player TPO is the most menace toward GRARDIAN that no matter on citation or transaction TPO is on the competitive relationship with GUARDIAN. For this crisis, GUARDIAN should be careful for the strategy that TPO would take.

CONCLUSION

The ego network could analyze from the multi-sides that help explore the position and advantage of each individual while the traditional CHI could not get the point. The research applies the method Network Constraint Index to discuss the network. It is to know the higher the constraint value is, the much constraint it would stop the linkage from connecting that would lost the power of controlling. This is meant the firm connects densely with others then it shares the information within the linked ones and might prevent the new ideas from entering in. On the other hand, the much lower the constraint value it is, the little connection it is with the others that might appearing the chance to obtain the intermediate benefit. On account of being the overlap position the most firms they are, they would be lack of the linkage with others and without any interaction. The firm with constraint trait might be the bridge to connect the side to side and control the important resource and advantage for the intermediary of all.

In the citation matrix, though it links with others much densely and duplicated for obtaining technology easily, it would not appear the phenomenon of structural hole so does not have the chance to get profit from the position-advantage. On the other hand, the least constraint value is 0.156 for ROCKWELL_TECH, which it could get much benefit from the others linked with each other much and be with overlapped without interactions. As for the transaction matrix, though it links with others much densely and duplicated for obtaining technology easily, it would not appear the phenomenon of structural hole so does not have the chance to get profit from the position-advantage. On the other hand, the least constraint value is 0.243 for INDUSTRIAL, which it could get much benefit from the others linked with each other much and be with overlapped without interactions.

The study expects to find out the players of cooperation and competition from the ego perspective to help the decision-maker for a better strategy. Because there are two kinds of matrix of citation and transaction, the research sets up a four-grid standard for measurement. The operation is to fill the overlapped firm into the columns for four parts, the both sited at transaction with cooperation and citation with cooperation, transaction with cooperation and citation with competition, transaction with competition and citation with cooperation, and transaction with competition and citation with competition. By this way, the purpose is to distinguish whether the other players is on the side as the ally or the competitor and help to make a complete patent portfolio for the management.

In conclusion, there are various kinds of the relationships between cooperation and competition in citation matrix and transaction matrix. By the analysis method this study brings out is help explore the deeper implications that provides the useful references for the decision-makers. With different characteristics for the four parts: international, Taiwanese, legal entity, and patent trolls could analyze each special conditions they are.

By the each column could provide something important information for the further discussion; moreover, put the two models together for the comparison is much effective exploring the whole network. Look at the example of CHIMEI and LG_PHILIPS, they are almost reaching the same situation; on the side of CHIMEI, it could be found there are two columns corresponded with LG_PHILIPS while for LG_PHILIPS that there

are the whole four columns accorded with CHIMEI. By contrasting the former one and later one helps to consider the next step following from both the self-side and the counterpart. The duality relationship of each one is the good analysis method for the advanced suggestion for the management.

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DEVELOPING STUDENTS' CRITICAL THINKING SKILLS IN DESIGN-BASED LEARNING THROUGH PEER ASSESSMENT

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ABSTRACT

This paper is to develop students' critical thinking skills so that they are able to evaluate their own and their peers' design-based product. This was conducted for Furniture Design subject in year 1 diploma level. It is a challenge to change their mindset from school learning experience towards higher education learning experience. They used to learn in an environment where the teacher must be very instructive and descriptive which this would disable students from thinking critically on their own. Thinking critically enable the student to sustain their problem-solving skills in design. Critical thinking is how student analyzes complicated question or problem and the value of the outcome based upon several factors. Peer assessment was used to train the students to be more critical in thinking and mature in evaluating design problems. They were briefed on what is peer assessment, how assessment peer could help them to be a good designer and how to do marking where they have to provide the reason for giving such marks. This process will help students to reflect their understanding of design and being more critical in analyzing design problems. It was found that peer assessment in design based subject allowed students to be more actively engaged in Q&A activities and discussion among peers. They able to give thoughtful comments and admit that they learn how to differentiate good and bad design. Although there was minor issues occur during the session as the redundant question and some feel offended with the comments, but it can be solve and avoid by construct and design the assessment criteria well and a compressive training to the students beforehand.

ANALYSIS OF LANGUAGE NEEDS OF ENGLISH LITERATURE MAJORS: A NON-NATIVE CONTEXT STUDY

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ABSTRACT

The present research was conducted to investigate the language needs of English literature students in Iran. In this study two groups of participants filled in the related questionnaires which dealt with the investigation of their language needs. The first group (N=224) was junior and senior students of English literature from Shahid Bahonar University of Kerman, Razi University of Kermanshah, and Azad University of Kerman. The second group (N=52) was former English literature students who were teachers and/or translators in Kerman and Kermanshah at the time. The second group was chosen to verify if the expectations of the current students as regards their future needs were realistic. The results of the analysis of the data revealed that the current English literature students used English for academic purposes mostly. The most important future function of English language for current English literature students was for teaching purposes. Results revealed that the future expectations of the current English literature students were in accord with reality.

Keywords: English literature majors, English for specific purposes, Needs analysis

OPINION OF THAI PREMIER LEAGUE FOOTBALL AUDIENCES REGARDING THEIR DECISION IN PURCHASING SOUVENIRS IN THE NORTHEASTERN REGION

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ABSTRACT

This research was aimed to study opinions of audiences of Thai Premier League Football matches regarding their decision in purchasing souvenirs, and comparison of their decision, classified by demographic characteristics, and marketing mix (4P) factors. Samples were 400 audiences with data collected using questionnaire technique, and respondents were sampled using random sampling technique. Statistical analysis tools in use were percentage, mean, standard deviation in analyzing data, and t-test, F-test and One-way ANOVA in testing using SPSS application software.

Findings revealed the following:

1. Most respondents were male with age range of 20 – 35 years old, holding bachelor's degree, and earning monthly income of 10,000-20,000 Baht.
2. Opinions regarding marketing mix factors in general and by aspect, including pricing, product, promotion and distribution channel, were found to be at high level.
3. Results revealed that audiences with different genders had differences in their opinion on pricing regarding their purchases of souvenirs with significance level of 0.05, while opinions of audiences with different age, education level, and average monthly income level were not different

Keywords: Opinion / Purchasing Decision Making / Audiences of Thai Premier League Football matches

INTRODUCTION

Football or Soccer is sport that can not identify its origin clearly because each ethnics all have an amusement which similar to football in now a day such as in France there are play call "La soule" while Italy have Gioco Del Calcio. However, If contentious about which country are football origin the settlement can not be cause without evidence to confirm or reference. Firstly, rely with scientific evidence that proven have a kind of sport similar to football in China Military Manual of Han Dynasty between second and third century before Christian era call "Tsu-Chu" that mean kick leather ball with feet. The famous player in that era all record in that manual and also to hailed as national hero.

For firstly football club of Thailand is Royal Bangkok Sport Club was established in 1915. Later, Thai football club was increased until 2009 Asian Football Confederation or AFC was to enacted about completely football club that make Thailand Football Association was established Thai Premier League Company for manage football league competition in Thailand that have standard as international.

Now adays, each football club that participated in Thai Premier league all aware business administration both with develop the competition quality. Also to make income to football club continuity by integrated marketing communication with branding by marketing activity and can be planning suitable marketing that rely with Marketing Mix Theory that Siriwan Sereerat and other (2003) as cited in Mix Marketing such as Product, Price, Distribution Channel and Promotion all together for rely with target group. Each Football Club has its products and souvenir for sell to fulfill want of the consumer.

So that make me interest to study "Thai Premier league audience opinion about the decision to buy souvenir in North eastern" that focus on Marketing Mix Concept as the way to other football club can be apply to develop them organization and also to fulfill the customer.

RESEARCH OBJECTIVE

1. For Study Thai Premier league audience opinion about the decision to buy souvenir in North eastern.
2. For Study marketing factor that importance to buy the souvenir.
3. For compare the marketing factor that importance to buy souvenir. Classify with Gender, Age, Education and The average income per month.

Scope of Study

Content Scope

1. Population factor such as Gender, Age, Education and The average income per month.
2. Marketing Mix Factor such as Product, Price, Distribution Channel and Promotion.

Population Scope

- Population in this research is Thai Premier League Football audience in the north eastern about 400

Research Sampling

The sampling in this research focus on Thai Premier League Audience in Northeastern of Thailand only that calculate the sampling number from this formula (Kanlaya Wanichbancha. 2545 : 26)

Because the sampling is huge and the number still instable. So that, the sampling number can calculate with W.G. Cochran Formula that determine Confidence Level 95 percentage and To lerances level 5 percentage (Kanlaya Wanichbancha. 2549 : 74) The formula in this research is

$$n = \frac{P(1-P)Z^2}{e^2}$$

N is The sampling Number

P is Population Proportion that still random .50

Z is Confidence Level 1.96 on confidence 95 Percentage level 0.5

E is Mistake Level = .05

$$\begin{aligned} \text{Represent } n &= \frac{(0.05)(1-0.5)(1.96)^2}{(0.05)^2} \\ &= 384.16 \end{aligned}$$

The Sampling is 384 people that can be estimate the percentage which mistake even 5 percentage on confidence level 95 which comfortable to evaluate. So that, there are sampling 400 people that rely with the standard assign to more than 384 sampling.

Data Analysis

Data Analysis with computer program which are

1. Descriptive Statistics

1.1 Data Analysis with part 1 in questionnaire paper that the sampling characteristic are Gender, Age, Education and Salary per Month to be frequency identification also to show the result in percentage for study the general behavior of the sampling.

1.2 Data Analysis with part 2 in questionnaire paper with mean also to standard deviation.

Score Evaluation rule from the Class Interval data measurement.

2. Inferential statistics for hypothesis test which are

1) t - test (Independent t-test) to test the difference of two group populations mean that independent such as Gender

2) F - test (Independent sample F-test) One - way ANOVA (One - Way Analysis of Variance) or Brown Forsythe to compare the sampling mean more than two group to test hypothesis of Age, Education and Salary per month.

Research result Discussion

Thai Premier League audience opinion about the decision to buy souvenir in North eastern discussed that

1. The Mix Marketing factor both with holistic and each factor is in the high level which are Price, Product, Promotion and Distribution Channel that rely with research of Chinnaphat Phapatsarasook and Chutha Tingsaphat(2 015) who study Thai Premier League audience opinion about the decision to buy souvenir. Also to Phamseuk Huanphapai and Nutchaphasuk who study Mix Marketing that affected to the honest with Thai Premier League football club(2015) showed that Thai Premier League audience aware with Mix Marketing, Price, Promotion, Distribution Channel, Process, Personal and Product in the high level and

highest level that rely with research of Phimolrat Limpai boon(2008) who study The factor of Mix Marketing that affected to decision to buy Ceramic product from factory in Lampang Province. Naruemol Homkanchan(2007) study The factor of Mix Marketing that affected to decision to buy electronic equipment in Muang District, Lampoon Province. Preecha Meenak(2007) who study The factor of Mix Marketing that affected to decision to buy Doikam product in Muang District, Chiangmai Province. Noppadol Sittichaitanakit(2006) who study The factor of Mix Marketing that affected to decision to buy the soap and herb shampoo of consumer in Muang District, Chiangmai Province found that almost of the sampling aware for decision to buy goods, product, price, distribution channel and promotion in the high level.

2. The audience who difference with gender and reason for decision to buy product or souvenir that difference price was a statistically significant difference level 0.05. But the other factor are not difference.

3. The audience who difference with age, education and salary per month has opinion about decision to buy souvenir not difference that rely with research of Chinnabhat Phapattanasankul and Chuta Tingsabhat(2015)who studied Opinion about the decision to buy souvenir of Thai Premier League audience found that Male and Female are difference with decision to buy souvenir with price was a statistically significant difference level 0.05.

4. The audience who difference with age has opinion about decision to buy souvenir with product, diversity kind and attractive packaging, beautiful and interesting was a statistically significant difference level 0.05.

5. The audience who difference with salary per month has opinion about decision to buy souvenir with product and size of souvenir that comfortable to carry also to has delicate information was a statistically significant difference level 0.05.

RESEARCH RESULT

1. Almost of the sampling is male who has age between 20-35 years old, Graduated in Bachelor degree and salary per month between 10,000-20,000 Baht.

2. Opinion about Mix Marketing in the holistic and each factor in the high level such as Price, Product, Distribution Channel and Promotion.

3. Study hypothesis test results found that the audience who different gender has the opinion to buy souvenir with price There was a statistically significant difference level 0.05 but different with Age, Education and The average income per month has the opinion to buy souvenir was a statistically significant not difference.

RESULT DISCUSSION

Thai Premier league audience opinion about the decision to buy souvenir in North eastern can be discuss that

1. The factor of Mix Marketing in the holistic and each factors in the high level such as Price, Product, Distribution Channel and Promotion that rely with the research of Chinnaphat Phasook and ChuthaTingsaphat(2015) also to PhamseukHuanphapai and Nutch Phasuk (2015) found that Thai Premier league audience aware about The mix marketing all of Price, Product, Distribution Channel, Promotion, Process, Personal and Product in high level that rely with Pimonrat Limpai boon(2008) , Naruemol Homkanchan(2007) , Preecha Meenak (2007) ,Noppadol Sittichaitanakit (2006) found that almost of the sampling aware about decision to buy product, Price, Distribution Channel and Promotion in the high level.

2. The audience who different gender has opinion about decision to buy souvenir was a statistically significant difference level 0.05. The other factor not different but the audience who different with Age, Education and The average income per month has opinion about the decision to buy souvenir not different that rely with the research of ChinnaphatPhapattanasankul and Chutha Tingsaphat (2015) found that Male and Female has opinion about the decision to buy souvenir different in price but the audience who different with Age, Education and The average income per month is different but opinion about the decision to buy souvenir not different.

RESEARCH RECOMMENDATION

Thai Premier league audience opinion about the decision to buy souvenir in North eastern can be recommend that

1. Product: Should develop product strategy that focus on football club identity and create product diversity to increase product quality that rely with audience demand.

2. Price: Should have Clear price label and Market-based pricing standards to attractive the audience to buy increase.

3. Distribution Channel :Football Club should study the way to sale more for increase circulation. Also to fulfill more detail of place where sale the product.

4.Promotion: Product sale plan rely with expectation also to promote with any mass media and design advertisement media with creativity and responding to the audient which focus on relation with the audience and make the benefit both with football club income.

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MARKETING FACTORS AFFECTING PURCHASING DECISION MAKING BEHAVIOR OF THAI PREMIER LEAGUE FOOTBALL CLUBS' FANS IN BANGKOK AND VICINITY

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ABSTRACT

Football is one of the most popular sports in Thailand. It should no longer be considered as just a pastime sport. However, operating a successful professional football club in Thailand requires much more than just playing and winning the matches. Sustainability of financial success forces teams to operate as professionals.

This research aimed to examine the demography characteristic, marketing factors and decision making behavior of Thai (Premier) League football clubs' fans. The primary objective was an attempt to identify which and how marketing factors affected purchasing decision making behavior of fans of football clubs competing in the top of Thai football league system. The statistical tools used were percentage, mean, standard deviation, t-test, F-test, and Multiple Regression Analysis (MRA).

A total of 400 samples were selected from the population of fans of football clubs in Bangkok and Vicinity that were completing in Thai (Premier) League 2016 season. The majority of the respondents was single males, aged 25-35 years old, holding Bachelor's degree and earned a monthly income of 15,000-20,000 Baht. The findings provided different viewpoints towards the purchasing decision making behavior of professional football clubs' fans in Thailand. Their overall satisfaction on marketing mix factors are found to be at high level. The significance of marketing mix factors affecting purchasing decision making behavior was also in a high level. The results of hypothesis testing indicated that the marketing mix factors affected the purchasing decision making behavior of Thai Premier League Football Clubs' Fans in Bangkok and Vicinity at a significant level of 0.05.

Keywords: Purchasing Behavior, Decision Making Behavior, Marketing Mix Factors, Thai Premier League Football Clubs' Fans

INTRODUCTION

Football is arguably one of the most, if not the most, popular sport in the world. In Thailand, football has been our nation favorite game both for watching and playing (Kachonyot Chokthanaset, 2009). Although a game of football was first introduced to Thailand in 1897, the professional football leagues in Thailand seem to be something novelty especially when comparing to other countries in the west. The 1st professional league season in Thailand was officially known as the Johnnie Walker Thailand Soccer League and is actually started in 1996. Before that the highest level of club football was the KOR Royal Cup which was contested in a tournament format from 1916 to 1995.

The name of the league has been changed several times since 1996. The name "Thai Premier League" was acquired later in 2006. And recently, on February 11, 2016, after the controversial president's elections, Pol. Gen. Somyot Poompanmoung, the new president of the Football Association of Thailand, has announced the name change from "Thai Premier League" to "Thai League". Nonetheless, since the change is very subtle

and hardly noticeable, not many people outside Thailand carelessly recognized the name changed. Many international publishers were found to be using the old name when referring to the league in writing. Consequently, the word Thai Premier League and Thai League in this paper will be used interchangeably.

During the year 2009 to 2011, after Asian Football Confederation (AFC) declared the new regulations for the associations that have the intention to send the clubs to compete in AFC Champions League, there were several significant changes that lead to the new era of Thai professional football league. The new regulation had forced all football clubs in the league to complete AFC Club License Criteria which means many clubs were forced to separate themselves from the parent organizations and registered as the independent football authorities. Many clubs had to rebrand itself. Those organization based clubs had to start thinking about finding the new local supporters to support the clubs financially. There were many major changes occurred to the league during that period of times. Several organizations decided to sell the club. In addition, Football Association of Thailand (FAT) had to found a new company as a separate identity to professionally run the league.

There is strong evidence that Thai professional football industry has made huge progress in the past decade as it has moved from a Bangkok-based semi-professional league to a national professional league. Now, it is a big business that contributes significantly to Thai economy. It is multi-billion-baht industry (Saichol Panyachit, 2010). It is an example of how to convert popularity in one culture into profitable commodity in another. It can be involved in a number of industries such as advertising, media, beverage, clothing, toys, education, etc.

In theory, there is little reason why profession football clubs cannot be profitable. In England, Premier League clubs are proved to be cash cows with three strong sources of revenue –broadcasting rights, commercial activities and gate receipts. However, that is not the case in Thailand. Investing in Thailand professional football clubs is a super risky business. It is not an easy business to make a profit. It is very expensive. In reality, only a handful of football clubs in Thailand found to be profitable. Operating a successful and profitable professional football club requires much more than just playing and winning the football matches. In general, it should be no different than operating other types of business. For professional football clubs to be profitable they need not only be successful on the pitch but realize the importance of their fans as a revenue stream. Therefore, it is an inevitable fact that, professional football clubs should recognize the fans purchasing power.

The main purpose of this research, therefore, was to investigate purchasing decision making behavior of Thai Premier League football clubs' fans in Bangkok and Vicinity. It aimed to examine the demography characteristic, marketing factors and decision making behavior of fans of football clubs competing in the top of Thai football league system. Financial success may be achieved through the implementation of effective marketing strategy. Hopefully, the finding from this study can help moving Thai football clubs to the profitable side of their balance sheet.

LITERATURE & THEORY

Thai Premier League or Thai League is a Thai professional football league for men's association football clubs in Thailand. It is Thailand's primary football competition and it is at the top of Thai football league system. It operates on a system of promotion and relegation with Thai Division One League. There are a total of 18 teams, including top 15 teams from last year season and three new teams which will be promoted from Thai Division one League. Season normally will run from March to October. Teams play 34 matches each (playing each team in the league twice, home and away), totaling 306 matches in the season. Most games are played on Saturday and Sunday, with only a few games played during weekday. It is run by the Football Association of Thailand (FAT).

Purchasing decision making behavior patterns of consumers are well documented in many marketing literature. Even though it is somewhat determined in sports marketing literature, there is a lack of studies on behavior and purchasing patterns of sports fans related to licensed merchandise (Dietz-Uhler, Harrick, End and Jacquemotte, 2000; Wann and Hamlet, 1995). In addition to that consumer behavior is unarguably an important topic in marketing field. This is because the knowledge can help those marketers and researchers explaining what consumers think and why customers make their decision to purchase a particular product or service. In theory, there are countless factors that can influence purchasing decision making behavior, including but not limited to friends, family, social factors, cultural, personal experience and many psychological factors (Brosekhan, Velayutham and Phill, 2002).

A marketing activity normally comprises 4 elements which are also known as the 4P of marketing mix. Stanton (2001) described marketing as an overall system which defines a business activity comprising the planning, determining price, promoting and distributing products and services, in order to satisfy existing customer and potential consumer needs. Siriwan Sereerat and the other (2003) confirmed that mix marketing factors such as product, price, channel to sale and promotion must be used together in a proper formula if fulfilling customers demand is priority.

Furthermore, professional football match spectating activity is gaining more popularity in Thailand in the last decades. Most of the currently available studies relating to consumption behavior of the football match spectators are on attendance to the events. There are only a few studies that directly investigated spectators' purchasing behaviors of goods, especially merchandising goods related to the professional football clubs in Thailand. Because of the different behaviors spectators have, compared to general product purchasers, behaviors are also different in purchasing decisions making behavior. Football match spectators obviously have different behavioral intentions to buy. This is important for companies' profits because the main factors are quality, satisfaction and loyalty (Trail et al., 2005). Oliver et al. (1997) supported this argument in their study by emphasizing the correlation between positive effect and satisfaction. These factors will differ according to the differences of customers. While licenses have positive impact on buying behavior, it is also easier to create or gaining more brand loyalty using club merchandise.

RESEARCH METHODOLOGY

In this study, questionnaire was used as an instrument to collect data. The study carried on 400 fans of Thai (Premier) League football clubs who attending any of the 8 randomly selected Thai (Premier) League football matches held in a stadium located in Bangkok or vicinity during the month of March 2016. The questionnaires were distributed and collected until completing 50 sets per match.

In order to complete the questionnaire, researcher approached to the attendances, introduced themselves and asked to speak with football fans. A screening query, "Are you considered yourself to be a fans of any football clubs currently completing in Thai (Premiere) League 2016?", was then used. If the sample replies to be "Yes", the researcher will explained the purpose of the study and administered questionnaire to those who agreed to participate. Participation to questionnaire was voluntary. The time to explain the study and complete the questionnaire was approximately 15 minutes.

The validity of the questions was evaluated by using IOC technique with three experts. Each questions in the questionnaire were tested and passed the Cronbach Alpha criteria with at least 0.7. The population was the Fans of football clubs completing in 2016 Thai (Premier) League season. As the certain number of population has been unknown, the samples size for data collection was calculated using the formula of W.G. Cochran (Boonchom Srisaard. 2011: 41). And at 95% of confidence level, the size of samples getting from the calculation was 385. However, for error prevention, the additional 15 sets of questionnaires were added, totaling to 400.

Descriptive statistics utilized in this research including percentage, mean, and standard deviation. The Analytical statistics used in this study were t-test, F-test, and Multiple Regression Analysis (MRA).

RESEARCH KEY FINDINGS

Firstly, the demographic finding indicated that most of the respondents were male, with age between 25-35 years old and single status. The bachelor or equivalent degree was reported as the majority; whereas most of the respondents were self-employed with the average monthly income between 15,000 - 20,000 baht. The majority of respondents reported their purchasing frequency pattern as once a month and 500-100 baht per time as their purchase spending amount. The respondents with different gender, age, occupation and monthly income were found to have different purchasing decision making behavior both in term of purchase frequency and purchase spending amount at .05 and .01 of statistical significance level, respectively. Therefore, it can be concluded that customers with different gender, age, educational level and occupation have had different purchase behaviors. This finding has been consistent with the research of Kornpin Klinkesorn (2010) that studied on the title of Behavior and Factors Causing Purchase Decision of Frozen Convenience Food Products for Consumers in Bangkok Zone.

Secondly, the results from marketing factors show that product was the most important factor that affects the respondents purchasing decision making behavior followed by place, promotion and price respectively. Their overall satisfaction on marketing mix factors are found to be at high level. In term of product, product variety and product customization ability were the most important factor when respondents making their purchasing decision on their favorite football clubs' merchandize, followed by product design and product uniqueness. In term of place, stadium point of purchase was the most important factor, followed by online store. In term of promotion, discount campaign was the most important, followed closely by free gift campaign. In term of price, good value for money was more important to the respondents than economical/low price.

Thirdly, the significance of marketing mix factors affecting purchasing decision making behavior was also found to be in a high level. The results from hypothesis testing revealed that marketing mix factors could influence the purchasing decision making behavior of Thai Premier League Football Clubs' fans with significance level of 0.05. This coincided with the research finding from Thanin Tairak (2011) which concurred that product factor had relation with behavior to buy merchandise from Manchester United Shop with Statistical significance of 0.05. The finding also suggest that Product (product variety, product customization ability, product uniqueness and product design), Price (economically/low-price and good value for money), Place (online store and stadium point of purchase), and Promotion (discount and free gift campaign) can increase Thai Premier League Football Clubs' Fan' purchase frequency and spending amount per time on clubs' products. The results support argument of Chinnabhat Phapattanasankul and Chuta Tingsabhat (2010) that the sampling has opinion about decision to buy Toyota Thai Premier League products, both with holistic and each factor separately, which are product, price, distribution channel and promotion, are all in high level. Additionally, this finding seem to consistent with the research result from Ongart Korsinkha, Thakarn Phantumlertluhee & Thanasuwit Tabhiranrak (2015) which indicated that Recognition of marketing communications, which are promotion, public relation, advertisement and direct marketing, are in the highest level.

CONCLUSIONS

Overall, this study provides insights into Thai Premiere League football clubs' fans' perception on marketing mix elements and how these factors influence their purchasing decision making behavior. The

multiple regression analysis confirms a significant positive relationship between marketing mix variables and Thai Premier League football clubs' fans' actual purchase. Specifically, the results show that product is the most important factor that affects their purchase decision followed by place, promotion and price respectively. Regarding product attributes, Thai Premier League football clubs' fans pay a great attention to product variety and product customization. This has been consistent with the research of Pramsuk Huanprapai, Natcha Phasook and Thanasuwit Tabhiranrak (2015) that studied on the title of Mixed Marketing Factors that Affected to the Royalty of Thai Premier League Football Clubs' Fan.

FUTURE RESEARCH RECOMMENDATIONS

Although this study has produced significant results it is not without limitations. Notably, the research focused only on demographics characteristics and several marketing variables. Future research should incorporate some other factors such as competition result, club ranking, famousness of the club and a macro environment stimuli. Doing so will help explaining Thai Premier League football clubs' fans regarding purchasing behavior in both broader and deeper perspectives. Also, this study was administered to a relatively limited number of respondents; therefore there would be a need for larger sample size. Lastly, data collection in different geographic areas would greatly be useful for increasing sample representativeness and clarifying regional differences.

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USING A LEAN MANAGEMENT TO EXPLORE THE SERVICE TOUCH POINT AND OUTPATIENT SATISFACTION: THE CASE OF YANHEE INTERNATIONAL HOSPITAL, BANGKOK THAILAND

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ABSTRACT

This research was aimed to reduce the duration time at the service touch point by the theory of Lean management used as a guide to explore the service touch point and outpatient satisfaction of Outpatient Department (OPD) at Yanhee International Hospital, Bangkok Thailand. This study employed the outpatient satisfaction survey as the means in collecting data with nonprobability sampling of 400 outpatients. The statistics used to compile the data were frequency, percentage, average and standard deviation. The results of applying the guidelines to reduce the duration time at the service touch point can shorten the waiting time up to 9 minutes per one service touch point. For the outpatient satisfaction found that, there were quite satisfied overall, and thus could provide a service to a greater number in the same period. Most outpatient were female, the highest education was bachelor degree, most were aged between 20-40 years, the average revenue per month were 25,000-35,000 bath was the largest number. Most did not come to the hospital for the first time. The service touch point had been very satisfied, including patient registration, medical facilities, the pharmaceutical and financial division were the most. Issues and recommendations should include a discussion questioning the health symptoms and increasing signs suggest to other healthcare destinations. Further research there should be a comparative study of Lean management in the other hospitals both private and public sector that how they use to explore the service touch point and outpatient satisfaction.

Keywords - Lean management, Outpatient satisfaction, Service touch point

INTRODUCTION

Yanhee International Hospital is a leading center for the treatment of patient with more than 36 centers including the center of plastic surgery, skin and leaser, dental, 24 hours medical, heart and surgery center etc. All are equipped with the medical equipment and technology for diagnosis, treatment and examination. There have 155 surgical rooms, 12 large rooms, 30 minor surgery rooms including delivery room, C.U. emergency room, dialysis room, baby room, Cath lab, modern chemical laboratory and a sterile standard room. There can accommodate up to 400 inpatient beds and capacity of 2,000 outpatients per day.

At present, the current number of patient are increased that delays the service. Most patients complained the duration time at the service touch point. That was a source of research to improve the service operation by implement a Lean management to explore the service touch point and outpatient satisfaction to step up in providing efficient service as well as the ability to leverage a universal service, the competitive advantage and enhance service standards. While Lean management and supply chain management have many similarities, especially concerning origin, tool and effects, methodologies. Base on combination impacting by the

cooperation within process that they differ in some areas (Issaragura Na Ayuthaya, (2016) in particular concerning the main theory, approach and the main criticism.

LITERATURE & THEORY

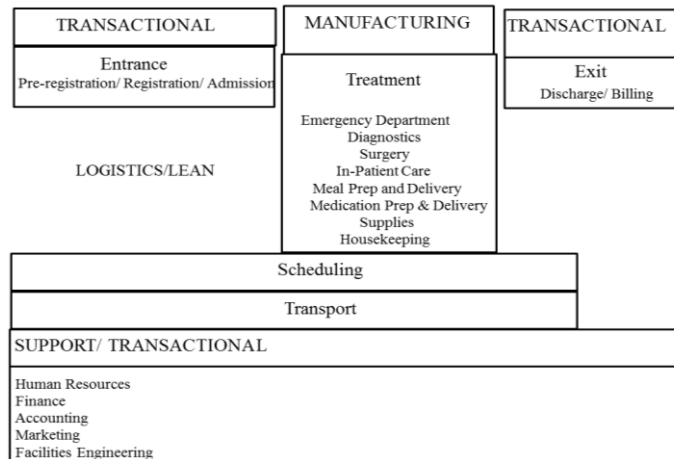
Lean means slim, refers to who have the slender body and fat-free, strength, agility and dexterity. If compared to the organization that was operated without any loss in process, the ability to adapt the needs of market and customers in a timely manner and superior than the competitor. Lean manufacturing is a multi-dimensional management practice including just in time-quality systems, work teams, cellular manufacturing, supplier management etc. the popular definition of Lean Manufacturing and the Toyota Production System usually consists of the following (Wilson, 2009); it is a comprehensive set of techniques which when combined allows you to reduce and eliminate the waste. This will make the company leaner, more flexible and more responsive by reducing waste; Lean is the systematic approach to identifying and eliminating waste through continuous improvement by flowing the product or service at the pull of your customer in pursuit of perfection.

Lean is a holistic & sustainable approach that use with the little things but works more and meet match to the customers' need. What is the less waste, cycle time, the delivery, the conservation, the use of the tools and operational areas. What is more knowledge and power of the workers, greater flexibility and capabilities of the organization, productivity, and customer satisfaction. The success in the long term of Lean thinking is to change from waste to the value in the view of recipient and changes endlessly. (Graban, 2016, pp.1-17)

Lean Thinking (Womack & Jones, 2003, p.15) is an integrated system of human development and as a philosophy management in building the Lean corporate culture (Convis & Gary, 2007). Lean is to eliminate all waste and show mutual respect (McIntyre, 2009, p.287). Lean is designed in the shape of the trial continued which will revealed a problem immediately. The problem will be dealt immediately by the rapid experimentation. The solution will be published and personnel at all levels of the organization are taught to be a trial (Spear & Steven J., 2005). The principle of Lean concepts are setting value from customer's perspective, identify all steps in value stream and eliminate all waste, make value step up in order to flow and integrate all tasks, customers will be the one who extract the value and aim for the perfection which have continuous improvement (Marchwinski, Chet & John Shook, 2003, p. 42). The researcher had used the concept of Lean management as the tools to explore the service touch point and outpatient satisfaction, analyze the cause and finding the way to improve service performance.

Given all the pressures on hospital organization, it's not surprising that hospital practitioners are looking to Lean management to help address industry challenges in core process (Watson-Hemphill & Kimberly, 2016, p.250) as shown in Table 1.

Table 1
(Hospital core process)



In the world of quality improvement, complexity is an unparalleled source of waste, losses, delays, and errors in process. Once you start looking at these functions as processes, it becomes clear that there are many opportunities for applying Lean management to make improvements. (Watson-Hemphill & Kimberly, 2016, pp. 249-253) as shown in Table 2.

Table 2
(Lean management projects in hospital)

	Project Type	Key Relevant Lean Management
Exit and Entry Transactional	Cycle time: <ul style="list-style-type: none"> - Registration - Admission - Discharge Working capital: <ul style="list-style-type: none"> - Reduce time between discharge and billing - Insurance coding accuracy Quality: <ul style="list-style-type: none"> - Improve customer satisfaction scores on admission or discharge - Improve medication tracking accuracy from admission to discharge 	Voice of the customer - interviews and surveys <ul style="list-style-type: none"> - Process mapping/VSM - Setup reduction - Process load balancing - Statistical tools - Mistake-proofing
Treatment	Wait time: <ul style="list-style-type: none"> - Reduce ER wait times - Reduce time from arrival to bed 	Process mapping/VSM <ul style="list-style-type: none"> - Simulation - Statistical tools - Root cause analysis tools - Quick changeover - FMEA
Logistics	Inventory: <ul style="list-style-type: none"> - Improve consumable replenishment process - Reduce cost of inventory on hand (pharma, ortho, endo, cardio) - Distribution and management of medications - Room turnover 	<ul style="list-style-type: none"> - Pull system - ABC stratification - Batch size optimization - Quick changeover

RELATED WORKS

Al-Araidah & others (2010), studied Toyota Lean principles to reducing or eliminating nonvalue-added time, money, and energy in healthcare. By utilize DMAIC (Define, Measure, Analyze, Improve, Control) and 5S (Sort, Set-in-order, Shine, Standardize, Sustain) principles to identify and reduce wastes that contribute to increasing the lead-time in healthcare operations at the pharmacy understudy. The results obtained from the study revealed potential saving of >45% in the drug dispensing cycle time.

Begam & others (2013), detailed literature survey that had been conducted to identify the lean practices in various manufacturing industry. The results revealed that the status of Lean Manufacturing implementation in still in thriving stage. This will further assist the organizations to improve its process, align it to the requirements of its customers and relentless contribution to manufacturing sector to enhance productivity, quality and competitiveness is immense.

Martinez & Lu (2013), provided a literature overview about the application of “Lean thinking” concept and the main research findings through different industries. By collecting research records from ISI web of knowledge naming directly the lean thinking issue; 34 Web of science records, 10 Medline records and 2 Chinese citation database records were found. Results show that the main focus areas on Lean thinking researches were mainly applied in healthcare industry (48%) followed by manufacturing industry (17%), construction (10%), product development (7%), training and education (7%) and supply chain (2%) other industries (9%) are also starting to apply lean think philosophy according to the particularities of their domain.

Dammand & others (2014), explored whether Lean management can improve efficiency in patient treatment at hospital. By using a case study methodology and rely on both qualitative and quantitative data for analysis. Found that efficiency in patient treatment increased through reduction in waiting times, higher process cycle efficiency, and shorter walking distances for staff. This was achieved through the use of various Lean tools, such as Kaizen tablets, elimination of non-value adding activities, and Gemba mapping.

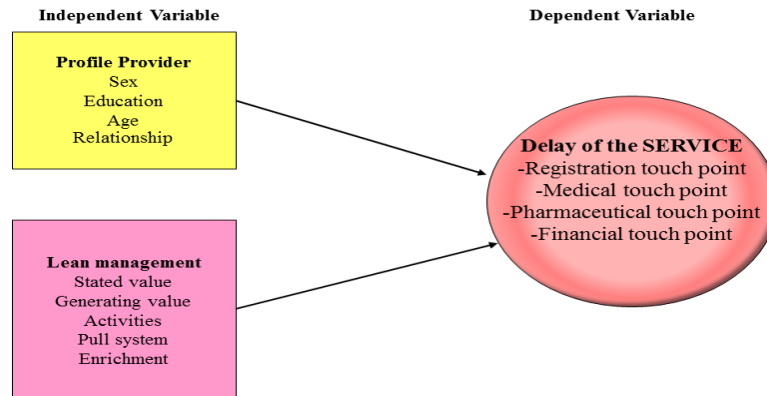
Young (2014), reviewed the information about 5S, Lean, ways to implement 5S in healthcare setting, use of 5S in healthcare, combinations of 5S and other tools and suggestions to enhance success of 5S in healthcare service. Results showed that 5S can be applied to healthcare service with beneficial effects, and sustain is a key to success.

Kovacevic & others (2016), studied the Lean concept that had been successfully implemented in healthcare and hospital organization systems as a management method and philosophy with main focus on elimination of all types of wastes and looses in all tasks and processes so that time, materials, resources and medical procedures could be realized as effectively as it is possible.

Magalhaes & others (2016), demonstrated the scientific knowledge developed on Lean thinking in health, highlighting the impact and contributions in health care and nursing. This study showed that the use of Lean thinking in the context of health had a transforming effect on care and organizational aspects, promoting advantages in terms of quality, safety and efficiency of health care and nursing focused on the patient.

Figure 1

(Conceptual framework)



METHODS

Sample used in this research was the outpatient who came to the hospital, using the formula of Taro Yamane this study employed the outpatient satisfaction survey as the means in collecting data with nonprobability sampling of 400 outpatients. Questionnaire was divided into three parts; the overview of the respondents, the satisfied to shorten the waiting time at service touch point, the problem and suggestions. For the creation and performance of the tool, the procedure had been follow these steps; learn the basic research papers related to the concept of creating a set of guideless, analyze the documents and draft a structured questionnaire, create a query in the definition and purpose. The questionnaires were tested to determine the validity and reliability by Cronbach's Alpha Coefficient 0.703.

The researcher used a computer program for data analysis. The survey of service touch point satisfaction levels was a question of rating scale, which had an option on the five-level average (\bar{X}) and the standard deviation (S.D.). The scoring was as follows; Level 5 means most satisfied, Level 4 means very satisfied, Level 3 means moderately satisfied, Level 2 means least satisfied and Level 1 means very little satisfied.

RESULTS

Found that the respondents were female more than male, with 255 female equal to 63.8% and 145 male which equal to 36.3%. The highest education was bachelor degree, most were aged between 20-40 years from 250 people. The average revenue per month 25,000-35,000 bath was the largest number, which have 202 people equal to 50.5%. Most did not come to the hospital for the first time.

At the patient registration service touch point, the satisfaction to shorten the time of service was in averaging level with very satisfied (mean = 3.95) and duration of service (mean = 3.97), followed by the servicing staff willingly welcome with enthusiasm (mean = 3.93).

For reducing the duration service at doctors service touch point was satisfied to very satisfied on average (mean = 3.75), the modesty, care, consulting (mean = 3.99) within the very satisfied level. The second was a waiting period to see a doctor (mean = 3.78).

The reduced time available at the financial division service touch point were the most satisfaction (mean = 4.29). The highest level of satisfaction were the care in consulting and explained clearly (mean = 4.78) and staff beaming (mean = 4.78).

The pharmacy service touch point was in the most satisfaction level (mean = 4.65), the convenience and empathy were the most satisfaction items (mean = 4.90).

The results of applying the guidelines to reduce the duration time at the service touch point can shorten the waiting time up to 9 minutes per one service touch point. For recommendations should include a discussion questioning the health symptoms and increasing signs suggest to other healthcare destinations, the THAI etiquette and manners which featured a smiling can make the impressive service and using ICT systems for data network searching will able to work effectively and reduce the waste resources.

CONCLUSION AND FUTURE WORK

Focus on service touch point is particularly important. The service providers need a person with service minded, who understand and recognize the importance of providing service to create a good image and good impression on all clients and end user, as an important one to develop a personality with a conscience in loving service. This will create the organization that has achieved excellence in service.

Further research there should be a comparative study of Lean management in the other hospitals both private and public sector that how they use to explore the service touch point and outpatient satisfaction. Yet as with the application of Lean management methodologies, there are differences in the deployment details for hospital organization that have proved to be challenging if they are not addressed directly; Change management; Developing relevant and engaging training with continuous improvement (Kaizen).

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AN ORGANIZATIONAL CULTURE MANAGEMENT: A CASE STUDY OF THAI AIRWAYS INTERNATIONAL (PUBLIC) COMPANY LIMITED ATTAINING A HIGHEST PERFORMANCE SERVICE SATISFACTION

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ABSTRACT

This research aims to study An Organizational Culture Management: A Case Study of Thai Airways International (Public) Company Limited Attaining a Highest Performance Service Satisfaction. The research employed qualitative research such as in-depth interviews to collect data from 30 key informants such as internal and external organization. The study were found that Culture Management of Thai Airways International (Public) Company Limited Attaining a Highest Performance Service Satisfaction are Organization Culture, Ideas Culture, Behavior Culture and Material Culture are effect to the Management of Thai Airways International (Public) Company Limited Attaining a Highest Performance Service Satisfaction and Sustainability the issue of Organization Culture can be further Development to improve the Quality of Service provide to the Airlines that have a Highest Performance Service Satisfaction. The Development features in term of Values beliefs of Flight Attendants of Thai Airways International (Public) Company Limited is a Characteristic of the Transition from the Older to the Young Generation both the Working Methods and Activities including Training which resulted in the Development of the Airline's Commitment to build a Highest Performance Service Satisfaction. There are in an Understanding in the Line of Duty to provide full Capacity to the Clients are satisfied the Impression of getting good Service. The key informants that a Culture that are all able to Express the Behavior of Service providers by the Service is fully and full capacity a Communication can talk at Understanding the Needs and Attentive Care of Passengers in order to get a Quality Service in a Global Level. The issues of Material Culture that are preparing them fully and a supply things according to the Requests of Passengers by Process and Procedures that are Universal based on the Charm of Thailand to Develop Service of Thai Airways International (Public) Company Limited Attaining a Highest Performance Service Satisfaction of Sustainable.

Keywords - Organization Culture, High Performance Organization, Thai Airways International Public Company Limited

INTRODUCTION

Thailand has national airlines to give an international class service for domestic and international passengers. Thai government has established Thai Airways International (Public) Company Limited to operate a business of air transportation service both in the country and abroad mainly at the head office in Bangkok with its operational base in Suvarnabhumi International Airport consisting of air transportation services by transporting passengers, product transfers, cargo operations and other related lines of businesses namely: warehouse service, ground customer service, landing service and ground equipment, aviation kitchen and aviation maintenance service. It is an international airline acting as the country's representative to preserve and strengthen the aviation in a right way to cooperate, to promote, to develop tourism industry, to seek and to increase income both in Thai Baht and foreign currency. In addition, it also realizes its responsibility to the country and the world in the environmental preservation including focusing on propagation of culture, tradition, custom and identity of Thailand to the world widely. All of these mark the

identity of Thai Airways International (Public) Company Limited that also reflexes Thai brand for more fashionable and international affairs since the beginning of establishment and created a good reputation to the country throughout more than fifty-six years of its commercial aviation business operations. Thai Airways International (Public) Company Limited contributed an importance on image creation since the beginning either an application of symbol “*Dancing Man*” before changing to “*White Jampaka*” which still keep Thai style feelings, but with more modernization together with applying various colors such as purple, pink and gold expressing natural beauty and Thai civilization, including bringing “*Thai silk*” made of Thai traditional suit as the receptionist’s uniform on the flight reflecting its status, dignity and identity. These are all things that Thai Airways International (Public) Company Limited convey about its standpoint in the customer service in premium class since the beginning as shown in all sections of the organization up to the present. Thai Airways International (Public) Company Limited remains competitive with the other airline companies and brings Thainess throughout the world under the vision focusing on “*First Choice Carrier*” together with Thai charms on a concept “*Medium Pricing with Higher Value*” with networking among alliances.

Leisure Destination Airline can be described as follows:

Higher value means a creation of things with worth. Full network means providing services to customers worldwide through “*Star Alliances*” or contracts with the other airlines around the world. Moreover, it means offering services in all dimensions because “Thai Airways International (Public) Company Limited is a leisure destination airline, a leisure hub and a center of products offering from Thailand to various destinations. It also opens opportunity to create convenience for transporting travelers around the world to Thailand and other countries. Therefore, this study is focused on the cultural management of Thai Airways International (Public) Company Limited which have caused many profits for developing efficiency and effectively in order to increase the organizational management’s high performance level.

PURPOSE

This study has a purpose to study the organizational culture management of Thai Airways International (Public) Company Limited to a highest performance organization in providing airline services.

BENEFITS

Results of the study of the organizational culture management of Thai Airways International (Public) Company Limited to a highest performance organization in providing services can be applied as a guideline for the development of an organizational culture management of Thai Airways International (Public) Company Limited.

RESEARCH METHODOLOGY

This research study is a qualitative research using in-depth interview, important data providers, observation from fieldwork and documentary research by studying, researching and compiling of information from medias, such as technical documents, texts, magazines, journal papers of state enterprise and annually report of Thai Airways International (Public) Company Limited and related research studies.

EXECUTIVE SUMMARY OF THE RESEARCH

The important data providers were customer groups and mostly considered that culture of flight attendants of Thai Airways International (Public) Company Limited effected the efficiency of a high performance in service due to the organizational culture pays key roles to cause sustainability and continuous service development of the organization as well as to create good relationships among the personnel of Thai Airway International (Public) Company Limited. It depicts a culture of teamwork; enable

to develop the organization's service in all sections. The results of the study in sub-issues of the organizational culture management of Thai Airways International (Public) Company Limited in three issues namely: cultural thoughts, cultural behavior and material culture and it was found that the important data provider considered that the cultural data was important to the outcomes of the highest performance services of the flight attendants of Thai Airways International (Public) Company Limited due to the following validated output:

A. Desirable occupational value in the viewpoint of Thai youth to the flight attendants especially the flight attendants of Thai Airways International (Public) Company limited which was a pay structure and deemed as an important role to promote and show acceptance, dedication, adjustment to professionalism in a flight attendant career. Another thing is that recruitment as a flight attendant and values nurtured from professional training in career services which evidently shown to customers reflecting ideal dedication to an operation

to create satisfaction and impression to passengers mainly.

B. Service culture with Thainess identity, which is the important data provider considered that is truly an application of the cost of Thai culture which is well known and accepted worldwide as regards to the capability of excellent services of Thai on such issues reflecting Thai values and norm that "the guest must always be welcomed", apparently a welcome with generosity which all these properties occurred from a mental nurture in Thai people since their birth and grow up in Thai family style until school age and brought for work operations which is an emphasis of professionalism for the flight attendants of Thai Airways International (Public) Company Limited. Prominence with service identity and mix with Thainess to the world class service. However, the important data provider considered that problems and obstacles in this point have occurred because some of the flight attendants have high self-confidence and less human relationship affecting their expression of services with less congeniality and care to customers. In order to improve the system, promotion and development should be used for the important data provider considered it as a necessary to improve forms and concept of ideal creation, a service responding requirements of customers with various race and values in order to perform duty with efficiency, quality, standardization and dedication for the development of highest performance organization services.

C. Cultural behavior. In the issue of cultural behavior, the important data provider considered it very important for creation of customer impression whereas operational norms are expressed and seen from various actions emphasizing smile, Thai style salutation, care, generosity, friendship and hospitality, expression with nice image of Thai gentlemen and gentlewomen with modesty as an expression that can make a clear understanding and able to answer doubts, questions and offer services quickly and act naturally of the flight attendants as per customer's expectation which able to promote and push forward for the service efficiency development to a higher performance service airline with Thai style world class service. For the ways of improvement, promotion and development to cause a creation of service efficiency with high performance, the important data provider considered necessary to keep standard, further development of service form an operational pattern that can offer a prompt service with friendly behavior, as well as a process to make a relaxing feeling while waiting for services by applying a services behavior expressing of readiness and enthusiastic for a service offer consistently throughout the flight.

D. Behavioral material. In the issue of material behavior the important data provider considered that the material culture had some points that customers place importance as follows:

I. Cultural material in the sense of an air plane.

Information system in the cabin of the flight, the important data provider considered that in such point Thai Airway International (Public) Company Limited may be disadvantaged to other airlines in the same class and in some routes because of both old age and the cabin rather old without maintenance as well as tools, equipment and accessories for entertainment such as monitor

in each seat of passengers and earphone etc. which are old and inconvenient and unfashionable as well as luxurious and fashionable airlines such as Airbus 380-600 a few available for service comparing with other airlines in the same class whereas Thai Airways has only 6 same airplanes etc. A lot of competitors such as Qatar Airways has total 50 Airbus 380-600 airplanes which the data providers considered it is interested to try its service because of its high regard of quality regarding its modern and comfort including the reputation of such airline received a world class award.

II. Material serviced in the point of special room service (lounge) to first class customer and business class in international routes before boarding.

The important data provider considered that Thailand has a competitive advantage to other airlines in the same class due to lounge service to the passengers before boarding of Thai Airways International (Public) Company Limited. It is distinguished in the point of service quality from a luxurious, grand decoration and best quality of food and beverage services, including facilities during waiting in order to please the customers while waiting for flight. For examples are spa, massage machine, bathroom, theater, etc. In this point, the important data provider considered that Thai Airways International (Public) Company Limited still maintain and developed it better than other airlines in the same class and accepted internationally as evidence that Thai Airways International (Public) Company limited has received World's Best Airline Lounges Spa Facility which is deemed a success arising from dedication for development and standardization of premium class service.

III. Cultural material in the point of dresses of the flight attendants and the passenger room decoration which keeps Thai identity by applying uniforms and symbols expressing Thainess mixing with universality divisibly.

The important data provider considered it as an advantage to the other airlines in the same class by bringing "*Thai silk*" sewed as a Thai traditional costume for the uniform of the flight attendants which reflects its dignity and Thai identity that Thai Airways International (Public) Company Limited likely to inform its standpoint to the world society on its premium class service since the beginning as shown in all parts of the organization as shown on website of advertisement for ticket distribution, check-in counter, lounge of service on the plane until uniform of the flight attendants, etc.

IV. Cultural material in the point of foods and beverages served on the plane.

The important data provider considered that charms of Thai foods and Thai cooking of any kind of foods Thai people always give importance and tidiness of raw materials, taste, and preservation of the foods offered to customers that Thai Airways International (Public) Company Limited has paid dedication to pay most importantly in such point and created impression to customers.

However, the important data provider considered that at the present such importance to the point is less paid obviously and it is necessary for improvement regarding service of foods and beverages in the flight especially attractiveness of taste of Thai foods was inferior in the past and the important data provider considered that change quality of taste is a loss of strong points of service quality while other airlines especially the large carriers in Asia which have paid more importance and continuous improvement to the food quality.

In addition, the important data provider had an opinion and consideration that in the present considering in overall image of the material culture the important data provider considered that Thai Airways

International (Public) Company Limited has property of Material culture not enough to meet requirement and expectation of the passengers because of some obstacle in the point of equipment, tools of facilitation in the cabin including the issue of old planes in some routes and the important data provider considered such limits may derive from the reason of government airline that must wait for financial budget from the government. Therefore, this caused some influence on investment about the material sued for services so because of this reason the important data provider considered the guideline of improvement, promotion and development to a High Performance Organization in Service should be a raise of capital from Stock Market to be used as budget for investment of the material development in order for compatibility with other airlines in the same class.

At the same time, executive officers should give importance to the development both for cultural thought, values and behavior of personnel in paying importance to passengers to respond their requirements and meet expectations and to create an impression with Thai identity service together with Material culture development necessary for compatibility with other airlines in the same class in order to create a motivation and to attract tourists or customers to choose Thai Airways International (Public) Company Limited as first alternative airline of leisure and travelling consistently.

To summarize, the organization culture can promote a service quality development to the highest performance organization services. Such development of properties on thought, value and belief of the flight attendants of Thai Airways International (Public) Company Limited is a transfer from Senior to Junior and from the operation method and activities including training, causing better development to a highest performance organization in services by making understanding their operational duties in order to provide an excellent service for customers' needs and satisfaction.

The important data provider considered that all cultures can be expressed through service minded. All of these the points of cultural material are completely prepared and procurement as per requirements of passengers with a universal process and method on base of Thai style fascination for the service development of Thai Airways International (Public) Company Limited to a highest performance organization in service.

SUGGESTION

From the research study information the researcher has suggestions as follows:-

Suggestion on Organizational Culture: From the research study information the researcher has some points of suggestion for Organization Culture Development to the actual operation as follows:-

1. Thai Airways International (Public) Company Limited should promote a participation process of personnel in all portions of the organization under concept of cooperation between a government sector and private sector (Public Private Partnership). It means a full support for all the personnel in all parts the organization to take participation in the management and development of Thai Airways International (Public) Company Limited to solve its internal problem such as a two way communication utmost understanding, and establishment of good relationship with the departments of the organization and also support a recruitment from the outside society.

2. Thai Airways International (Public) Company Limited should have a modern culture for the airline management with advance technology which must have dynamic, prompt adjustment, application of strategies and facilities in modern administration with information technology that ready to respond requirements and competition in time.

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SUPPLY CHAIN PERFORMANCE AND SUPPLY CHAIN COST IN PERISHABLE PRODUCT IN THAILAND

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ABSTRACT

This research presents a quantitative data analysis of the complete set of results from supply chain performance measurement and supply chain cost. The purpose of meta analysis is to identify trends and provide an overview of all data collected. The analysis of trends is reliable when a large sample of collected data is used. The meta analysis also examines the relation between all parameters within the supply chain performance measurement using SCOR model. An overview of the effect on collaboration and performance of a number of factors are taken from the CFPLR model. The meta analysis covers identifying costs of orchid supply chain that are operating costs associated with business functions related to the procurement, manufacturing and distribution of orchids. Finally, the inter-correlations of supply chain performance and supply chain cost are also examined.

Keywords—Logistics Performance, Orchid, Supply Chain Cost

INTRODUCTION

The quantitative meta analysis was aimed at conducting a further investigation of how collaboration among orchids vendors will be made by the use of supply chain performance measurement. Supply chain performance measures can be classified broadly into two categories: qualitative measures (such as customer satisfaction and product quality) and quantitative measures (such as order-to-delivery lead time, supply chain response time, flexibility, resource utilization, delivery performance, etc.). This study considers only the quantitative performance measures in which the measurement was developed using SCOR model. It was used to identify, measure, reorganize and improve the orchids supply chain processes. Improving supply chain performance may require a multi-dimensional strategy that addresses how the organization will service diverse customer needs. The inter-correlations of supply chain performance and supply chain cost are examined. These can be used to identify the correlation among different parameters, and correlations within supply chain performance measurements objectively and subjectively. This may also provide information regarding which technique is most or least functional as a measure of supply chain collaboration. The meta analysis here presents a cross examination of both measurements to allow statistical and descriptive comparison. The trend of data that is wider spread can be more identifiable, and this data is less likely to be biased by anomalies.

LITERATURE REVIEW

1. SCOR

SCOR version 5.0 includes a series of enable elements for each of the processes. Enable elements focus on information policy and relationships to enable the planning and execution of supply chain activities. SCOR spans all customer, product, and market interactions surrounding sales orders, purchase orders, work orders, return authorizations, forecasts, and replenishment orders. It also encompasses material movements of raw material, work-in-process, finished goods, and return goods. In version 5.0, SCOR specifically does not address

sales processes, product development, and customer relationship management processes. The SCOR model includes three levels of process detail. In practice, Level One defines the number of supply chains and how their performance is measured. Level Two defines the configuration of planning and execution processes in material flow, using standard categories like stock, to-order, and engineer-to order. Level Three defines the business process used to transact sales orders, purchase orders, work orders, return authorizations, replenishment orders, and forecasts.

2. Supply Chain Performance

This measurement identifies five core supply chain performance attributes: Reliability, Responsiveness, Agility, Costs, and Assets. They are shown as follows (Hotrawaisaya, 2014):

2.1 Reliability

The Reliability attribute addresses the ability to perform tasks as expected. Reliability focuses on the predictability of the outcome of a process. Typical metrics for the reliability attribute include: on-time, the right quantity, the right quality. The SCOR's KPI (level 1 metric) is Perfect Order Fulfillment. Reliability is a customer-focused attribute.

2.2 Responsiveness

The Responsiveness attribute describes the speed at which tasks are performed. Examples include cycle time metrics. The SCOR's KPI is Order Fulfillment Cycle Time. Responsiveness is a customer-focused attribute.

2.3 Agility

The Agility attribute describes the ability to respond to external influences and the ability to change. External influences include: Non-forecasted increases or decreases in demand; suppliers or partners going out of business; natural disasters; acts of (cyber) terrorism; availability of financial tools (the economy); or labor issues. The SCOR's KPIs include Flexibility and Adaptability. Agility is a customer-focused attribute.

2.4 Cost

The Cost attribute describes the cost of operating the process. It includes labor costs, material costs, and transportation costs. The SCOR's KPIs include Cost of Goods Sold and Supply Chain Management Cost. These two indicators cover all supply chain spend. Cost is an internally focused attribute.

2.5 Asset

The Asset Management Efficiency ("Assets") attribute describes the ability to efficiently utilize assets. Asset management strategies in a supply chain include inventory reduction and insourcing versus outsourcing. Metrics include: inventory days of supply and capacity utilization. The SCOR's KPIs include: Cash-to-Cash Cycle Time and Return on Fixed Assets. Asset Management Efficiency is an internally-focused attribute.

3. Supply Chain Cost

Supply chain cost is a discrete measure defined as the fixed and operational costs associated with the supply chain processes linking from upstream to downstream. A view of supply chain costs takes into account:

3.1 Order Management Cost (Customer Service, Finished Goods Warehouse, Outbound Transportation, Contract and Program Management, Installation Planning and Execution, Accounts Receivable)

3.2 Material Acquisition Cost (Purchasing, Raw Material Warehouse, Supplier Quality, Component Engineering and Tooling, Inbound Transportation)

3.3 Planning Cost (Demand Planning, Supply Planning, Supply Chain Finance)

3.4 Inventory Carrying Cost (Opportunity, Obsolescence, Shrinkage, Taxes and Insurance)

3.5 IT Cost for Supply Chain (Supply Chain Application, IT Operation for Supply Chain)

DISCUSSION

The present analysis of the impact of supply chain performance was made towards all vendors in orchids supply chain. For reliability, an average score of Plan, Source, Make, and Deliver was between 3 and 4 of Likert Scale. This means normally all vendors did not fulfill a performance level as best practices, and that should be an efficient improvement. For responsiveness, data was collected as quantitative analysis. It should be noted that time to adjust delivery plan in case of order processing changes, time to release until receive an order from suppliers, duration of raw materials procurement from new sources, and time to deliver products in domestic was only 1 day. Nonetheless, time to deliver products in overseas was nearly 3 days. Data was also quantitatively collected for agility. Time to adjust an order processing plan in case of changed quantity requirements, time to adjust an order processing plan in case of changed delivery time, time to release an order in case of an urgent requirement, and time to deliver products in domestic was also 1 day. Delivering orchids requires speed to reduce decomposition of orchids because its short life cycle. Moreover, a policy in returning defective products by suppliers (from producers) and returning defective raw materials by producers (from customers) was approximately 3 days. For the cost perspective, supply chain management cost equals to 940,000 Baht, cost of goods sold equals to 450,000 Baht, value-added productivity equals to 50,000 Baht, and warranty cost or returns processing cost equals to 30,000 Baht. Similarly, the asset utilization was analyzed and summarized as follows: payment made to suppliers until receiving money from customers equals to 180,000 Baht, cut-flower orchids equals to 40 %, and flask orchids equals to 60 %. Delivering orchids was done by means of truck, truck connecting with train, truck connecting with airplane of 100%, 0%, and 50%, respectively. The cost of transportation per number equals to 2,500 Baht.

Supply chain cost analysis indicated and summarized that order management cost equals to 40.17%, material acquisition cost equals to 47.234%, planning cost equals to 2.234%, inventory carrying cost equals to 9.52%, and IT cost for supply chain equals to 5.283%. This supply chain cost was calculation on a monthly basis as the fixed and operational costs associated with the supply chain processes linking from upstream to downstream. The quantitative meta analysis experimental programme has been shown to validate supply chain collaboration and a correlation of supply chain performance parameters. The meta analysis was proved to be an acceptable and useful approach, where controlled manipulation of independent variables was applied. The analysis showed a significant correlation of supply chain performance data integration, resulting in a more reliable examination of data trends. It was concluded that there were some correlations between supply chain performance and cost.

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ASSESS THE LEVEL OF DEVELOPMENT OF GUILAN AGRICULTURAL USING NUMERICAL TAXONOMY (Case Study: The Rural Areas the Central City District of Rasht)

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ABSTRACT

In the process of planning for rural development, identify structural features for levels of development and awareness of the environmental potential of the each area is important. In the process of planning for rural development, identify structural features for levels of development and awareness of the environmental potential of the each area is important.

Generally, the level of development of the agricultural sector in different parts of region is not the same, and In fact the absence of homogeneity and heterogeneity is seen. This makes it inevitable necessity of the study the process of development in the parts of a region. Identify and explore the possibilities and abilities and then determining the levels of development of different regions is the first step in the planning process and the development of such areas. The overall objective of this study was to determine the level of development of agriculture in rural areas of Guilan using numerical taxonomy. To achieve this goal, six main indicators of agricultural to rank the villages in the province have been used. The data for the study of agricultural statistics and the letter was obtained by years 2007-2012. The results of this study showed that Falakdeh, Tosarvandan, Pirkalachay and Bijarbaneh have higher degree of development than other villages and villages such as Gurab Varzal, Kaftrod, and siaestalakh have lower-ranking. Some villages were excluded due to the heterogeneity of the other villages. Finally, strategies for agricultural development for different villages were presented.

Keyword: the level of agricultural development, numerical taxonomy

INTRODUCTION

Development is one of the concepts that are developed after World War II in the discussion of science, economics, social and political and governance as well as it has been a special place in international affairs. Development in terms of lexical have similar meanings of social change, social development, social development, modernization and progress and finally, the development is a comprehensive process in order to increase the socio-human power to respond to human and social needs; Meanwhile, the need continues to be refined in the light of cultural values in social and stable outlook of world (Taheri, 1997).

In Iran, more than three decades, policymakers, experts and planners use various ways of planning, such as regional, spatial and land to use this method, and the insistence on the economic, social and environmental power and potential in various areas to establish sustainable development in the field of national regional. Among the sectors that have always been considered in developing countries and regions, is agriculture that in Iran, due to the supply country's food needs is very important.

In fact development is the first and most important goal of all governments. Development is a process in which communities from condition of retardation and underdevelopment through more or less identical developmental stages, and tolerance and the qualitative and quantitative changes to become a developed nation (Ghadiri & Habibi, 2004).

In the process of development, man managed to drain the swamps, overcoming hot deserts and dense forests of the tropics and the bizarre polar plains, and in agricultural development in rural areas has achieved stunning

success. Measurement the performance of areas is necessary because today areas faced with a shortage of resources. So, this resource should be allocated in such a way that it can be more products or services offered through existing resources. In this study, rural conditions, in terms of agricultural development, are assessed with the method of numerical taxonomy in the province of Guilan.

By examining issues such as power and capabilities of agricultural development of province; Ranking rural areas in terms of development and whether in terms of deprivation and inequality in agricultural development in rural areas of Guilan province (in the villages) there is a significant difference or not?

So in this study, the main issue is the study of how the level of development of Guilan Agricultural using numerical taxonomy is evaluated?

LITERATURE REVIEW

Growth and development as the issue of socio-economic, first by economists and sociologists and researchers in some sciences was considered as the base of planning (Hadder, 2000). In principle development has been meant to improve the living conditions. Because of economics, is a knowledge about effective and efficient use of resources to meet the basic material needs of human life; development, is permanent attraction for economics and subsequent processes (Peet, 1999).

The challenges of today's world, food security and supply this early needs of humans (Essiat, 2001). Developing countries are faced with a serious challenge for the imbalance between population growth and agricultural production and the pressure of population growth and food supply constraints, has led to international attention to the research of environmental, food and nutrition (Burke et al, 2005). Due to this, in our country seems to be vital for agricultural development. In any case, the development of the agricultural sector is a prerequisite for economic development and until they don't remove obstacles to the development of this sector, other sectors will also not achieve growth and development (Zangi Abadi & Soltani, 2088).

In Iran, more than three decades, policymakers, experts and planners have use various ways, such as regional planning, environment and land to use this method, and the insistence on the economic, social and environmental power and potential various areas, establish sustainable development in the field of national-regional. Among the sectors in developing countries and regions are the agricultural sector in Iran that due to the country's food needs is very important. However, in recent years, the problems of rural areas, causing irregular migration, widespread poverty, inequality growing , rising unemployment, high agricultural waste and reduce rural incomes in rural areas (Rahnama, 2006).

In the north - Guilan and Mazandaran - thanks to the Alborz mountain range, good soil, lush vegetation and abundant water resources, fertile coastal plains, the climate has been created in Caspian which is a very efficient area of agriculture and the environment in Iran. In the West, temperate zone of the Zagros Mountains and its foothills, the different ways of life created by other regions of Iran. This area is very rich in terms of soil and water resources that over the centuries is the establishment of Iran's population. Moreover, in the East and South of the country, arid and semi-arid area in the center of the country, the area has created vast desert climate that the characteristics are low vegetation, warm climate and arid, low rainfall, a little current water, low population and scattered and far apart settlements. Such climate features include most of the country's territory.

In general, the approach used in this field can be divided into four categories approach to economic, social approach, physical- Space approach and comprehensive approach. Fits any one of these approaches, several strategies have been used. In economic approach, "Agricultural Development Strategy (Green Revolution)", "land reform strategy" and "Rural industrialization strategy" is detectable. The strategy of "basic needs", "participation in rural development" and "local communities' development" is related to social approach and spatial approach, "strategic planning of rural centers, village Counter- City Development Strategy", "urban functional role in rural development strategy", is detectable. "A comprehensive strategy for rural development

and rural integration" and "sustainable development strategy", including strategies that are holistic approach than to rural development programming (Rezvani, 2002).

In the process of planning and rural development of the current situation and the level of development, investigating differences in local and regional development, factors affecting the development and ultimately attempting to solve problems and meet the needs in order to modify existing inequality is of particular importance (Parsons, 1949). Rural development is the process of increasing people's choice, extending public participation, enable people to make decisions in shaping their environment, increasing prosperity, development and potential opportunities, enable all people, especially women, small farmers and ... to organize and enable their space for teamwork (Papeli Yazdi & Ebrahimi, 2003).

Previous Research

Kohansal and Rafee Darani (2009) about the development of the agricultural of cities of Khorasan with the method of the numerical taxonomy concluded that Chenaran, Fariman and Sabzevar cities than other cities have higher degree of Agricultural Development and Kalat, Nishapur, Gonabad are also in a low degree.

Taghvaei and Rezaei (2004) with the using of classification techniques of the numerical taxonomy to determine the degree of development of rural areas of Ilam concluded that Greatest amount of benefiting villages in the city was Shirvan chardavol city and Ilam, Darrehshahr, Dehloran, Mehran, Ivan and Abdanan are located in the next categories.

Movahhed and et al (2011) in a study with titled "Analysis of the degree of development of the city in Khuzestan province by using factor analysis and cluster analysis" paid to determine the degree of development of the cities of Khuzestan province. For this purpose, they paid by using 25 indicators of urban development, through factor analysis to analyze the indicators. The results of their research showed that Abadan, Andimeshk, Ahvaz, Bandar Mahshahr, Behbahan, Rāmhormoz, Shushtar, Omidiyeh are developed, Counties of Izeh, Khorramshahr, Dashte Azadegan, Shadegan, Masjed Soleiman, Shoosh, Baghmalek are less developed and the cities of Dezful, Lali, Hendijan, Ramshir, Gotvand Are among the underdeveloped city .

Soleimani (2008) study about determining the degree of development of rural areas in the city of Rasht by using numerical taxonomy and reported that: However, the overall improvement of all areas in the process of rural development is important, But attention to deprived rural areas and having less in terms of securing their basic needs and the adjustment for differences in their availability levels Is more important. In Rasht, even though all the villages in the development process need to preparing and implementing of projects Proportional to the type and level of their exclusion but six villages from the collection of villages, because in all aspects of social, economic and physical are in deprived condition, have a greater priority to the implementation of targeted development programs. The six Villages are included Jyrahndeh, Kenarsar and Noshahr, Balasbaneh, Lacan and Pirbazar.

Bhatia & Rai, (2004) by using 23 indicators (12 indicators for agriculture and 11 underpinning index) by using factor analysis and numerical taxonomy, paid to determine the level of agricultural development of 380 blocks in 32 districts of India in the 2001's period. Based on the results of 56 blocks relatively developed Relatively developed based on the results of 56 blocks, 116 blocks were introduced less developed and developing 52 blocks.

Soares et al, (2003) in research by using factor analysis and cluster, the country of Portugal in periods of 1991 and 1995 were evaluated and ranked in terms of development.

Research Questions

- Is there the possibility of assessment of Level of development of Guilan Agricultural by the method of numerical taxonomy?

- is there a significant difference in the amount of deprivation and inequality agricultural development in rural areas of the central city of Rasht (at villages' level)?

- How would be ranking the rural areas of the central city of Rasht in terms of agricultural development by using the method numerical taxonomy?

METHODOLOGY

This study is an applied in terms of the nature and is a research that by using the results of basic research has done to improve and integrity in the behavior, methods, tools, equipment, products, structures and patterns of human societies. The research on the nature and type of study is secondary analysis of data and available statistics. In other words, the information and indicators collected for each village and using appropriate statistical methods of the numerical taxonomy discussed to rank and classification of rural areas of the central city of Rasht. The study population consisted of rural areas is the central city of Rasht.

Statistical analysis and hypothesis testing

Numerical taxonomy are using to determine the level of development and evaluation of research questions. In other words, in the numerical taxonomy method that is a method of measuring the degree of development, one of the initial steps in the calculation is to determine the areas of homogeneous and heterogeneous areas is removed which contributed to the analysis results. That standard matrix of villages was calculated and results provided in the below table.

Table 1- size of the development of various villages in the central city of Rasht and rating them

Row	village	Development pattern C_{io}	size of the development d_i	ranking
1	Mobarak Abad	1.615	.672	11
2	Nokhodchar	1.626	.801	15
3	Shalko	1.474	.613	5
4	Falakdeh	1.445	.601	1
5	Pasikhan	1.932	.803	16
6	Bijarpas	1.5	.624	6
7	Bijarkenar	1.646	.684	12
8	Siaestalakh	2.183	.908	18
9	Tosarvandan	1.447	.602	2
10	Tarazkoh	1.894	.788	14
11	Siagalvandan	1.609	.669	9
12	Pishevar	1.474	.613	9
13	Bijarbaneh	1.472	.612	4
14	Vishga Sogheh	1.513	.629	7
15	Gorab varzal	2.380	.990	20
16	Pas Visheh	1.718	.714	13
17	Kaftrod	2.294	.954	19
18	Saghalaksar	1.601	.666	8
19	Katigar	1.614	.671	10
20	Pirkalachah	1.458	.606	3
21	Tash	2.1	.873	17
Average of development pattern C_{io}			1.761	
The standard deviation of development pattern S_{io}			.321	
Upper limit C +			2.403	
Lower limit C-			1.119	

Among the reasons that rural development is Falakdeh in the first place, the high ratio of beneficiaries with agricultural land of beneficiaries, tractors per beneficiary per capita and the ratio of the total area under cultivation for sprinkler irrigation crops is. It seems that lack of crushing of farms has dramatic impact of high per capita arable land area per beneficiary. This makes the development of a pressurized irrigation system better (With regard to the status of pressurized irrigation in the village) and also provides the other hand on the use of other technologies. The ratio of beneficiaries to the land of the farmers in the city of Falakdeh, Nokhodchar, Shalkoh, Tarazkph, Bijarbaneh, Katigar, Saqalaksar, is high and the mentioned index is higher in Shalkoh than other villages. Capita index of agricultural cooperatives for 1,000 per beneficiary in the villages MOBARAKABAD, Byjarknar, Byjarbnh, then Vyshh, Kftrvd and Pyrklachah higher figure than other villages and in Kaftrod although in the cooperative activities toward other villages have the better development and its experience can be used in the other villages, However, due to low level in the other indicators has very down position. Capita tractor per beneficiary in the villages of Falakdeh, Nokhodchar, Tosarvandan, Bijarbaneh, Saqalaksar, and Katigar is higher. The ratio of the above index in Nokhodchar is the higher amount than other villages but not has a good place. Index the ratio of electro pumps to the total electro pumps and diesel electro pumps (percent) villages of Falakdeh, Mobarak Abad, Nokhodchar, Pasikhan, Bijarpas, Bijarkenar, Siah Galvandan had better development and Bijarkenar village due to the high pressurized irrigation place toward other villages, could be as a model in terms of the using electro pumps instead diesel pump And can use it's experience in the other villages to develop electro pumps.

Capita Index for cultivated area for each beneficiary (ha) Mobarak Abad, Falakdeh, Pasikhan, Tarazkoh, Pasvisheh, Kaftrod and Pirkalachah is higher and Pasvisheh has highest index cultivated for each beneficiary (ha) compared to the other villages. Ratio index irrigated under pressure cultivation to the total area of irrigated crops, In the province, just in the villages Falakdeh, Nokhodchar, Shalkoh, Pasikhan, Saqalaksar, Katigar, Pirkalachah and Tash, has been development and Katigar due to the high proportion of cultivation under pressurized irrigation to the total cultivation crops than other cities, has best development of pressurized irrigation systems and can be a suitable model for other villages.

CONCLUSIONS AND FINDINGS

The findings confirmed that using numerical taxonomy, it is possible to assess the level of development of Guilan Agricultural and according to the standard deviation of the model of development (Sio) that is obtained, and it appears that there is significant differences in terms of deprivation and inequality agricultural development in rural areas of central Rasht and with attention to the numbers obtained Under the title the size of development (di), ranking rural areas of the central city of Rasht in the amount of development has taken place.

The study has used of six indicators to assess the level of development of Guilan. To determine the respective indices, in addition to the use of indicators in the past, that was associated with agriculture, the experts' idea was also used. It is worth mentioning that one of the important indicators of the development of agriculture, is value added, or the value of production in the various regions. Since it is very difficult to have access to such data, the index of per capita arable land area has used that this index has a significant impact on the income of the various regions.

It seems that the lack of Crushing farms has a great impact on the high per capita arable land area per beneficiary. This issue, on the one hand lead to better development of pressurized irrigation systems, and the other hand on the use of other technologies also provides. Although comparative advantage in promoting agricultural areas growth is effective, but having the right weather conditions and prone agricultural land, along with cooperatives and mechanization and scientific and technological and construction progress that can increase yield per hectare and caused the development of the agricultural sector.

Functional Suggestions of Research

- If the regions are facing with a crisis of inputs, especially water, the plans of agricultural development must have been to the conservation and optimum using of resources, which may also cause to reduce cultivated area.
- Further support for irrigation projects under pressure and also using of successful experiences in the development of agricultural cooperatives has significant impact on the development of its agricultural sector.
- To resolve the causes of underdevelopment of agriculture through the rankings of rural areas in terms of agricultural development pay to allocating of resources and doing activities required in each region.

Suggestions for Future Research

- Conducting research in other provinces and also in other rural and agricultural areas and comparing their results together.
- Reviewing the status of agricultural development in the economy of developing and underdeveloped countries
- Reviewing of present study through other possible methods, such as method Mauritius etc.

Limitations of Research

- Lack of existence of thesis with the topic of evaluation of agricultural development (especially) with the method of numerical taxonomy
- Lack of up-to-date the information of statistical yearbook of province
- Lack of sufficient cooperation Agricultural Jihad Organization

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