

**A STUDY OF THE COST PERFORMANCE ANALYSIS OF
A PRIVATE FIRM DEPLOYED 3D PRINTING TECHNOLOGY :
AN ACTUAL CASE OF A WIRE MANUFACTURING COMPANY**

by

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Abstract

To grasp the cost structure is an aspect of the competitiveness of a company's strength. However, the research for studying a method for discussing costs is not insufficient. As a result, this study attempts to discuss and consider the cost structure applied to a real wire frame company. For the purpose, it tries to compare a typical manufacturing process with a situation in which 3D printing technology is introduced. Concretely, the IDEF0 method is introduced to clarify the process, and the cost-matrix method is used to calculate costs related to the IDEF0. This study also clarified a future issues related to the introduction of 3D printing technology. Through these analyses, this study provided an understanding of the cost structure for each activity in the real company, a discussion of a typical manufacturing process and the introduction of the 3D printing process and clarifying future discussions regarding the introduction of 3D printing technology.

1. Introduction

In a competitive manufacturing industry, understanding the cost structure is very important because price is typically influenced by cost. Moreover, sales and profits are affected by changes in costs, depending on the setting, structure, and establishment. Various

methods exist to clarify the cost structure, such as the cost accounting method, cost–volume–profit (CVP) analysis, activity-based cost (ABC), activity-based management (ABM). The ABC method, for example, traces costs. Further, an indirect cost is divided into each activity depending on the time taken for the activity. Consequently, the method comprehends real activity cost. However, it is not enough that the ABC method uses only an activity’s time because various activity indicators exist, such as number of laborers, equipment, and operating time. To obtain detailed information, realizing a “process” in a manufacturing situation and discussing the cost and profit structure of a detailed process are useful.

Three-dimensional (3D) printing technology has arrived and is changing the philosophy of “processing.” This technology allows a 3D replication of a solid object and can virtually shape any item from a digital graphics file. The printed product is made from a powder or resin. The range of applications for this manufacturing technology is extensive and includes the automobile industry, consumer electronics parts, medical organs, and architectural models (Leukers et al., 2005, Silva et al., 2008, Parthasarathy et al., 2011).

Considering former two topics, this study attempts to focus on 3D printing technology and its influence on manufacturing industries. It specifically discusses the impact of 3D printing technology applied to manufacturing companies on their cost, time, and activities. To answer this question, a cost structure is developed using the integrated definition for function modeling (IDEF0) process modeling method. The cost calculation is also considered using the cost-matrix method. Through these analyses, problems related to the target manufacturing company are clarified, and the discussions indicate the results of introducing 3D printing technology.

2. Previous studies and this study’s approach

Numerous studies focused on cost management. Historically, ABC and ABM were applied to numerous companies. ABC is a management technique to achieve both a service improvement and a cost reduction from the optimal use of resources through a separate analysis of activity units. ABM includes the strategic concept into ABC. ABM provides a numerical basis, so it helps to company’s decision making in the scene of product strategy, examination of prices and transactions, and improvement plans for waste work and time reductions. These conventional ABC and ABM methods are able to use a variety of solutions to understand costs. However, they do not provide clear definitions about activities. In addition, the calculation step for each cost is not shown (Brimson, James and Robin Fraser, 1991). Therefore, this study clarifies each activity’s elements through the IDEF0 process modeling method (David A, et. al., 1987).

The IDEF0 method is useful for distinguishing the activities through a drawing base. They have many researches attention to the cost management with the IDEF0 method. Qian and Ben-Arieh (2008), for example, studied to evaluate the cost for machined parts. For that matter, the IDEF0 model used to clear the activities along to the ABC moving, working time, operating time and design time. They gave some example with the linkage between ABC and the cost to calculate standard and suggest the cost computation form. Bargelis and Stasišk (2008) are proposed a new intelligent support tool for making the best decision between available product and process alternatives. IDEF0 has been applied to estimate and increase the process capability at the early product and process design stage. From their simulation, they said that IDEF0 model and mathematical form reduce the risk of implementing new

products, processes and operations. They show that capability and manufacturing cost analysis helps to determine the ability for manufacturing between tolerance limits and engineering specifications. Numerous studies paid attention to cost management using the IDEF0 method and the IDEF0 method is useful for distinguishing activities through a figure base, as illustrated in Figure 4. However, these studies focus on only “one” activity typically in the manufacturing process, which has numerous processes that interrelate among the activities. Consequently, each cost related to the activities’ interface, which manages the input and output of the activities, constraints, and time, needs to be discussed and clarified. Further, these studies did not focus on the possibility of 3D printing.

In contrast, numerous studies provided approaches that focused on 3D printing. They were dedicated to the possibility of printing (Foroozmehr and KovacevicR, 2009), focused on efficient ways to print (Zhang and Khoshnevis, 2013), and discussed the cost effect (Kenny, 2013). Previous studies failed to identify the influence of 3D printing technology’s activities on cost, the management process, and the value added. Therefore, Nakamura et al. (2014) examined the possibility of 3D printers in terms of manufacturing processes, product inventory, and product yield. To clarify the process, they analyzed process flows using IDEF0 and calculated a cost structure. Their study attempted to connect IDEF0 and the cost structure. However, the object of IDEF0 is a hypothetical company, and discussing the application of 3D printing technology is difficult.

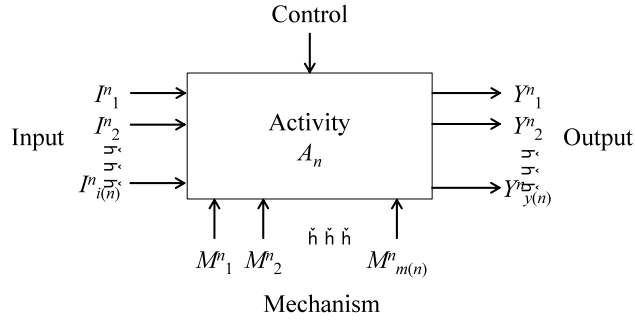
Consequently, this study attempts to compare a typical manufacturing process in a real wire frame company with a situation in which 3D printing technology is introduced. The IDEF0 method is introduced to clarify the process, and the cost-matrix method is used to calculate costs related to the IDEF0. Through these analyses, the cost structure must be clear in the process flow. Moreover, future prospects regarding situations in which a real manufacturing company introduces 3D printing technology are discussed.

3. Using the IDEF0 and the cost calculating model

3.1 Using the IDEF0

To clarify the process activities involved with human resources, products, and equipment, this study introduces the concept of the IDEF0 for the manufacturing process model (Figure 1). The box in Figure 1 indicates an activity, such as “manufacturing process” or “delivery.” The arrows indicate the flow of materials, the design file, the product, and so on. The inputs enter from the left side of the box ($I^n_{i(n)}$) and the outputs exit from the right side of the box ($Y^n_{y(n)}$). Inputs are transformed into outputs through the activity. Outputs created include data or objects produced by the activity. Arrows entering the box from the top represent controls (C) that specify the conditions required for the activity to produce correct outputs. Arrows connected to the bottom of the box represent mechanisms ($M^n_{m(n)}$). Upward pointing arrows identify support for the execution of the activity. Activities are linked through the input and output arrows, and a generic term of these four arrows is called an “ICOM.” The activity also clarifies the hierarchical characteristic and the nested structure of new activities, which explains the details of the activity.

Figure 1: Activity of IDEF0



After clearing the activities through the IDEF0 method, each activity's cost calculates by using the cost-matrix method. Its method composes from the labor cost and time, raw materials total cost, and the equipment total costs. In this approach, each activity's cost is clearing through the calculation.

3.2 The cost-matrix model

The cost-matrix method is formed as follows:

$$C^n = \left[c(Y_1^n) \ c(Y_2^n) \ \dots \ c(Y_{y(n)}^n) \right]^T$$

$$= \left[Q^n \mid R^n \right] \left[\begin{array}{c|c} SQ^n & 0 \\ \hline 0 & SR^n \end{array} \right] \left[\begin{array}{c|c} E^{i(n)} - L^n & 0 \\ \hline 0 & E^{m(n)} - K^n \end{array} \right] \left[\begin{array}{c|c} U^n & 0 \\ \hline 0 & S^n \end{array} \right] \left[\begin{array}{c} I^n \\ M^n \end{array} \right] \quad (1)$$

where

n : the activity number;

C^n : the unit matrix of the cost;

$c(Y_{y(n)}^n)$: the cost of the output $Y_{y(n)}^n$.

This matrix calculates the cost of the products or the semi-manufactured products $Y_{y(n)}^n$ in activity A_n .

Details of each matrix are as follows:

Q_n is the amount of material required to make $Y_{y(n)}^n$.

$$Q^n = \begin{bmatrix} q_{11}'' & q_{12}'' & \dots & q_{1n}'' \\ q_{21}'' & q_{22}'' & \dots & q_{2n}'' \\ \vdots & \vdots & \ddots & \vdots \\ q_{y(n)1}'' & q_{y(n)2}'' & \dots & q_{y(n)n}'' \end{bmatrix} \quad (2)$$

q_{ij}'' is the amount of material or semi-manufactured product j required to make semi-manufactured products or product i in activity A_n .

R^n is the operating time of material required to make $Y_{y(n)}^n$.

$$R'' = \begin{bmatrix} r''_{11} & r''_{12} & \cdots & r''_{1m(n)} \\ r''_{21} & r''_{22} & \cdots & r''_{2m(n)} \\ \vdots & \vdots & \ddots & \vdots \\ r''_{j(n)} & r''_{j(n)2} & \cdots & r''_{j(n)m(n)} \end{bmatrix} \quad (3)$$

r''_{ij} is the operating time of material or semi-manufactured products j required to make semi-manufactured products or products in activity An .

SQ_n is the rate of the material matrix depending on the requested size.

$$SQ^n = \begin{bmatrix} sq_1^n & 0 & \cdots & 0 \\ 0 & sq_2^n & \cdots & \vdots \\ \vdots & \vdots & \ddots & 0 \\ 0 & 0 & \cdots & sq_{y(n)}^n \end{bmatrix} \quad (4)$$

sq_{ij}^n is the rate at which materials or semi-manufactured products j are used to make semi-manufactured products or products i depending on the requested magnitude of activity An . Final product changes are made according to customer requests, which create variations in the amount of materials, semi-manufactured products, and human resource consumption.

SR^n is the rate of operating time matrix depending on the requested size.

$$SR^n = \begin{bmatrix} sr_1^n & 0 & \cdots & 0 \\ 0 & sr_2^n & \cdots & \vdots \\ \vdots & \vdots & \ddots & 0 \\ 0 & 0 & \cdots & sr_{m(n)}^n \end{bmatrix} \quad (5)$$

sr_{ij}^n is the rate of at which material or semi-manufactured products j required to make semi-manufactured products or products i depending on the requested magnitude of activity An . Final product changes are transformed according to customer requests, which create variations in the amount of materials, semi-manufactured products, and human resource consumptions.

L^n is the rate of the material loss.

$$L^n = \begin{bmatrix} l_1^n & 0 & \cdots & 0 \\ 0 & l_2^n & & \vdots \\ \vdots & & \ddots & 0 \\ 0 & \cdots & 0 & l_{i(n)}^n \end{bmatrix} \quad (6)$$

l^n is the rate of the material loss for each output, which is calculated as the rate of the material yield from the unit matrix subtracting L^n .

K^n is the rate of the operating loss.

$$K^n = \begin{bmatrix} k_1^n & 0 & \cdots & 0 \\ 0 & k_2^n & & \vdots \\ \vdots & & \ddots & 0 \\ 0 & \cdots & 0 & k_{m(n)}^n \end{bmatrix} \quad (7)$$

k_k^n is the rate of the operating loss for each output, which is calculated as the formal operating time from unit matrix subtracting K^n .

U^n is the material cost per unit.

$$U^n = \begin{bmatrix} u_1^n & 0 & \cdots & 0 \\ 0 & u_2^n & & \vdots \\ \vdots & & \ddots & 0 \\ 0 & \cdots & 0 & u_{i(n)}^n \end{bmatrix} \quad (8)$$

u_k^n is the cost per unit of material or semi-manufactured products k in activity An .

S^n is the operating time per unit.

$$S^n = \begin{bmatrix} s_1^n & 0 & \cdots & 0 \\ 0 & s_2^n & & \vdots \\ \vdots & & \ddots & 0 \\ 0 & \cdots & 0 & s_{m(n)}^n \end{bmatrix} \quad (9)$$

s_k^n is the operating time per unit of the equipment or stuff k in activity An .

I^n is the amount of the material flow.

$$I^n = [I_1^n \ I_2^n \ \cdots \ I_{i(n)}^n] \quad (10)$$

I_k^n is the amount of material or semi-manufactured products k required to execute the activity An at one time.

M^n is the number of the equipment.

$$M^n = [M_1^n \ M_2^n \ \cdots \ M_{m(n)}^n] \quad (11)$$

M_k^n is operating time of the equipment or stuff k required to execute the activity An at one time.

4. Application for company A

About Company A and the IDEF0

Applied manufacturing company, called “Company A,” engages in processes to make wires from plastic. This wire product (Figure 2) is utilized for a paper making company, uses an impure substance during filtering, and transfers the pulp as an endless conveyor (Figure 3).

Figure 4 illustrates the IDEF0 of Company A’s manufacturing process. The four important activities are as follows: A1 represents base fabric manufacturing, A2 represents the stock process for the base fabric manufacturing, A3 represents the finished product, and

A4 represents the delivery process. In detail, A1 represents the process that transforms plastic into grainy wire. The plastic is supplied by other companies, which develop a delivery time schedule plan. The grainy wire is called the “base fabric net.” A3 represents the finished product ordered from a customer, and A4 represents the delivery activity to the customer, including packaging.

Figure 2: Finished product

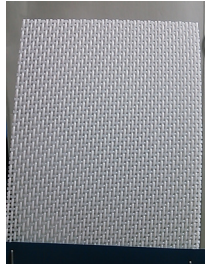


Figure 3: Situation in which the finished product is utilized

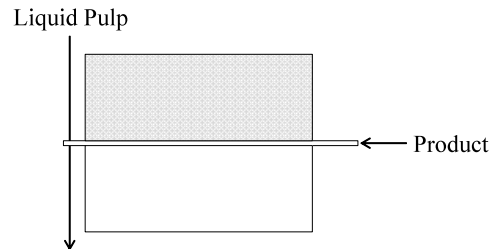


Figure 4: Typical manufacturing process

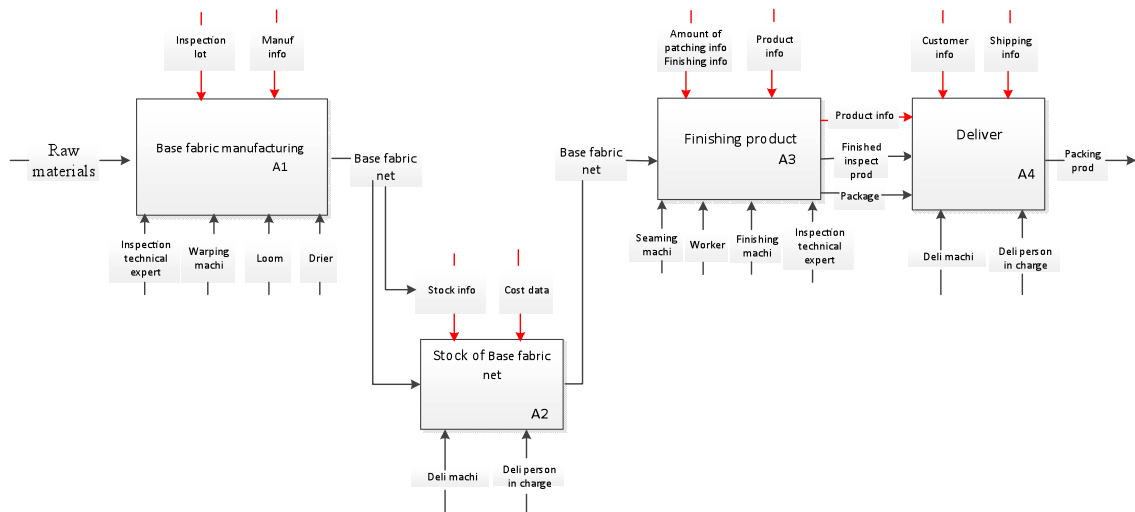


Figure 5 illustrates the nested structure of the A1 activities. At activity A11, raw materials are checked for their strength, length, density, and other specifications. Activity A12 represents warping, which is a preparation process for looming the wire using a looming machine. The raw material is prepared into a wire rolled by a tubular, such as in Figure 6. Activity A13 represents weaving the wire through the looming machine. Activity A14 represents the heat set process in which the weaving wire becomes the base fabric net through heating.

Figure 5: Nested structure of A1 activity

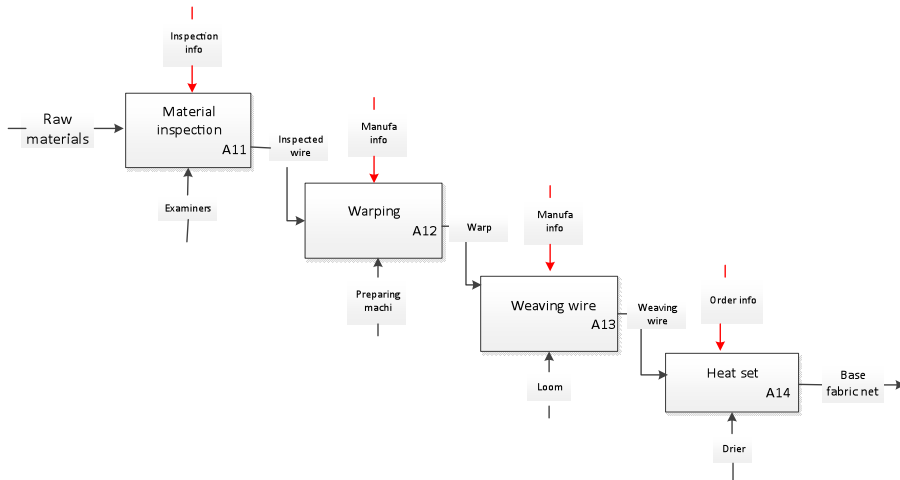


Figure 6: Warp for the loom

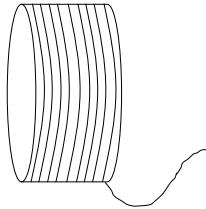


Figure 7 illustrates the nested structure for the A3 activities. The A31 activity, which represents measuring, is a cutting process according to the customer's order information. Activity A32, which involves a seaming wire, represents poaching the wire with human hands (Figure 8). Company A has a significant problem executing this activity, which takes a long time to process, generates high costs, and is based on order information for net size and volume. Ordering the product to delivering the product to the customer requires significant lead-time. Consequently, a large volume of base fabric nets is stocked at processing activity A2, "stock for base fabric net."

Figure 7: Nested structure of A3 activity

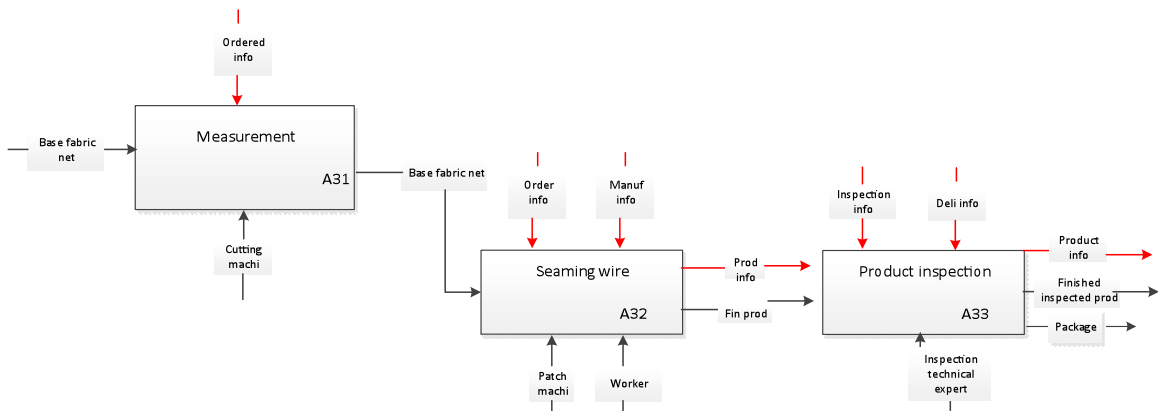
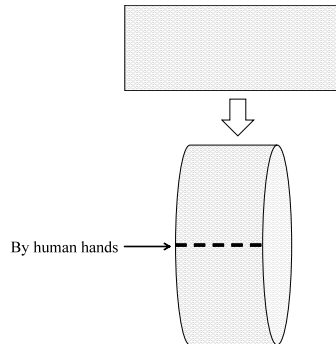
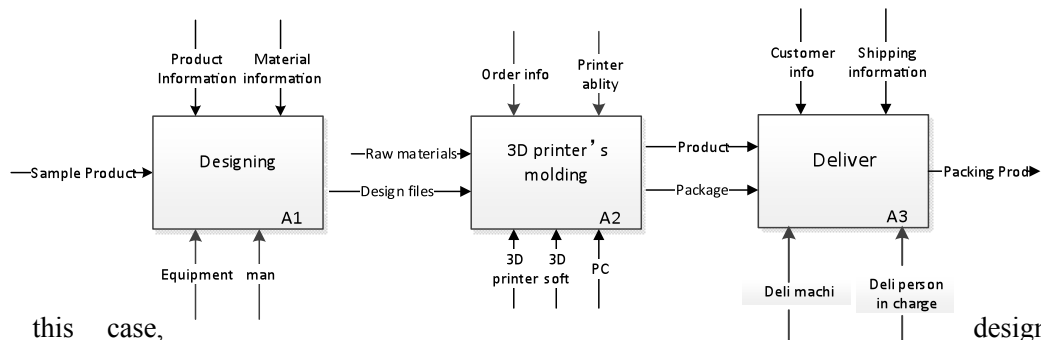


Figure 8: Activity A32



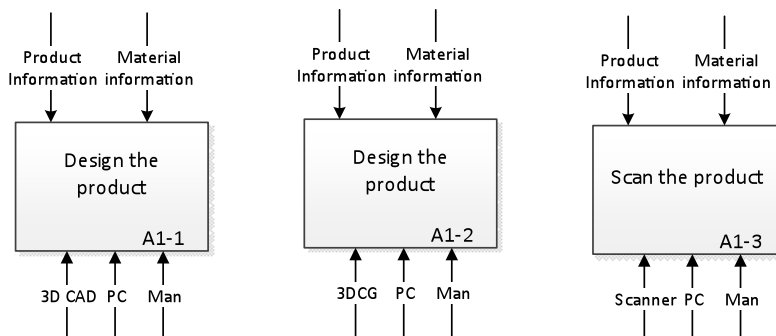
Next, 3D printing technology is applied to Company A, as shown in Figure 9. In this case, three activities occur: A1 represents design, A2 represents the 3D printer's molding, and A3 represents the delivery process.

Figure 9: 3D process



In this case, design uses three methods (Figure 10). First, the product is designed using a 3D computer-aided design (CAD). Second, a 3D computer graphic is used. Finally, a 3D scanner scans a sample product or a final molded product and converts a 3D spatial image to a digital file. The digital file flows from the output of A1 to the input of A2.

Figure 10: Alternative processes of the 3D A1 process



Using the digital file and the raw materials, activity A2 prints the finished product using the 3D printer. The printing speed depends on the 3D printer's output size, buildup

speed, and graphic mode. There are different types of the 3D printer. In this study, equations (4) and (5) are applied to the output cost and time according to the printer's ability.

5. Calculate and study the cost of the typical manufacturing and 3D printing processes

In this chapter, each activity's cost is calculated using the cost-matrix method. The initial data and the parameters are used in the calculation. Table 1 provides the initial data on the rate of material loss, operating cost, and time per unit, and determines the 3D printer's ability.

Table 1: Initial data

A unit cost		The rate of yield	
Wire cost per g	500	Inspected wire	1.000
Package cost	1,000	Warping	1.000
Processing costs per mm		Weaving	0.980
Material inspection cost	20,000	Heat set	1.000
Warping cost	100,000	Base fabric	1.000
Weaving cost	100,000	Seaming	0.950
Drier	50,000	Measurement	1.000
Delivery machine	50,000	Finished product inspection	1.000
Stock hour cost	1,000	Total rate of yield	0.931
Seaming cost (machine)	200,000	3D Molding time	
Seaming cost (human)	1,000	Variable	Partial regression coefficient
Measurement cost	20,000	Parameter α	0.194
Finished product inspection cost	20,000	Parameter β	0.755
		Parameter γ	0.202
		Constant term A	-3.930

Equipment processing costs, such as warping costs, are calculated as depreciation divided by the equipment's operating time throughout the year. Equipment time influences the equipment's ability per hour. Human processing cost is a fixed hourly wage for each activity. Setting the molding time is difficult because of the various types of 3D printers. Each printer's ability is different with respect to molding time, resolution, lamination pitch, and other characteristics. This study assumes that the 3D printer's ability is decided on by the input data, including width, depth, and height. As a result, the following formula calculates the molding time.

$$\begin{pmatrix} t_1 \\ t_2 \\ \vdots \\ t_n \end{pmatrix} = \begin{pmatrix} A_{11} & A_{12} & \cdots & A_{1n} \\ A_{21} & \ddots & & \vdots \\ \vdots & & \ddots & \vdots \\ A_{m1} & \cdots & \cdots & A_{mn} \end{pmatrix} \times \begin{pmatrix} w_1^{\alpha_1} & 0 & 0 \\ 0 & \ddots & 0 \\ 0 & 0 & w_n^{\beta_n} \end{pmatrix} \times \begin{pmatrix} d_1^{\beta_1} & 0 & 0 \\ 0 & \ddots & 0 \\ 0 & 0 & w_n^{\beta_n} \end{pmatrix} \times \begin{pmatrix} h_1^{\gamma_1} & 0 & 0 \\ 0 & \ddots & 0 \\ 0 & 0 & w_n^{\gamma_n} \end{pmatrix} \quad (14)$$

A_{mn} , α_n , β_n , and γ_n are the parameters assumed in a multivariate analysis. Measured value refers to real 3D printing time for a ProJet 5500. Therefore, printing time (t_n) must be forecasted from real printing data. In this manner, the operating and 3D printing time and cost assist in calculations using the cost-matrix method.

Table 2 lists each processing time taken to develop the final product assuming a width of 100 mm, depth of 200 mm, and height of 50 mm. Using the lists, total processing time of both the typical manufacturing process and the 3D process can be estimated.

Table 2: Processing time

Usual process	
Inspection	5.000
Warping cost	10.000
Weaving cost	3.000
Hear set	2.000
Delivery machine	1.000
Seaming machine	10.000
Seaming machine	7.500
Measurement	2.000
Fin-prod inspection cost	3.000
Stock	50.000
3D process	
3D molding time	5.768
3D design time	3.846

Table 3 presents a calculation process for the unit cost in A1's nested activity. The left column represents "Activity." "ICOM" and "Content" are from the IDEF0. "Total price" represents the material cost of the input and output of the "Contents." The calculation of the total price is the sum of "Quantity after loss" multiplied by "Unit price per quantities." The total cost of the processing price is calculated using the mechanism in Table 3. The total cost of the processing time is calculated multiplying the processing time from Table 2 by the "Unit price per processing." For example, A12's warping process used 500 g of wire input, which changed to a net 2,000 mm² through the activity. From this output, the material cost was 500 g of wire multiplied by 500 yen from Table 1, or 250,000 yen. To calculate the unit cost, the 250,000 yen was divided by 2,000 mm² of net warping, for 125 yen, which goes to A13's input unit cost per quantity. To determine net warping, a warping machine needs to operate for five hours. The machine cost was 500,000 yen and the cost to prepare the wire for the machine was 1,000 yen. Finally, the total processing cost was 1,000,000 yen for activity A12, and 500 yen was the unit cost for each occurrence of the activity.

Table 3: Activity A1's calculation process of unit cost

Activity	ICOM	Content	Quantity	Quantity after the loss	Unit price per quantities	Total price	Processing time	Unit price per processing	Processing price
A1 Base fabric manufacturing	A11 Material inspection	Output Mechanism	Inspected wire	100 g	100 g				
		Control	Examiners	100 g			5 h	20,000 ¥/h	100,000 ¥
		Input	Inspection info						
		Total	Raw material	100 g		50,000 ¥			100,000 ¥
	A12 Warping	Output Mechanism	Warping net	2,000 mm ²	2,000 mm ²				
		Control	Warping machine				5 h	100,000 ¥/h	500,000 ¥
		Input	Manufacturing info						
		Total	Inspected wire	500 g	500 g	500 ¥/g		1,000 ¥/h	500,000 ¥
	A13 Weaving wire	Output Mechanism	Weaving wires	1,500 mm ²	1,470 mm ²				
		Control	Loom				3 h	100,000 ¥/h	300,000 ¥
		Input	Manufacturing info						
		Total	Warping net	1,500 mm ²	1,500 mm ²	125 ¥/mm ²		500 ¥/h	750,000 ¥
	A14 Heat set	Output Mechanism	Base fabric net	500 mm ²	500 mm ²				
		Control	Drier				2 h	50,000 ¥/h	100,000 ¥
		Input	Manufacturing info						
		Total	Weaving wires	500 mm ²	500 mm ²	127.55 ¥/mm ²		714.29 ¥/h	357,145 ¥
		Output Mechanism							
		Control							
		Input							
		Total							
		Output Mechanism							
		Control							
		Input							
		Total							

Table 4 indicates the 3D manufacturing calculation process through a selection of the case of "A1-3." In the A1-3 activity, the mechanism needs 3.85 hours of activity to scan the product.

Table 4: 3D manufacturing calculation process in case of the “A1-3.”

Activity		ICOM	Content	Quantity	Quantity after the loss	Unit price per quantities	Total price	Processing time	Unit price per processing	Processing price
A1: Making the design	A1-3: Scan the product	Output	Design files	1 byte	1					
		Mechanism	Scanner					3.85 h	34.72 ¥/h	133.53 ¥
			PC					3.85 h	8.68 ¥/h	33.38 ¥
		Control	Product Information					3.85 h	1000 ¥/h	3845.56 ¥
		Input	Material Information							
			Sample Product	1 m	1					
		Total								3979.09 ¥
		Unit cost with loss								3979.09 ¥
A2: 3D printer's molding		Output	Product	100 mm	100 mm	500 Vg	50,000 ¥			
		Mechanism	Package					5.77 h	347.22 ¥/h	2002.90 ¥
			3D printer							
		Control	3D soft							
			PC							
		Input	Order information							
			Printer ability	500 g		10,000 Wg	5,000,000 ¥		3979.09 ¥/h	1989544.57 ¥
			Raw material							
			Design files							
		Total					5,000,000 ¥			1991547.46 ¥
		Unit cost with loss					10,000 ¥			19915.47 ¥
A3: Delivery		Output	Packing product	100 mm	100 mm			10 h	260.42 ¥/h	2604.17 ¥
		Mechanism	Delivery machine					1 h	1000 ¥/h	1000.00 ¥
			Delivery person in charge							
		Control	Customer information							
			Shipping information							
		Input	Finished inspected product	100 mm		1,000.00 ¥/mm	100,000 ¥			
			Product information							
			Package	1 m		100.00 ¥/mm	100 ¥			
		Total					100,100 ¥			3604.17 ¥
		Unit cost with loss					1,001 ¥			36.04 ¥

Table 5: Total material processing cost

Cost item	Material cost	Processing costs	Total
Material cost			
Wire	134.26		134.26
Package	10.00		
Processing costs			
Inspection cost		268.53	268.53
Warping cost		268.53	268.53
Weaving cost		214.82	214.82
Loom cost		210.53	210.53
Delivery equipment cost		105.26	105.26
Delivery person in charge		105.26	105.26
Seaming cost (human)		6.58	6.58
Measurement cost		80.00	80.00
Finished prod inspection cost		600.00	600.00
Subtotal	144.26	1,859.51	2,003.77
Total	144.26	1,859.51	2,003.77

Cost item	Material cost	Processing costs	Total
Material cost			
Resin	500		500
Package	100		100
Processing costs			
Design soft cost		133.53	133.53
Design equipment cost		33.38	33.38
Designer's cost		3845.56	3845.56
Molding cost		20.03	20.03
Delivery equipment cost		26.04	26.04
Delivery human cost		10	10
Subtotal	600	4068.54	4668.54
Total	600	4068.54	4,668.54

Table 5 indicates the total material cost and processing cost for width 100 mm, depth 200 mm, and height 50 mm. The material cost is calculated using the cost-matrix method, which produces a material cost subtotal of 144.26 yen in the typical process. The processing cost subtotal is 1,859.51 yen, resulting in a total manufacturing process cost of 2,003.77 yen for the typical process. For the 3D process, the total cost is 4,668.54. Therefore, the typical manufacturing process has a lower cost than the 3D technology process, indicating that the standard decision made favors this typical manufacturing process for wire of width 100 mm, depth 200 mm, and height 50 mm. In the detailed cost analysis, the seaming cost incurred by humans is 6,358 yen. The seaming wire process of the typical manufacturing process is time consuming if the required final product volume is produced; consequently, it requires more labor and equipment processing hours. This activity also incurs significant production costs, which change depending on the size of the final product.

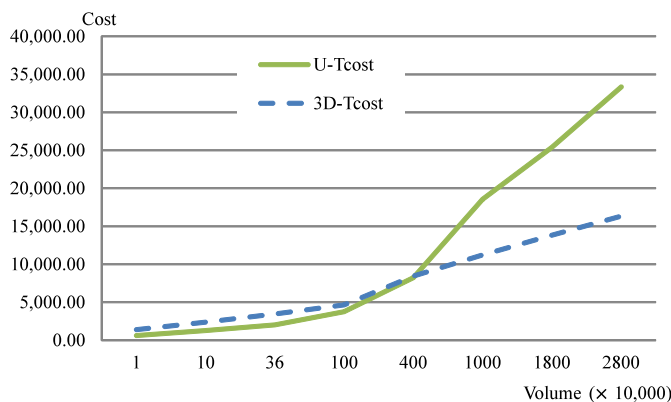
Therefore, sensitivity analysis is conducted on the size of the final product. Table 6 represents the alternative plan and the outputs for the cost. Figure 11 depicts a transition in volume and the total activity cost. The volume is calculated from multiplying width, depth, and height. This output shows that the typical manufacturing process is less expensive than the 3D method for small order volumes. However, after volumes of 4,000,000, the typical manufacturing process becomes more expensive than the 3D method because of the related human costs. Therefore, higher volumes require longer final processing time to complete the product. In contrast, the 3D process' cost increases are as gradual as the volume increases.

This comparison indicates that this study can determine a changing optimal point from the typical process to the 3D process.

Table 6: Outputs of the sensitive analysis

W	D	H	Volume	U-Tcost	3D-Tcost
20	50	10	10,000	624.79	1,384.92
50	100	20	100,000	1,276.71	2,372.33
60	150	40	360,000	2,019.93	3,445.67
100	200	50	1,000,000	3,758.16	4,668.54
100	400	100	4,000,000	8,235.63	8,462.31
200	500	100	10,000,000	18,540.46	11,231.99
200	600	150	18,000,000	25,399.96	13,831.86
200	700	200	28,000,000	33,333.55	16,346.12

Figure 11: Transition of the sensitive analysis



6. Managerial Implication

For discussion of a managerial implication, the member of the company A are provided possibilities and future tasks if the 3D printing technology introduced to the practical company. Possibilities of the application are as follows:

- The base fabric is produced by make-to-stock manufacturing, and the product with the peculiar order size is assigned to it in measurement process. The 3D printing technology is able to produce the product without assignment of the base fabric. Therefore, they expect to significantly increase the rate of the yield.

- It is able to cut the human cost because of the omitting many processes. The process of the seaming wire, especially, has the highest human cost. Therefore, they expect to significantly decrease the rate of manufacturing cost in accordance with the omitting of that process.

- They have the production lead-time between 1.5 and 3.0 months. According to the printing ability, the omitting many processes by the 3D printing technology affect our production lead-time. Therefore, they expect to significantly reduce the production lead-time.

On the other hand, they give future tasks such as:

- A product realization needs to discuss such as a size of the products, the diameter of each monofilament such as the raw materials for actual products, the mesh count as the number of monofilament per inch, and so on.

- A correspondence of the resin specifications as the raw materials must check as PET, PEEK, the resin including carbon, and so on.
- Evaluation of the physical properties is necessity from viewpoints of inspection of the products: ultimate tensile strength, stretch rate, aeration, and so on. The aeration is a passage degree of air through the mesh.

7. Conclusion

To grasp the cost structure is an aspect of the competitiveness of a company's strength. Studying the method for discussing costs is inadequate. Changing the concept of the process activity and the cost understanding to introduce 3D printing is also possible. In this study, the typical manufacturing process and the introduction of 3D printing technology are analyzed in a real wire frame company. Due to this, the IDEF0 method was introduced to understand the processing activities, and the cost-matrix method was adopted to determine the cost structure. This study clarified the following future issues related to the introduction of 3D printing technology:

- Design information is very important for introducing 3D printing technology. In short, design information influences the processing time and finished quality. If complicated design is prepared, printing time may increase and quality satisfaction may be reduced. In this simulation of the 3D design process, the scanner technology was selected to understand and calculate the cost and the activities. In a real situation, revising and modifying the design after scanning the product is important. As a result, in future, we aim to consider the cost of the design information.
- Introducing 3D printing technology in the wire frame company enabled a discussion of the cost considerations. However, considering the profits or the distribution of value-added is also required.
- Even the 3D printer process requires material stock. Therefore, the stock point and cost must be considered, as well as the cost related to logistics, time, and activity.
- The ability to engage in 3D printing is a virtual assumption in this study. In a real situation, the stacking pitch decides the printing performance because this pitch determines the printing time. Currently, depending on the 3D printer, printing a 10 cm-tall figure takes one hour. The hope is that future 3D printers will have improved performance and produce higher quality at lower costs.

As a result, this study provided the following outcomes: 1) an understanding of the cost structure for each activity in the real company, 2) a discussion of a typical manufacturing process and the introduction of the 3D printing process through a sensitive analysis, and 3) clarifying future discussions regarding the introduction of 3D printing technology.

Numerous areas exist for future research, including applications to other companies and using real numerical examples.

8. Acknowledgments

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**A STUDY ON COMMUNITY DEVELOPMENT WITHIN
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Abstract

The objective of the Study on Community Development within the Framework of CSR-Sufficiency Model: Case of Subpud Village, Tambon Yangsao, Vichienburi District, Phetchaboon Province is to assess the development outcomes in the village during 2010-2013 after the introduction of development approach based on the CSR-Sufficiency Economy Model (CSR-Sufficiency Model) in order to achieve sustainable development. The scope of this study is limited to the development of community and its members living in Subpud village, Tambon Yangsao, Vichienburi District, Phetchaboon Province during 2010-2013. Purposive sampling is used for the collection of data employing survey approach based on prepared questionnaire. Supplementary data are collected by Focus Group and In-depth Interview.

Most of the sampled group are male, equally of 41-50 year-of-age and 51-60 year-of-age, with primary education, married with 2 children, with 3-4 members in the household, with no incapacitated members, and having lived in the village over 15 years. On development issues concerning occupation and household variables of the sampled group during the studied period, several positive developments are found. These include: having higher income (42.5 percent), incurring lower expenses for their occupations (12.03 percent), spending less on unnecessary personal expenses such as liquor, cigarette (53.17 percent) as well as on fortune seeking expenses (54.08 percent), and increased amount of savings (184.16 percent). These have significantly improved their quality of life. They are well-unified, seriously developing the community cooperatively, and relying more on themselves as well as capable of being depended upon by others. The analysis of the focus group data leads to the conclusion that since the application of the CSR-Sufficiency Model approach to community development, the livelihood of the community has clearly changed, the members has made positive adjustments, improved in their occupations, resulting in better livelihood. An important outcome is members' greater participation in the development of the community.

These results point out that the application of CSR-Sufficiency Model to work and living practices of people in Subpud Village, Tambon Yangsao, Vichienburi District, Phetchaboon Province has led to developmental changes at personal, community and social levels in the direction of personal and public benefits leading to sustainable development of community, society and the environments.

Keywords: Community Development, Philosophy of Sufficiency Economy, CSR-Sufficiency Model.

1. Introduction

In Thailand the development of the country has been given high importance since the past up to the present. Each government has supported the development of the country in various areas especially the development of local administrations in the provinces to improve the livelihood of community members. Due to the agricultural-based economy of Thailand in the past the economic growth was not very high making the achievement of development goals not as fast as planned. Thailand decided to restructure its economy to become manufacturing-based, the economy that used to depend heavily on the agricultural sector has shifted to rely on the manufacturing sector for its output resulting in greater positive developments in several dimensions (Thongpakdee, 2011). Even though these positive developments have proceeded rapidly, upon serious investigation, the past development has been mostly for the overall economy neglecting certain areas and lacking full consideration of the problems for instance, the focus on high economic growth to the detriment of imbalance outcomes in several aspects such as unequal income distribution, disappearing and deterioration of natural resources and the environments, concentration of urban population migrated from the rural areas, and worsening of values, ethics and morality (Issarangkul Na Ayudhaya, 2011).

These imbalances have impacted on the foundations of the Thai society and its immunity to change. When faced with the economic crisis of 1997, the Thai economy took five years to recover bringing its GDP back to the pre-crisis level. After the crisis considerable number of Thai private enterprises, large, medium and small, have turned to the Philosophy of Sufficiency Economy of King Bhumibol for solutions to the problems. The Philosophy were stated by the King since 1974. These enterprises were able to manage their organizations applying the principles of moderation, logical decision making, and immunity supported by resourceful knowledge and morality. To ensure sustainability for the organizations economically, socially and environmentally, several Thai organizations, both private and public, have increasingly incorporated in their operations the practices of Corporate Social Responsibility (CSR), such as donations of goods/money, reforestation, dam building, school building, etc.

Therefore, to address the above mentioned problems and to allow all stakeholders in the society to play important roles in fostering sustainability of Thai society especially the role of the business sector in economic, social and environmental development aiming at the Triple Bottom Line of Profit, People, and Planet, business organizations need to engage in social responsibility practices not only to be accountable to their direct stakeholders but also to take part in the development and advancement of local community, society and the environments in line with the ISO 26000 standard specifying that community development is one major task of business organization. Such social responsibility practices in accordance with Sufficiency Economy philosophy would address the CSR concerns of business organizations and those of the economy, society and the environments by fostering balance, security and sustainability for the organizations, community, society and the environments, thus enabling all parties to co-exist happily. The environments would have been conserved and revived at the same time. One important principle of this approach is the provision of learning opportunity for the stakeholders to achieve self-sufficiency sustainably and capable of being rely upon by others in the future.

To implement practical community development, the researcher has applied the CSR-Sufficiency Model to ensure measurable productive outcomes efficiently. If business organizations implement their CSR activities by applying the Sufficiency Economy

philosophy recommended by King Bhumibol in the community development efforts, the outcome would be sustainable development of the community, society, and the environments.

In order to develop such a practical framework for sustainable community development, the CSR approach focusing on sustainable development of the economy, the society and the environments need to be integrated with the Philosophy of Sufficiency Economy focusing on maintaining balance to ensure stability and sustainability of the economy, the society and the environments. The researcher has undertaken such integration into what might be called Corporate Social Responsibility-Sufficiency Economy Model or “CSR-Sufficiency Model” in short. The Model was then applied to community development practices at Subpud Village, Tambon Yangsao, Vichienburi District, Phetchaboon Province in its community development program since 2010. A survey of the community on a set of defined variables was made before the program started and the application of the Model has been implemented according to the set plan continually. In 2014 a follow-up survey was made to assess the outcomes of the development approach of the Model during 2010-2013. The findings on the directions of changes of community and its members could be the basis for recommendations of further development of the Village itself as well as for other communities.

2. Objective of the Research

The objective of this research is to assess the development impact of the application of CSR-Sufficiency Model on the livelihood of people in Subpud Village, Tambon Yangsao, Vichienburi District, Phetchaboon Province in two stages:

First stage: in 2010 data were collected on the sample of 100 households (taking as 100 percent) living in Subpud Village, Tambon Yangsao, Vichienburi District, Phetchaboon Province as the base indicators for subsequent monitoring of community development practices.

Second stage: in 2013 a repeat survey of the same 100 households was undertaken to assess the impact of the development within the framework of CSR-Sufficiency Model during 2010-2013. The number of responses were 60 household (accounting for 60 percent) because a number of the original participants in the sample could not be reached due to various reasons such as change of address, death, moving away, sick, etc.

3. Expected Benefits

3.1 Organizations both public and private sector could better apply the “CSR-Sufficiency Model” in the development of other communities in accordance with the needs of the communities and their members.

3.2 Organizations or interested parties could utilize the results of this study as guidelines for sustainable development of communities according to the Philosophy of Sufficiency Economy.

4. Literature Review

4.1 Sustainable Community Development

According to the sustainable community development approach given by King Bhumibol to strengthen the community, the development should be in accordance with the need of community members focusing first on the development of “people” to improve their quality for them to engage in occupational living to achieve economic security.

4.2 The Philosophy of Sufficiency Economy

According to the Royal Directive of King Bhumibol on “the Philosophy of Sufficiency Economy” given to the Thai people since 1974, the central principle focuses on the practices aiming for balance, security and sustainability of all stakeholders, whether economic, social and the environments, based on three supporting tenets of moderation, rationality and immunity to change, external and internal in the 4 dimensions of economic, social, environmental and cultural. The outcome would be sustainable self-support, as well as capable of being rely upon by others. Members of the community would live together morally and ethically, honestly, patiently, diligently, and mindfully utilizing and sharing their knowledge and wisdom.

The Philosophy of Sufficiency Economy could be incorporated into practices at every level focused on the middle path and systematic development. Sufficiency requires three properties consisting of 1) Moderation meaning the appropriate amount not less and not more in such a way that is neither harming oneself nor others for example production and consumption must be in moderate level; 2) Rationality meaning the determination of sufficiency level based on rationality taking into consideration all relevant factors including the subsequent effects carefully; and 3) Self Immunity meaning the ability to absorb adverse effects of probable changes based on expected surrounding situations both short-term and long-term. This definition of sufficiency level of activities to be undertaken requires two necessary conditions of knowledge and morality. The knowledge condition includes the comprehensive information and understanding of relevant technical knowledge, the careful application and integration of that knowledge in planning, and attentive implementation of the practices. The morality condition includes having moral awareness, honesty, patience, and mindful effort in daily living. The outcome would be a balanced and sustainable development capable of reacting to all changes whether they be economic, social, environmental, informational and technological.

4.3 Social Responsibility based on Sufficiency Economy Philosophy

Social responsibility practices based on Sufficiency Economy Philosophy must be carried out in a systematic approach in order to foster strength leading to balance, security and sustainability for business organization, society and the environments (Viriyanpan, 2011).

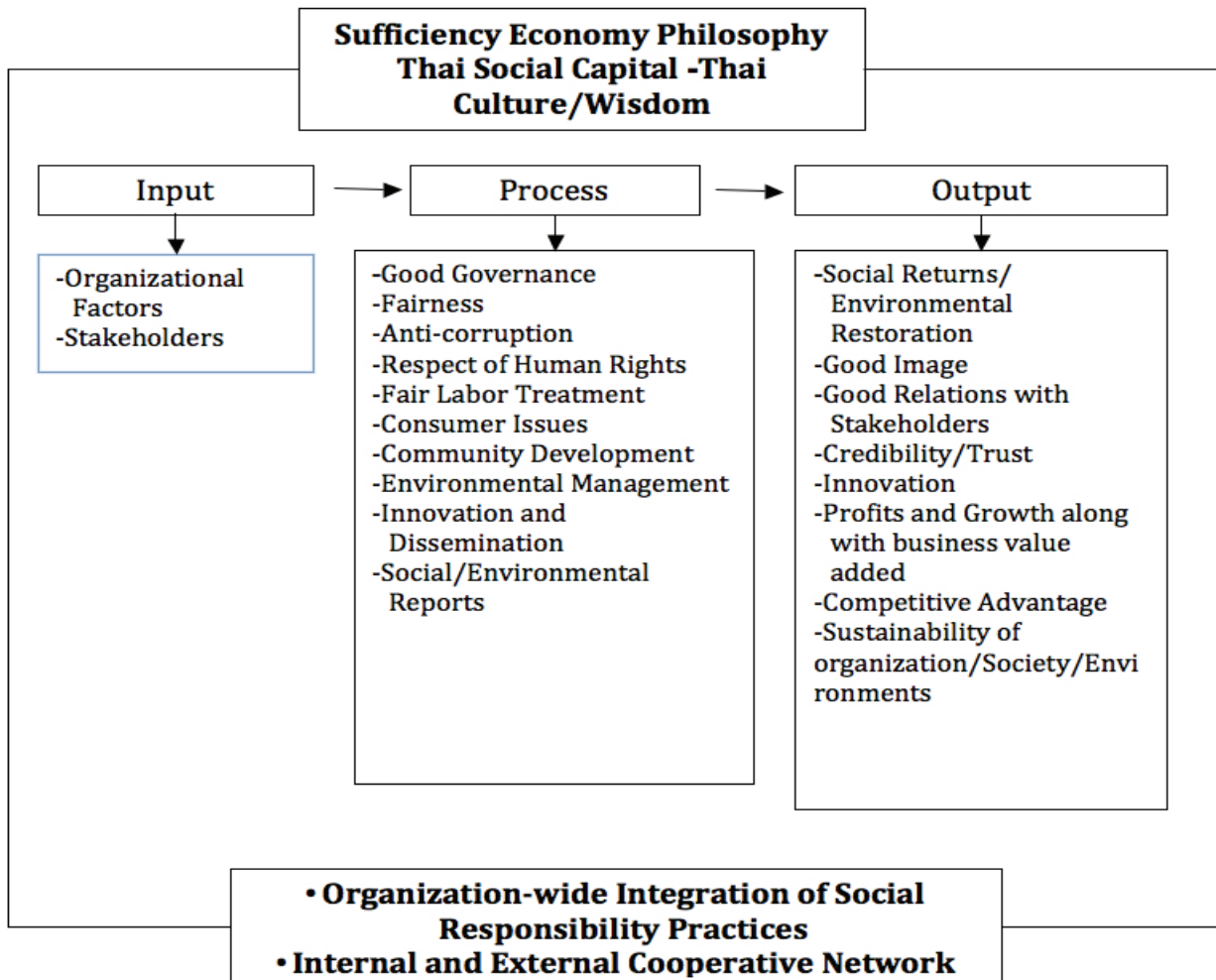
A good starting point of implementing social responsibility practice based on Sufficiency Economy Philosophy should at the organization level in order to enable both internal and external stakeholders to work together happily and fairly, unselfishly and equitably for the public good rather than for self interest. The organization should form organization-wide network of cooperation by giving emphasis on social responsibility practices based on Sufficiency Economy Philosophy in its philosophy, instilling organization values/culture supportive of public-minded, volunteer-ready employees to seriously looking after the interests of all stakeholders concretely, and clearly setting its vision, missions, and policies/strategies/plans consistent with social responsibility practices based on Sufficiency Economy Philosophy (SRSE practices).

During implementation, the normal business practices and the SRSE practices should be balanced in moderation taking into consideration the available resources and readiness of the organization, not to incur excessive expenses to the extent of lessening the value of the business. The extent of CSR-in-process practices or CSR-after-process practices in line with

the principle of moderation would depend rationally on the resources of the organization to build up immunity against risk or adverse effects of probable changes and should be carefully planned so that the subsequent implementation would not produce undesirable outcome. At the same time morality should be fostered in the spirits of employees in the organization to enable them to implement social responsibility practice based on Sufficiency Economy Philosophy honestly, diligently and successfully taking into consideration the social and cultural conditions of its members and the mode of life of the community.

The outcome for the organization is the contribution of something back to the society because this is the practices for the benefits of the society and sustainability of the environment. The benefits go to the stakeholders in the form of happiness for the givers and the receivers; the organization consequently builds up good relations with stakeholders including the community and society at large. The results would be good organizational image as it would be socially recognized and credible, and trusted by stakeholders. The organization would progress sustainably reaping both profits and value-added, generating innovations, and competitiveness toward long-run sustainability of the business, society and the environments as shown in figure 1.

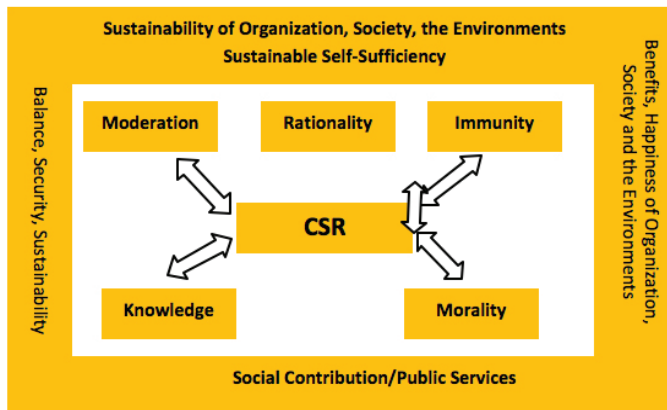
Figure 1 Social Responsibility Practice based on Sufficiency Economy Philosophy (Viriyapan, 2011)



4.4 CSR-Sufficiency Model

The CSR-Sufficiency Model would focus on the middle path to create balance by relying on the principles of non-impingement of others, not exceeding one's own capacity or responsibility, not seeking unsustainable profits, and not taking advantage of society without regard to the adverse effect on society, the environments, and culture possibly leading to subsequent crisis. In addition, it would promote the use of resources productively and qualitatively for sustainable development of the organizations, economy, society and the environments at large, thus benefiting the organizations, community, society, and full restoration of natural resources and the environments. The implementation of the "CSR-Sufficiency Model" needs to focus on the goal of sustainability in the form of ability to be self-reliant sustainably and to be rely upon by others in order to bring about balance of benefits and happiness for the organizations, society and the environments, consequently positively benefiting national development at all levels from individuals to organizations, to communities/society and the country as shown in figure 2.

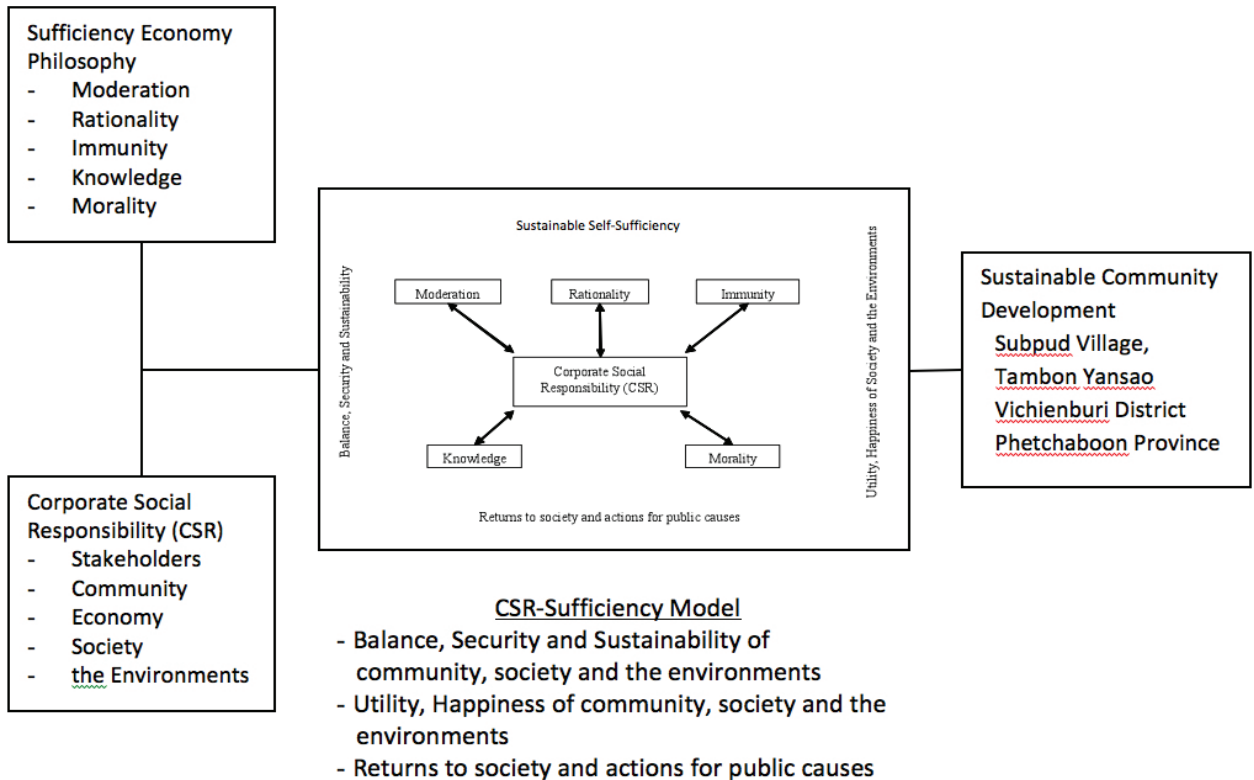
Figure 2 CSR-Sufficiency Model (Viriyapan, 2010)



4.5 Performance Indicators on Sufficiency Economy Practices, Ministry of Interior

The Ministry of Interior has assigned the responsibility to the Community Development Department to implement the Sufficiency Economy Village Program in collaboration with Department of Provincial Administration and Department of Local Administration based on a set of 6X2 indicators for assessment of villages adopting Sufficiency Economy Philosophy as a way of life. The indicators are cutting down expenses, income augmenting practices, financial savings, learning outcome, environmental conservation and sustainable, use of natural resource and helping hands habit.

5. Conceptual Framework



6. Research Method

6.1 Population and Sample

6.1.1 The population of this study is the people living in Subpud Village, Tambon Yangsao, Vichienburi District, Phetchaboon Province.

6.1.2 The sample group is the 100 households selected by purposive sampling in the previous base study undertaken by the researchers in 2010 and have lived in Subpud Village, Tambon Yangsao, Vichienburi District, Phetchaboon Province, during 2010-2013 to allow a longitudinal assessment of their development for 3 years.

6.2 Research Instruments

The main research instrument is a set of close-ended and open-ended questionnaires consisting of two parts: Part 1 covers information on the respondents and Part 2 covers the livelihood of the respondents and their households including occupations, educations, local wisdoms, culture, natural resources and the environments, as well as their contributions to the development of the village.

6.3 Data Collection

The data collected are in 2 categories; primary data and secondary data. The latter are from documents, printed media and websites regarding community development, corporate social responsibility, and Sufficiency Economy philosophy.

The annual data collection from the sample included the field survey, telephone interviews and focus group arrangement for in-depth interviews, as well as personal relations in gathering of supplementary data.

6.4 Data Analysis and Statistics Employed

The collected data were edited for correctness and completeness and analyzed by statistical software for frequencies, percentages, means of the quantitative data and by content analysis for the qualitative data.

6.5 Limitation of the study

Due to time constrain and mobility of the villagers, the researcher cannot reach the entire number of the original participants in the sampling group, limiting the analysis to a smaller sample group.

7. Research Findings

7.1 Part 1 Information on the Sample

Base data of the 100 households in Subpud Village, Tambon Yangsao, Vichienburi District, Phetchaboon Province were collected in 2010 and the follow-up data collection of these households were done in 2013. Sixty questionnaires were returned accounting for a 60 percent response rate, all of them were edited and found to be complete for analysis.

The sample group was found to be mostly male accounting for 85.0 percent, of age between 41-50 and 51-60 ranges accounting for 26.7 percent each, with primary education accounting for 83.3 percent, being married accounting for 80.0 percent, having 2 children accounting for 26.7 percent, with 3-4 members in the household accounting for 38.4 percent, living in the village for over 15 years accounting for 90.0 percent, and no member in household that cannot support oneself accounting for 86.7 percent.

The occupation of the sample group was mostly agricultural-based supplemented by other income-generating employment. Most of them (44 households) grew crops, followed by workers (20 households) and merchants (11 households). Their land possession was mostly in the range of 6-10 rai and 13-20 rai (8 households each) accounting for 13.3 percent, followed by 31 rai and above (7 households) and 1-5 rai accounting for 11.7 and 6.7 percent respectively. Most of the crop-growing households sold their crops as raw material (36 households) accounting for 60.0 percent, followed by own consumption (16 households) and further processing for sale (3 households) accounting for 26.7 and 5 percent respectively.

The study found the occupational income of the sample group to improve from an average annual income of 142,223 Baht per household in 2010 to 202,663 Baht in 2013 or an increase of 60,440 Baht at 42.5 percent. The occupational expenses were found to decrease from an annual amount of 188,454 Baht in 2010 to 165,780 Baht in 2013 or a drop of 22,674 Baht at 12.03 percent. The significant decrease in expenditure was in the category of loan and interest with the average of 68,623 Baht in 2010 down to 45,515 Baht in 2013 or a reduction of 23,114 Baht at 33.68 percent. The expenses for production also exhibited a downward trend from an average of 59,221 Baht in 2010 to 6,394 Baht in 2013 or a drop of 52,827 Baht at 89.20 percent. On the household expenditure, notable increase and decrease in the household expenditure in 2010 and 2013 are shown below.

Table 1 Household Expenditure Increases for 2010 and 2013

Average annual expenditure	2010	2013	Increase	Percent
Purchase of household appliances such as TV, refrigerator, etc.	5,170	16,400	11,230	217.21
Schooling Fees	963	3,310	2,347	243.72
Health care and medicine	680	1,521	841	123.68

Table 2 Household Expenditure Reductions for 2010 and 2013

Average annual expenditure	2010	2013	Decrease	Percent
Food	6,870	3,828	3,042	44.28
Home Repair	5,685	2,649	3,036	53.40
Tobacco, spirits such as liquor and beer.	1,277	598	679	53.17
Fortune Seeking (gambling)	1,224	562	662	54.08

On administration matters, the majority of the sample (42 households) made plans before taking action accounting for 70 percent while only a few (2 household) did not accounting for 3.3 percent. Two thirds of the sample (40 households) faced some problems in their occupations accounting for 66.7 percent while only a few (3 households) did not have any problem accounting for 5 percent. The sample group indicated their need for advice and assistance in investment, marketing, production and others knowledge accounting for 16.7, 13.3 and 10.0 percent respectively.

On financial issues, the study found 17 households undertook savings with average annual savings of 8,808 Baht in 2010, while the number had increased to 28 households with average annual savings of 25,029 Baht in 2013, or an increase of 16,221 Baht at 184.16 percent. On the possession of properties, the highest-valued asset was occupational related property (including land) with average value of 780,000 Baht, followed by personal properties (including house and land) with average value of 629,125 Baht and investment assets such as gold, time deposits with average value of 253,333 Baht respectively. The sample group also possessed major electrical appliances such as television, refrigerator, radio, mobile phone, washing machine and motor vehicles of various types ranging from motor cycle, pick-up truck and tractors.

On the liabilities side, the study found most of the sample group to be debtors within the financial system in both years, with 48 households being debtors in 2010 accounting for 80.0 percent but dropping to 46 households in 2013 accounting for 76.7 percent. The average debt per household incurred in the financial system was 162,578 Baht, while the amount for non-financial system debt was 132,223 Baht. Half of them or 50 percent (30 households) took out loans for occupation-related expenditure or investment while 20 percent (12 households) took out loans for household expenditure. On the repayment of loans, 63.3 percent (38 households) said they did not have any problems while 21.7 percent (13 households) had problems. The majority of them or 78.3 percent (47 households) could make payment within the scheduled date while 6.7 percent (4 households) could not. A quarter of them or 25 percent (15 households) could pay off their loans within 1 year; 10 percent (6 households) could pay off loans in 3 years; and 5 percent (3 households) in 10 years.

On the keeping of household accounts, most of them (43 households) accounting for 71.7 percent did not keep such records. Only 3.3 percent (2 households) kept accounts every month, while 15 percent (9 households) kept accounts but not regularly. On keeping informed of current news and acquisition of knowledge, most of the sample group both in 2010 and 2013 relied on watching television accounting for 91.7 and 81.7 percent (55 and 49 households) respectively.

7.2 Part 2 Community Development

7.2.1 Results from In-depth Interview

Analysis of data obtained from interview with 12 respondents found the sample group and people in the village giving importance to taking care of the community, society, and the environments citing the reason of “wanting to improve the livelihood of the community, to have pleasant surroundings, and out of dedication to their homeland to strengthen and advance the community.” The outcome of the Integrated Collaborative Sustainable Community Development Project in accordance with the CSR-Sufficiency Model had improved the quality of life of people in the community which could be summarized as follows:

1) Adequate availability of water for households and agricultural purposes has allowed year-round growing of crops for own consumption and sale. Consequently the villagers have gained greater independence (or more self-sufficiency) from increase in income and savings, with lessening problem of informal loans and debts.

2) Attainment of knowledge on pesticide-free crop growing and crop rotation, processing of agricultural produce resulting in self-development of community members.

3) Fostering of cooperative contribution in village development, senses of solidarity, caring and sharing with one another in need of help, and transfer of learned knowledge to other communities.

4) Change of behaviors away from bad habits such as drinking, smoking, gambling or fortune seeking, etc. to good habits such as spend more effort to increase their income and their own quality of life, more social contribution.

5) A sense of self-pride for own contribution to the betterment of the village to become a model of strong community able to be presented to other communities to imitate.

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7.2.2 Development Outcome in Accordance with CSR-Sufficiency Model

1.) Moderation

1.1) Members of the community and relevant parties were able to implement community development program within their capability employing available resources without raising of additional fund. For example, plan to use resources as required was made in the hill-side water works project by making a survey of the area to draft the pipe-laying plan. In constructing community water tank, a plan was drafted of the tank for the purpose of storing water to guard against shortage in the future. Calculation of the required resources was carefully made in the community development to ensure economy and no waste.

1.2) Full and efficient use of local natural resources by community members.

1.3) Community members participated and took part in the development of their own community voluntarily and collaboratively, without hiring of external labor.

2.) Rationality

2.1) Development of Community took into consideration the needs and participation of members.

2.2) Encouragement of community members to express opinions and suggestions in the development of the community through village leaders, village head and local administration to foster a culture of social responsibility for public good.

2.3) Organization of brain-storming meetings of community members and related parties. For example, meetings to draft work plan, work procedures and project implementation of community development projects for maximum benefits of the community.

2.4) Request for support from relevant parties as needed and appropriate, with an aim for self-reliant in the future. For example, request for assistance in projects related to water provision for farming, livestock raising, and household consumption, support for occupation training to gain additional income.

2.5) Community members made careful consideration and voted to use the fund provided by the government for construction of a community rice mill in order to achieve the greatest benefit to the community. It would enable the community to be self-reliant in the future.

2.6) Further processing of community output to add value. The ladies group turned the agricultural produce of the community into processed food. If the raw materials within the village were insufficient, the differences were purchased from neighboring villages.

3) Immunity

3.1) Community members helped seek ways to guard against drought risks. For example, utilization of natural water sources for agricultural farming during dry season and construction of water storage tanks for use during shortage period. Thus, the community enjoyed year round availability of water for crops/livestock, increasing the income of households.

3.2) Members of community can implement the “New Theory Farming” or integrated farming reducing the dependency on planting of a single crop, subsequently being more self-reliant.

3.3) Members seeking ways to reduce the risk of rising costs of rice farming by investing the support fund from the government in the construction of a community rice mill, thus lessening the dependency on non-controllable external factors

3.4) Members learned to manage the risk of low crop prices or over production (market surplus) by further processing of agricultural output such as the processing of farm ingredients into various “Nam Prik” (spicy food paste), etc.

4) Knowledge

4.1) Members had acquired the knowledge of sustainable development process through “Learning by Doing”.

4.2) Members exchanged ideas in making plans for working together, resulting in effective and efficient work.

4.3) Members worked out plans together with supporting parties and organizations, enabling close co-ordination of work.

4.4) Members were enthusiastic to develop themselves productively, eager to learn through various media both printed and online.

4.5) Members started to collect and maintain a database of basic community information, local wisdom, local learned persons for transferring to later generations.

5) Morality

5.1) Members were willing to work together for the common good, and conscious of their social responsibility. Construction of public goods for the benefit of later generations was built.

5.2) Members recognized the importance of being good citizens, and proud of being able to contribute socially and significantly to the community.

5.3) Leaders of the community were willing to sacrifice for the common good, ready to head the implementation of community tasks and capable of persuading other members to contribute for the public causes. At the start only a few join the community effort but currently all members participated in the development of the community based on their ability.

5.4) The households also participated in the various development projects such as the preparation of meals for the people in the projects, offering of equipments and instruments, etc. Every member had learned to work cooperatively in the development of the community.

5.5) Members were proud of their roles in the development of their community progressively and enjoyed their lives with equal dignity.

5.6) Members were solidified, loved their homeland, willing to sacrifice personal gain for the common good, and mutual assistance.

5.7) Members witnessed the outcome of doing good for the public in the form of improving the livelihood of oneself and neighbors, the economic and social status, and the environments.

5.8) Officers of the Network of Development Cooperation visited the village and provide guidelines and advices on implementation of various projects, consequently building good rapport between business organizations and the community.

8. Conclusion and Discussion

Upon examining the results of data analysis for this study on Community Development within the Framework of CSR-Sufficiency Model: Case of Subpud Village, Tambon Yangsao, Vichienburi District, Phetchaboon Province, the following summarizes the researcher's conclusion and discussion.

8.1 Community Development

Based on the accumulated data, it can be concluded that Subpud Village has adopted the CSR-Sufficiency Model as the main approach in their community development. The process started with a gathering of people in the community to offer their views on the problems and needs of their community. It was agreed that they needed a hill-side waterworks project for sustainable agricultural farming. In addition to people in the village, the project got cooperation and collaboration from various parties concerned with respect to the knowledge on CSR- Sufficiency Model and provision of required materials/equipment , etc. contributing to its success. A major key to the success was the voluntarily participation of community members in drafting of the plan, making decision, implementing and taking responsibility cooperatively. The result was team learning, affectionate relationship among community members evident in their sense of belonging. The success of community development was due to the fact that “people” were developed at the early stage, this is in accordance with King Bhumibol’s advice that “people” needs to be developed first to improve their quality or ability in taking up occupations and conducting businesses to secure their livelihood, and consistent with Oppayothin (2000) recommendation on sustainable development that “a foundation should be laid focusing on improving the quality of human resource through the process of action learning to enhance occupational skills and capability, thus improving their quality of life, creating strong and self-reliant community. The development must be responsive to the needs of community members, surrounding situations

and local cultural settings empowering them to be “self-sufficient” by utilizing local wisdom to initiate program motivating them to draw upon and employ their existing capabilities for the benefits of themselves, households, and society in general, thus enhancing national security. This is the sustainable economic and social development driven by individuals.”

8.2 Occupational Development

Most of the sample group earned their living mainly from growing crops supplemented by other occupations. This is in contrast with the findings of research by Thailand Development Research Institute (TDRI: 2013) concluding that “Thai society had stepped out of an agrarian society. Agricultural was no longer the major source of households’ income. The number of households engaged in farming had dropped the most from 2.3 million persons in 2001 to 1.76 million persons in 2009.” The contrast could be that the geographical condition of Subpud Village was appropriate for farming and the implementation of the hillside waterworks project and the community water tank project as its community development effort had eliminated the problem of water shortage during the dry season enabling the crop rotation planting throughout the year for people in the community. The projects were supported by various parties; namely the University of the Thai Chamber of Commerce providing guidance on planning and integration of assistance from a network of community-development interested parties such as the Thai Chamber of Commerce, Nawaplastic Company, Limited (Saraburi), Bathroom Design Company, Limited, Siam City Cement, Public Company, Office of the Royal Development Projects Board, The Chaipattana Foundation, Ministry of Interior, Ministry of Agriculture and Cooperatives, and a few others. The projects had increased the household income of most people, alleviated the poverty situation, and reduce economic and social gaps to some extent. The projects were initiated based on ideas and agreement of community members, thus consistent with local way of life and occupations. This is consistent with the King Approach stating that, “Community development effort must be in accordance with the needs of people in the community because it would enable them to make their living and enjoy lives adequately and securely.”

8.3 Average Household Income

The increase in the average annual incomes from occupations of the sample between 2010 and 2013 was indicative of the significant positive impact of the implemented development projects in accordance with the CSR-Sufficiency Model. They could plant crops all year round for sale and engage in additional occupation such as forming a group to produce chilly sauce, home gardening, raising animal for household consumption, thus earning additional income as well as reducing food expenses. Their average expenditure per household dropped thus increasing the asset holding. This is consistent with the measured indicator of the Community Development Department, Ministry of Interior, pointing out that, “If any household has taken up supplementary occupation, its income would increase, and if any household sets up home gardening, its expense would decrease.” The results on the annual savings of the sample between 2010-2013 showed an increase in the average savings, possibly as a consequence of increased income and decreased expenses. They set up plans for their crop planting, spending and saving, as well as reduction of expenditure on luxury, liquor, and gambling; resulting in higher level of saving. This is consistent with defined Sufficiency Economy Philosophy (SEP) indicator of the Community Development Department, Ministry of Interior, stating that, “Households with regular saving habits are those with saving deposits at banks/financial institutions/saving groups/or other group taking deposits from members.” Similar finding was also concluded by TDRI (2013) that in 2009

the average household income was greater than household expenditure, resulting an increase in the average household saving of Thai people. The quality of life of the sample was found to improve because in 2013 they owned more labor-saving equipment both at home and at work making life more comfortable and work more efficient. This is consistent with the defined SEP indicator of the Community Development Department, Ministry of Interior, stating that, “Households applying appropriate technology are those using work tools and equipment or household appliances appropriate for the local conditions resulting in cost saving and increased efficiency such as the use of organic fertilizer in crop growing producing high-valued produce, growing pesticide-free vegetables, use of alternative energy, etc.”

8.4 Average Household Expenditure

The comparison of average household expenditure between 2010 and 2013 found a drop in the average household expenditure. The reason could be that the sample group had learned the Sufficiency Economy Philosophy and adopted it in their living and occupation, thus was able to spend economically, not extravagantly, grew several crops in rotation and seek supplementary work. Consequently, their income increased and expenses dropped, with the differences saved for future use. This is an indication that the group understood the concept that, “Income received was not as important as having money left for saving.” This is consistent with the Sufficiency Economy principles applied at individual level stating that “Leading a life with no distress, keeping a lifestyle moderately within one’s means, not drifting along the glitter of materialism, and being free on any obligations are the bases for life security and ability to rely on oneself.” The expenditure on production such as water, electricity, etc. was also found to decrease. This could be the result of continually energy and environmental conservation campaigns of the public sector. In addition, with the awareness of the community members of the true value of natural resources such as energy and water ducted from the waterfall; they participated in the conservation of the environments in order to make the resources available in the long-run for future generation. This is consistent with the Philosophy of Sufficiency Economy of King Bhumibol stressing the importance of development of all aspect of life from economy, society, technology to the conservation of natural resources based on the principles of moderation in use and intelligent management of resources, while seeking ways to add value for the sustainable development of the country. It is also consistent with the indicator of the Community Development Department, Ministry of Interior on the conservation of the environments and the sustainable use of natural resources stating that, “Community using raw materials sustainably for making a living is that utilizing local materials and resources economically and fully in making a living with plan to obtain replacement together with conservation effort, by way of reforestation, livestock replenishment, maintenance of water resources, forest, and the environments, etc. These conservation efforts include the planting of trees in public areas for shade and landscaping. Members are encouraged to plant trees on local streets, in their houses or any vacant space, etc. and take great care of them.” The expenditure on debt obligations was found to decrease significantly as a result of adoption of the moderation principle of Sufficiency Economy Philosophy. No additional debts were undertaken and greater care was considered in incurring expenses. This is a way of life consistent with the indicator of the Community Development Department, Ministry of Interior, stating that, “Village adopting Sufficiency Economy Philosophy as the basis of life would reduce expenses and increase income, as well as would not be addicted to narcotics, not gamble, and follow morally conduct.” In addition, the group took out loans only as necessary such as loan for occupation and loan for education. This is supported by the findings of the Center of Economics and Business Forecasting, UTCC,

indicating that the most cited reason for taking loans in 2013 was for daily living, followed by educational expenses for children and purchase of fixed assets such as house, car, etc. It is also supported by the finding of TDRI (2013) that household debts of Thai people had increased, mostly in the consumption and investment categories during the latest years. In this study, the profit from sale of produce compared between 2010 and 2013 was found to decrease. This could be because the increasing cost of farming or the problems of finance, marketing, and middlemen. Additional cause might come from the fact that the abundance of natural resources had decreased thus shrinking the resource available for self reliance. This is consistent with the finding of the Nakorn Srithammarat Center of Community Development and Studies, Community Development Institute, Community Development Department that. “the dynamic of Ban Bangmui Community during the pioneering stage to become a sufficiency or traditional economy able to be self reliant for the four basic needs of living would depend on the factors supporting self reliance such as the abundance of natural resources, land, water supply, low level of population, familial relationship in the community, and spirit of public awareness and contribution.

8.5 Average Personal Expenditure between 2010-2013

On personal expenditure, the study found average expenses in 2013 to be higher than that of 2010. This is in line with the economic principles of inflation and annual increase of prices of consumer goods, making cost of living higher. It is interesting to take note that expenses on sinful goods such as cigarettes, liquor, gambling had dropped significantly. Consequently, this was not only a reduction in unnecessary expenses but an improvement to the health as well as a saving of money available for other needed items. This could be the impact of Subpud Village joining the Livable Community Project of Thai Health Foundation (THF) making community members aware of the importance of looking after one’s own and family health through the year-round events of reducing, lessening, or abstention of sinful activities. The community members were able to grow crop all year round from the availability of water supply, providing constant working opportunity with no time for sinful activities. The implementation of the Livable Community Project not only made the members healthier but also made them more secure in their employment, capable of supporting themselves and families. This is consistent with the indicator for village adopting Sufficiency Economy Philosophy on the abstention of sinful activities stating that, “all members of the household are not addicted to narcotics, gambling, but behave morally, thus reducing household expenses and increasing income from supplementary employment.” However, this is in contrast with the findings of TDRI (2013) pointing out that the expenditure of Thai household on liquor/tobacco was greater than that on education; and the expenditure on entertainment and special occasion was also greater than that on education.

8.6 In-depth Interview

The results of in-depth interviews with 12 selected respondents found that the implementation of the CSR-Sufficiency Model in their work and lives has brought about changes at personal, community and societal levels in the form of sustainable community development. These changes can be concluded and discussed below:

At personal level, the respondents and community members exhibited signs of personal happiness as seen from their fresh and smiley faces, absence of sickness from stress, and sense of pride. These were most likely the outcome of following the learned principles of Sufficiency Economy Philosophy as seen from the moderation by way of planting crops

seasonally within own capability, not too much nor too little; the immunity by way of crop rotation, integrated farming, growing of pesticide-free crops for higher sale prices, lessening use of chemicals to reduce cost and better health, applying local wisdom in processing of local raw materials into products of added-value, and the knowledge on production planning for both household consumption and the market. In addition their sense of happiness also propagated to other members through their willingness to share, exchange output and knowledge with neighbors and visitors, and helping one another in public undertakings. The community lived in solidarity with continual development, providing opportunities for greater employment and increased income which had attracted the return of emigrated youngsters back to their hometown, bringing back greater warmth and happiness to their families. This is supported by results of the research on Happy Benefits from Sufficiency Economy Project of Kanchanarangsrinont et.al (2011) stating that the way of life in accordance with the Sufficiency Economy Philosophy had brought about happiness to the respondents at all levels personally and family-wise. This is consistent with the worldly happiness explained in Buddhism pointing out that those who lead their lives according to Sufficiency Economy Philosophy would attain a level of happiness high enough not to want anything more for themselves and would be proud, fulfilled and eager to “give” to or “share” with others.

At community level, there were positive changes of respondents’ behavior. Evidences of increase happiness of overall community members include their participation in the community activities, neighborly sense of care, sense of community pride, community problems being solved through cooperative effort and solidarity, etc. With the recognition by community members that the effect of a common approach for development was the improvement of their livelihood, better economic status, ability to be self reliant, and capable of sharing and helping other members or neighboring village, the general welfare of community members would improved considerably. This is supported by the finding of Kanchanarangsrinont et.al (2011) pointing out that the actions undertaken that could benefit community members are the support and encouragement of members to live their lives in accordance with Sufficiency Economy Philosophy, the adoption of social and economic development directions of the community consistent with Sufficiency Economy Philosophy, the actions to solve economic, social and environmental problems of the village, and the actions facilitating the ease of adoption of Sufficiency Economy Philosophy in their daily living. The source of happiness from giving or helping others is the recognition and acknowledgement of one’s importance, resulting in self-pride, especially when being addressed as “teacher.” This personal interaction has provided the respondent with happiness from moral practices. While the source of happiness for community, public organization, and private party while giving or making beneficial contributions is mainly the feeling of the main driving force of the action and the outcome has benefited the community, organization, and society in general.

At societal level, positive changes in the behavior were also observed. Examples were the recognition as the prototype village adopting the CSR-Sufficiency Model in its development, visitors coming to learn and community members disseminating development information to the general public, members attained a sense of social recognition of their value and significance and feeling contented to have contributed socially. It can be concluded that the development of Subpud Village according to the CSR-Sufficiency Model had resulted in gross happiness or a peaceful society. This is consistent with the finding of Kanchanarangsrinont et.al (2011) stating that what the organizations as a group provides are knowledge and output which would improve the health of people. The benefits provided to

the community are the source of employment, income, happiness from earning a living, and restoration of cultural activities related to production. The benefits provided to the society are the value-added of production with no use of chemicals. In the same study Kanchanarangsrinont et.al (2011) also give definition of the word “healthy welfare” as the assistance of the less privileged, helping of others and society, and public actions for the welfare of people in general, which provide benefits to others and satisfaction to oneself. If all members in the society derive happiness from the act of giving and beneficial contribution, there would arise a society full of happiness in which all members are eager to help one another, give, share, avoid disputes, cooperate, unify, and live happily in harmony as well as willing to share their happy moments with others.

9. Management Implications

9.1 Business Organization could utilize results of this study as guidelines in the integration of cooperation or cooperative networking for economic, social and environmental development of other communities towards sustainability.

9.2 Business Organization or interested parties could apply the framework of CSR-Sufficiency Model in the economic, social and environmental development of organization or units for sustainability in line with the Triple Bottom line.

10. Recommendations for the Study

10.1 The community development by the integration of cooperative network of involved parties within the framework of the CSR-Sufficiency Model should be promoted for the sustainability of organizations, economy, society and the environments.

10.2 The community development within the framework of the CSR-Sufficiency Model should be extended to other villages with the goals of making community members capable of self-sufficiency and being rely upon by others, thus being both healthy receivers and givers.

10.3 A village cooperatives should be organized at Subpud Village, Tambon Yangsao, Vichienburi District, Phetchaboon Province in order to form a collaborative group in accordance with principles of cooperatives.

10.4 Community members should be persuaded to keep household accounting book as a tool for efficient financial management. They would be able to monitor increase in income and reduction in expenses explicitly, contributing to greater saving.

11. Recommendations for the Further Research

11.1 Further comprehensive study should be extended to the entire people in Subpud Village, Tambon Yangsao, Vichieonburi District, Phetchaboon Province on their mode of living, employment, and participation in the community development.

11.2 Follow-up study of the impact of community development in Subpud Village, Tambon Yangsao, Vichienburi District, Phetchaboon Probvince should be carried out to assess the long-run changes.

11.3 Results of this study should be compared to those of other villages adopting the principles of Sufficiency Economy Philosophy.

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DOES IFRS ADOPTION MITIGATE ACCRUAL EARNINGS MANAGEMENT? EVIDENCE FROM AN EMERGING MARKET

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Abstract

This study examined an impact of IFRS adoption on earnings management in Thailand. The Jones model (1991) modified by Kothari et al. (2005) was employed to measure earnings management. The sample contained 761 Thai listed firm-year observations in the year before (2008) and after (2011) the adoption of IFRS. Using multiple regression analysis, the research found significantly positive association between the IFRS adoption and earnings management, suggesting that Thai firms tended to engage in earnings management after the IFRS adoption more than before. This led to a question of the increasing earnings quality due to the IFRS adoption in an emerging market. Also, the model showed the significantly positive relationship of earnings management with the leverage ratio, revenue growth, profitability ratio, and negative earnings variables. In contrast, it revealed the significantly negative association of earnings management with firm size and industry type. These results were consistent with much research (Klein, 2002; Usman and Yero, 2012; Doukakis, 2014; Wan Ismail et al., 2013) and strengthen the long-established theories used in this research area (e.g. the agency theory and the positive accounting theory).

Key words: Accrual earnings management, Thailand, Modified Jones model, International Financial Reporting Standards (IFRS).

1. Introduction

Since the International Accounting Standards Board (IASB) was restructured in 2001, the International Financial Reporting Standards (henceforth “IFRS”) have been worldwide accepted. Many countries decided to partly or fully adopt standards while a question of their impact on earnings quality, specifically earnings management, was arisen. Some researchers empirically showed the reduction of earnings management after the IFRS adoption (e.g., Sellami and Fakhfakh, 2013; Zèghal et al., 2011; Wan Ismail et al., 2013; Cai et al., 2012; Barth et al.,

2008; Chua et al., 2012) whereas some argued that earnings management had intensified since the adoption (Jeanjean and Stolowy, 2008; Callao and Jarnea, 2010; Rudra and Bhattacharjee, 2012; Li and Park, 2012). These inconclusive results were possibly due to the differences in the location of the sample. The studies (Houque et al., 2012; Chua et al., 2012; Daske et al., 2008) suggested that a country with high investor protection right and strong legal enforcement is likely to have positive impact of the IFRS adoption on earnings management; however, some research results (Brad et al., 2014; Wan Ismail et al., 2013) argued this observation. The argument implied that the impact of IFRS adoption on earnings management in a particular country was an open empirical issue that warranted distinctive investigation.

In Thailand, IFRS have been announced to be fully adopted since 2009, and it mainly aimed to increase earnings quality, meaning reducing earnings management. However, this aim was questionable. This doubtfulness was supported by the inconclusive results stated above and the fact that Thailand seems to have high investor protection right stated in its regulatory framework but the enforcement and practices seem to be questionable because Thai financial system is a credit-based system. This characteristic might facilitate the fully IFRS adoption to either reduce or increase earnings management practices, as several studies (Chua et al., 2012) found that in a country with a capital market-based system, earnings management tended to reduce after the IFRS adoption whereas some (Zèghal et al., 2011; Zhou et al., 2010; Wan Ismail et al., 2013; Pelucio-Grecco et al., 2014) found similar impact of IFRS adoption on earnings management in a country with a credit-based system.

In addition, before the fully IFRS adoption, Thai accounting standards were based on mainly the Anglo-Saxon model, recognized as the high quality of standards. In fact, some Thai accounting standards had already followed some of IAS. Therefore, the fully IFRS adoption might result in a small or negligible impact on the changes in earnings quality in Thailand, as Chua et al. (2012) suggested that a country with high quality of the standards, the IFRS adoption might not have much impact on earnings quality.

Furthermore, after reviewing previous research, the current study found no research specifically tackling a question of the earnings quality after the adoption in Thailand. Most of the research determining earnings management in Thailand focused on the relationship between earnings management and corporate determinants (Chomchan, 2007; Eamsherangkoon, 2008; Jaitad, 2012; Kiatapiwat, 2010; Powijit, 2012; Sukeechep, 2013; Bokkaranee, 2006; Thoopsamut, 2007; Sujirachato, 2009; Marttra, 2006) in order to indicate the motivations for earnings management. A few studies focused on the impact of other changing situations (e.g., seasoned equity offerings and initial public offerings) on earnings management (Prangthawat, 2002; Phraethong, 2009; Sriworadetpisan, 2006; Tuntana, 2011).

Therefore, the study of IFRS adoption and earnings management in Thailand deserved to be thoroughly investigated. The main research objective was to explore an impact of IFRS adoption on earnings management in Thailand. Specifically, the research aimed to investigate whether earnings management was significantly associated with the period of IFRS adoption and if so, whether the positive or negative relationship existed. This investigation contributed several benefits to both Thailand and international discipline. For Thailand, the research revealed earnings management behavior of Thai management before and after the IFRS adoption. This behavior, specifically accruals earnings management, would notify Thai regulators to consider about the effectiveness of IFRS in increasing earnings quality. For international discipline, particularly

countries with an emerging market, this study was a good example of an impact of IFRS adoption on earnings management behavior and if there seems to have any serious negative impact, the countries with the similar characteristics should be aware and cautiously adopt the standards.

The remainder of this paper was organized as follows. Thai financial reporting standards were introduced and discussed. This was followed by a review of literature dealing with the influence of IFRS adoption on earnings management. Then, the hypotheses were developed and research methodology was described. After that, the research results and discussion were presented. Finally, the conclusion and recommendations were made.

2. Literature Review

2.1 Thai Financial Reporting Standards

Similar to other developing countries, Thai accounting standards (TAS) have been developed using western accounting standards as a model (Sutthachai, 2006). Before the fully IFRS adoption, Thai standards had a combination of accounting practices from three western accountancy bodies: those of the UK, the US, and the IASB. However, after the economic crisis in 1997, TAS had been dramatically changed as a part of financial infrastructure restructuring program required by the World Bank and the International Monetary Fund (IMF). The Thai government called on the ICAAT (the Institute of Certified Accountants and Auditors of Thailand, later changed to the Federation of Accounting Profession: FAP) to fully adopt IAS/IFRS in order to facilitate the inflow of foreign capital from both international financial institutions and foreign private investment. At first, the ICAAT responded by either adopt or adapt the IAS/IFRS. The adoption refers to the use of the standards without significant changes in their content whereas adaptation means substantial changes in content of the standards. The adaptation usually occurs when an accounting standard committee wants to issue the standards to suit a country's environment.

Nevertheless, since 2009, the FAP finally decided to fully, rather than partly, adopt the IFRS. At first, it had committed formal timelines to fully adopt IFRS for Thai companies listed in the Stock Exchange of Thailand (SET) by the year 2011 (Deloitte global services limited, 2013). The new accounting framework and 26 new TAS based fully on IAS bound volume 2009 were issued and effective in 2011. Later, 13 TAS, both new and revised version, and five Thai Financial Reporting Standards (TFRS) were published. These standards were mainly based on IAS and IFRS bound volume 2012 and were implemented in 2014. Continually, in 2014, the FAP had issued the new accounting framework, 26 TAS, and 10 TFRS based on IFRS bound volume 2013. These standards were either superseding or revised the 2009 and 2012 standards. Also, during 2014-2015, seven Thai standards interpretation (TSIC) and 12 Thai financial reporting standards interpretations (TFRIC) were introduced (FAP, 2015). The detail of the adopted IFRS and IAS can be reviewed on the FAP website.

From the chronological events, it could be seen that the first dramatic changes in accounting practices occurred in 2011 when the adopted accounting standards were legally effective. Several standards allow accounting practitioners to employ their professional judgment more than in the past. For example, the standard of property, plant and equipment (PPE) (TAS 16) applies a component approach in the asset recognition and depreciation when the PPE

condition is met certain circumstances stated in the standard. This practice permits accounting practitioners to divide one asset into several components and then each component is depreciated depending on its useful life. Furthermore, in the standard, when PPE is first recognized, its initial costs should include, apart from its purchase costs and related costs necessary for preparing an asset to be ready to use, the estimated cost of dismantling and removing an asset and restoring the site on which it is located. The practices stated above had not been applied before and necessarily require professional judgment; as a result, the value of assets and expenses presented in the financial reports are directly affected.

The standard for employee benefits (TAS 19) is also another example causing huge change in accounting practices. It had never been compulsorily applied in Thailand before. The standard employs considerable professional judgment in practices and thus affects the accounting figures in financial reports. It requires a company to recognize the expected costs of all types of employee benefits that it has committed to the staff and this requirement could cause Thai companies to recognize a substantial amount of expenses in one period which then significantly affect corporate earnings, particularly of Thai listed companies. Thus, FAP had provided Thai listed companies the four alternative accounting practices for the first-time adoption of this standard; 1) using the prospective method according to TAS 8 accounting policies, change in estimates and errors, 2) setting the provision and continually recognized an expense within five years by a straight-line method, 3) adjusting the beginning of retained earnings in the adopting year, and 4) applying the retrospective method. Thummanont and Tantiprapa(2011) had surveyed Thai listed companies which alternative chosen most and they revealed that setting the provision had been practiced by the majority, followed by the adjusting the beginning of retained earnings method. Nonetheless, any alternatives could notably affect liabilities and expenses presented in a company's financial reports.

The two examples stated above revealed the substantial changes in Thai accounting standards which possibly provided Thai management higher opportunity to manipulate financial figures by using discretionary accruals than that in the past; as a consequence, earnings quality was questioned and Thai financial reports needed to be carefully analyzed. However, the proponents of the IFRS adoption argued that the IFRS would increase earnings quality and consequently the quality of financial reports (Houque et al., 2012; Sellami and Fakhfakh, 2013). The accounting practices indicated in the IFRS allow professional judgment of management and practitioners in order to generate financial information based on the qualitative characteristics of 'relevance' and 'faithful presentation'. These characteristics shape financial reports to be useful for users of financial reports (Houque et al., 2012), reflecting a company's economic reality. Since the fully IFRS adoption in Thailand occurred, this argument had not been seriously investigated whereas it had been widely studied in other countries' context.

2.2 Earnings Management

Zwan (2009) reviewed 'earnings quality' and agreed that earnings quality has not been well defined, but from the previous research, Zwan suggested that earnings management, sustainability and predictability are closely related to earnings quality. As this research intended to address a question of earnings quality after the IFRS adoption in Thailand, the research has applied 'earnings management' as the representative in the investigation of earnings quality in Thailand after the IFRS adoption. According to Healy and Wahlen (1999, p. 368), earnings management is defined as:

“...the managers use their judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers.”

Based on the accounting framework, financial reports are presented on the accruals basis. The accruals arise because of differences between the timing of accounting recognition and cash activities. Thus, Healy (1985) decomposed earnings into three components, namely cash flows from operations, nondiscretionary accruals, and discretionary accruals. The discretionary accruals are the one that management employs to manage earnings; therefore, the amount of discretionary accruals is used to be a proxy to measure earnings management, generally mentioned as “accrual earnings management”.

Previous research (Healy, 1985, DeAngelo, 1986; Jones, 1991; Dechow, Sloan & Sweeney, 1995) categorized the measurement for accruals earnings management into two approaches: 1) an aggregate accruals model, and 2) a specific accruals model. An aggregate accruals model is the most applied method and states that discretionary accruals are the residuals between total accruals and estimated nondiscretionary accruals. The models to measure accruals earnings management have been developed continuously and can be classified into three time period: (1) before the Jones model, (2) the Jones model, and (3) the Modified Jones model.

Before the Jones model. Healy (1985) and DeAngelo (1986) are the earliest researchers who developed models to measure accruals earnings management. Healy (1985) used the mean of total accruals as a measure of nondiscretionary accruals and total accruals are calculated by the difference between accounting earnings and cash flows from operations. Cash flows from operation are estimated by working capital from operations less changes in receivables and inventory, plus changes in payables and income tax payable. DeAngelo (1986) further developed this by using the lagged total accruals as a measure of nondiscretionary accruals. However, both Healy (1985) and DeAngelo (1986) were criticized of their models that the model assumption is unrealistic. The models assumed that nondiscretionary accruals are constant from period to period and have a mean of zero in the estimation period. Therefore, if nondiscretionary accruals change from period to period, both models will tend to measure nondiscretionary accruals with errors (Dechow et al., 1995).

The Jones Model. Jones (1991) proposed a regression to estimate nondiscretionary accruals. The measure of accruals earnings management is residual between total accruals and total accruals that are estimated from a regression on changes in sales and property, plant, and equipment. Total accruals are calculated as the change in noncash working capital before income tax payable less total depreciation expense.

$$TA_t = [\Delta CA_t - \Delta Cash_t] - [\Delta CL_t - \Delta CM_t - \Delta TP_t] - Dep_t \dots\dots (1)$$

where

- TA_t = total accruals in year t;
- ΔCA_t = current assets in year t less current assets in year t-1;
- ΔCash_t = cash in year t less cash in year t-1;
- ΔCL_t = current liabilities in year t less current liabilities in year t-1;
- ΔCM_t = current maturities of long term debt in year t less current maturities of long term debt in year t-1;

- ΔTP_t = income taxes payable in year t less income taxes payable in year t-1; and
 Dep_t = depreciation and amortization expenses in year t.

The Jones model for estimating normal total accruals is as follows:

$$\frac{TA_{it}}{A_{it-1}} = \alpha_i \left(\frac{1}{A_{it-1}} \right) + \beta_{1i} \left(\frac{\Delta REV_{it}}{A_{it-1}} \right) + \beta_{2i} \left(\frac{PPE_{it}}{A_{it-1}} \right) + \varepsilon_{it} \dots \dots \dots (2)$$

where

- TA_{it} = total accruals in year t for firm i;
 ΔREV_{it} = revenues in year t less revenues in year t-1 for firm i;
 PPE_{it} = gross property plant and equipment in year t;
 A_{it-1} = total assets at t-1;
 $\alpha_i, \beta_{1i}, \beta_{2i}$ = the firm-specific parameters;
 ε_{it} = error term in year t for firm i;
 I = 1, 2, ..., N, firm index; and
 T = 1, 2, ..., T, year index for years included in the estimation period.

Jones (1991) used ordinary least square (hereafter “OLS”) to obtain estimates parameters ($\alpha_i, \beta_{1i}, \beta_{2i}$) in this equation. The prediction error, the residual between reported and predicted total accruals, is used as a proxy of accruals earnings management, as follows:

$$\varepsilon_{it} = \frac{TA_{it}}{A_{it-1}} - \left(\alpha_i \left(\frac{1}{A_{it-1}} \right) + b_{1i} \left(\frac{\Delta REV_{it}}{A_{it-1}} \right) + b_{2i} \left(\frac{PPE_{it}}{A_{it-1}} \right) \right) \dots \dots \dots (3)$$

where

- ε_{it} = the prediction error or abnormal accruals or the level of discretionary accruals at time t for firm i and
 a_i, b_{1i}, b_{2i} = OLS estimator of the firm-specific parameters, (α, β_1 and β_2 respectively).

Modified Jones Model. Several researchers had modified Jones model. Among these researchers, the modified Jones model of Dechow et al. (1995) and of Kothari et al. (2005) are applied the most.

Dechow et al. (1995) calculated total accruals consistent with the Jones model but replaced ΔCM_t and ΔTP_t in Equation (1) with the changes in debt in current liabilities in the event period. Also, in their model, the change in revenues is adjusted for by the change in receivables in the event period. This model implicitly assumed that all changes in credit sales in the event period result from earnings management. This modified Jones model augmented for change in net receivables to provide a powerful test of earnings management (Dechow et al., 1995).

The Modified Jones model by Kothari et al. (2005) calculated total accruals the same as Equation (1), except that it did not including ΔTP in the model. For estimating normal total

accruals, Kothari et al. (2005) includes the previous return on assets (hereafter “ROA”) in the model to control for the impact of firm performance in the accruals regression. They suggested that the ROA controls the measured discretionary accruals to enhance the reliability of inferences from earnings management research.

Recently, Kothari et al. (2012) applied another modified Jones model. They used panel data models to measure accruals earnings management by adding net income in the accruals regression instead of ROA while other models are the same as the modified Jones model by Kothari et al. (2005). They suggested that the modified Jones model by Dechow et al. (1995) can be improved upon by controlling for earnings (NI).

2.3 The Influence of IFRS adoption on Earnings Management

Since the IASB financial reporting standards were internationally worldwide accepted, the standards have been either partly or fully adopted by many countries. The studies of influence of the IFRS adoption on earnings management received much attention but the results from this investigation have been inconclusive.

In empirically supporting the positive influence of IFRS adoption on earnings management (i.e. earnings quality seemed to increase after the IFRS adoption), many researchers found a significant association between the adoption of IFRS and a reduction of earnings management in several countries, such as France (Sellami and Fakhfakh, 2013; Zèghal et al., 2011), Australia (Chua et al., 2012), the UK and Ireland (Aussenegg et al., 2009), Romania (Brad et al., 2014) and Malaysia (Wan Ismail et al., 2013). Contradictorily, some studies found either the increase of earnings management or no changes in earnings management after the IFRS adoption in other countries, such as Germany (Van Tendeloo and Vanstraelen, 2005), some EU countries (Callaoa and Jarnea, 2010), China (Li and Park, 2012) and India (Rudra and Bhattacharjee, 2012). In fact, some countries were the same countries found a decrease of earning management after the IFRS adoption; for example, the UK, Australia, and France (Jeanjean and Stolowy, 2008).

The inconclusive findings were possibly due to the differences in the location of the sample. Chua et al. (2012) suggested that the differences of the IFRS impact in various countries were due to the differences of institutional structures which generally determine accounting quality. Houque et al. (2012) empirically tested and confirmed this view that an increase of earnings quality after the IFRS adoption seemed to appear in countries where firms had incentive to be transparent in order to protect investors’ benefits and where legal enforcement is strong. The studies undertaken in many countries having strong investor protection mechanism, such as Australia (Chua et al., 2012) and the UK (Aussenegg et al., 2009), were agreeable with this view. The research results in developing countries with weak investor protection mechanism, such as India (Rudra and Bhattacharjee, 2012) and China (Zhang et al., 2013) also confirmed this observation. Rudra and Bhattacharjee (2012) suggested that IFRS adoption was not an effective tool to increase earnings quality in a country with no appropriate capital market paradigm and institutional rules to support IFRS reporting principles (Sellami and Fakhfakh, 2013).

However, this observation was not yet firmly established because some other research empirically revealed different results. For example, in Romania (Brad et al., 2014) and Malaysia (Wan Ismail et al., 2013) with the emerging markets, the IFRS adoption had reduced earnings management in the firms’ financial reports, suggesting an increase of earnings quality.

From the review, there was no consensus view about the impact of IFRS adoption on earnings management. Consequently, this research area was an open empirical issue that warrants distinctive investigation in a particular country.

3. Hypotheses Development

Thailand is one of developing countries with a weak form of capital market and concentrated ownership structure. The Thai capital market had been started since the 1960s but has been continually developed from 1975 when the Securities Exchange of Thailand (officially changed to 'the Stock Exchange of Thailand (SET)' in 1992) was introduced under the Securities Exchange of Thailand Act B.E. 2517 (1974). Although the Thai capital market has undergone both good and bad economic incidents; for example, the rapid growth of the economy in the early 1990s and the 1997 economic crisis, which were likely to strengthen the market, its role in financing Thai corporate sector has been still small, compared to the US and the UK where capital market-based financial systems exist. The World Bank reported that in 2012, Thai capital market has its capitalization around 382 hundred million dollars whereas the UK capital market capitalization was about 3,019 hundred million dollars and the US market was about 18,668 hundred million dollars, suggesting the small amount of market capitalization in Thailand compared to the developed capital market.

With an emerging capital market, it was not surprising that the ownership structure of Thai listed companies were mainly concentrated although there was a period, specifically the 1997 economic crisis period, compulsorily transforming the structure to be widely-held. After the 1997 economic crisis, several researchers (Suehiro, 2001; Khanthavit et al., 2003) confirmed that many listed companies controlled by concentrated ownership in the period before the crisis, were controlled by foreign investors, domestic financial institutions, and various widely-held group after the crisis. However, their findings showed that about 40-45 percent of their sample still had a group of related families as controlling shareholders. This characteristic is persisting in Thailand (Connelly et al., 2012).

In addition, in Thailand, the legal enforcement has still been limited. This was reflected through the Corruption Perception index (CPI), being 85 out of 175 countries, meaning that the country has been perceived having moderately high corruption in the public sector in 2014 (Transparency International organization, 2014). This suggested that there were somewhat widespread bribery, lack of punishment for corruption and public institutions that don't respond to citizens' needs.

From the notion that in a country with strong investor protection and legal enforcement, the IFRS adoption seemed to have incremental economic benefits more than that with weak ones, the IFRS adoption in Thailand, therefore, was likely to have either no or negative impact on earnings management, meaning an increase of earnings management and thus lower quality of financial reports.

However, as several researchers (Brad et al., 2014; Wan Ismail et al., 2013) found that firms in a country with an emerging capital market had decreasingly managed earnings after the IFRS adoption, Thailand which had similar institutional structure to that country possibly could then gain incremental economic benefits from the IFRS adoption, i.e. after the adoption, Thai financial reports contained less earnings management than the time before adoption.

As reviewed above, it can be seen that no clear prediction about the direction of which earnings quality had been affected by the IFRS adoption in Thailand. Hence, the research hypothesized that,

H1: there was a significant relationship between the transitional period of IFRS adoption and accrual earnings management.

4. Research Methodology

4.1 The before and after IFRS adoption periods

In order to achieve the research objective, the research divided the IFRS adoption period into two periods: the before (2008) and after (2011) IFRS adoption period. The year of 2008 was selected as the before IFRS adoption period because in this year, the FAP had not announced its fully IFRS adoption project to the public but in 2009, the FAP had revealed its plan to converging to IFRS and started to draft many of new Thai accounting and financial reporting standards and interpretations based on IFRS, IAS, SIC and IFRIC. Most of these standards and interpretations were required to be effective at beginning on or after 1 January 2011. Also, the year 2008 was three years back from the year 2011 which was the starting year of effective standards; therefore, the problem of early IFRS adopters was minimized.

For the after IFRS adoption period, the year 2011, the first year of mandatory IFRS adoption, was selected because Thai listed companies started to be alert about the fully IFRS adoption since the beginning of 2009 and consequently the accounting practitioners in Thai listed companies had acknowledged this and had more than a year to understand and prepare themselves for the new standards and interpretations; in fact, several companies became early-IFRS adopter. When the standards were effective, the companies were unquestionably able to manage their earnings regarding the new standards.

4.2 Data and Sample Selection

The sample companies were selected from the listed companies of Stock Exchange of Thailand (henceforth “SET”). However, listed companies in the financial industry, property fund sector, and insurers were excluded from this study because their operation and environments differ from other businesses and the financial institutions have, in general, different accruals processes (Peasnell et al., 2000). Also, companies listed in the Market for Alternative Investment (henceforth “MAI”) were excluded because of the difference in firm size (SET, 2013a). Another group of companies excluded was companies under rehabilitation plans, which had problems with their operations and finances, leading to the suspension of their trading and if a company fails to resolve its problems, the SET will proceed to consider delisting the company’s securities (SET, 2013b).

Table I contains a summary of how the final sample for this study was obtained.
[INSERT TABLE I HERE]

From Table I, the total number of listed companies in 2013 was 615 and after excluding the companies, mentioned previously, the research obtained 407 companies as a sample. However, the research investigated the year 2008 (before-adoption period) and the year 2011

(after-adoption period), thus it required the companies listed in those years and among the 407 firms listed in 2013, there were 383 companies listed in 2008 and 392 companies listed in 2011.

Table II contains a summary of how the final sample for this study was obtained. The initial sample included 775 firm-years (383+392). Fourteen firm-years were eliminated due to missing data. The final sample consists of 761 firm-years, which 376 observations were drawn from the year 2008 and 385 were drawn from the year 2011.

[INSERT TABLE II HERE]

Financial and non-financial data of these sample companies was collected from corporate annual report available to the public via the Thai Securities and Exchange Commission of Thailand's (SEC) website and the SET Market Analysis and Reporting Tool's (SETSMART) website.

4.3 Model Specification

4.3.1 Earnings Management model

The research employed the absolute value of abnormal accruals to represent the level of earnings management. This absolute value was calculated from the Jones (1991) model modified by Kothari et al. (2005). First, the total accruals (TA) were computed. The model was illustrated that,

$$TA_{it} = [\Delta CA_{it} - \Delta Cash_{it}] - [\Delta CL_{it} - \Delta CM_{it}] - Dep_{it} \quad \dots\dots\dots (4)$$

Where TA_{it} is total accruals for firm i in year t ; ΔCA_{it} is current assets for firm i in year t less current assets in year $t-1$; $\Delta Cash_{it}$ is cash in year t less cash in year $t-1$; ΔCL_{it} is current liabilities for firm i in year t less current liabilities in year $t-1$; ΔCM_{it} is current maturities of long term debt for firm i in year t less current maturities of long term debt in year $t-1$; Dep_{it} is depreciation and amortization expenses for firm i in year t ; i is 1, 2, ..., N , firm index; and t is 1, 2, ..., T , year index for the years included in the estimation period.

Then, the model coefficients were estimated by running the following cross-sectional regression.

$$\frac{TA_{it}}{M_{it-1}} = \beta_1 + \beta_2 \frac{1}{M_{it-1}} + \beta_3 \frac{\Delta Sales_{it} - \Delta P\&E_{it}}{M_{it-1}} + \beta_4 \frac{\Delta Rec_{it}}{M_{it-1}} + \beta_5 \frac{PPE_{it}}{M_{it-1}} + \beta_6 \frac{NI_{it}}{M_{it-1}} + \epsilon_{it} \quad \dots\dots\dots (5)$$

where TA_{it} is the total accruals in year t for firm i ; A_{it-1} is the total assets at $t-1$; $\Delta Sales_{it}$ is the change in sales in year t for firm i ; ΔRec_{it} is the change in receivables in year t for firm i ; PPE_{it} is the net property plant and equipment in year t ; NI_{it} is the net income in year t for firm i ; ϵ_{it} (labeled as AEM) is the abnormal total accruals in year t for firm i .

Finally, data calculated from the first and second models was replaced in the following model in order to find the accrual earnings management (AEM), the abnormal accruals of firms. From the model, the AEM was actually the residual generated from the regression.

$$AEM_{it} = \frac{TA_{it}}{M_{it-1}} - \beta_1 - \beta_2 \frac{1}{M_{it-1}} - \beta_3 \frac{\Delta Sales_{it} - \Delta P\&E_{it}}{M_{it-1}} - \beta_4 \frac{\Delta Rec_{it}}{M_{it-1}} - \beta_5 \frac{PPE_{it}}{M_{it-1}} - \beta_6 \frac{NI_{it}}{M_{it-1}} \quad \dots\dots\dots (6)$$

4.3.2 The Regression Model

In order to determine the influence of IFRS adoption on earnings management, the research employed the multiple regression analysis. The independent variable which the research focused was the IFRS adoption period. This research divided the IFRS adoption period into two periods: 1) before the IFRS adoption (2008) and 2) after the IFRS adoption (2011) and in the model, the variable was assigned 1 representing the after-adoption period and 0 otherwise.

Apart from the IFRS adoption period variable, other factors found to be related to earnings management were also included in the model in order to control for their effect on earnings management similar to other previous research (Wan Ismail et al., 2013; Doukakis, 2013; Zèghal et al., 2011; Al-Fayoumi et al., 2010; Yang et al., 2008; Farooq and El Jai, 2012). These variables included:

1.) Firm size. Generally, large firms tend to have a high proportion of outside ownership and also tend to separate between ownership and management. Based on an agency theory, these firms need a strong internal control system to supervise management performance, suggesting that management would have difficulties in managing earnings. Therefore, an association between firm size and the level of earnings management is negative. Many studies (Sun & Rath, 2009; Swastika, 2013) empirically confirmed this significantly negative association.

2.) Profitability ratio and Revenue growth. In the capital market, earnings is one of the information accounted by investors in their decision making and consequently, managers manipulate earnings for capital market purposes in order to obtain capital with low cost (DeAngelo, 1986; Cohen & Zarowin, 2008; Kothari et al., 2012). Companies with revenue growth tend to maintain this sustainable growth to keep investors' expectation and some even more increase more growth to raise the value of their shares and attract more investors to meet firms capital needs (Doukakis, 2013). Previous studies (Wan Ismail et al., 2013; Doukakis, 2013) found that earnings management is positively related to firm growth and their profitability.

3.) Leverage. Based on an agency theory (Jensen and Meckling, 1976), management is motivated to manage earnings for debt covenant purpose. Watts and Zimmerman (1990) further explain that highly leveraged firms are more likely to engage in earnings management upwards to avoid violating debt covenants. Many studies (Klein, 2002; Usman & Yero, 2012) confirmed this statement as they found that firm leverage has a positive impact on earnings management.

4.) Auditor types. An agency theory states that in order to reduce agency costs, the control system is required to monitor management work. External auditors are also considered as a monitoring device in this control system. Furthermore, high standards of auditing performance are likely to strictly observe management work (Chung et al., 2005; Johl et al., 2007). Therefore, this study predicts that the high audit quality is negatively associated with earnings management. In this study, the high audit quality refers to a big four international auditing firms (i.e. Deloitte, KPMG, Earnst & Young, and Pricewaterhouse Coopers).

5.) Board of directors. The board of directors is directly responsible for overseeing all work done by management. It is viewed as the ultimate internal monitor of management. Therefore, the independent and efficient board of directors plays an important role in income-increasing discretionary accruals constraint for management (Peasnell et al., 2005). Therefore, the number of board of directors possibly has a negative association with earnings management.

6.) Ownership structure. The ownership structure, including block-holder ownership, insiders ownership, and free-holding share ownership, is related to management incentives to manipulate reported earnings. Block holders refer to shareholders having the highest proportion of total shares of a firm. Therefore, the degree of separation between management and ownership is low and consequently, earnings can be managed intentionally for the benefits of management. Thus, there is possibly positive relationship between earnings management and block shareholders. The insider ownership is also expected to have a positive association with earnings management. Based on a positive accounting theory, when management benefits are associated with firm performance, management tends to increase firm performance (Watts and Zimmerman, 1990) and earnings management is one of the tools applied for this purpose. Al-Fayoumi et al. (2010) and Yang et al. (2008) had tested this positive relationship between earnings management and insider ownership. On the other hand, free-holding share ownership is expected to have negative relationship with earnings management. Free-holding share ownership indicates a high degree of separation between ownership and control. Therefore, high free-holding share ownership requires efficient monitoring tool and thus, management is overseen closely. Al-Fayoumi et al. (2010) and Yang et al. (2008) had investigated this negative association between the two variables.

7.) Negative earnings. Regarding the signaling theory, companies tend to avoid signaling their negative performance to investor because the message can lead the investor to have negative attitude to the company's corporate financial position, with the result that the cost of capital increase (Ross, 1977). Previous studies (Burgstahler & Dichev, 1997; Jaggi & Leung, 2007) agreed with this statement as they found the significantly positive relationship between earnings management and negative earnings.

8.) Industry types. Each industry has its own environment, particularly regulatory environment. The regulations can be employed by the government to transfer wealth from firms and thus cause political costs to the firms. Therefore, based on the political cost hypothesis (Watts & Zimmerman, 1986) management is motivated to manage discretionary accounting methods to reduce their political costs. The research expected the significant relationship between industry and earnings management.

Therefore, a cross-sectional multiple regression model was structured as follow.

$$\begin{aligned}
 \text{Abs_AEM}_{it} = & \beta_0 + \beta_1 \text{LEV}_{it} + \beta_2 \text{Size}_{it} + \beta_3 \text{Growth}_{it} + \beta_4 \text{ROE}_{it} + \beta_5 \text{AUD}_{it} + \beta_6 \text{LOSS}_{it} + \beta_7 \text{Industry} + \beta_8 \text{Year} + \beta_9 \text{Constant} + \epsilon_{it}
 \end{aligned}
 \tag{7}$$

Where

- Abs_AEM_{it} = the absolute abnormal accruals in year t for firm i
- LEV_{it} = the total debt to total asset in year t for firm i;
- Size_{it} = the nature logarithm of the total asset in year t for
- Growth_{it} = the growth of total revenue in year t for firm i;
- ROE_{it} = the return on equity in year t for firm i;
- AUD_{it} = a dummy variable equal to 1 if the firm are audited by a big four audit firm in year t for firm i, 0 is otherwise;
- LOSS_{it} = the absolute value of negative earnings in year t for firm i;

BOD_{it}	=	the number of directors on BOD in year t for firm i;
INS_{it}	=	the number of shares held by the insider (chairman and CEO) at year-end scaled by total outstanding shares of the firm in year t for firm i;
$CONC_{it}$	=	the number of shares held by highest block-holding scaled by total outstanding shares of the firm in year t for firm i;
$FREE_{it}$	=	the number of shares held by free float-holding scaled by total outstanding shares of the firm in year t for firm i;
$IFRS_i$	=	a dummy variable that is equal to 1 for the years 2011 (the financial report is prepared under IFRS representing the IFRS adoption period) for firm i, 0 is otherwise;
$INDUS_{ki}$	=	a dummy variable for industry k for firm i, 0 is otherwise (the industries included agribusiness, consumer, industrial, property, natural resource, service, and technology sectors but in the model, technology sector was excluded as the reference category in order to avoid the perfect collinearity).

5. Research Results and Discussion

5.1 The Descriptive Statistics

Table III presented the descriptive statistics of the variables used in this study across the before and after IFRS adoption periods. In both periods, the sample companies seemed to manage earnings either downward or upward, as the minimum and maximum values of accrual earnings management showed the negative values (-1.80 and -1.04) and the positive sign (2.09 and 0.83) respectively.

Also, the results of the magnitude of earnings management, the absolute abnormal accruals (Abs_EM), revealed that after the IFRS adoption, accrual earnings management increased as the Abs_EM grew from 0.08 to 0.091. The results of other variables showed that the sample's characteristics were varied. For example, in the before IFRS adoption period, the sample had the minimum leverage ratio of 0.005 and the maximum of 3.623.

[INSERT TABLE III HERE]

5.2 The Pearson Correlation

The research used the Pearson correlation to test the degree of relationship among the variables in the model. Table IV showed that there were statistically significant relationships between earnings management and other variables, either negative or positive relationship. These variables were such as the leverage ratio, the revenue growth, the auditor type, and the negative or small profit. However, the IFRS adoption period seemed to have no significant associated with the Abs_EM. Also, the result revealed that there were statistically associations among the independent variables but the correlation was unlikely to be strong enough to cause a serious problem of multicollinearity, as Field (2004) suggested that the degree of correlation reaching eight or nine could bring the serious concern.

[INSERT TABLE IV HERE]

5.3 The Influence of IFRS Adoption on Earnings Management

Table V presented the results of the multicollinearity test and the OLS regression model. From the table, the Tolerance and the Variance Inflator Factor (VIF) values statistically confirmed that the regression model had no serious multicollinearity problem, because the values were not greater than 10 for the VIF values and more than 0.20 for the Tolerance values (Field, 2004).

Overall, the independent variables in the regression model successfully explained the variation of earnings management for 34.3 percent (R square). The adjusted R square confirmed that the model seemed to be well generalized as the R square differed from the adjusted R square for only 1.5 percent (34.3 less 32.8 percent). The F test was also statistically significant ($p < 0.000$), meaning that the model significantly helped to improve the ability to explain the outcome variable. Furthermore, as the Durbin-Watson statistic was 1.804, which was close to 2, the assumption of independent errors had almost certainly been met.

Focusing on the IFRS adoption period variable (IFRS), the results showed that the coefficient of the IFRS variable, 0.017, was statistically significant at 95% confidence interval, suggesting that the IFRS adoption was positively associated with earnings management. This suggested that Thai firms tended to engage in earnings management more after the IFRS adoption, implying that the adoption in Thailand was likely to decrease earnings quality of Thai firms rather than increase and consequently, possibly reduced the quality of financial reports. This implication possibly initiated a warning sign to the Thai regulators that their expectation to increase the creditability of Thai financial reports might not be reached effortlessly by just fully adopting the IFRS.

The significant relationship between the IFRS adoption and earnings management was also consistent with previous researchers (e.g. Callao and Jarnea, 2010; Li and Park, 2012). This provided supporting empirical evidence that a country with an emerging capital market and concentrated ownership structure was likely to unsuccessfully increase earnings quality by adopting IFRS. This was probably because Thai institutional structure provided Thai firms' management little incentive to prepare financial reports for firm's economic purpose. Chua et al. (2012) reviewed literature and suggested that accounting quality was determined by a country's institutional structure, for the structure framed management incentives to prepare financial reports; therefore, in countries where firms have no incentive to be transparent and weak investors' protection, management would have less incentive to adopt the IFRS for companies' benefits but apply the standards for management opportunistic purposes.

Several controlled variables in the regression model were also statistically significant associated with earnings management. The leverage ratio, revenue growth, profitability ratio and negative earnings variables had a significant positive relationship with earnings management, suggesting that if firms have a high value of these variables, they are likely to increase earnings management behavior. These results were consistent with much research (Klein, 2002; Usman and Yero, 2012; Doukakis, 2014; Wan Ismail et al., 2013) and strengthen the long-established theories used in this research area (e.g. the agency theory and the positive accounting theory). Noticeably, both profitability ratio (ROE) and negative earnings have a significantly positive relationship with earnings management whereas these two variables represent contrasting performance of the company. The results suggest that both a company with high profitability and

a company with high loss are likely to manage earnings. This is because these two kinds of company have the same incentive to manage earnings, i.e. for the capital market purpose. A company with high profit manages earnings to maintain its consistent profit while a company with high loss manages earnings to increase profit. Also, the research applied the absolute abnormal accruals, representing magnitude of earnings management, in the regression model, did not indicate the sign of either upward or downward earnings management.

Other controlled variables, including firm size and industry type, showed a statistically negative relationship with earnings management. For the firm size variable, the negative coefficients indicated that small firms engaged in high accrual earnings management practices, consistent with previous research (Swastika, 2013; Sun and Rath, 2012; Doukakos, 2014).

Considering the statistical significance of the industry variable, the research revealed that firms in an agribusiness sector was likely to manage earnings significantly less than the benchmark sector, i.e. the technology sector, as the coefficient of this sector was statistically significant less than 10% interval. The results implied that companies in different industries would have different earnings management behaviors.

[INSERT TABLE V HERE]

6. Conclusion and Recommendations

Thailand where the IFRS had been fully adopted since 2011 was questioned of earnings quality after the adoption, as it had an emerging capital market and concentrated ownership structure of which some researchers (Rudra and Bhattacharjee, 2012) suggested that the IFRS adoption was not an effective tool to increase earnings quality in a country. To address the question, the research employed the modified Jones model (1991) by Kothari et al. (2005) to measure accrual earnings management, representing the earnings quality, and the multiple regression analysis to determine the influence of IFRS adoption on earnings management. The data of the sample of listed companies in the before and after IFRS adoption period was gathered. There were 761 Thai listed firm-year observations, which 376 observations were drawn from the year 2008 and 385 were drawn from the year 2011.

The descriptive statistics showed that the magnitude of earnings management in the after adoption period was higher than the before adoption period. The regression models confirmed that the IFRS adoption influenced earnings management in Thai firms, as the model showed the statistically significant association between earnings management and the IFRS adoption period, suggesting that the different periods could explain the variation of earnings management of Thai companies.

The findings notified Thai regulators to rethink about the effectiveness of IFRS in increasing earnings quality, i.e. reducing earnings management. The IFRS could be either the effective tool in enhancing the earnings quality because the standards provided financial information on the basis of relevance to economic decisions and faithful presentation, or the selective tool providing the discretion for management to prepare financial reports for its opportunism. From the research results, currently, Thai firms were likely to employ the IFRS as the latter tool.

In emerging countries, their institutional structure seemed to be the main obstacle in effectively adopting IFRS. The structure, specifically with an emerging market and concentrated shareholders, has not sufficiently encouraged firms to be concerned with investors' interests and thus management has no incentive to prepare financial reports in order to protect investors' benefits. Nevertheless, many developing countries which decided to fully adopt the IFRS had acknowledged this problem and paid much effort to boost their capital market and issued the regulations for investors' right protection with rigorous compliance.

These efforts were also arisen in Thailand but their impact has not been clearly emerged since Thai firms are still in the credit-based financial system and the regulatory framework for investors' protection has not been rigorously complied. The research results showed the increasing earnings management after the IFRS adoption, implying that earnings quality might partly reflect economic reality of Thai firms and some business transactions possibly realized and measured due to the management discretion in order to gain its opportunism. As such, users of financial reports, particularly Thais, were required to be cautiously in analyzing financial reports.

The results from the regression model also strengthened the long-established theories (e.g. agency theory and positive accounting theory) relating to earnings management and its incentives. The results showed that the controlled factors were statistically significant associated with earnings management and this was consistent with several prior studies (Swastika, 2013; Sun and Rath, 2012; Doukakis, 2014).

Although the research greatly contributed to the international discipline, particularly for the IFRS adoption in emerging countries, it has some limitations needed to be concerned. This research was concerned with the influence of IFRS adoption on earnings quality and used accrual earnings management to reflect the quality. The earnings quality might not be reflected in its multiple attributes, as Chua et al. (2012) suggested that earnings quality was a multi-dimensional concept and might require earnings quality metrics in the measurement. However, the current research was considered to be a pioneer study of this particular issue in Thailand, since currently no research had specifically investigated a question of the earnings quality after the adoption in Thailand. The use of accrual earnings management would encourage other researchers to undertake future research in order to further confirm the results.

Furthermore, as stated above that during the period studied, the rigorous compliance and the process of transforming financial system to the capital market-based system was still carried out, the research results probably showed unfavourable empirical evidence for the proponent of the IFRS adoption. Nevertheless, in the future when the systems in Thailand are completely transformed, the country will be a good object of the research in this area again in order to verify whether or not a country with a strong capital market and widespread shareholders will fully gain incremental economic benefits from the IFRS adoption. The future research in this area in Thailand possibly reveals the different results from this current research, which may be strengthen the proponent of the IFRS adoption.

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Appendices

Table 1: The sample selection.

	No. of Firms
SET listed companies*	615
Exclude	
Financial industry	(57)
Property fund	(43)
Medium-sized enterprise	(87)
Rehabilitation plan	(21)
Total Sample	407

*Total SET's listed companies as of August 8, 2013.

Table 2: Sample selection procedure.

	No. of Firms	Total
Pre- IFRSs adoption period:		
Sample as of December 31, 2008	383	
Post- IFRSs adoption period:		
Sample as of December 31, 2011	392	
Firms included in this study		775
Less: Firms due to missing data		(14)
Final Sample: Number of Firm-Year Observations		761

Table 3: Descriptive statistics.

	IFRS									
	Before IFRS adoption (2008) (n=376)					After IFRS adoption (2011) (n=385)				
	Mean	Median	Standard Deviation	Min	Max	Mean	Median	Standard Deviation	Min	Max
Abs_EM	0.08	0.05	0.15	0.00	2.09	0.09	0.06	0.11	0.00	1.04
EM	-0.05	-0.04	0.17	-1.80	2.09	0.00	0.01	0.15	-1.04	0.83
Lev	0.44	0.44	0.28	0.01	3.62	0.46	0.46	0.25	0.00	1.60
Size	3.54	3.44	0.63	2.17	5.95	3.63	3.54	0.66	2.17	6.15
Growth	15.48	6.49	51.87	-68.74	406.99	11.35	3.96	47.56	-61.63	718.76
ROE	0.01	0.05	0.50	-8.50	3.67	0.04	0.04	0.11	-0.87	0.63
Loss	0.05	0.00	0.45	0.00	8.50	0.02	0.00	0.08	0.00	0.87
BOD	10.59	10.00	2.71	4.00	23.00	10.37	10.00	2.64	5.00	21.00
INS	18.07	9.82	21.30	0.00	76.24	18.02	8.72	20.98	0.00	77.71
CONC	35.77	32.53	18.27	4.25	92.92	36.26	33.12	17.98	4.25	95.76
Free	38.32	34.31	17.97	2.20	100.00	39.83	37.15	18.17	2.21	100.00

Table 4: Pearson Correlation Matrix

	Abs AEM	Lev	size2	Growth	ROE	AUD	loss3	BOD	INS	CONC	Free	IFRS	Agro	Cons	Indus	Prop	Res	Ser
Abs AEM	1																	
Lev	.190**	1																
size2	-.055	.159**	1															
Growth	.170**	.002	.089*	1														
ROE	-.001	-.487**	.082*	.165**	1													
AUD	-.085*	-.027	.365**	.011	.083*	1												
loss3	.212**	.478**	-.114**	-.071	.913**	-.077*	1											
BOD	-.078*	-.107**	.333**	.012	.089*	.210**	.115**	1										
INS	-.073*	-.096**	-.264**	-.019	.039	.216**	-.044	.222**	1									
CONC	-.053	-.133**	.041	.026	.088*	.105**	-.085*	.121**	.299**	1								
Free	.150**	.239**	.063	.038	.117**	.145**	.130**	-.088*	.191**	-.605**	1							
IFRS	.043	.040	.068	-.041	.041	.011	-.060	-.041	-.001	.014	.042	1						
Agro	-.080*	-.057	-.025	.073*	.057	.160**	-.027	.070	.096**	.075*	.143**	-.004	1					
Cons	-.095**	-.192**	-.165**	-.061	.014	-.044	-.028	.122**	.012	-.049	.146**	-.004	.117**	1				
Indus	-.034	-.027	-.108**	-.004	-.057	.006	.063	-.058	.068	.102**	.108**	-.012	.174**	.169**	1			
Prop	.016	.182**	.096**	-.041	.013	-.031	-.027	.144**	-.002	-.092*	.197**	-.003	.180**	.175**	.259**	1		
Res	.074*	.029	.227**	.135**	.014	.038	-.018	.091*	.111**	-.019	.130**	.018	.094**	-.092*	.135**	.140**	1	
Ser	.054	-.060	-.043	-.002	.010	.156**	-.009	.109**	-.049	-.040	.021	.000	.182**	.177**	.262**	.272**	.142**	1

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

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

Table 5: OLS regressions of abnormal accruals on IFRS

Model	<u>Unstandardized Coefficients</u>		Standardized Coefficients	t	Sig.	<u>Collinearity Statistics</u>	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	.073	.037		1.975	.049		
Lev	.086	.019	.171	4.592	.000**	.636	1.572
Size	-.019	.008	-.093	-2.470	.014*	.624	1.603
Growth	1.747E-04	8.533E-05	.064	2.047	.041*	.893	1.120
ROE	.444	.029	1.190	15.489	.000**	.150	6.680
AUD	-.016	.009	-.058	-1.696	.090	.756	1.323
Loss	.502	.032	1.204	15.833	.000**	.153	6.540
BOD	.001	.002	.028	.785	.433	.713	1.403
INS	-3.659E-04	2.148E-04	-.057	-1.703	.089	.781	1.280
CONC	3.384E-04	3.032E-04	.045	1.116	.265	.533	1.875
Free	.001	3.061E-04	.069	1.688	.092	.526	1.903
IFRS	.017	.008	.063	2.105	.036*	.976	1.024
Agro	-.065	.019	-.150	-3.501	.000*	.482	2.074
Consumer	-.048	.019	-.108	-2.466	.014	.459	2.177
Industrials	-.039	.016	-.116	-2.394	.017	.379	2.636
Property	-.027	.016	-.082	-1.713	.087	.382	2.617
<u>Resourse</u>	.006	.021	.012	.299	.765	.581	1.723
Service	-.017	.016	-.052	-1.044	.297	.353	2.835

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

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

Model Summary	R	R square	Adjusted R square	F	Sig.
	0.586	.343	0.328	22.847	0.000

IMPACT OF GENDER IN SELECTION CRITERION OF CAREER DECISION: A STUDY ON PERCEPTION OF YOUTHS IN SYLHET CITY, BANGLADESH

by

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Abstract

The objective of the paper is to examine the perception of youths regarding their career decisions. In all 235 sample youths have been selected from tertiary level students of different educational institutions in Sylhet for collecting the primary data, out of which male is 122 and female is 113. The researchers used stratified sampling by considering the age, gender and educational background to collect primary data. The necessary secondary data were collected from relevant online and offline study materials. The collected data were processed by using Microsoft Excel 07 and SPSS 19, analyzed and interpreted afterwards to determine whether gender discrimination have influences on the selection criteria of career decisions by youth generation. Out of the total samples both the genders have opined same set of factors for selecting their career with similar extent and weight. The respondents were of the opinion that a prejudice free environment should be ensured with a view to creating an effective workplace where employees can contribute with their full potentials without facing any impasse. A significance difference has been found between men and women in selecting their career as women are more concerned about gender friendly environment in the workplace.

Keywords: Women Career, Gender Friendly Environment, Job security, family Suggestion.

1. Introduction

In last decade women' entrance in the corporate world has been increased remarkably. Even some women have achieved the highest position in their career. Although in the traditional societal structure the perception is that women career should be focused on raising the children and taking care of other family members. In the corporate world too, it is most often found that in the name of survival through competition different obstacles are created for women like odd work hour, overtime or over week etc. Sometimes, women have to give explanation and get approval from family for their long hour absence from home or even to go outside the town for business trip. Even in the workplace sometimes women face discriminatory behavior by the male counterparts in different forms, such as, lack of refreshment room, dining or prayers room. Therefore, advancement in the career is a challenging task for the female workers in the male dominated enterprises. In the high competitive job markets women are generally mal-perceived and it is holding those males are better to discharge the responsibilities as compared to their female counterparts. The research study shows that youthful appearance of women is more demanded by the employers than average looking women, as the common women are facing more trouble in getting any job (Hasan, 2012). It needs to invest more in beauty care to maintain their position in the job. Although, the presence of women in the decision making bodies of corporations in many cases may give different viewpoint to the decision makers that may create value. Thus, personal and organizational factors play crucial role in selecting the career of male and female youths which are influenced by their selective perceptions. The present study aims to explore about the gender impact in consideration of required ability, suggestion of family, perception about job environments are the important personal factor to decide about the careers and the return from the career in terms of compensation, advancement, flexibilities, status, security, use of knowledge and skill, prospects of dream realization are other important organizational factors in choosing their careers.

2. Literature Review

The selection of right career is a major issue of human life because a wrong selection brings sufferings in the long tenure. Career is generally associated with the employment in exchange of return and associated with single profession. Career selection is the process of career exploration and choice a specific one that drive him the future professional life (Zaidi. Ikabl 2012). The career selection is influenced by environment, family attachment, compensation and personality of a specific person (Davidson 2010). Borchert (2002) added opportunity with environment and personality with the other factors. Ferguson (2000) & Schreiner (2010) emphasized on personality and Gioia (2010) on parent's expectation, peer pressure, uniformed decision and poor self image. Career selection is a matching process between self and work, a decision making task of selection among alternatives. Some occupations are seem to be stereotyped for man and other for women (Alpert and Breen 1989) though it is declining among educated women recently (White J, Kurczek, brown and White B, 1989). The career option was found as narrower for women than men (Betz and Fitzgerald 1985). Women's preferences are oriented to occupations of higher social contact than technical elements (Lightbody, Siann, Tait and Walsh, 1997). Previously women preferred jobs of lower levels and less prestigious than men (Epstein and Bronzaft 1974). They perceived about their abilities as less than men that

drove them to less prestigious jobs (Betz and Fitzgerald, 1979) but due to change in attitudes women are preferring jobs of better pay and better prospects (Harmon 1989). Now they are able to increase their feelings about their competency (Betz and Fitzgerald, 1979) but still they consider the parental opinion regarding their selection of most prestigious jobs (Auster and Auster, 1989). Due to the social norms women's preference is affected by work-family conflict (Karpicke 1980). Now women are considering their occupation as realization of dreams and expressing self-identities in the society.

3. Research objective

The main objective of the paper is to examine the impact of gender in consideration of factors of career selection by male and female. The specific objectives are:

3.1 To find the profile of the respondents to justify the research and to express the feelings of youths.

3.2 To examine different factors of career selection like requisite qualities for specific career, the returns from the career, the working environment, the scope of optimum devotion and future prospects etc.

3.3 To provide some imperative to involve the less participating group in productive career by ensuring an environment without any gender discrimination.

4. Methodology

4.1 Research Design

The research was conducted to know perception about the factors considered by the youths of male and female to select of their future career at their preparation level, and to search whether there is any difference in consideration between them. So this is categorized as a descriptive analytical applied research. The different hypotheses in this regard are to be proved by this research are:

Hypothesis1: There is no significant difference between men and women in considering the requisite qualities and matching it with the candidates' ability.

Hypothesis 2: There is no significant difference between youths of both genders in considering the opinions, suggestions and pressures of family members in selecting the careers.

Hypothesis 3: There is no significant difference between men and women in considering the job environment in the yardstick of gender friendliness of each career.

Hypothesis 4: There is no significant difference between men and women in considering the compensation packages of different careers.

Hypothesis 5: There is no significant difference in considering the scope of advancement in each career under consideration by prospective men and women.

Hypothesis 6: There is no significant difference between men and women in considering flexibilities provided by each career in discharging the responsibilities.

Hypothesis 7: There is no significant difference between men and women in considering social status provided by each career.

Hypothesis 8: There is no significant difference between men and women in considering job security provided by each career.

Hypothesis 9: There is no significant difference between men and women in considering opportunity of using intelligence of education of the candidates' for personal and organizational advancement provided by each career.

Hypothesis 10: There is no significant difference between men and women in considering prospects of realization of dream of every youth provided by each career.

4.2 Sampling Design

To know the perceptions of youths of different age, gender and education range, the researchers used stratified random sampling of prospective youths of that region and selected the range of age, gender and education by ensuring the consistency with the objective of the research to collect the primary data.

4.3 Sample Size

The sample size is determined by estimation of confidence level at 95%, the acceptance of maximum sampling error at 6.5% and the conservative policy on success by 50% for that infinite source of population. By calculating through the accepted formula ($n = z^2 pq / E^2$), the sample size is determined at 235.

4.4 Data Collection

The study was done in Sylhet city that is located on the banks of the Surma River and is surrounded by the Jaintia, Khasi and Tripura hills of India. It is the head quarter of both Sylhet Division and Sylhet District. The primary data was collected from 235 youths of different educational institutions of Sylhet city by a well designed questionnaire.

4.5 Reliability and validity of data

By finding out the Cronbach Alpha as 0.66, the reliability of data is ensured and the questionnaire to collect data was examined by the senior researchers before collecting data to be ensured about the validity of research and the result of such examination was found positive about the validity.

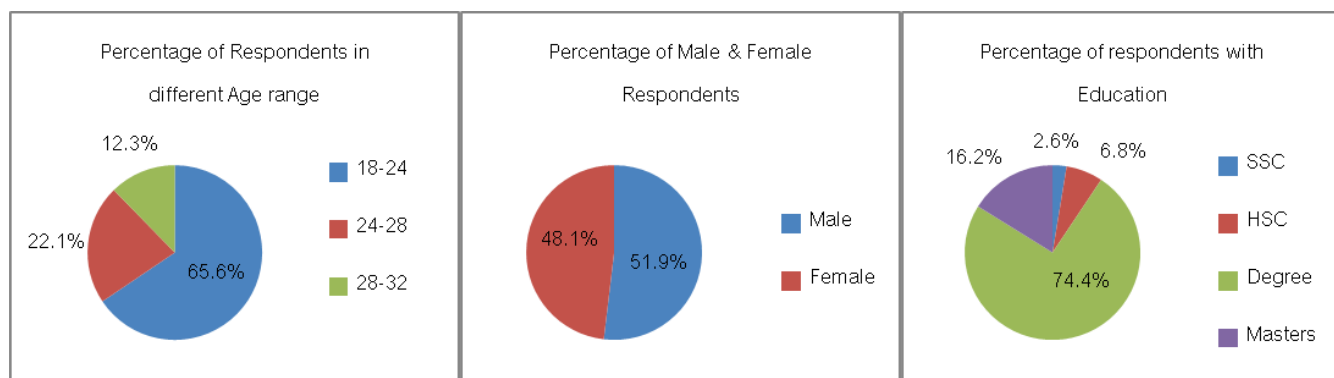
4.6 Data Analysis

The collected data were processed through Microsoft Excel 07 and SPSS 19. The outputs in the form of Cross tabulation and Chi-Square test were analyzed by the researchers subjectively and objectively to reach in a conclusion.

5. Findings

Status of the respondents carries importance in this research to know the perception of the respondents about the selection criterion of their career in coming future. So composition of the respondents on age, gender and education levels is to be considered to ensure proper representation of youths in examining their perception.

Figure 1 Frequency Table - Profile of Respondents



Source: Outputs of SPSS of the Data from Field Survey conducted on May-Aug 2014

The starting age of career is ranged from 18 to 32 in our country. The maximum age limit for fresher in public service is 30, where up to 32 people must settle him in any career. The most common age range in diversified thinking about job is 18 to 24. After that the field is becoming limited because of failure in attaining different criteria imposed by employers. The representing sample is 18-32 is most effective in this research and 65.6% from the age group of 18-24 is appropriate to get their opinion about selection of career. The increasing numbers of female in different careers is to be emphasized in such study and same proportion of male and female is included in the sample. The education level of respondents is referred as prospective field of job seekers. The 74.4 percent of undergraduate level has given their opinion about career selection to increase the validity of that research. Thus the sample is properly representing the population of job seekers of different background with due weight to the specific section.

Table 1 Requisite qualities of career considered by Male and Female Youth

Gender	Description	Gender Friendliness					Total
		very Insignificant	Insignificant	Average	Significance	Strong Influence	
Male	Count	2	8	12	47	53	122
	Percent	1.6%	6.6%	9.8%	38.5%	43.4%	100%
Female	Count	1	6	12	44	50	113
	Percent	0.9%	5.3%	10.6%	38.9%	44.2%	100%
Total	Count	3	14	24	91	103	235
	Percent	1.3%	6.0%	10.2%	38.7%	43.8%	100%

Source: Outputs of SPSS of the Data from Field Survey conducted on May-Aug 2014

Entrance in the job is limited by the requisite qualities imposed by the employers to apply for that career. It is true both for employment and for business. Every career needs some qualities to fulfill before compete to enter. All youths are supposed to realize that. So they are in the process of acquiring the qualities to enter the career academically or logistically. There should not be any difference between men and women in the perception of that factor of consideration. Among the youth participants 83.1% of female and 81.9% of male considered that factor in above significance level. The rest may think about the malpractices that are very prevalent in our country.

Table 2 Requisite qualities of career considered by Male and Female Youth - Chi-Square Tests

Type	Value	df	Asymp. Sig. (2-sided)
Linear-by-Linear Association	0.155	1	0.694

Sufficiently the Chi-Square test verifies that there is no significant difference in the consideration of that factor-requisite quality to compete in a job as it is a systematic matter and the organization need to fulfill their vacancies by the right persons. Society also demands right entrepreneurs in right field to uplift the status of economy of that country.

Gender & Suggestion about Job: Family suggestion has great influences on the youths in their decision making process regarding selection of careers. The youths have to take their suggestion and guidelines from their parents.

Table 3 Opinion of family members considered by Male and Female Youth - Cross tabulation

Gender	Description	Suggestions					Total
		very Insignificant	Insignificant	Average	Significance	Strong Influence	
Male	Count	4	10	25	57	26	122
	Percent	3.3%	8.2%	20.5%	46.7%	21.3%	100%
Female	Count	1	9	21	50	32	113
	Percent	.9%	8.0%	18.6%	44.2%	28.3%	100%
Total	Count	5	19	46	107	58	235
	Percent	2.1%	8.1%	19.6%	45.5%	24.7%	100%

Source: Outputs of SPSS of the Data from Field Survey conducted on May-Aug 2014

The girls are comparatively more depended on their parents' guidelines than the boys. Among the girls (72.5%) considered the suggestion as above average significant level against 68.0% of boys.

Table 4 Opinion of family members considered by Male and Female Youth: Chi-Square Tests

Type	Value	df	Asymp. Sig. (2-sided)
Linear-by-Linear Association	1.728	1	0.189

The Chi-Square test verifies that there is no significant difference in considering the factor of family suggestion by male and female. So all are opt to taking the suggestion of parents because the parents have the vast experience in different career potentials and can suggest properly in the decision making process of youths.

Table 5 Job Environment in the Yardstick of Gender Friendliness considered by Male and Female Youth-Cross tabulation

Gender	Description	Gender Friendliness					Total
		very Insignificant	Insignificant	Average	Significance	Strong Influence	
Male	Count	21	29	9	38	25	122
	Percent	17.2%	23.8%	7.4%	31.1%	20.5%	100%
Female	Count	2	5	14	37	55	113
	Percent	1.8%	4.4%	12.4%	32.7%	48.7%	100%
Total	Count	23	34	23	75	80	235
	Percent	9.8%	14.5%	9.8%	31.9%	34.0%	100%

Source: Outputs of SPSS of the Data from Field Survey conducted on May-Aug 2014

Gender friendly environment is an important requirement especially for female to facilitate them to do their job. So, all the female respondents consider that factor in above significant level and conscious, sympathized part of male respondents should support it, especially those who have spouses in the careers. In absence of gender friendly environment it is almost impossible for the female counterparts to carry on in their career in that conservative minded people dominated region. Life style of people is changing so fast, women are increasingly interested in their own career because maintaining the living standard is also going to be impossible by the income of single person in a family. So it supposed that all youths either male or female should consider that factor equally in very near future. Existence of some sort of stereotype idea about the notion that men should work outside and women in home management makes the male youth not to bother about the gender friendly environment in the workplace. It is found that 81.5% of female consider that factor in above significance level against 51.6% of male respondents.

Table 6 Job Environment in the Yardstick of Gender Friendliness considered by Male and Female Youth-Chi-Square Tests

Type	Value	df	Asymp. Sig. (2-sided)
Linear-by-Linear Association	38.369	1	0.000

Consideration of gender friendly environment by the youths of different gender is found as significantly different by Chi-square test. But the researchers perceived that this difference will be faded away soon as the attitudes of the youths towards career is fast changing and the participation of women in the productive works is increasing rapidly.

Table 7 Compensation packages of the career considered by Male and Female Youth - Cross tabulation

Gender	Description	Compensation					Total
		very Insignificant	Insignificant	Average	Significance	Strong Influence	
Male	Count	4	9	22	49	38	122
	Percent	3.3%	7.4%	18.0%	40.2%	31.1%	100%
Female	Count	2	13	13	49	36	113
	Percent	1.8%	11.5%	11.5%	43.4%	31.9%	100%
Total	Count	6	22	35	98	74	235
	Percent	2.6%	9.4%	14.9%	41.7%	31.5%	100%

Source: Outputs of SPSS of the Data from Field Survey conducted on May-Aug 2014

The female consider the compensation package a bit more (75.3% against 71.3%) than the male counterpart as they have more opportunity cost of choosing the career outside the home (Table 7). The male youths are perceived to bear the overall responsibilities of all the members of the family. But the unavailability of sufficient job opportunities compels the youths to manage with the existing salary structure.

Table 8 Compensation packages of the career considered by Male and Female Youth- Chi-Square Tests

Type	Value	df	Asymp. Sig. (2-sided)
Linear-by-Linear Association	0.068	1	0.794

The chi-square test verifies that there is insignificant difference between men and women in choosing their career by considering the compensation packages because youth irrespective of gender do work for that consequence.

5.1 Advancement in career Considered by Youths of both genders

Table 9 Prospects of Advancement of the career considered by Male and Female Youth

Gender	Description	Advancement					Total
		very Insignificant	Insignificant	Average	Significance	Strong Influence	
Male	Count	1	8	17	52	44	122
	Percent	.8%	6.6%	13.9%	42.6%	36.1%	100%
Female	Count	0	13	17	47	36	113
	Percent	.0%	11.5%	15.0%	41.6%	31.9%	100%
Total	Count	1	21	34	99	80	235
	Percent	.4%	8.9%	14.5%	42.1%	34.0%	100%

Source: Outputs of SPSS of the Data from Field Survey conducted on May-Aug 2014

Advancement means more benefits, more social status and more responsibilities. Every person needs advancement in his career as men live by their dream and this dream is unlimited. Men do not want to stay at the same place year after year because at that time the experience, skill, qualities and also responsibilities are to be increased. Before choosing career people have to consider the advancement opportunities of that career. More prospects of advancement is preferable to almost all the people except the most lethargic one. The effect of stereotype nature of men and women is a little bit vigilant in respect of searching advancement opportunity in the job. Out of 235 respondents, 78.7% of men consider that factor significant in above average level against 73.5% of women.

Table 10 Prospects of Advancement considered by Male and Female Youth - Chi-Square Tests

Type	Value	df	Asymp. Sig. (2-sided)
Linear-by-Linear Association	1.078	1	0.299

It is also found from the Chi-Square test the issue of advancement is almost similarly influence the male and female candidates (Table 10). All persons need advancement in their carrier and there is no significant difference between men and women in this issue.

5.2 Flexibilities in Job Considered by Youths

Table 11 Scope of flexibility in discharging the duties of the career considered by Male and Female Youth - Crosstab

Gender	Description	Flexibility					Total
		very Insignificant	Insignificant	Average	Significance	Strong Influence	
Male	Count	3	17	13	47	42	122
	Percent	2.5%	13.9%	10.7%	38.5%	34.4%	100%
Female	Count	6	13	18	38	38	113
	Percent	5.3%	11.5%	15.9%	33.6%	33.6%	100%
Total	Count	9	30	31	85	80	235
	Percent	3.8%	12.8%	13.2%	36.2%	34.0%	100%

Source: Outputs of SPSS of the Data from Field Survey conducted on May-Aug 2014

Flexibility in work rules and conditions is also required by everyone. In selection of career, it is one of the major issues for the candidates as people need more relaxed lives and they have other duties of family and society along with the demand of personal recreations. So flexibility of career attracts almost all candidates in the process of selection of jobs. It is supposed that female should consider that matter more than their counterparts but men also need to engage their time and efforts outsides and inside the family, so the summation of need may be similar. So, 72.9% of male consider this factor in above average level of significance against 67.2% of female (Table 11).

Table 12 Scope of flexibility in discharging the duties of the career considered by Male and Female Youth-Chi-Square Tests

Type	Value	df	Asymp. Sig. (2-sided)
Linear-by-Linear Association	0.428	1	0.513

Chi-square test again verifies that there is no significant difference between men and women regarding the choice of career by considering the flexibilities positively (Table 12).

5.3 Status of Jobs

Table 13 Social Status of the career considered by Male and Female Youth - Crosstab

Gender	Description	Status					Total
		very Insignificant	Insignificant	Average	Significance	Strong Influence	
Male	Count	2	6	16	49	49	122
	Percent	1.6%	4.9%	13.1%	40.2%	40.2%	100%
Female	Count	2	8	12	48	43	113
	Percent	1.8%	7.1%	10.6%	42.5%	38.1%	100%
Total	Count	4	14	28	97	92	235
	Percent	1.7%	6.0%	11.9%	41.3%	39.1%	100%

Source: Outputs of SPSS of the Data from Field Survey conducted on May-Aug 2014

Stereotyped women choose less prestigious career for themselves, but the women of present world have changed their attitudes totally. They are more conscious about the status of job in their selection process. Unavailability of job may tie some of them to select less prestigious jobs but the expectations are different. Among the respondents 80.6% of women consider the job with high social status against 80.4% of men as above significant level.

Table 14 Social Status of the career considered by Male and Female Youth - Chi - Square Tests

Type	Value	df	Asymp. Sig. (2-sided)
Linear-by-Linear Association	0.123	1	0.726

The Chi-Square test successfully verifies that there is no significant different between the choice of career by men and women by considering the status of it (Table 14). That is women have reverted from the stereotyped concept of choosing less prestigious jobs for themselves by considering their ability and intention. But the limitations, environmental constraints and unavailability of suitable job may compel them to accept some jobs against their will.

5.4 Security of Jobs

Table 15 Security provided by the career considered by Male and Female Youth - Crosstab

Gender	Description	Security					Total
		very Insignificant	Insignificant	Average	Significance	Strong Influence	
Male	Count	0	14	18	44	46	122
	Percent	.0%	11.5%	14.8%	36.1%	37.7%	100%
Female	Count	2	5	12	46	48	113
	Percent	1.8%	4.4%	10.6%	40.7%	42.5%	100%
Total	Count	2	19	30	90	94	235
	Percent	.9%	8.1%	12.8%	38.3%	40.0%	100%

Source: Outputs of SPSS of the Data from Field Survey conducted on May-Aug 2014

Job security is one of the significant factors in the time of selection of jobs. It ensures the stability in people's life and people expect stability in their life. Women have to look after their kids, maintain their family and they have to do work outside. So, the work-life balance is a must for women than the men. So job security is expected by all the respondents irrespective of gender.

Table 16 Security provided of the career considered by Male and Female Youth - Chi - Square Tests

Type	Value	df	Asymp. Sig. (2-sided)
Linear-by-Linear Association	1.988	1	0.159

Chi-Square test verifies that there is no significant difference between the consideration of job security by men and women in the process of selection of career. Both of them prioritize that factor before the selection to make their life risk free because of huge unemployment rate in the country. In such environment life becomes risky in case of losing the job in any stage of matured life where people have to discharge more responsibilities in their personal lives.

5.5 Use of education and Skill:

Successfully completion of duties gives the inner spirit to the person in his career and it is one of most important source of satisfaction. By use of his skill and knowledge, the mastery of art of doing any job can be achieved. So every person need to use his knowledge and intelligence in his job. Every educated men and women seek the opportunity to use the acquired knowledge and their intelligence level in their work. So by analyzing the nature of work people seek the scope of using it.

Table 17 Scope of utilizing the intelligence and education by the career considered by Male and Female Youth - Crosstab

Gender	Description	Utilizing the intelligence and education					Total
		very Insignificant	Insignificant	Average	Significance	Strong Influence	
Male	Count	2	6	19	52	43	122
	Percent	1.6%	4.9%	15.6%	42.6%	35.2%	100%
Female	Count	1	7	18	54	33	113
	Percent	.9%	6.2%	15.9%	47.8%	29.2%	100%
Total	Count	3	13	37	106	76	235
	Percent	1.3%	5.5%	15.7%	45.1%	32.3%	100%

Source: Outputs of SPSS of the Data from Field Survey conducted on May-Aug 2014

Out of the respondents 77.8% of men and 77% women consider that factor in above average level of significance in the process of decision making regarding their career (Table 17).

Table 18 Scope of utilizing the intelligence and education by the career considered by Male and Female Youth - Chi - Square Tests

Type	Value	df	Asymp. Sig. (2-sided)
Linear-by-Linear Association	0.320	1	0.572

The Chi-Square rightly verified that there is no significance difference between men and women in considering that factor before selecting their career (Table 18).

5.6 Dream Realization by Career:

Table 19 Scope of Realization of Dream by the career considered by Male and Female Youth

Gender	Description	Scope of Realization of Dream					Total
		very Insignificant	Insignificant	Average	Significance	Strong Influence	
Male	Count	2	6	23	44	47	122
	Percent	1.6%	4.9%	18.9%	36.1%	38.5%	100%
Female	Count	1	8	15	50	39	113
	Percent	.9%	7.1%	13.3%	44.2%	34.5%	100%
Total	Count	3	14	38	94	86	235
	Percent	1.3%	6.0%	16.2%	40.0%	36.6%	100%

Source: Outputs of SPSS of the Data from Field Survey conducted on May-Aug 2014

By selecting the most suitable career is a dream of every youth either male or female. It is natural that every person expects to fulfill their dream by their career in their youth age before getting the bitter experience of the practical world. Among the youths 78.7% of women and 76.6% of men expects to realize their cherished dream by the most suitable career (Table 19).

Table 20 Scope of utilizing the intelligence and education by the career considered by Male and Female Youth - Chi - Square Tests

Type	Value	df	Asymp. Sig. (2-sided)
Linear-by-Linear Association	0.002	1	0.968

Chi-Square test verifies the fact that there is no difference in the educated male and female in the expectation of dream fulfilling by the career and consider that factor in the selection process of career (Table 20).

5.7 Overall Discussion

Stereotyped notion about career of the youth of both genders was considered as a career selection criterion by the male and female. They thought about their career differently in some years back in this region though it was changing in developed world since twenty to thirty years back. The social norm about career was that women are for soft jobs and men are for hard working career. But due to change in attitude, ability, demand of family and requirement of working field this notion is shifting fast. Examining the factors of selecting career by the men and women was perceived as an important matter of research. The hypotheses of the differences in consideration of different factors of career selection by men and women as negative were examined in the research.

The factors tested were the matching the requisite qualities of specific career with their own qualities, the suggestions from elder family members, the returns from career in compensation, advancement scope, flexibilities in performing duties, security of the career, opportunity of using intelligence and education, realization of specific dream and the status of the career.

6. Results

	Hypothesis	Result
#1	There is no significant difference between men and women in considering the requisite qualities and matching it with the candidates' ability.	Accepted
# 2	There is no significant difference between men and women in considering the opinion, suggestion and pressure of family members in selecting the careers.	Accepted
# 3	There is no significant difference between men and women in considering the job environment in the yardstick of gender friendliness provided by each career.	Rejected
#4	There is no significant difference between men and women in considering the compensation packages of different jobs in selecting the careers.	Accepted
#5	There is no significant difference between men and women in considering the scope of advancement in each career under consideration.	Accepted
# 6	There is no significant difference between men and women in considering flexibilities provided by each career in discharging the responsibilities.	Accepted
# 7	There is no significant difference between men and women in considering social status provided by each career.	Accepted
# 8	There is no significant difference between men and women in considering job security provided by each career.	Accepted
# 9	There is no significant difference between men and women in considering opportunity of using intelligence of education of the candidates' for personal and organizational advancement provided by each career.	Accepted
#10	There is no significant difference between men and women in considering prospects of realization of dream of every youth provided by each career.	Accepted

It is found that due to the change of attitudes towards women participation in productive career, there are no differences in consideration of the requisite qualities (Table 1), suggestion from family (Table 3), compensation package (Table 7), advancement prospects (Table 9), flexibilities in discharging duties (Table 11), securities of job to ensure safe life (Table 15), use of intelligence and education to be expert in that field (Table 15), realization of dream by that career (Table 17), and status of job (Table 13) between youths of both genders. Only in the very special factor of gender friendly environment, a significant difference in the consideration by men and women was found in selecting their specific career (Table 5 & 6) because it ensures the women's continuation with their career otherwise withdrawal of themselves. The authors' logical analysis ensures that there will be no significant difference between men and women in that factor in near future and the authority should consider that factor to encourage more women in the productive work place.

7. Conclusion

With the increasing level of education, skill and interest the stereotyping idea of women's different job selection is vanishing fast. The considering factors of career selection is approaching to the male and female with same level of significance other than gender friendly environment. The need of gender friendly environment is presently considered differently by male and female because of the very need of women. But women are the partner of men in their lives so the significance level of consideration of this factor will have no difference in near future. So the respective authorities should consider that factor and ensure the non-discriminating environment for both men and women.

8. Benefits of the Study

This study would be helpful to academicians and employers to understand the changed attitudes of prospective youths of both gender specially women in selecting their career. The required knowledge and ability increase the confidence of youths in taking any assignment. The increased positive attitudes of women towards enrollment in higher education makes confident enough to compete for any type of job. The youths of both genders considers the requisite qualities, work environment and the compensation from the careers equally accept the sexual harassment of the workplace that is considered more by the women than men. So the academicians and employers should be informed about the changed attitudes of women about their career for enhancement of knowledge and making proper decision about recruitment process and job environment.

9. Limitation of the Study

The sample frame includes youths of Sylhet City rather than youths of different areas of Bangladesh are identified as one of the important limitations of the study. But study on the most conservative attitudes of the people of that region in such topic express the change of such people about their career. It can be easily assumed that the attitudes of people of other region are far advanced in selecting their career.

10. Further Research: Further research can be done on attraction and restoration of youths of both sex to different careers specially the most contributing career such as entrepreneurship and other employment generating activities. The realization of employers in creating gender friendly environment to attract the aspirant and promising youths of both genders is another field of further research based on that research.

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INFLUENCING FACTORS ON LOYALTY INTENTION IN THE WEEKEND MARKET

by

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Abstract

With growing number of tourists around the world, there is always the need for different and unique tourist destinations. For many years, tourism destinations have been promoted in different dimensions (e.g. price and location) to international tourists and destination managers always search for the methods to encourage the tourists to revisit the destinations. Loyalty intention has become a particular research topic for tourism marketing research areas over the last few years. Clearly it is highly useful to understand more about loyalty intention and the benefits are to help tourism service providers and destination managers to discover new approaches or activities to continue to increase the tourist loyalty in the long run. From 426 samples of international tourists, the results indicated that loyalty intention is positively influenced by product quality, location, price, product variety and shopping environment, respectively. Research implications and directions for further research are also provided.

1. Introduction

Shopping is one of the most popular activities for tourists of all nations. In some places, one may visit a number of times in one month, such as the shopping mall or department stores. However, in the context of weekend markets, little studies had paid attentions to the intention to revisit the market. In recent years, there has been an increasing interest in understanding tourist loyalty intention, due to the fact that for each destination the repeat tourists contribute significantly in terms of tourist expenditures, leading to higher national income for the country.

According to McDowall(2010), the empirical research studies in the area of destination loyalty can help providing and suggesting guidelines for the effective tourist destination management by investigating the tourists' viewpoints of the destination.

During the past decade, marketing researchers have showed the importance of loyalty intention and its determinants in various industries (Sonhoh et al., 2007; Dwivedi, 2015; Akinci et al., 2015). In recent years, several local markets have been promoted as the tourist attractions for international tourists. Tourists visiting the local markets can experience different product characteristics or market environments that cannot be found in their home countries.

The purpose of the study is to highlight the influence of various factors on intention to revisit the weekend market. In addition, the results can be used to support further development of weekend market to help facilitating the shopping behaviors, shopping satisfaction and loyalty intention of the tourists.

Loyalty intention is one of the widely acceptable indicators to allow sellers to anticipate the repeat purchase in the future. The greater the degree of loyalty intention, the higher the possibility of repeat purchase (Valle, Silva, Mendes & Guerreiro, 2006). The current study contributes to the loyalty intention literature, especially in the context of destination marketing.

2. Literature Review

The context of this study is Chatuchak Weekend Market. In the current study, the area of the research was at Chatuchak Weekend Market, which is known as one of the most popular tourist attraction in Thailand. According to Tourism Authority of Thailand (2015) there are greater than 15,000 shops in the 27 acres, particularly consisting of unique local Thai products. The market is open only on weekends, allowing both Thai and foreign visitors to select variety of product choices from books, tables, fashion items, handicrafts, secondhand products, and pets. One of the main characteristics of Chatuchak weekend market is that the customers can shop and at the same time can enjoy Thai hospitality and Thai food available in different areas in the market. The operating hours of the weekend market is from 7 am. To 8 pm.

Loyalty intention is central to the study of consumer behaviour. It is the concept, which helps marketers to anticipate the repeat purchases in the future of individuals or groups of customers. Loyalty intention can be defined as the likelihood of customers to buy products or services from the same sellers again and it is less likely that the customers will go to buy those products and services from the competitors (Dwivedi, 2015; Akinci et al., 2015).

Furthermore, it is obvious that the understanding of factors influencing the loyalty intention can support the destination managers to effectively manage and attract the tourists to revisit the weekend market. Mittal & Kamakura (2001) suggested that intention to repurchase is important for businesses to understand and worth exploring. It also depends on the objectives of the researchers whether they would focus on the intention or the repurchase behaviour.

2.1 Determinants of loyalty Intention

For the factors affecting loyalty intention, Johnson, Herrmann, & Huber (2006) stated that determinants of loyalty intentions are highly dynamic and differ at different stages of product life cycles.

Price is one of the most important determinants in marketing literature and is known as the basic marketing mix affecting customer satisfaction. According to Kandampully & Suhartanto (2000), price has influence on customer decision in many aspects including intention to repurchase and on customer loyalty. Valle et al., (2006) also recognized the crucial role of price in their study on tourist satisfaction and destination loyalty intention. Sirohi, McLaughlin & Wittink (1998) showed in their research findings that price of the product reflecting in terms of perceived value for money had an impact on the loyalty intention to revisit the stores.

Based on the characteristics of the market, the customers usually expect the product variety when shopping. Elliot and Fowell (2000) suggested that product variety support the repurchase behaviour. Rohm and Swaminathan (2004) show that shoppers usually sought for variety of product in order to find the right product to buy.

Quality has influenced on repeat visitation of the destination. Related to the work of Alegre & Cladera (2006), the study was conducted in the context of holiday destination and found that the tourists continued to show interest and maintain their loyalty when high quality of the destination can be identified.

Shopping environment can be defined as the atmosphere and facilities provided in the shopping areas, including interaction between buyers and sellers, and numbers of customers and sellers (Deighton & Grayson (1995). Mathwick, Malhotra, & Rigdon (2001) mentioned shopping environment can create experiential value for the customers. In addition, shopping environment can also reflect the design of overall environments creating positive consumer feelings to enhance the potentials of buying products (d'Astous, 2000).

Another important factor for studying tourist's attraction is location. For retailing sites, including for the market and shopping centers, location plays important roles for customer's decisions in visiting (Mark & James, 1996). One of the important factors for tourist's decision for shopping sites is good location, including the safety of the location. (Yüksel & Yüksel, 2007).

One of the main highlights of the weekend market is that customers can look for local, rare and unique products available only in a certain areas. Product characteristics can have the effect on customer preference and how they evaluate the product (Tenenhaus, Pages, Ambroisine & Guinot, 2005). In the context of weekend market, the tourists may look for unique or local product characteristics that the tourists have never found in their home countries.

In the current study, dependent variable is loyalty intention and independent variables are price, product quality, product variety, shopping environment, location and product uniqueness.

To develop the questionnaire for the study, past literatures were investigated and interviews were conducted with marketing experts to validate the questions. Furthermore, reliability analysis showed acceptable results for all the factors with Cronbach's alpha of higher than 0.6 as shown in Table 1.

Table 1: Results of Reliability analysis

Factors	Items	Cronbach's alpha
Loyalty intention	- I will come back to shop at Chatuchak weekend market in the future. - I will talk positively about Chatuchak weekend market to others. - I always think positively about Chatuchak weekend market. - I will recommend others to shop at Chatuchak weekend market.	0.88
Price	- I am very concerned about price. - When I shop, I usually compare prices of the products. - I usually shop around for lower price of the product.	0.77
Product variety	- There are many different types of products available in Chatuchak weekend market. - Chatuchak weekend market has products for all customer groups. - I feel that I can find any type of product in Chatuchak weekend market.	0.68

Factors	Items	Cronbach's alpha
Product quality	- The products at Chatuchak weekend market have good quality. - The quality of products, sold at Chatuchak weekend market, is trustworthy.	0.68
Shopping environment	- Sellers at Chatuchak weekend market are friendly and ready to service the customers. - It is easy to walk around Chatuchak weekend market. - The shopping areas have good atmosphere. - I can find what I want to buy in Chatuchak weekend market.	0.67
Location	- Chatuchak weekend market is easy to access. - The location is convenient via public transportation.	0.63
Product uniqueness	- Chatuchak weekend market has a number of rare products that I have never seen. - I find many products with unique design at Chatuchak weekend market. - There are many locally made products in Chatuchak weekend market.	0.80

3. Research Method

In the context of the current study, the author collected data from 426 international tourists shopping at the Chatuchak weekend market. The questionnaires were distributed in the period of eight weeks due to the fact that the market only opened on Saturday and Sunday. 426 usable questionnaires were identified and analyzed for further analysis. Multiple regression model was developed in order to test the relationship among the variables as follows;

$$\text{Loyalty intention} = B1(\text{Price}) + B2(\text{Product variety}) + B3(\text{Product quality}) + B4(\text{Shopping environment}) + B5(\text{Location}) + B6(\text{Product uniqueness})$$

4. Research Results

In this part, demographic characteristics of the respondents were provided and the test of proposed regression model were indicated in order to identify the influential factors on loyalty intention. The details of demographic characteristics were shown in Table 2.

Table 2: Demographic Characteristics

Characteristics	Frequency	Percent
<i>Gender</i>		
Male	210	49%
Female	216	51%
<i>Nationality</i>		
Asian	225	47%
Non-Asian	201	53%
<i>Education</i>		
High school	21	5%
Vocational	67	16%
Some college	101	24%
College degree	237	56%

Characteristics	Frequency	Percent
<i>Marital status</i>		
Single	199	47%
Married	176	41%
Divorced	20	5%
Others	31	7%
<i>Age (years)</i>		
18 – 25	65	15%
26 – 35	133	31%
36 – 45	120	28%
46 – 55	80	19%
Above 55	28	7%

The data were collected at Chatuchak weekend market and international tourists. The details of demographic characteristics were identified in terms of gender, nationality, education, marital status and age. Female respondents (51%) slightly outnumbered male respondents (49%). Most tourists earned college degree (56%). In terms of marital status, the majority of sample was single (45%), followed by married group (41%). Regarding nationality, top three nationalities in Asian group were Chinese, Japanese, and Malaysian, respectively. In addition, for Non-Asian group, the three largest groups were British, American and Australian, orderly.

Table 3: Descriptive Statistics of Variables

	Mean	Std. Deviation	N
Loyalty intention	4.61	.769	426
Price	5.75	.987	426
Product variety	5.54	1.091	426
Product quality	4.47	1.235	426
Shopping environment	3.96	1.181	426
Location	4.39	1.080	426
Product uniqueness	5.14	1.213	426

According to the descriptive statistics table, the means of the variables ranges from 3.96 to 5.75. The highest mean is with “price”, followed by variety of products.

To test the relationship among independent variables and loyalty intention, multiple regression model was developed and tested. The results were shown in the following tables below.

Table 4: Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.540 ^a	.291	.281	.652	2.129

Based on ANOVA table, global test showed that the model is acceptable ($F = 28.708$; $\text{Sig.} = .000$). With Durbin-Watson closed to 2, there is no autocorrelation issue. In addition, with VIFs less than 10, multicollinearity is not detected. According to the model summary table, the regression model had R Square of 29.1%.

Table 5: ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	73.150	6	12.192	28.708	.000 ^b
Residual	177.941	419	.425		
Total	251.092	425			

a. Dependent Variable: Loyalty intention.

b. Predictors: (Constant), Price, Product variety, Product quality, Shopping environment, Location, and Product uniqueness

Table 6: Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	3.451	.234		14.749	.000		
Price	.290	.046	.372	6.358	.000	.494	2.024
Product variety	.170	.044	.242	3.851	.000	.429	2.329
Product quality	.259	.034	.416	7.518	.000	.553	1.810
Shopping environment	.081	.035	.124	2.317	.021	.588	1.701
Location	.290	.042	.407	6.961	.000	.494	2.025
Product uniqueness	-.044	.032	-.070	-1.377	.169	.658	1.519

a. Dependent Variable: Loyalty intention.

From Table 6, the influential factors affecting loyalty intention are product quality, location, price, product variety and shopping environment, respectively. A factor of unique product characteristics has no influence on loyalty intentions.

As a result, the acceptable model can be shown in the following equation:

Loyalty intention = .372 Price + .242 Product variety + .416 Product quality + .124 Shopping environment + .407 Location - .070 Product uniqueness

(t-value)	(6.358)	(3.851)	(7.518)	(2.317)	(6.961)	(-1.377)
[sig.]	[0.000]	[0.000]	[.000]	[.000]	[.021]	[.169]

5. Discussions

The findings of this research shed light on the perception of visiting the weekend market with the new perspectives. As Tourism Authority of Thailand (2015) suggested that Chatuchak weekend market provides unique and local products where international tourists can explore and select, but however product uniqueness showed no influence on loyalty intention. In addition, the study indicated that price had positive influence loyalty intention. This is supported by the work of Valle et al., (2006) and Kandampully & Suhartanto (2000), mentioning that price led to intention to repurchase. The finding of this current study is also in line with the concept that quality had influence on repeat visitation (Alegre & Cladera, 2006). Furthermore, location of the destination is crucial to increase the degree of loyalty intention (Yüksel & Yüksel, 2007)

6. Conclusions

The study highlights the significance of loyalty intention in the areas of destination management in the context of weekend market. With 426 samples, the findings analyzed the data from international tourists visiting Chatuchak weekend market and tested the influencing factors affecting their intention to revisit the market again. Quality of product, location and price are three most influential factors on loyalty intention, respectively. This certainly confirmed with many of the past literatures (e.g. Alegre & Cladera, 2006). that product quality is considered the very important criterion for the tourists to revisit in the future, while location is shown to be the second-most influential factor, indicating that accessibility of the weekend market can increase the possibility of revisit as well.

7. Recommendations and Implications for Future Research.

The findings can provide several guidelines for practitioners. One of the most important factors affecting loyalty intention is product quality. Therefore, it is important to ensure that the tourists can always trust the quality of the products sold in the market. Quality assurance program should be introduced to all the sellers to certify the product quality. In addition, destination managers and service providers can devise marketing strategies on attracting the tourists to revisit the destination by focusing on the critical influencers, such as prices and locations. Additionally, due to the special characteristics of weekend market with its growing popularity, this study suggested that the destination managers should consider the development of similar markets with near the tourists' attractions in order to improve the number of tourist attractions in different areas. Future studies may apply in-depth interviews or focus-group discussions to explore the segmentation of different nationalities, ages or genders. Other studies may also add other variables, including motivational factors or shopping behaviors.

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INVESTIGATING INTERNAL AND EXTERNAL FACTORS AFFECTING ADOLESCENT CONSUMERS' PURCHASE INTENTIONS ON ENVIRONMENTAL FRIENDLY PRODUCTS

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Abstract

Purpose - The purpose of this study is to identify the internal and external factors affecting adolescent consumers purchase intentions on environmental friendly products.

Design/methodology/approach - The population is people age between 15 to 24 years old. The convenience sampling was used in this study and conducted at Siam Center in Bangkok, Thailand. The sample group was 400 respondents.

Finding - This study shows that all internal factors have a positive relationship with green purchase intentions of adolescents. Four from five of external factors except family have a positive relationship with green purchase intention of adolescents Demographic variables are not statistical significantly related to their green purchase intentions and purchase behaviors. This research contributes to the theoretical and practical implications of consumer behaviors on environmental friendly products.

Research limitations/implications - The sample group is limited by a group of people living in Bangkok area. The data results on the sample may not be generalized to represent the results of all adolescents who live in Thailand. However, this study provides some guidelines to the green marketers on formulating their various strategies on how to attract customers to purchase their environmental friendly products.

Keywords: Internal Factors, External Factors, Purchase Intentions, Environmental Friendly Products, Adolescent Consumers

1. Introduction

Environmental pollution is the core cause of many problems such as nature, ozone depletion, loss of biodiversity, carbon footprint, global warming, earthquake, tsunami, and flood as recently. The society has become increasingly aware of environmental issue as the rise of environmentalism due to the environmental situations. It seems to continuously worsen and leads to an interminably public concern in many countries. Nowadays, everyone in the world agree that global warming has become a big crisis. Many countries pay attention to the green movement for preservation of the environment. Environmental pollution and natural disasters increasing rapidly both are the problems that effect Thailand and other countries all over the world and has made people's lifestyles changing very fast when compared to few decades ago.

Pavan (2010) stated that “green products” and “environmental products” are the business terms that are used commonly to describe products that protect or enhance the natural environment by conserving energy and/or resources and reducing or eliminating use of toxic agents, pollution, and waste. In general, green products are known as ecological products or environmental friendly products that have less of an impact to the environment (Ottman & Rielly, 1998). Pavan (2010) defined the characteristics of green products, which consist of original grown, recyclable, and reusable products, natural ingredients, recycled content, approved chemical, unpolluted environment, and untested animals. Over the last decade, concerning for the environment has been steadily increasing due to increased media coverage, greater awareness of environmental problems, the impact of major industry disasters, and the rise of activist groups on the environment (Kalafatis, Pollard, East, & Tsogas, 1999). Moreover, the marketers need to respond to these environmental consumptions because it has become an important branch of learning (Finisterra & Raposo, 2008).

The aims of this research are (1) to examine the factors influencing adolescent consumers purchase intentions, and (2) to investigate the relationships among demographic characteristics and adolescents purchase behaviors on environmental friendly products in Bangkok, Thailand. This research especially identifies the internal and external factors affecting adolescent consumers purchase intentions on environmental friendly products.

2. Literature review

This part explains the concept of green marketing, environmental friendly products, consumer behavior theory, and the internal and external factors affecting adolescent consumers purchase intentions on environmental friendly products.

2.1 Green Marketing

Today many consumers are paying more attention to the environmental efforts of businesses and support companies that use green marketing (Kassaye, 2001; McDaniel & Rylander, 1993; Pujari & Wright, 1996). Green marketing is considered as one of the major trends in a business, which concerns about environment. According to the concept of green marketing “green or environmental marketing consists of all activities designed to generate and

facilitate any exchanges intended to satisfy human needs or wants, such that the satisfaction of these needs and wants occurs with minimal detrimental impact on the natural environment” (Polonsky, 1994, p.4). A majority of people believe that green marketing refers solely to the promotion or advertising of products with environmental characteristics. In terms like Phosphate Free, Ozone Friendly, Recyclable, Refillable, and Environmentally Friendly are some of the things consumers most often link to green marketing (Polonsky, 1994). However, with similar points of view, green marketing or environmental marketing relates to facilitate exchanges to satisfy consumer needs and wants by minimizing the impact of these activities on the physical environment.

2.2 Environmental Friendly Product

Environmental friendly products or green products are commonly used to describe products that protect or enhance the natural environment by conserving energy and/or resources and reducing or eliminating use of toxic agents, pollution, and waste (Pavan, 2010). In other words, environmental friendly products refer to the products that under 3R strategies that are recycle or renewable resources efficiently, reused product by repair the old product, and reduced packaging or using less toxic materials to reduce the impact on the natural environment and energy.

2.3 Consumer Behavior Theory

Consumer behavior is the study of when, why, how, and where people do or do not buy products. The factors influencing the consumer decision-making process can be the internal and external factors. Internal factors include motivation, learning, memory, emotions, perception, attitudes, personality, and lifestyle, while external influences on the consumer are culture (subcultures), demographics, opinion leader, reference groups, social class, and marketing campaigns. Customer behavior study is based on consumer buying behavior, with the customer playing the three distinct roles of user, payer and buyer (Hawkins, Roger, & Coney, 2001). However, Blackwell, D’Souza, Taghian, Miniard, and Engel (2006) had suggested with a similar perspective in that the factor influencing purchase decision has two main factors which are individual and environmental influences. Individual influences include demographics, personality, value, lifestyle, consumer resources, motivation, knowledge, and attitudes. External factors include culture, social class, family, and situation. These both factors can affect to the consumer purchase decision process.

2.4 Purchase Intention and Purchase Behavior on Environmental Friendly Product

2.4.1 Purchase Intention on Environmental Friendly Product

Purchase intention on environmental friendly product is conceptualized as the probability and willingness of a person to give preference to products having eco-friendly features over other traditional products in their purchase considerations. Purchase intention on environmental friendly product is a particular type of environmental friendly behavior which is exhibited by consumers to show their concern for the environment. The green purchase intention of consumers is like a substitute for actual purchase behavior of consumers. (Ramayah, Lee, & Mohamad, 2010).

2.4.2 Purchase Behavior on Environmental Friendly Product

Regarding to Schiffman and Kanuk (2000), consumer behavior relates to how persons make a choice to spend their accessible resources. It includes how to select, obtain, use, and remove the goods and services. The concept of purchasing behavior on environmental friendly products is similar to the concept of green purchasing behavior. Lee (2009) noted that green purchasing behavior can be translated to the act of consuming products that are conservable, beneficial for the environment, and responding to environmental concern. Responding to environmental concern, one of the way related to waste management system is by doing the 3R (Reduce, Reuse, and Recycle). From the research of Beckford, Jacobs, Williams, and Nahdee (2010) and Chan (2001), green purchase intention is a significant predictor of green purchase behavior, which means that purchase intention is positively affect the probability of a customer decision that he/she will buy green products.

2.5 Internal Factors Influencing Consumer Purchase Intention

2.5.1 Environmental knowledge

Chan and Lau (2000) found that Chinese people with more ecological knowledge had a stronger intention to involve in green purchasing which were more likely to conduct green purchase. Fryxell and Lo (2003) defined environmental knowledge as “a general knowledge of facts, concepts, and relationships concerning the natural environment and its major ecosystems” (p.45).

2.5.2 Environmental attitude

According to Ajzen and Fishbein (1980), the instant determining factor of an individual's beliefs is the individual's attitude. An individual's beliefs toward a certain object might be a lot, yet that individual has to merely attend to a limited number of beliefs. Paco and Raposo (2009) concluded that consumers were more likely to buy green products if they were more closely involved with the environment.

2.5.3 Self-image

Self-image is the conception of oneself. Self-image of consumers can influence their purchase behaviors when choosing the products. Pickett-Baker and Ozaki (2008) found that the pro-environmental self-images were influenced green behaviors. Lee (2008) also agreed that self-image was the third predictor on green young consumers' purchasing behavior in Hong Kong.

2.6 External factors influencing consumer purchase intention on environmental friendly product

2.6.1 Family

In a study of Caruana and Vassallo (2003) had found parental influence on purchasing behavior acts as a main role for children. Cotte and Wood (2004) found parental influences not only exist in the purchase decision-making process, but also shape the behavior of young children. In addition, parents who hold strong desire to consume material goods, their children also value material goods in a similar way like their parents do (Chaplin & John, 2010).

2.6.2 Peer group or reference group

Reference groups refer to those groups or group members who are “psychologically significant for one’s attitudes and behaviors” (Turner 1991, p.5). Peer pressure refers to the psychological pressure which each agent experiences when comparing his/her actions with those of others (Cohan, 2009). Childers and Rao (1992) found that peer and reference group could influence on consumer decision-making.

2.6.3 Media Exposure

People are likely to seek information from print and broadcasted entertainment (Speck & Elliott, 1997). Mazis and Raymond (1997) also suggested that advertisers should use a variety of media to communicate product benefits to a target audience.

2.6.4 Eco-label

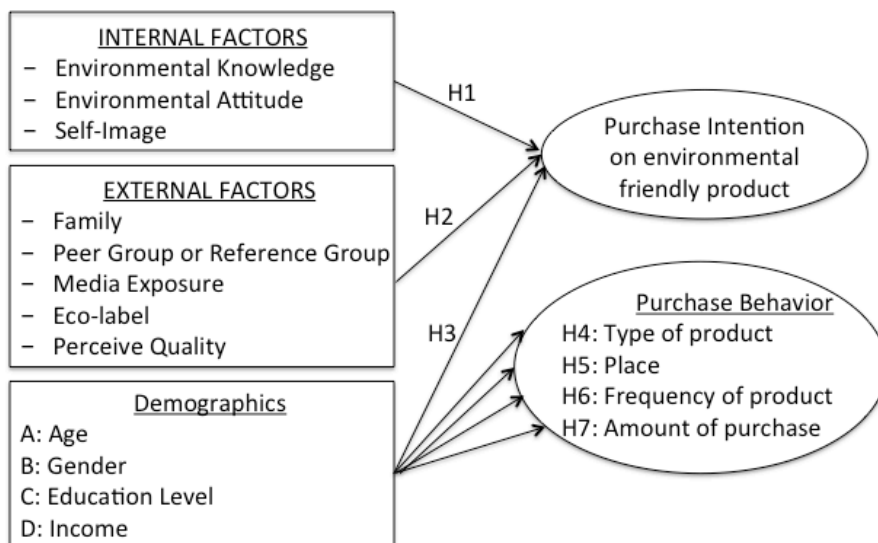
Eco-label is a synonymous descriptor that refers a product provides information about the environmental impacts associated with the production or usage of a product (Rotherham, 1999). The environmental labels are increasingly being utilized by marketers to promote the identification of environmental friendly products (D’Souza, Taghian & Lamb, 2006).

2.6.5 Perceived quality

Steenkamp and Meulenberg (1986) found that perceived food quality was associated with keep ability, wholesomeness, appearance, well-known brands, taste, price, and nutritional value.

Based on the literature review, conceptual framework is developed as figure 1.

Figure 1 Conceptual framework of adolescents’ purchase intentions on environmental friendly products.



3. Research Methodology

The target population was the adolescent consumers who are age between 15 years to 24 year old living in Bangkok, Thailand. The convenience sampling method was used to collect the data. The sample size in the study was 400 respondents at Siam Center. The questionnaire was adapted from Promotosh and Sajedul (2011), Wahid, Rahbar, and Shyan (2011), Pickett-Baker and Ozaki (2008), Lee (2008), Mei, Ling, and Hooi (2012), Iravani, Zadeh, Forozia, Shafaruddin, and Mahroeian (2012), as well as Kuo, Wu, and Deng (2009). Research questionnaire had four parts, whereby the first part was demographic information about gender, age, education level, and income. The second part asked the respondents about purchase behavior on environmental friendly product by using multiple choices. In the third and fourth part asked for variables affecting purchase intentions on environmental friendly product of adolescent consumers in Thailand by using a five-point Likert scale for asking the respondent to rate in each item.

To test the differences among demographic characteristics and purchase intentions on environmental friendly product, ANOVA analysis was used. When testing the relationships between internal, external factors, and purchase intentions, the multiple regressions analysis was used. Regarding the relationships of demographic characteristics and purchasing behavior, this Chi-square test was applied in this study, furthermore using the Phi and Cramer's V values to judge the level of association.

4. Research Results

The results of demographic characteristics of respondents and hypotheses testing are showed as follows.

4.1 Demographic of respondents

Table 1 The Data of Demographic Characteristics

Demographic	Frequency (N=400)	Percent
Gender		
Male	196	49
Female	204	51
Age		
15 – 18 years old	112	28
19– 21 years old	163	40.8
22 –24 years old	125	31.2
Education		
High School	143	35.75
Diploma	86	21.5
Bachelor degree	171	42.75
Monthly Income (Bath)		
Less than 4,000 Baht	80	20
4,001-8,000 Baht	75	18.75
8,001-11,000 Baht	69	17.25
11,001-15,000 Baht	89	22.25
More than 15,000 Baht	87	21.75

From table 1, the respondents consisted of 204 females (51.00%) and 196 males (49.00%). The highest sample of age group was 19 – 21 years old (163 respondents or 40.80%), the second group was 22-24 year old (125 respondents or 31.20%), and the third group was 15-18 year old (112 respondents or 28.00%). For the education levels, most respondents held the bachelor degree with 171 respondents, (42.75%), followed by high school (143 respondents, with 35.75%), and diploma (86 respondents, with 21.50%). The highest rate of income was 11,001-15,000 Baht with 89 respondents or 22.25%. In terms of purchase behavior, there were 369 respondents (92.25%) who ever bought the environmental friendly products, whereas there were 31 respondents (7.75%) who never bought environmental friendly products.

4.2 Results of Hypotheses Testing

H1: Internal factors have a positive relationship with adolescent purchase intentions on environmental friendly products.

Table 2 Multiple Regression of Internal Factors and Purchase Intentions

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	0.916	0.167		5.483	0.000	0.587	1.244
Environmental Knowledge	0.297	0.048	0.320	6.161	0.000**	0.202	0.391
Environmental Attitude	0.122	0.049	0.128	2.480	0.014*	0.025	0.219
Self-image	0.309	0.047	0.309	6.525	0.000**	0.216	0.402

Note: ** Significant level at 0.00, * Significant level at 0.05

Multiple regression analysis identified that all three factors of the internal factor positively influenced adolescents purchase intentions on environmental friendly products. These were environmental knowledge ($t = 6.161$, $p < 0.01$), environmental attitude ($t = 2.480$, $p < 0.05$), and self-image ($t = 6.525$, $p < 0.01$). It referred that the more adolescent consumers had environmental knowledge, environmental attitude, and self-image; the more they tended to purchase environmental friendly products. Therefore, H1 was fully supported that all internal factors had positive influence to adolescent purchase intentions on the environmental friendly products. The coefficient of determination (R^2), documenting these three predictors (environmental knowledge, environmental attitude, and self-image) was able to explain the variation in purchase intention on environmental friendly products (with 41.00%). The F-test was 91.775, considering the result of significant level was 0.000.

H2: External factors have a positive relationship with adolescents purchase intentions on environmental friendly products.

Table 3 Multiple Regression of External Factors and Purchase Intentions

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	0.296	0.160		1.858	0.064	-0.017	0.610
Family	0.036	0.031	0.036	1.148	0.252	-0.026	0.098
Peer group	0.127	0.039	0.131	3.215	0.001**	0.049	0.204
Media Exposure	0.417	0.045	0.435	9.339	0.000**	0.329	0.505
Eco-label	0.222	0.042	0.243	5.323	0.000**	0.140	0.305
Perceive Quality	0.114	0.042	0.111	2.742	0.006**	0.032	0.196

Note: ** Significant level at 0.01, * Significant level at 0.05

Multiple regression analysis identified four out of five external factors had a positive influence on purchase intentions on environmental friendly products. Specifically, media exposure ($t = 9.339$, $p < 0.00$), eco-label ($t = 5.323$, $p < 0.00$), peer or reference group ($t = 3.215$, $p < 0.01$), and perceive quality ($t = 2.742$, $p < 0.00$) contributed to adolescent consumers purchase intentions on environmental friendly products. It implied that the more adolescents were influenced from peer or reference group, media exposure, eco-label, and perceived quality, the more they would purchase environmental friendly products. However, the family did not affect to the purchase intention at a statistically significant level. Therefore, H2 was partially supported, in that four out of five elements of external factors were related to purchase intention on environmental friendly products. The coefficient of determination (R^2), documenting those five predictors (family, peer or reference group, media exposure, eco-label, and perceive quality) were able to explain the variation in purchase intention on environmental friendly products (with 63.10%). The F-test value was 134.986 and the significant level was 0.000.

H3: Adolescents with different demographic characteristics intend to purchase on environmental friendly products differently.

Demographic characteristics consisted of gender, age, income, and educational levels. All these dimensions did not affect to adolescents purchase intentions. These mean that the demographic characteristics had no impact on purchase intention on environmental friendly products. The result found that females had a little mean (Mean = 3.6005, S.D. = 0.60096) less than males had (Mean = 3.6684, S.D. = 0.64179) with the t value being 1.092 and p value being 0.224 ($p > 0.05$). In addition, all age groups of respondents tended to purchase environmental friendly products similarly ($F = 0.141$, p -value = 0.868). For the education level, F was 1.169 and p value was 0.312, which mean that education level did not affect to adolescents purchase intentions. The result of ANOVA testing also shown that adolescents with different income did not relate to the difference of purchase intentions on environmental friendly products ($F = 1.618$, p -value = 0.169). This result contradicted with the study of Torgler, Garcia-Valinas, and Macintyre (2008) found that the demographic variables such as age and gender affected ecological conscious consumers. In addition, with respect to gender of consumers, this result was

also contrast with the study of Tikka, Kuitunen, and Tynys (2000); Brown and Haris (1992); Zelezny, Chua, and Aldrich (2000); Stern, Dietz, and Kalof (2005);

H4: Adolescents with different demographic characteristics tend to purchase on different types of environmental friendly products.

The results found that there were not statistically significant differences in adolescent's consumer purchase behaviors regarding the types of environmental friendly products based on demographic characteristic (gender, age, education, and income).

H5: Adolescents who have different demographic characteristics will buy environmental friendly products in different place.

The results found only gender affected to the place of buying environmental friendly products. Most males purchased environmental friendly products from street store, followed by hypermarket, flea market, shopping mall, and the internet respectively. Women purchased environmental friendly products from street store, followed by flea market, hypermarket, shopping mall, and the internet respectively.

H6: Adolescent consumers with different demographic characteristics will relate to the frequency of buying environmental friendly products differently.

The results found that there were not statistically significant differences in adolescent consumer purchase behaviors based on demographic characteristics (gender, age, education, and income).

H7: Different adolescents' demographic characteristics will purchase a different amount of purchase environmental friendly products.

The results found that adolescents with different ages and genders would not purchase environmental friendly products in different amount. However, adolescents holding different incomes and educational levels would purchase a different amount of purchase environmental friendly products.

Table 4 Education Levels and Amount of Purchase

Amount of purchasing per month		≤ 500 baht	501-1,000 baht	> 1,000 baht	Total
Education					
High school	Count	71	52	9	132
	% of Total	19.20%	14.10%	2.40%	35.80%
Diploma	Count	44	27	8	79
	% of Total	11.90%	7.30%	2.20%	21.40%
Bachelor	Count	76	42	40	158
	% of Total	20.60%	11.40%	10.90%	42.80%
Total	Count	191	121	57	369
	% of Total	51.80%	32.80%	15.50%	100.00%

Pearson Chi-Square 43.992, df 8, Sig. 0.000**

Phi value 0.345, Cramer's V value 0.244

Note: ** Significant level at 0.01

From the table 4, there was a statistical significant relationship between education and amount of purchasing environmental friendly products per month. Adolescents who held bachelor degree were likely to purchase environmental friendly product more than the other groups did. Moreover, The Phi value was 0.345 and the Cramer's V value was 0.244, which mean that the relationship between education and amount of purchase environmental friendly products per month was a moderate association.

Table 5 Incomes and Amount of Purchase

Amount of purchasing per month Education		≤ 500 baht	501-1,000 baht	> 1,000 baht	Total
≤ 4,000 baht	Count	40	31	5	76
	% of Total	10.80%	8.40%	1.40%	20.60%
4,001-8,000 baht	Count	37	24	6	67
	% of Total	10.00%	6.50%	1.60%	18.20%
8,001-11,000 baht	Count	34	22	5	61
	% of Total	9.20%	6.00%	1.40%	16.50%
11,001-15,000 baht	Count	41	30	13	84
	% of Total	11.10%	8.10%	3.60%	22.80%
> 15,000 baht	Count	39	14	28	81
	% of Total	10.60%	3.80%	7.70%	22.00%
Total	Count	191	121	57	369
	% of Total	51.80%	32.80%	15.50%	100.00%

Pearson Chi-Square 80.903, df 16, Sig. 0.000**

Phi value 0.468, Cramer's V value 0.234

Note: ** Significant level at 0.01

When using the Chi square test for the relationship between income and amount of purchasing per month, the result found that there was the relationship between income and the amount of purchasing ($p = 0.000$) (see table 5). Adolescents who had less income tended to purchase environmental friendly products less than adolescents who had higher income did. However, Phi value was 0.468 and Cramer's V was 0.234 which indicated that the relationship between income and amount of purchasing per month was a moderate association.

5. Conclusion

This study aims to investigate the internal and external factors affecting adolescent consumers' purchase intentions toward the environmental friendly products. The results found that all internal factors (attitude, knowledge, and self-image) significantly influenced their purchase intentions to those products. The result of this study is similar to the study of Wahid et al. (2011) and Ooi, Kwek, & Tan (2012) which showed that environmental knowledge should also be enhanced by raising expectations and be positively related to purchase intentions on environmental friendly products. In terms of external factor, the results found only four out of five external factors affecting adolescents' purchase intentions on environmental friendly products. These are the media exposure, eco-label, peer or reference group, perceive quality, except for family. These results are consistent with Wahid et al. (2011) who suggested that eco-label and perceive quality would be antecedence of consumers' purchase intentions. And with

similar to the research result of Ooi et al. (2012) who found that eco-label and peer influence positively effects Malaysian adolescents' purchasing green products. Promotosh and Sajedul (2011) found that family, peer, and media were positively associated with purchase intentions on environmental friendly products. Furthermore, this study examined the relationship between demographic characteristics and adolescent' purchase intentions on environmental friendly products. The result showed that gender, age, education, and income were not significantly related to adolescent purchase intention on environmental friendly product. This result contradicts with the results from the previous studies. Torgler et al. (2008) found that the demographic variables such as age and gender affecting with ecological conscious consumers. Tikka et al. (2000); Brown and Haris (1992); Zelezny et al. (2000); Stern et al. (2005); and Lee (2009) shown significant differences in environmental attitudes between men and women. Men have more negative attitudes towards the environment compared to women. Moreover, the result of this research found some demographic characteristics of adolescents influencing some patterns of their purchase behaviors. The amount of purchasing environmental friendly products depended on their income and education levels.

6. Implication for Business

This research provides some guidelines to the green marketers on formulating their various strategies on how to attract adolescent customers to purchase their environmental friendly products. The study has proposed the findings that are useful to marketers who are willing to participate in green marketing activities. Marketers should aware that adolescent consumers do associate certain determinants toward their purchase intentions on environmental friendly products. The powerful antecedents in affecting the purchase intentions on environmental friendly products of adolescent consumers are environmental knowledge, environmental attitude, self-image, peer pressure, media exposure, eco-label, and perceive quality. In order to success in business, the companies should understand the adolescents' environmental knowledge and self-image on environmental friendly products. Then, marketers should improve their marketing campaign to ensure that they are conveying the message on how their products can help to reduce environmental problems. Furthermore, the marketers might plan the place of selling their environmental friendly products different between males and females. In addition, the marketers should consider income and educational levels of adolescents in order to promote their amount of purchasing.

7. Recommendation for future research

There are several recommendations for future research based on the current study and its findings. There are some discrepancies between the current research and previous research that have been done. The next researchers who are interested in this topic can focus more on the other areas out of Bangkok. Their results would compare to the results of this study. Future study may investigate more on variables relating to purchase intentions on environmental friendly products for deeply understanding of the factors affecting adolescents purchase intentions on these products. Moreover, the next future researcher should use qualitative research to collect data in order to explore additional factors relating to purchase intentions on environmental friendly products. According to the factors resulted from qualitative research will be used to better understanding the reasons for adolescents purchase intentions on environmental friendly products.

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**QUALIFICATIONS REQUIRED FOR EMPLOYEES IN THE HOTEL
INDUSTRY IN BANGKOK FROM HR MANAGERS' PERSPECTIVES:
GETTING READY FOR THE AEC IN 2015**

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Abstract

This study aims to investigate employee qualifications as required by human resource (HR) managers in the hotel industry in Bangkok when the ASEAN Economic Community (AEC) launches in 2015. Researchers applied the qualitative research method through interviews with 12 HR managers of three- to five-star hotels in Bangkok. The results indicate that some HR managers have done no planning for AEC. However, those managers with plans reported that they would train staff in both languages and work skills. In addition, they will make staff aware of AEC's influence and work to improve service quality.

The results also reveal that labor mobility may solve the hotel industry's labor shortage problem in Bangkok. Moreover, labor mobility will pressure Thai workers to improve themselves by enhancing their service quality. Furthermore, hotel managers will consider hiring employees from other ASEAN countries on the operational level.

The findings also indicate that hotel employee qualifications should include five traits: work attitude, skills in multiple languages, service-oriented personality, professional appearance and emotional intelligence. Additionally, HR managers should consider the location of applicants' homes, which should not be far from the workplace so as to avoid problems related to traffic and transportation.

Lastly, the results show differences in the weightings among required qualifications for front-line and back-office staff. For example, having an applicant possess a warm, easy smile is far more important when hiring for front-line positions than for back-office work. Therefore, this study provides insights for those seeking employment in Bangkok hotels as well as for those seeking employees. Both parties can prepare to meet the qualifications needed to survive and thrive in the hospitality industry.

Keywords: hotel industry, human resources, employee's qualifications, front line staff, Bangkok, AEC

1. Introduction

This study investigated staff qualifications required in the hotel industry in Bangkok by human resources (HR) managers in preparing their workers for the AEC, which begins in 2015. Multiple factors will increase competition in the regional labor market. First, the AEC will lead to the free flow of goods, services, capital investment and skilled labor. Moreover, large disparities in wages and employment opportunities, geographic proximity and social-cultural-linguistic environment, and disparities in educational development will increase regional labor mobility. Finally, as mentioned above, the AEC will lead to higher competition within business sectors.

Furthermore, Mutual Recognition Arrangements (MRAs) are the major instrument for skilled labor mobility within ASEAN. The MRA was created to promote regional mobility of workers and service suppliers. Thailand signed an MRA for tourism professionals in support of AEC's establishment (ASEAN Secretariat, 2012).

The number of tourist arrivals in Thailand grew annually in years 2010, 2011 and 2012 by 12.63%, 20.67% and 16.24%, respectively. Arrivals in the first half of 2013 rose 20.01% compared with the first half of 2012. For the years 2007 to the first half of 2013, the maximum annual increase in revenue occurred between 2010 (approximately 593 billion baht) and 2011 (approximately 776 billion baht), or 30.94%. The number of tourist arrivals from 2007 to the first half of 2013 and revenue generated are shown in Table 1.

Table 1 Tourist Arrivals and Revenue, 2007-2013 (Jan.-Jun.)
(Tourism Authority of Thailand, 2013)

Year	Number of tourists	% of change	Tourism revenue (million baht)	% of change
2007	14,464,228	+4.65	547,781.81	+13.57
2008	14,584,220	+0.83	574,520.52	+4.88
2009	14,149,841	-2.98	510,255.05	-11.19
2010	15,936,400	+12.63	592,794.09	+16.18
2011	19,230,470	+20.67	776,217.20	+30.94
2012	22,353,903	+16.24	983,928.36	+26.76
2013 (Jan.-Jun.)	12,744,374	+20.01	559,425.18	+19.82

The hospitality industry combines products and services and has three major characteristics: (1) it offers numerous job opportunities in many nations, (2) it is an important contributor to a country's gross domestic product (GDP) and (3) it faces greater global competition than other business sectors (Deng, Yeh & Sung, 2013; Guerrier & Deery, 1998).

In summary, the AEC leads to the free flow of people, service, capital and goods incorporated in the seven tourist-related MRAs that will lead to much greater labor competition in the hospitality industry. Overall, these seven agreements bring advantages and disadvantages to the tourism industry, so how hotels in Bangkok manage this situation is a great challenge.

According to the research problems and questions mentioned above, this study's objectives are as follows: 1) to explore how hotels are preparing for AEC, 2) to understand how hotels plan to take advantage of the increasing labor mobility that AEC will enable, 3) to investigate whether Bangkok-based hotel managers are considering the hiring of other

nationalities when AEC-enabled labor mobility begins, 4) to identify the qualifications of applicants and present employees that the hotel industry in Bangkok is seeking in preparation for the AEC, and 5) to examine the differences between qualifications required for front-line and back-office staff.

2. Literature Review

This part summarized related literature on human resources management in hotel industry and characteristics of hotel employees in order to provide an overview of the hotel industry and personal traits required for workers in the industry.

2.1 Human Resource Management in Hotels

Lucasa & Deery (2004) point out that human resource management (HRM) can be discussed in many contexts, such as competencies, turnover, employee development, service quality, retention, management and training, though typically the subject of recruitment/selection sees less discourse. Buller and McEvoy (2012) stated that HRM practices such as recruitment/selection, performance appraisal, training/development and compensation are important to produce firm-specific human and social capital. Human capital directly affects performance outcomes; therefore, in this study the researcher focused on recruitment, especially on the employee qualifications that Bangkok-based hotels are seeking to prepare for the AEC.

Lengnick-Hall et al. (2009) also support that HR practices directly affect organizational performance and that strategy moderates the relationship between HR practices and organizational performance, with the current trend of strategy human resource management (SHRM) focused on human capital because its diversity affects performance. Tsaur and Lin (2004) state that 1) HRM practices of “recruitment/selection” are significantly related to service quality and 2) better HRM practices lead to a higher service levels. They suggest that an organization could select employees based on factors such as job-related characteristics, job knowledge and personality.

2.2 Characteristics of Hospitality Employees

2.2.1 Emotional Intelligence (EI)/Emotional Quotient (EQ)

Emotional intelligence (EI) is important for service providers because customers judge the quality of services by their feelings toward providers. EI comprises self-awareness, self-management/discipline, relationship management skills and social awareness. Social awareness includes empathy, organizational awareness and service orientation (Scott-Halsell, Blum & Huffman, 2008).

2.2.2 Competencies

Competency domains include practical competency, adaptability to a working environment, ability to make progress, interpersonal skills, active participation in social gatherings, and flexibility of time management (Kim et al., 2011). Front-line employees need a professional appearance, voice and tone (Tsaur & Tang, 2013). Kamau and Waudu's research (2012) demonstrated that employer expectations of overall staff competency were affected by the ratings of hotels in Nairobi, but specifics such as customer care and the ability to communicate in different languages was expected by international guests regardless of

hotel rating. Tsaur and Tang (2013) stated that the hospitality industry seeks front-line employees who give aesthetic pleasure, but also expects them to understand customer expectations of quality service.

2.2.3 Experience

Work experience relevant to an available position is an important factor in a recruiter's decision to hire a fresh graduate in the hospitality industry (Karani, 2011; Kwok, Adams & Price, 2011). Scott-Halsell, Blum & Huffman (2008) showed that the level of emotional intelligence was positively related to the number of years of experience in the service industry, which in turn leads to better service.

2.2.4 Managerial Competency

Managerial competency is required for managerial-level employees. Using the New Zealand Institute of Management Capability Index, Blayney & Blotnicky (2010) outlined nine major determinants of competent managers: (1) innovation of products and services, (2) interpersonal relationships, (3) knowledge and technology, (4) organizational capability, (5) financial management, (6) people leadership skills, (7) performance leadership, (8) results and comparatives, and (9) visionary and strategic leadership.

2.2.5 Gender

Managerial competency shows no difference between male and female managers. However, the research points out that female managers were less likely to switch jobs than male managers. However, switching positions frequently provides varied experience and, as mentioned in earlier paragraphs, experience is a condition for a hotel industry employee. This condition seems contradictory to the statement that male and female managers are equally competent.

2.2.6 Behavior

1. Feminine & Masculine: Feminine behavior characteristics are associated with emotionality, selflessness, sensitivity and inter-personal relationships, whereas male behavior is typically characterized as assertive, activity-driven, self-developing (this one cited as a managerial competency) and goal-oriented (Blayney & Blotnicky, 2010).

2. Personality: Through the recruiting process to select the person most suitable for an organization, the suitability of an applicant's personality in a work context is very important (Karani, 2011). According to Jovičić et al. (2011), an individual's personality for the hospitality industry should include five traits: extroversion, conscientiousness, pleasantness, openness to new experiences and negative affectivity.

3. Organizational Citizenship Behavior: Organizational citizenship behavior references self-initiated and positive employee behavior (Chiang & Hsieh, 2012).

4. Psychological Empowerment: Psychological empowerment refers to the perspective of an employee toward his or her job: is it important or meaningful to him or her? An employee should feel confident in his or her competence to perform a job. Moreover, psychological empowerment is a positive influence on employee organizational behavior and job performance (Chiang & Hsieh, 2012).

3. Research Methodology

The researcher applied a qualitative approach, whereby the research outcomes would be interpreted to understand the requirements of an employee by HR managers in Bangkok-based hotels in preparation for the AEC. The population was HR managers in Bangkok-based hotels whose ratings are between three and five stars. Researchers interviewed 12 respondents, whose positions were related to managing staff recruitment. Interview questions were set to achieve the objectives required. The in-depth interview guideline is listed below:

1. Please tell me a little bit about your work experience in the hotel industry and specifically in your HR department.
2. As the AEC is coming in 2015, how will AEC policies such as the free flow of labor and service affect your hotel?
3. How is your hotel preparing its staff for AEC?
4. What are the hotel's requirements for recruiting new staff?
5. What qualifications and characteristics do you expect from your workers?
6. Why are those characteristics important?
7. Of those characteristics, which one is most important and why?
8. Are there any differences in the required characteristics for front-line versus back-office staff?
9. In conclusion, how would you describe a model employee of your hotel?

3.1 Data Collection

Face-to-face interviews were conducted using semi-structured and open-ended questions. Firstly, researchers sent request letter to the hotels with interview questions and a letter provided by UTCC requesting permission to collect data. Secondly, the hotels replied and they were asked to confirm an interview time set by them. Thirdly, researchers met respondents at their work places. Interviews were conducted in the language convenient for respondents: Thai or English. Before starting, researchers asked for permission to record the interviews. Finally, the interviews were transcribed and interpreted.

3.2 Data Analysis

Researchers did data analysis as per Creswell (2003), employing qualitative inquirers that often conveyed a generic process of data analysis. The three generic steps are as follows:

1. Organize and prepare the data for analysis. This includes transcribing interviews, optically scanning material, typing field notes, and sorting and arranging data into different types depending on the sources of information.
2. Read through all data to obtain a general sense of the information and to reflect on its overall meaning.
3. Begin data analysis with a coding process, such as placing text data into categories and labeling those categories with a term based on the participant's language.

4. Results

The researchers completed 12 hotels interviews. Hotels' general information and respondents' positions are listed below (Table 2). The serial number of respondents is shown in Table 3.

Table 2 Profile of Respondents

Hotel Serial Number	Hotel Name	Respondent Position	Hotel Star Level	Hotel Address
1	Pullman Bangkok King Power	Director of Human Resource	5 stars	8-2 Rangnam Road, Thanon Phayathai Ratchathewi, Bangkok 10400
2	Intercontinental Bangkok	Director of Human Resource	5 stars	973 Ploenchit Road, Bangkok 10330
3	Swissôtel Le Concorde Bangkok	Director of Human Resource	5 stars	204 Ratchadapisek Road, Huay Khuang, Bangkok 10310
4	Plaza Athénée	Director of Human Resource	5 stars	61 Wireless Road (Witthayu), Bangkok 10330
5	Royal Orchid Sheraton	Director of Human Resource	5 stars	Charoen Krung Road Soi 30 (Captain Bush Lane) Siphya, Bangrak, Bangkok 10500
6	Windsor Suites & Convention	Human Resource Manager	4 stars	10/1 Sukhumvit Soi 20 Sukhumvit Road, Klongtoey, Bangkok 10110
7	Miracle Grand Convention	Human Resource Manager	4 stars	99 Khamphangphet 6 Rd. Talad Bangkhen Rangsit, Bangkok 10210
8	Rama Garden	Human Resource Manager	4 stars	9/9 Vibhavadi Rangsit Rd, Bangkok 10210
9	The Royal River	Personnel Manager	4 stars	66/1 219 Charansanitwong Rd, Bangkok 10700
10	Furama	Operation Manager & Senior Assistant Human Resource Manager	4 stars	533 Silom Rd, Silom, Bang Rak, Bangkok 10500
11	101 Holiday Suite	Human Resource Manager	4 stars	194 Soi Ladpro 101, Ladpro Road, Bangkok, Bangkok 10240
12	Ratchada City Hotel	Human Resource Manager	3 stars	Ratchadaphisek Rd, Chatuchak, Bangkok 10900

Table 3 Serial Number of Respondents

Respondents	Serial Number of Respondents
Director of Human Resource of Pullman Bangkok King Power Hotel	Respondent 1
Director of Human Resource of Intercontinental Bangkok Hotel	Respondent 2
Director of Human Resource of Swissôtel Le Concorde Bangkok Hotel	Respondent 3
Director of Human Resource of Plaza Athénée Hotel	Respondent 4
Director of Human Resource of Royal Orchid Sheraton Hotel	Respondent 5
Human Resource Manager of Windsor Suites & Convention Hotel	Respondent 6
Human Resource Manager of Miracle Grand Convention Hotel	Respondent 7
Human Resource Manager of Rama Garden Hotel	Respondent 8
Personnel Manager of The Royal River Hotel	Respondent 9
Operation Manager & Senior Assistant Human Resource Manager of Furama Hotel	Respondent 10
Human Resource of 101 Holiday Suite Hotel	Respondent 11
Human Resource of Ratchada City Hotel	Respondent 12

4.1 Results of the Study

Summaries of the main themes from the respondents' statements are shown below.

4.1.1 Free Flow of Labor is an Opportunity for Selecting People

The AEC will provide an opportunity for managers in selecting candidates for the hotel industry because of three problems in the industry cited by some HR managers:

1. The hotel industry will become more competitive because of increasing supply, which will constrain the supply of qualified staff. Respondent 3 indicated that many newly built hotels are ready to open; demand for qualified employees is high, while supply is low.

2. Some positions are experiencing greater shortages than others. Respondent 3 pointed out that, "Nowadays, Thai people may not accept any position that looks low in the public eye."

3. Hotels are eyeing the hiring of foreign staff who can better communicate with guests from the same countries.

4.1.2 Free Flow of Labor Will Affect Some Positions

Only some positions are open for workers from other ASEAN countries, as shown in Table 4. The positions mentioned most frequently are housekeeping, room maid, room attendant, front line, and food and beverage. Front-line positions and those in food and beverage require good English skills and an ability to communicate well with guests.

Table 4 Hotel Positions on Offer to Workers in Other ASEAN Countries

Offered Positions	Hotels by serial numbers											
	1	2	3	4	5	6	7	8	9	10	11	12
Housekeeping	√	√				√			√			√
Front Line	√	√	√	√		√	√				√	
Room Maid			√			√			√	√		
Room Attendant	√		√			√						
Food & Beverage	√			√	√	√						
Supervisor	√											√
Gardener								√		√		
Bellboy				√		√						
Steward			√		√							√
Cook												√

4.1.3 Knowledge & Cultural Exchange & Business Risk

The AEC will lead to the free flow of labor, and hotel managers' concern about knowledge and cultural exchanges and the resulting business risk can be seen from both positive and negative perspectives. While a free labor flow might ease labor shortages, it could present a big challenge to ensure that people from different countries and cultures work together well and can run a business smoothly. As Respondent 7 explained: "It could be challenging for the managers to manage well and make people from different countries and cultures get along well."

4.1.4 Worries from the HR Managers

Some hotel managers have concerns regardless of whether they hire people from other ASEAN countries:

1. Most HR managers mentioned that a work permit would be a barrier for hiring labor from other ASEAN countries.
2. Cultural clashes among workers may cause problems at work.

4.1.5 AEC will not affect Recruitment for some HR Managers

Despite the opportunities of an expanded, regional labor pool from AEC, some managers still prefer to hire Thai people. Other HR managers reported that they will recruit people only according to their hotels' needs; they see little or no effect on their hiring practices with the onset of AEC.

4.1.6 Hotel Staffing Preparations for AEC

1. No plan: Respondent 2 explained that she does "not really have a plan to prepare, as English-language training is already required by a five-star hotel. We're not concerned about AEC. We hire a company to train staff and we have our own permanent English teachers."
2. Language training: Respondent 8 said, "We develop them, train them...for hotel jobs; good language skills are necessary."
3. Work skill training: Respondent 4 explained that "We keep training them on job knowledge and additional knowledge that concerns their jobs, such as online systems."
4. Staff awareness of AEC's implications: Respondent 4 said, "I keep reminding our staff that if they do not improve, they will be in trouble or even lose their jobs because of rising competition."
5. Efforts to maintain or improve service quality: Respondent 10 explained, "We must improve English skills and work standards for every position. With AEC coming, the staff needs to maintain our service standards as high as before or even better."

4.1.7 Qualifications Required for Employees in the Hotel Industry in Bangkok

According to the results (see Table 5 for more details), normal competencies related to their jobs, such as good attitude, being service-minded and displaying friendliness, are the basic requirements of every hotel employee. The ability of an applicant to work is also important. Some HR managers consider the distance between an applicant's home and the hotel an important issue. They explained that the traveling distance should not be far so as to minimize the travel time from home to work. Other managers stress different factors. For example, the weighting of requirements among various positions differs. Jobs involving guest contact emphasize service-mindedness and smiling, such as, while back-office positions such as accounting may need close attention to habits and details, and housekeeping requires hard physical labor.

4.1.8 Qualification of Characteristics between Front-Line and Back-Office Staff

Qualifications of characteristics among front-line and back-office staff can be stated as "Different" or "Not Different". The answer would depend on perspectives. On the one hand, some managers see no difference between the two because they are all doing service jobs, so they should have the same characteristics. On the other hand, it could be different in the level of each qualification required; back-office staff and front-line personnel both are required to have the right attitude, service-mindedness and friendliness, but front-line staff are required to place more emphasis on physical traits such as appearance.

Table 5 Qualifications Required for Employees in the Hotel Industry in Bangkok

Requirements	Hotels by serial numbers											
	1	2	3	4	5	6	7	8	9	10	11	12
Team work					√		√			√		√
Transportation							√		√			
Languages (English)	√		√	√			√				√	√
References/CV	√									√	√	
Attitude	√	√	√	√	√	√	√	√	√	√		√
Depend on Position		√	√		√	√	√	√	√	√		
Service Minded	√	√	√	√	√	√	√	√	√		√	√
Appearance	√		√	√								
Experience				√		√		√		√	√	√
Vacancies					√	√		√				
Personality		√		√					√	√		
Potential				√								
Integrity										√		
Eye Contact	√				√							
Active	√				√							
Friendly		√		√	√		√	√				
Love Job						√	√		√		√	
Positive Thinking							√					
Open Minded							√					
Flexible							√					
Attentive									√			
Integrity										√		
Knowledgeable	√	√										
Understand Guests' Needs		√										
Take Ownership		√										
Sharing		√										
E.I.				√			√			√	√	
Self- Improvement				√			√					
Doing Own Job Well					√			√			√	√

5. Discussion

Researchers made the following conclusions per the objectives and compared the results with the literature review to provide the following discussion.

5.1 Preparation for AEC

This part answered the study's first objective to investigate how hotels are preparing for AEC. The answers are shown below.

1. Staff training in languages, such as English, as required. Three-star and four-star hotels prefer to train staff about their customer group's native language, such as Chinese or Vietnamese. For example, Respondent 8 said, "We improve them, train them...language is necessary for a hotel job."

2. Training staff in specific work-related skills. Respondent 4 explained that, "We keep training them in job knowledge and additional knowledge concerned with their jobs, such as online systems."

3. Raising staff awareness of AEC's implications. Respondent 4 said, "I keep reminding our staff that if they do not improve, they will be in trouble or even lose their jobs because of rising competition."

4. Maintaining and improving service standards. Respondent 10 pointed out, "We must improve English skills and work standards for every position. With AEC coming, the staff needs to maintain our service standards as high as before or even better."

5.2 Making labor mobility: an advantage

The second objective was to inquire as to how the hotels will turn labor mobility into an advantage. These answers are from the first question seeking opinions on the forthcoming labor free flow.

1. To solve the labor shortage problem in operational positions, such as housekeeping, Respondent 1 said, "It is a good opportunity for the hotel because we have a problem finding labor. Everyone is looking for labor."

2. Greater labor mobility will lead to greater competition, providing an opportunity for management to enhance their staff so as to improve service quality. The staff must improve or face competition from other ASEAN countries.

5.3 ASEAN workers hiring

HR managers will consider hiring workers from other ASEAN countries in some positions. This points to the study's third objective to investigate if HR managers would consider hiring other nationalities under AEC. The answer is yes, because it would allow them to solve their operational-level labor shortage in jobs such as housekeeping. "Maybe only in certain departments like housekeeping, because it is very difficult to find housekeeping staff now," said Respondent 2. The hotel might hire someone who can speak English well for a front-line position, but will not hire non-Thai nationals for back-office positions such as accounting, HR and engineering. Respondent 4 expressed that, "I will be happy to hire more applicants who can speak English well from other ASEAN countries and put them in the guest contact area. I think I will be happier to get more applicants who can speak English well in the guest contact area."

5.4 Qualifications for Hotel Employees in Bangkok

The study's fourth objective was to determine the employee qualifications that hotel HR managers in Bangkok are seeking to prepare for AEC. They mentioned 6 critical issues, as summarized below:

1. Language is required. As Respondent 4 explained: "I can hire Malaysians, Filipinos, Burmese and Vietnamese who can speak English well." Respondent 3 added that, "I want to hire anyone who can speak English."

2. Work attitude is important. Most managers indicated that it is the most important factor. It includes willingness to work, attentiveness to work, willingness to solve problems, an assumption of ownership, love for one's job, and service-mindedness as the important factors in the service sector.

3. A good personality is required. Traits such as politeness, a friendly smile and an ability to make a guest feel comfortable or even warm is important. Respondent 4 said, "We evaluate the English competency, attitude and an applicant's personality."

4. A professional appearance is required because it is the face of the service sector. Respondent 3 said, "I want to hire the one whose appearance is acceptable."

5. A high level of emotional intelligence/emotional quotient is desired. As respondent 4 said, "This kind of job is not easy, because we are confronting the emotions of guests. You have to be very good in emotional intelligence."

6. Transportation is a final issue. This can affect hiring decisions because Bangkok's notorious traffic jams can affect the staff's work quality and may lead to staff turnover as well. As Respondent 7 explained: "Transportation is a concern as well, because it's one factor that determines whether a staff member will work with us for long."

5.5 Differences between front-line staff and back-office staff

The study's fifth objective showed some differences between front-line and back-office staff. Some managers saw no difference between these two groups because of they are all doing service jobs and therefore they should have similar characteristics. In contrast, others believed there could be some differences in the weighting of qualification requirements. Respondent 1 believed that, "There is no difference: both require politeness, an easy smile, an active nature, frequent eye contact and a good attitude, but front-line staff might face additional physical requirements." Respondent 5 added that, "Although both types of work basically require a good attitude and a good service mind, we emphasize the service mind and an attractive physical appearance for staff who will be in contact with guests."

6. Conclusion

HR managers in Bangkok hotels may consider recruiting people from other ASEAN countries for operational positions such as those in housekeeping and on the front line (guest contact requires fluent English speakers). The most important point is professional certification. It means anyone who wants to work in other ASEAN countries must pass an exam under the same standard for all ASEAN countries.

The researcher summarized several concerns from HR managers, including work permits and potential cultural clashes. These problems create risks for business. If they are not managed well, they can damage a hotel's image and brand.

Furthermore, positions suffering from a labor shortage, such as in housekeeping, can be filled with labor from outside the country. Many hotels in Thailand already obtain visas

and work permits for Cambodian, Lao and Myanmar nationals. Those positions could possibly be filled from those three countries as well. Obviously if a hotel can find qualified applicants from the Thai labor market or those three nationalities, they will not consider hiring others as operational-level staff.

Relevant work experience is another important factor that affects recruiting decisions in the hospitality industry (Karani, 2011; Kwok, Adams & Price, 2011). This is not always correct, according to this study's results. In this case, five-star hotel managers do not see work experience as important. In contrast, three-star and four-star managers prefer to seek experienced people because it saves time for training and they can work immediately.

Implications for the hospitality industry from this study could be that (1) hotels should be aware of AEC's labor free flow as it may help reduce some hiring problems as identified in the research and (2) job-seekers can properly prepare themselves for employment by using the insights gleaned from this study as it relates to job requirements.

This research provides two recommendations for HR managers. First, the work permit process should become easier as employers have requested because it is the main barrier that affects hiring decisions of non-Thai nationals. If the work permit process remains unchanged, it will inhibit labor mobility. Second, managers must be aware of issues surrounding the hiring of multiple nationalities in terms of their working together.

7. Limitations and Future Research

This research met with several limitations. First, it was difficult to get respondent appointments because the interviewees are in high positions. Their time is valuable, and requesting 30-60 minutes for an interview was difficult. Second, data collection during times of political uncertainty, when hotel occupancy was low, added to the workload and time constraints of HR managers who were busy trying to solve the consequent business problems. Thus it was even more difficult to make appointments. Finally, language was a barrier in some cases.

Further research could address (1) all the characteristics that HR managers require and expect, how those characteristics are related to a hotel's performance and service quality, and (2) the free flow of labor and its effects on other industries.

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**THE EFFECT OF PERCEIVED VALUE, TECHNOLOGY ACCEPTANCE,
AND E-SERVICE QUALITY ON CUSTOMER SATISFACTION
AND SERVICE LOYALTY FOR INSTANT MESSAGE
PROVIDERS BUSINESS**

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Abstract

Thailand is the second-fastest growing smartphone market in the ASEAN region, mobile instant message (MIM) services have been widely adopted in Thailand. Although previous research are extensive on the adoption of mobile services industry, only few focus on customer satisfaction and loyalty to MIM in Thailand.

This research use simple random sampling to choose four places (Si Lom, Sutthisan, Phahon Yothin and Lardprao) in Bangkok, and use accidental sampling to choose the respondents who use the MIM. A total of 430 respondents answered the questionnaires. Data analysis was using descriptive statistic, multiple regressions and factor analysis.

This research found that perceived value, technology acceptance, and e-service quality has the positive significant effect on customer satisfaction and service loyalty; functional value is seen to be a major driver of customer satisfaction. Additionally, this research find that nationality and behavioral of MIM usage, have difference in the objective of use.

The result of this research showed that MIM provider should develop and provide more functional value in MIM, to let customers got more value from the function through use them product and service. Consider the finds of behavior and nationality of respondents, most of Chinese respondent use MIM for social communication, and Thai respondent use MIM for both social communication and work. MIM provider should pay more attention on different nationality customer's needs.

Keywords: mobile instant message, customer satisfaction and service loyalty.

1. Introduction

Thailand is the second-fastest growing smartphone market in the ASEAN region, due to its still-low broadband penetration. Thailand's has reportedly reached a mobile penetration

rate of more than 130 percent, according to recent government figures. The country's smartphone penetration is expected to top 25 percent of the total population by the end of 2012, up from 17 percent in June 2012. However, 8% of mobile phone users worldwide have adopted Mobile Instant Messaging (MIM). It is used by 61% of them. More widely used than Short Message Service (SMS), Mobile Instant Messaging (MIM) is becoming the “primary non-voice method of interacting - with potentially dramatic consequences for service and network providers’ revenue” (TNS Global, 2008).

Through the huge number of smartphone users install Mobile Instant Messaging (MIM) and huge significant convenience usage of Mobile Instant Messaging (MIM). For the instant message providers business, it is important to find what exactly drive the customer satisfaction and loyalty to select the instant message software provider.

In the research area of business and information management, one of the important research topic is customer satisfaction. (Au, Ngai, & Cheng, 2008). In review of studies, perceived value, technology acceptance factor and electronic service quality, all are important dependent variable for the customer satisfaction in the study area. Further, with the aid of information technology, customers are becoming more and more open to understanding the brand; thus, satisfaction alone may not be adequate to retain a long-term relationship (Kassim & Abdullah, 2008). Satisfaction positively affect the customer loyalty, satisfaction is one antecedent of customer loyalty, and satisfied customers are more loyal. (Deng et al 2010; Dick & Basu, 1994).

In such a competitive Mobile Instant Messaging (MIM) market, Mobile Instant Messaging (MIM) service providers are all making efforts to attract more users and gain more market shares. Thus, the ability to provide a high degree of customer satisfaction services is crucial to providers in differentiating themselves from their competitors. Accordingly, it is important for Mobile Instant Messaging (MIM) service providers to understand what factors impact these users’ satisfaction and loyalty, and then to take measures to retain their customers. And the research question will concentrate on, how is the effect of perceived value, electronic service quality, technology acceptance factor on mobile instant message software customer satisfaction and loyalty in Bangkok, Thailand?

2. Literature review

Literature in this study includes customer satisfaction, perceived value, technology acceptance factor, electronic service quality and service loyalty.

2.1 Customer satisfaction

Oliver (1981) defined customer satisfaction, “the summary psychological state resulting when the emotion surrounding disconfirmed expectations is coupled with the consumer’s prior feelings about the consumption experience”, in the following study, customer satisfaction is defined as “the consumer's fulfillment response, the degree to which the level of fulfillment is pleasant or unpleasant” (Oliver 1997). Customer satisfaction is an overall attitude formed based on the experience after customers purchase a product or use a service (Fornell, 1992).

Furthermore, Kotler (2000) defined satisfaction as a person's feelings of pleasure or disappointment resulting from comparing a product's perceived performance in relation to their expectations. If the performance falls short of expectations, the customer is dissatisfied and if it matches the expectations the customer is satisfied. Most of companies want have high satisfaction level, customers who are just touch satisfied, they still easy to switch to another provider, when a better provider comes out. Satisfaction can be reflection in content of service, it is the assessment of the experience of interacting with a service provider, and customers can use it, to estimate future experience (Crosby et al, 1990).

2.2 Perceived value

Zeithaml, (1988) define perceived value as a ratio of perceived benefits to perceived costs. McDougall & Levesque (2000) has broadly defined perceived value is the results or benefits customers receive in relation to total costs (which include the price paid plus other costs associated with the purchase). On the research of the consumer perceived value Sweeney and Soutar (2001) defined functional value to be two group, price/value for money and performance/ quality.

Emotional value: the utility derived from the feelings or affective states that a product generates.

- Social value: (enhancement of social self-concept) the utility derived from the product's ability to enhance social self-concept.
- Functional value: (performance/ quality) the utility derived from the perceived quality and expected performance of the product.

From the review of literature, many research notice that, perceived value is related to customer satisfaction (Sweeny and Soutar. 2001). Between satisfied customers and supplier, value is a direct impact factor (Anderson et al., 1994). Bolton and Drew (1991) has been proposed that, part of the future intentions are determined by perceived value. McDougall& Levesque (2000) found perceived value is one of the most important driver for customer satisfaction. Through the customer purchasing process, no matter it is one-time purchase or repurchase, perceived value occurs in the whole process (Woodruff, 1997).

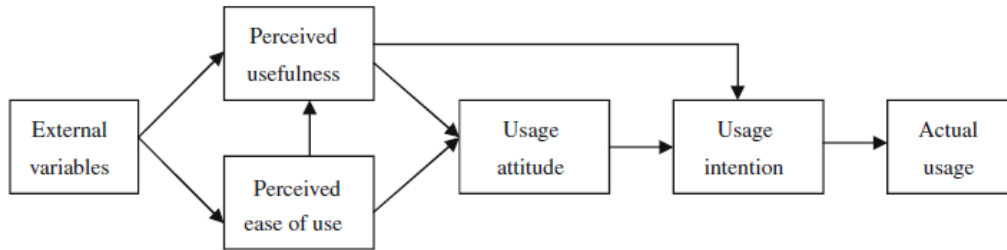
Consumers' perspectives on value, they are willing to make a purchase, when perceived values are high (Holbrook, 1994). Past research identifies a direct link between perceived value and loyalty and linkages in the perceived value-satisfaction-loyalty chain (Ryu et al., 2008; Parasuraman and Grewal, 2000).

2.3 Technology acceptance factor

Davis (1989) proposed to use the technology acceptance model explain and predict user acceptance in information systems or information technology. Through the perceived usefulness, the perceived ease of use has a positive indirect effect on usage of system, the model defined as

- Perceived usefulness: "The degree to which a person believes that using a particular system would enhance his or her job performance".
- Perceived ease of use: "The degree to which a person believes that using a particular system would be free of effort"
- Users' motivation: perceived usefulness, perceived ease of use, and usage attitude.

Figure 1 Technology acceptance model, (Davis 1989)



Technology acceptance model is a robust and powerful model for the explanation of technology usage (Lee, Kozar, & Larsen, 2003). Consider of ease of use in information technology, customer satisfaction in the online environment is significantly higher than in traditional channels, (Poddar et al, 2009; Verhagen and Dolen, 2009). Perceived usefulness as an extrinsic source of motivation (Davis et al 1992). Perceived ease of use had a significant impact on perceived usefulness (Liu et al, 2009).

Davis et al (1992) founded that “while usefulness will once again emerge as a major determinant of intentions to use a computer in the workplace, enjoyment will explain significant variance in usage intentions beyond that accounted for by usefulness alone”. They concluded that, perceived enjoyment is an intrinsic source of motivation, perceived enjoyment can mediated the influence of perceived ease of use on intention.

Davis (1989) founded that, behavioral usage intentions is lead to actual system use. Research has demonstrated the validity of this model, across wide variety of information technology industry. Moon and Kim (2001) proposed, in the study of extended technology acceptance model, the perceived usefulness had a significant influence on behavioral usage intention.

2.4 Electronic service quality

Service quality is a customer's subjective comparison of expectations with actual service performance (Parasuraman, et al 1985). Many conceptualizations and measurements of service quality can be found. For example, it has been defined as consisting of two aspects: technical quality and functional quality (Gronroos, 1984). A third conceptualization of service quality includes interaction quality, physical environment quality, and outcome quality (Brady & Cronin, 2001).

- Interaction quality: attitude, behavior, and expertise.
- Physical environment quality: ambient conditions, design, and social factors.
- Outcome quality: waiting time, tangibles, and valence.

Parasuraman et al (2005) defined the four core dimensions that customers use to judge which they experience no questions or problems are as follow:

1. Efficiency: The ease and speed of accessing and using the site.
2. Fulfillment: The extent to which the site's promises about order delivery and item availability are fulfilled.
3. System availability: The correct technical functioning of the site.
4. Privacy: The degree to which the site is safe and protects customer information

If quality improvements are not based on customer needs, then it will not lead to improved customer satisfaction. The key difference between service quality and customer satisfaction is (Iacobucci et al 1995).

- Quality related to managerial delivery of the service
- Satisfaction reflects customers' experiences with that service.

Rust and Oliver (1994), suggest that customer satisfaction or dissatisfaction is “cognitive or affective reaction”. As a response to a set of service quality is one dimension on which satisfaction is based, (Dick & Basu 1994). Service quality as an antecedent to satisfaction, Bolton and Drew (1994, p. 176). Anderson et al. (1994) suggested that improved service quality will result in satisfied customer. Therefore, the hypothesis posted below

2.5 Service loyalty

“Service loyalty is the degree of which a customer exhibits repeat purchasing behavior from a service provider, possesses a positive attitudinal disposition toward the provider, and considers using only this provider when a need for this service arises” (Gremler and Brown 1996). Additionally, Lu (2002) defined service loyalty as: “The willingness of customer to consistently re-patronize the same service provider, company that maybe the first choice among alternatives, thereby complying with actual behavioral outcomes and attaching with favorable attitude and cognition, regardless of any situational influences and marketing efforts made to induce switching behavior.”

Therefore, in this study the service loyalty is defined as: customer consistently re-patronize the same software provider, regardless of any situational influences and marketing efforts made to induce switching. On the other hand, Moonkyu and Lawrence (2001) defined service loyalty is based on past experiences and future expectations, the customers have intention to continue choose their current service provider.

Anderson and Fornell (1994) point out that customer loyalty is determined to a large extent by customer satisfaction. Luarn and Lin (2003) proposed that, although satisfactory alternatives exist, consumer also give the preference to a particular product/service provider.

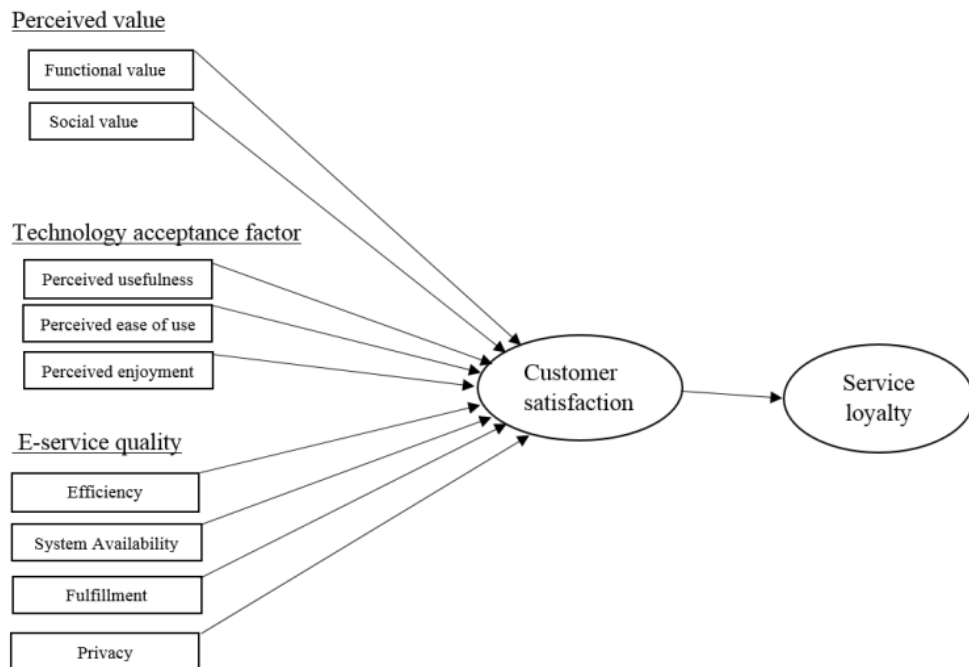
Some researcher have been studies the customer satisfaction or loyalty of mobile services consumers. They found that, analysis of loyalty effecting factor is important for the mobile instant message company. In addition, they also agree that, customer satisfaction is the core mediate for mobile service firms to enhance them company sustainability and success (Deng et al, 2010; Wang& Liao, 2007; Turel& Serenko, 2006). “There is increasing recognition that the ultimate objective of customer satisfaction measurement should be customer loyalty”, Fornell (1992). In the research area of information management, one of the important research topic is customer satisfaction. (Au, Ngai, & Cheng, 2008). In review of studies, satisfaction positively affect the customer loyalty, satisfaction is one antecedent of customer loyalty (Deng et al 2010; Dick & Basu, 1994). Cristobal et al. (2007) report that e-satisfaction has a positive significant effect on e-loyalty Satisfied customers are more loyal.

3. Conceptual framework

After the literature review, the conceptual framework of this research was developed and showed as figure 2. There is three main independent variable which effects customer satisfaction, perceived value, technology acceptance factor and electronic service quality.

For each independent variable, totally have nine dimension to measure it, which including functional value, social value, perceived usefulness, perceived ease of use, perceived enjoyment, efficiency, system availability, fulfillment, and privacy.

Figure 2 Conceptual framework of this research



4. Methodology

This research selects four places to collect the respondents' data, which including Si Lom, Sutthisan, Phahon Yothin and Lardprao. Therefore, the questionnaires were distributed and collect in these four places in Bangkok. A total of 430 respondents answered the questionnaires, which 400 questionnaires were relevant for this study.

5. Research Instrument

Five-point Likert scale was used measured all indicators where "1" indicates the least favorable response alternative (Strongly disagree) and "5" the most favorable response alternative (Strongly agree).

Item Objective Congruence (IOC) was used to test the validity of questionnaire by experts. IOC was a process to content specialists to rate each individual item on the scale what if could use to measure the objectives of this study. All the items index of this study were greater than 0.75, in which meant that the all index were as valid.

The pretest for the reliability test was collect by 30 smartphone user in Bangkok, Thailand. The Cronbach's alpha coefficient was used to measure the reliability of this research. After the data taste, Crobach's Alpha of this study is ranked from 0.716 to 0.841. It can imply that the data were acceptable.

6. Data analysis

In the data analysis of this research, Pre-test used for complete the questionnaires. Likert Scale was applied to measure the level of agreement of variables the personal data is collect and analyze with descriptive statistic. Multiple regressions and factor analysis was used to examine the postulated hypothesis.

7. Result

The total sample size in this study consisted of 430 respondents distributed in Bangkok. The return rate was 93%. Thus, 400 questionnaires are used for data analysis based on the conceptual framework that the researcher mentioned in the previous chapters.

The majority of the respondents who are 21-25years of age for 175 respondents which equals to 43.8% and the second large group which is the respondents who are 26-35 years old that has 162 respondents which equals to 40.5% for this research, 44 respondents which equals to 11% of the respondents had the age between 36-50years old.

The sample was component of 121 male and 279 female which equals to 30.2% for male and 69.8% for female, included the 272 Thai and 128 Chinese respondents. The majority group of the respondents graduated a bachelor degree for 297 persons or 74.2% and 75 or 18.8% respondents graduated from master or above. In the income group shows that the majority group of the respondents has income of under 15,000 Baht/month for 141 persons or 35.2% and the second majority group was 15,001-25,000 baht /month 102 persons or 25.5%. Also the income between 25,001-30,000baht/month has 88 persons equals 22% of all respondents.

In the research of respondents smart phone use, shows that iPhone users was majority with 151 respondents contained which equals to 37.8% of all respondents, Samsung users has 122 respondents or 30.5% of all respondents, and Nokia has 37 respondents equal 9.2%. In the smartphone operation system use, the research shows that Android system is the majority with 183 respondents use equals to 45.8%, apple iOS was the second large group with 151 respondents contained which equals to 37.8%. Microsoft windows phone has 10.2% or 41 respondents.

Moreover, research of the behavioral to use mobile instant message software ,found that majority group was the 329 persons or 82.2% respondents use Line, has 168 persons or 42% respondents are use Wechat, for the Whatsapp and QQ, have 11.5% and 8.8% respondents use.8.2% respondents use other software. Many respondents have used more than one software at same time. The highest number of respondents most use mobile instant message software was the group of Line user with 260 persons or 65%. Also Wechat has 111 respondents or 27.8% were mostly used. In the time spend on mobile instant message software, the data showed that the majority respondents were use software over 5 time per hour with 41.2% respondents, has 28.0% respondents were use 4-5 time per hour, and 21.2% respondents were use 2-3 time per hour.

In the how long for respondents onetime use mobile instant message software section, has the 163 persons or 40.8% respondents are spend 20-30 minutes use software on onetime, 87 persons or 21.8% respondents are below 10 minutes use software on onetime, 79 persons or 19.8% respondents are spend 40-50 minutes use software on onetime, have 70 persons or

17.5% respondents are use over 50 minutes use software on one time. In the objective of use mobile instant message software showed that 285 of the respondents or 71.2% had used the mobile instant message software for the social communication ,30.8% or 123 of the respondents had used for work, 6.2% used for study, and 2.8% used for other. In the behavior and nationalist of respondents, in the objective of study and other, Chinese and Thai respondents are quite same only have few of them use MIM for study, in the objective of use for work, only have 10.9% Chinese use MIM for work, but have 40.1% Thai respondents use it for work, in the objective of social communication, have 94.5% Chinese are use MIM for social communication, and have 60.3% Thai use for it.

This research use 5-point rating scales with the means is range from 3.68 to 4.02, the functional value the result as agree (mean = 3.84, S.D. =0.60), the result of social value show as agree (mean = 3.71, S.D. =0.67), perceived usefulness (mean = 4.02, S.D. =0.62), perceived ease of use (mean = 4.09, S.D. =0.65), perceived enjoyment (mean= 3.93, S.D. =0.63) the result show as agree, efficiency (mean = 3.89, S.D. =0.62), system availability (mean = 3.87, S.D. =0.65) fulfillment (mean = 3.89, S.D. =0.63), and privacy (mean = 3.68, S.D. =0.73) the results show as agree. Customer satisfaction (mean = 3.90, S.D. =0.59), service loyalty (mean = 3.91, S.D. =0.65) results show as agree, show as table 1.

Table 1 Level of agreement

Item	Mean	Std. Deviation	Level of Agreement
Perceived value			
Functional value	3.84	0.6	Agree
Social value	3.71	0.67	Agree
Technology acceptance factor			
Perceived usefulness	4.02	0.62	Agree
Perceived ease of	4.09	0.65	Agree
Perceived enjoyment	3.93	0.63	Agree
E-service quality			
Efficiency	3.89	0.62	Agree
System availability	3.87	0.65	Agree
Fulfillment	3.89	0.63	Agree
Privacy	3.68	0.73	Agree
Customer	3.9	0.59	Agree
Service loyalty	3.91	0.65	Agree

In the section of the perceived value functional value had the most significant positive effect on the customer satisfaction at 0.363; social value had the second significant positive effect on the customer satisfaction at 0.244. In the section of the technology acceptance factor, perceived usefulness had the most significant positive effect on the customer satisfaction at 0.256, perceived enjoyment had the second significant positive effect on the customer satisfaction at 0.215, and perceived ease of use had the third significant positive effect on the customer satisfaction at 0.204. For the electronic service quality section, fulfillment had the most significant positive effect on the customer satisfaction at 0.311, privacy had the second significant positive effect on the customer satisfaction at 0.213, efficiency had the third significant positive effect on the customer satisfaction at 0.169, and system availability had the forth significant positive effect on the customer satisfaction at 0.109. The customer satisfaction had the significant positive effect on the service loyalty at 0.596. As the figure 3 showed below.

Figure 3 Research result of this study; explain by the value of standardized coefficients (beta value)



8. Discussion

8.1 Perceived value with customer satisfaction

In the outcome of this research, perceived value section, through the value of standardized coefficients (beta value) was explained that, the functional value had the most significant positive effect on the customer satisfaction; social value had the second significant positive effect on the customer satisfaction. The result showed that the functional value and social value are the variables which can interpret the effect of perceived value on customer satisfaction.

From the review of literature, many research notice that, perceived value is related to customer satisfaction (Sweeny and Soutar. 2001). Between satisfied customers and supplier, value is a direct impact factor (Anderson et al., 1994). Bolton and Drew (1991) has been proposed that, part of the future intentions are determined by perceived value. McDougall & Levesque (2000) found perceived value is one of the most important driver for customer satisfaction. Through the customer purchasing process, no matter it is one-time purchase or repurchase, perceived value occurs in the whole process (Woodruff, 1997).

Consumers' perspectives on value, they are willing to make a purchase, when perceived values are high (Holbrook, 1994). Past research identifies a direct link between perceived value and loyalty and linkages in the perceived value–satisfaction–loyalty chain (Ryu et al., 2008; Parasuraman and Grewal, 2000).

As mentioned earlier, perceived value plays the important role with customer satisfaction. It reveals that this research conform to the previous study. The finding of this research also found that the result corroborates with Sweeny and Soutar. 2001; McDougall & Levesque 2000; Anderson et al., 1994.

8.2 Technology acceptance factor with customer satisfaction

In the research outcome of the technology acceptance factor, through the value of standardized coefficients (beta value) was explained that, the perceived usefulness had the most significant positive effect on the customer satisfaction, perceived enjoyment had the second significant positive effect on the customer satisfaction at, perceived ease of use had the third significant positive effect on the customer satisfaction.

The result showed that the perceived usefulness, perceived enjoyment, and perceived ease of use are the variables which can interpret the effect of technology acceptance factor on customer satisfaction.

Additionally, this research also discovered that the perceived usefulness, perceived enjoyment and perceived ease of use has significant direct effect on customer satisfaction. This can implies that perceived usefulness also is the main determinant of effect of technology acceptance factor on customer satisfaction for instant message providers business. And compare with perceived ease of use, perceived enjoyment has more effect on the customer satisfaction.

Technology acceptance model is a robust and powerful model for the explanation of technology usage (Lee, Kozar, & Larsen, 2003). Davis (1989) founded that research has demonstrated the validity of this model, across wide variety of information technology industry. Consider of ease of use in information technology, customer satisfaction in the online environment is significantly higher than in traditional channels, (Poddar et al, 2009; Verhagen and Dolen, 2009). Perceived usefulness as an extrinsic source of motivation (Davis et al 1992). Moon and Kim (2001) proposed, in the study of extended technology acceptance model, the perceived usefulness had a significant influence on behavioral usage intention.

Base on the information above, that perceived usefulness also is the main determinant of effect of technology acceptance factor on customer satisfaction for instant message providers business, it reveals that this research conform to the previous study which already done by Moon and Kim 2001; Davis et al 1992; Poddar et al, 2009; Verhagen and Dolen, 2009.

8.3 Electronic service quality with customer satisfaction

After model test. in the section of the electronic service quality, through the value of standardized coefficients (beta value) was explained that, the fulfillment had the most significant positive effect on the customer satisfaction, privacy had the second significant positive effect on the customer satisfaction, efficiency had the third significant positive effect on the customer satisfaction, and system availability had the forth significant positive effect on the customer satisfaction.

For objective of this research, identify the effect of electronic service quality on customer satisfaction for instant message providers business. The result showed that the fulfillment, privacy, efficiency, and system availability are the variables which can interpret the effect of electronic service quality on customer satisfaction.

Oliver (1994), suggest that customer satisfaction or dissatisfaction is “cognitive or affective reaction”. As a response to a set of service quality is one dimension on which

satisfaction is based, (Dick and Basu 1994). Service quality as an antecedent to satisfaction, Bolton and Drew (1994). Anderson et al. (1994) suggested that improved service quality will result in satisfied customer.

Refer on the information above, this research found that fulfillment is the most determinant of effect of electronic service quality on customer satisfaction for instant message providers business. Privacy and efficiency has temperate significant positive effect on customer satisfaction. System availability has the less effect on customer satisfaction for instant message providers business. It means that, this research conform to the previous study which already studied by Dick and Basu 1994; Bolton and Drew 1994; Anderson et al 1994.

8.4 Factor analysis

Factor analysis was an important method of statistic used to study the variability among all the observed variables. In factor analysis, observed variables were referred to as factors or dimensions.

After rotated analysis, it was provided functional value (FV) perceived usefulness (PU), perceived ease of use (PEOU), perceived enjoyment (PE), and efficiency (EFF), were rotated significantly in component as Instant message using experience (IMUE).

For the second factor loading, after rotated analysis, it was provided information that social value (SV), system availability (SA), fulfillment(FUL), and privacy (PRI) were rotated significantly in component as Instant message after use experience (IMAUE).

Base on the result of rotated analysis, this research use regression analyses between rotated factor and customer satisfactions. After tested the model, in the section of the factor analysis, through the value of standardized coefficients was explained that, the Instant message after use experience (IMAUE) had the most significant positive effect on the customer satisfaction, Instant message using experience (IMUE) had the second significant positive effect on the customer satisfaction.

For objective of this research, identify the effect of rotated factor on customer satisfaction for instant message providers business. The result showed that the Instant message after use experience (IMAUE) and Instant message using experience (IMUE) are the variables which can interpret the effect of electronic service quality on customer satisfaction. In other words instant message users making to choose Instant message after use experience (IMAUE) as a first determinant, when they need to use the mobile instant software service. Instant message using experience (IMUE) was the secondly determinant of users to use the mobile instant software service.

8.5 Customer satisfaction with Service loyalty

In the research outcome of the customer satisfaction, through the value of standardized coefficients (beta value) was explained that, the perceived usefulness had the significant positive effect on the service loyalty.

For objective of this research, the effect of customer satisfaction on service loyalty for instant message providers business. The result showed that the customer satisfaction the variable which can interpret the effect of customer satisfaction on service loyalty.

“Service loyalty is the degree of which a customer exhibits repeat purchasing behavior from a service provider, possesses a positive attitudinal disposition toward the provider, and considers using only this provider when a need for this service arises” (Gremler and Brown 1996). On the other hand, Moonkyu and Lawrence (2001) defined service loyalty is based on past experiences and future expectations; the customers have intention to continue choose their current service provider.

In the research area of information management, one of the important research topics is customer satisfaction. (Au, Ngai, & Cheng, 2008). “There is increasing recognition that the ultimate objective of customer satisfaction measurement should be customer loyalty”, Fornell (1992). Satisfaction positively affect the customer loyalty, satisfaction is one antecedent of customer loyalty (Deng et al 2009; Dick & Basu, 1994). Customer satisfaction is the core mediate for mobile service firms to enhance them company sustainability and success (Deng, et al, 2010; Wang&Liao, 2007; Turel& Serenko, 2006, Cristobal et al, 2007, report that e-satisfaction has a positive significant effect on e-loyalty.

Base on the information above, that customer satisfaction is the main determinant on service loyalty for instant message providers business, it reveals that this research conform to the previous study which already done by Au, Ngai, & Cheng, 2008; Fornell 1992; Deng et al 2009; Dick & Basu, 1994; Wang&Liao, 2007; Turel& Serenko, 2006; Cristobal et al, 2007.

9. Implementation

9.1 For the instant message providers business

This research has important implications for instant message providers business. One of the challenging tasks that MIM providers face is how to enhance customer satisfaction and loyalty.

As suggested by this research model, customer loyalty will develop if the formation of perceived value, technology acceptance factor, electronic service quality, and customer satisfaction is well managed. Therefore, MIM service provider marketing strategies may be more fruitful through focusing on these variables. It is important for an MIM service provider to be a satisfying brand to increase customer loyalty. MIM service providers must be concerned about the quality of their service and highlight fulfillment. Particularly, they satisfy customers’ value through providing good and reliable functional value, giving a more perception of social value.

Therefore, in order to meet the demands of different types of customers, MIM service providers should.

1. The research and development of MIM service business provider, should develop and provide more functional value in them service business, to make their customers feel can got more value from the function of use them service and product.
2. The MIM service business provider also should pay more attention to keep the fulfillment of them service and produce. Make sure the information technology department keep update, upgrade and maintenance them server, software and service. To provide the fulfillment environment for the customer use, finally enhance the customer satisfaction.

3. The public relation and marketing department of MIM service business provider, should increase the social value receive perception of customer, that can make the customer feel they are receive more social value during use the providers' service and product.

4. Technology acceptance factor appears to be important for both customer satisfaction and loyalty formation, which implies that, in order to attract more current customers to use the MIM providers' service and product, the service providers must try to establish that product and service of them are usefulness, ease-of-use and enjoyable to their customers and care about customers' needs, which can enhance the degree of customers' perceptions of technology acceptance factor.

5. Social communication as first objective of users use the mobile instant message software. For the instant message providers, they should pay more attention on this field, and for the objective use to work and study, the research and development department also should develop more function of software, to support and optimize these three main objective of use.

6. Consider the result of behavior and nationality of respondents, this research included Chinese and Thai nationality people. Most of Chinese respondent use MIM for social communication, and Thai respondent they are like use MIM for both social communication and work. For the instant message providers, they should pay more attention on both objective of use in different nationality customers, which is social communication and work. Research development and marketing department should create and develop the image and function, which MIM can bring more social communication value to customer, and convenient usage in work for customers are use MIM for work.

9.2 For the academic

1. The empirical of this research confirm that the perceived value; technology acceptance model and electronic service quality model are fitted for testing the effect of customer satisfaction and service loyalty for instant message software providers business. The model can be well used in context across wide variety of information technology service industry.

2. The empirical of this research suggest that the researcher should focus on the customer perceived value, fulfillment and technology acceptance model to in the field of customer behavior in the of information technology service industry.

3. The empirical of this research suggest that, in the field of information technology service industry, through the information technology development ,efficiency and system availability are will not plays the significant role.

4. The empirical of this research suggest that, in the field of the regression analysis, factor analysis is a useful tool for investigating complex concepts variable relationship. It can investigate concepts that are not easily measured directly, by large number of variables into a few interpretable underlying factors.

10. Limitation of the study

The results might have limited generalizability. Due to the relatively small sample size, and geographic limitations, the results might also not be truly representative of all Thai mobile instant message software users.

11. Future research

1. The results of this study only provide results on consumers' customer satisfaction and service loyalty in Bangkok. Future research can consider to extend it with other areas in Thailand or other countries. It will be better to understand more about the customer satisfaction and service loyalty in the information technology service industry.

2. The future research was needed to investigate other factors in the information technology service industry, to study the relationship between the demographic and the customer satisfaction and service loyalty.

3. The future research could use more variable to measure the effect of customer satisfaction and service loyalty information technology service industry. So that makes the content of the information technology service industry more extensive and makes the results may become more meaningful.

4. The future research should enlarge the number of respondents, which may be able to distinguish respondents who were divided into different occupations or distinguish the objective of use MIM, for example business, research, family communication and so on.

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Appendices

English research questionnaire

A research is being undertaken to learn more about. The effect of perceived value, technology acceptance, and e-service quality on customer satisfaction and service loyalty for instant message providers business.

Your kindness in answering each of the questions below may help to improve the efficiency in information management. Please respond to each question. The format of requested responses varies by question and may require a written answer, checking ☒ in the relevant ☐ or for some questions are requested to indicate your perception level as a scale ranging from 1 to 5.

This questionnaire has 5 parts:

Part 1: Personal Information

Part 2: Perceived value

Part 3: Technology acceptance factor

Part 4: E-service quality

Part 5: Customer satisfaction

Part 6: Service loyalty

Part 1: Personal Information

Note: Please write down your answer or check ☒ in ☐ that related with your answer.

1. Gender ☐ (1) Male ☐ (2) Female
2. Age ☐ (1) 17-20 ☐ (2) 21-25 ☐ (2) 26-35
☐ (3) 36-50 ☐ (4) over 50 years
3. What is your nationality? ☐ (1) Thai ☐ (2) China
☐ (3) other (please specify)
4. Education level ☐ (1) Under Bachelor ☐ (2) Bachelor
☐ (3) Master or above
5. Income per month ☐ (1) Under-- 15,000 Baht ☐ (2) 15,001--25,000 Baht
☐ (3) 25,001--30,000 Baht ☐ (4) 30,001 and above
6. Which brand of smart phone are you using? ☐ (1) iPhone ☐ (2) Samsung
☐ (3) HTC ☐ (4) NOKIA ☐ (5) LG
☐ (6) SONY ☐ (7) Blackberry
☐ (8) Other (please specify)

7. What smart phone operation system are you using?
☐ (1) iOS ☐ (2) Android
☐ (3) Windows phone ☐ (4) Blackberry
☐ (5) Other (please specify)
8. Which brand of mobile instant message software (MIMS) are you using?
(Can choose more than one)
☐ (1) Line ☐ (2) Wechat
☐ (3) Whats App ☐ (4) other (please specify)
9. Which brand of mobile instant message software (MIMS) are you mostly using?
(Only one can choose)
☐ (1) Line ☐ (2) Wechat
☐ (3) Whats App ☐ (4) other (please specify)
10. How many times you spend on mobile instant message software (MIMS) per hour?
☐ (1) 1 times ☐ (2) 2-3 times
☐ (3) 4-5 times ☐ (4) Over 5 times
11. How long you spend time on mobile instant message software (MIMS) per time?
☐ (1) Below 10 minutes ☐ (2) 20-30 minutes
☐ (3) 40-50 minutes ☐ (4) Over 50 minutes
12. What is your main objective of using instant message software (MIMS)?
☐ (1) Study ☐ (2) Work
☐ (3) Social communication ☐ (4) other (please specify)

From the part 2 to part 6, please indicate your perception level as a scale ranging from 1 to 5, in which by checking $\sqrt{\quad}$ in the ☐. Each statement is measured using a 5-point Likert scale: 1 = strongly disagree; 2 = disagree; 3 = neutral; 4 = agree; 5 = strongly agree. MIMS = Mobile instant message software.

Base on the MIMS of you mostly use (which is your answer in question 9), answer the question in part 2 - 6.

Part 2 Perceived value	1	2	3	4	5
2.1 This MIMS is reliable.					
2.2 This MIMS has good functions.					
2.3 This MIMS fulfills my needs well.					
2.4 This MIMS helps me to feel acceptable.					
2.5 This MIMS makes a good impression other people					
2.6 Using this MIMS gives me a sense of belongings to others users.					

Part 3 Technology acceptance factor	1	2	3	4	5
3.1 This MIMS is useful to me.					
3.2 This MIMS allows me to conveniently communicate with others.					
3.3 This MIMS improves my efficiency of communication with others.					
3.4 Learning to operate this MIMS is easy for me.					
3.5 It is easy for me to become skillful at using MIMS.					
3.6 Overall, this MIMS is easy to use.					
3.7 Using this MIMS gives enjoyment to me.					
3.8 Using this MIMS gives fun to me.					
3.9 Using this MIMS keeps me happy.					

Part 4 E-service quality	1	2	3	4	5
4.1 This MIMS enables me to complete a message quickly.					
4.2 This MIMS loads its message fast.					
4.3 This MIMS enables me to get on to it quickly.					
4.4 This MIMS is always available for use.					
4.5 This MIMS launches and runs right away.					
4.6 This MIMS does not crash.					
4.7 This MIMS push message in right time.					
4.8 This MIMS sends out the message as ordered.					
4.9 This MIMS makes send the right message.					
4.10 This MIMS protects about my message send.					
4.11 This MIMS does not share my personal information with other.					
4.12 This MIMS protects about my personal information.					

Part 5 Customer satisfaction	1	2	3	4	5
5.1 My choice to this MIMS service is a right choice.					
5.2 I think I did the right thing when I subscribed to this MIMS service.					
5.3 Overall, my feeling to this MIMS service is satisfactory					

Part 6 Service loyalty	1	2	3	4	5
6.1 I will continue to use this MIMS.					
6.2 I believe that this is my favorite MIMS.					
6.3 Even if close friends recommended another MIMS, my preference for this MIMS would not change.					

Chinese research questionnaire

此调查问卷的调查目的为：在即时通讯软件服务商的服务下。感知价值，科技接受程度因素，电子服务满意度，对于顾客满意度和忠诚度的影响。

你下面所回答的每一个问题都有助于帮助提升即时通讯软件公司在信息管理领域的水平。请回答认真每一个问题，每个问题有5个不同程度，请在您所选的问题下 (☐) 打勾 (☒) 。

这份问卷有5个部分：

第1部分：个人信息

第2部分：感知价值

第3部分：科技接受程度因素

第4部分：电子服务质量

第5部分：客户满意度

第6部分：服务的忠诚度

第1部分：个人信息

注：请在您所选的问题下 (☐) 打勾 (☒)

1. 性别 ☐ (1) 男 ☐ (2) 女
2. 年龄 ☐ (1) 17-20 ☐ (2) 21-25 ☐ (3) 26-35
☐ (4) 36-50 ☐ (5) 超过50岁
3. 国籍 ☐ (1) 泰国 ☐ (2) 中国 ☐ (3) 其他 (请注明)
4. 教育程度 ☐ (1) 大学以下 ☐ (2) 大学 ☐ (3) 硕士或以上。
5. 每月收入 ☐ (1) 15,000泰铢或以下 ☐ (2) 15,001 – 25,000
☐ (3) 25,001 – 30,000 ☐ (4) 30,001及以上
6. 您所使用的智能手机品牌是？ ☐ (1) iPhone ☐ (2) 三星 ☐ (3) HTC
☐ (4) 诺基亚 ☐ (5) LG ☐ (6) 索尼
☐ (7) 黑莓 ☐ (8) 其他 (请注明)
7. 您正在使用的手机操作系统是？ ☐ (1) 苹果iOS ☐ (2) Android系统
☐ (3) Windows phone系统 ☐ (4) 黑莓系统 ☐ (5) 其他 (请注明)
8. 您正在使用哪个服务商的即时通讯软件？ (可多选) ☐ (1) 连我 (Line)
☐ (2) 微信 (Wechat) ☐ (3) Whats App ☐ (4) 其他 (请注明)
9. 大多数情况下您使用哪个服务商的即时通讯软件？ (单选) ☐ (1) 连我 (Line)
☐ (2) 微信 (Wechat) ☐ (3) Whats App ☐ (4) 其他 (请注明)
10. 您每个小时大概使用几次即时通讯软件？ ☐ (1) 1次 ☐ (2) 2-3次
☐ (3) 4-5次 ☐ (4) 大于 5次
11. 您每次大概花费多长时间来使用即时通讯软件？ ☐ (1) 少于10分钟
☐ (2) 20-30分钟 ☐ (3) 40-50分钟 ☐ (4) 大于 50分钟
12. 你使用即时通讯软件的主要目的是什么？ ☐ (1) 学习 ☐ (2) 工作
☐ (3) 社交 ☐ (4) 其他 (请注明)

从第2-6部分开始，每个问题有5种不同程度。请在您所选的问题下，打勾 (☒) 。

您的评断分为 5 种等级，对应的数字分数规则为：5=非常认同；4 = 认同；3 = 一般；2 = 不认同；1 = 非常不认同

根据你最经常使用的移动即时通讯软件 (问题9题您所作的回答)，回答2-6部分的问题

第2部分，感知价值	1	2	3	4	5
2.1这个移动即时通讯软件是可靠的					
2.2这个移动即时通讯软件具有良好的功能					
2.3这个移动即时通讯软件可以满足我的需求					
2.4通过对这个移动即时通讯软件的使用，可以帮助我获得别人的认同					
2.5通过对这个移动即时通讯软件的使用，可以帮助我获得别人的良好印象					
2.6通过对这个移动即时通讯软件的使用，让我感觉和其他使用者有一种归属感					

第3部分：科技接受程度	1	2	3	4	5
3.1这个移动即时通讯软件对我很有用					
3.2这个移动即时通讯软件可以让我方便地与他人沟通					
3.3这个移动即时通讯软件提高了通信的我与他人的效率					
3.4对于我来说，学习这个移动即时通讯软件的操作是容易的。					
3.5对于我来说，操作好这个移动即时通讯软件是容易的。					
3.6总体而言，这个移动即时通讯软件的操作和使用是容易的。					
3.7我很享受这个移动即时通讯软件的使用					
3.8使用这个移动即时通讯软件，给我了乐趣					
3.9使用这个移动即时通讯软件总是给我带来快乐					

第4部分：电子服务质量	1	2	3	4	5
4.1这个移动即时通讯软件使我能够快速完成消息的收发					
4.2这个移动即时通讯软件可以快速的加载消息					
4.3我可以顺畅的使用这个移动即时通讯软件					
4.4这个移动即时通讯软件总是可供我使用					
4.5这个移动即时通讯软件能正确的启动和运行					
4.6这个移动即时通讯软件不会崩溃					
4.7这个移动即时通讯软件可以按时的推送消息					
4.8这个移动即时通讯软件按照我的要求发送信息					
4.9这个移动即时通讯软件可以准确的发送消息					
4.10这个移动即时通讯软件可以保护我发送的消息					
4.11这个移动即时通讯软件不会分享我的个人信息					
4.12这个移动即时通讯软件可以保护我的个人信息					

第5部分：客户满意度	1	2	3	4	5
5.1我想我选择了这个移动即时通讯软件是一个正确的选择					
5.2我想我订阅了这个移动即时通讯软件的服务是一个正确的选择					
5.3总体来说，我对这个移动即时通讯软件的服务感到满意					

第6部分：服务的忠诚度	1	2	3	4	5
6.1我会继续使用这个移动即时通讯软件					
6.2我相信这是我最喜欢的软件					
6.3即使我的亲密的朋友推荐了另一个软件，我仍然偏爱这个软件不改变					

**THE LONG RUN RELATIONSHIP BETWEEN THE VALUE
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Abstract

The research analyzes the long run relationship between the value of Chinese Yuan and stock market return in five countries of the Association of Southeast Asian Nations (Indonesia, Malaysia, the Philippines, Singapore and Thailand) from 2005-2013 by using daily data. The conditional work measured by Granger causality model. The value of Chinese Yuan under five selected countries were used as dependent variables. While the stock market index and trading volume of stock market were used as independent variables. The results show the evidence that the stock market indexes granger cause the exchanges rate between China and selected countries which refers to a positive long-run relationship between the value of Chinese Yuan and stock market return in five countries of the Association of Southeast Asian Nations.

Keywords: China, Indonesia, Malaysia, the Philippines, Singapore, Thailand, stock market index, trading volume, exchange rate, Granger causality

1. Introduction

1.1 Background of the study

The Association of Southeast Asian Nations, or ASEAN, was established on 8 August 1967 in Bangkok, Thailand. The member countries are: Indonesia, Malaysia, the Philippines, Singapore, Thailand, Brunei, Cambodia, Laos, Myanmar (Burma) and Vietnam. Five most economically developed countries with mature stock market in the community are selected to study in the research. These countries are Indonesia, Malaysia, the Philippines, Singapore and Thailand. All of these countries are put in alphabetical order. The dependent variable of this study is the value of Chinese Yuan under these five countries. This study analyzes the long run

relationship between the value of Chinese Yuan and stock market return in five countries of the Association of Southeast Asian Nations

Since Chinese economic growth rate has become lower consistently, the investors in the country may consider switching investment elsewhere away from home. At the same time, the economies of the ASEAN member countries look attractive and have bright future from the time of its formation. As a result, Chinese investors began planning to move to greener pastures awaiting in 2015. However, since it will be a huge project for the prospective investors, information in terms of the relationship between the value of Chinese currency and influential ASEAN countries' currency and the stock market performance of those ASEAN countries would be definitely useful and timely.

With the investigation result of this study, it will provide clear information of the relationship between the value of Chinese currency in terms of five ASEAN countries' currency and the stock market performance of those ASEAN countries. It would be of great help to investors of China to observe and realize how these two variables affect each other, which in turn would guide them on making wise choices. From intuitional stock market performance, investor can easier analyze the cost of investment and hedge the risk.

1.2 Objectives of the study

As stated previously, this study will analyze the value of Chinese currency to some ASEAN countries' currency and the stock market performance of those ASEAN countries. The specific objectives of this research are:

1.2.1 To test whether value of Chinese currency under Thailand currency has a significant long-run relationship with Thailand stock market performance.

1.2.2 To test whether value of Chinese currency under Singapore currency has a significant long-run relationship with Singapore stock market performance.

1.2.3 To test whether value of Chinese currency under Malaysia currency has a significant long-run relationship with Malaysia stock market performance.

1.2.4 To test whether value of Chinese currency under the Philippines currency has a significant long-run relationship with the Philippines stock market performance.

1.2.5 To test whether value of Chinese currency under Indonesia currency has a significant long-run relationship with Indonesia stock market performance.

1.3 Research questions

Since Chinese economic growth rate has become lower consistently, the investors in the country may consider switching investment elsewhere away from home. At the same time, the economies of the ASEAN member countries look attractive and have bright future from the time of its formation. As a result, Chinese investors began planning to move to greener pastures awaiting in 2015.

However, since it will be a huge project for the prospective investors, information in terms of the relationship between the value of Chinese currency and influential ASEAN countries' currency and the stock market performance of those ASEAN countries would be definitely useful and timely. Based on the background and objectives, the statement of the problem in this study can be:

1.3.1 Is there a significant long-run relationship between value of Chinese currency to Thailand currency and Thailand stock market performance?

1.3.2 Is there a significant long-run relationship between value of Chinese currency to Singapore currency and Singapore stock market performance?

1.3.3 Is there a significant long-run relationship between value of Chinese currency to Malaysia currency and Malaysia stock market performance?

1.3.4 Is there a significant long-run relationship between value of Chinese currency to the Philippines currency and the Philippines stock market performance?

1.3.5 Is there a significant long-run relationship between value of Chinese currency to Indonesia currency and Indonesia stock market performance?

2. Literature Review

Charles et al. (2008) tried to determine if the exchange rate volatility truly impacts on stock market in Ghana. The study also investigated if there are some other macroeconomic variables which can affect the stock market volatility. Noel and John (2009) aimed to examine the relationship between stock price and exchange rates in Australia. In this research, daily observations of Australia stock price and the Australian-US dollar exchange rate from 2003 to 2006 are used.

Wann-Jyi and Ching-Huei (2010) investigated the relationship between exchange rate volatility and the stock market returns of Thailand. The result showed that the exchange rate volatility has a negative impact on the Thailand's stock market.

There is most goods market hypothesis and the portfolio balance theory that proved that a linkage between exchange rates and stock prices exists, no matter what the different direction of causality is. Christos et al. (2010) made a research to study the linkages between stock prices and exchange rates in the case of "the euro-dollar rate and two composite European stock market indices: the FTSE Eurotop 300 and FTSE eTX All-Share Index".

Paul et al. (2010) tested the interaction between stock markets and foreign exchange markets in five countries which include Japan, Australia, Switzerland, Canada, and UK. Chia-Hao et al. (2011) examined the relationship between stock price and exchange rate and test the dynamic correlation of them is influenced by the stock market volatility. From the result, it showed that there are significant relationship between stock market and foreign exchange market in those five countries of Asia.

Tobias and Kennedy (2011) tried to find out which Macro-economic factors have an impact on the stock return volatility on the Nairobi Securities Exchange, Kenya. Wai-Choi (2012) studied the relationship between the exchange rate of Chinese currency and Hong Kong stock market performance. The study focus is set on the question if the real exchange rate of RMB and stock index in Hong Kong can affect each other or not.

Syed and Anwar (2012) studied the factors which can influence the stock prices of banking industry of Pakistan. In this paper, exchange rate, interest rates, and their volatilities are selected as the factors. This paper found out a significant negative long-run relationship between the exchange rate and interest rate under the model of cointegration test. Jyoti and Jitendra (2012) explored the interaction among the economic variables which include stock prices, exchange rate and demand for money in India. In this paper, two objectives are made. The first

one is “to explain the cointegrating properties of different monetary aggregates, stock prices, exchange rate, interest rate, economic activity, and inflation in India”. Under this objective, the paper works on the questions if there is a stationary long-run relationship between those factors. Secondly, the researchers examined the stability of the long-run money demand function with its determinants. Kulcsár and Tarnóczy (2012) aimed to find out how the movement of the stock market indices can drive the movement of exchange rate under euro in Romania and Hungary. Two traditional statistical methods which are simple linear regression model and the Bayesian statistics are used in this paper by the researchers to analyze the relationship between exchange rate and stock market index. From the results, a significant relationship between those two factors exists in both of those two countries.

3. Methodology

3.1 Scope of the study

This study deals with the daily data of exchange rate (between China and Thailand, China and Singapore, China and Malaysia, China and the Philippines, China and Indonesia), stock market index of Thailand, Singapore, Malaysia, the Philippines and Indonesia, trading volume of Thailand, Singapore, Malaysia, the Philippines and Indonesia. This study just selects 5 countries from a total of 10 ASEAN countries. The daily data are one selected point of the day. All the data are collected from Bloomberg and Oanda (an online forex broker leader) during Nov 2005 to Dec 2013. The collected data are tested under Granger causality Model.

3.2 Population and sample

The populations in this study are all secondary data which consisted of macroeconomic factors. In finance research, because data such as exchange rate and stock index change every second; we only focus on a period of time as a sample. In this study, 2131 days' data are used as a sample during the time from Nov 2005 to Dec 2013. There is one dependent variable in this study with different terms which are all the exchange rate between five ASEAN countries and China to measure the value of Chinese currency. Ten variables are analyzed; some of the variables are in the same group as the proxies of the same definition of macroeconomic factors.

3.3 Data collection

All of the data that were adopted in this study are secondary data, which were collected from previous empirical studies. All the data are daily data during Nov 2005 to Dec 2013, focusing on China and five ASEAN countries which include Indonesia, Malaysia, the Philippines, Singapore and Thailand, and collected from Bloomberg and Oanda (an online forex broker leader). These two sources could provide the largest time scale of data and meet the requirement of daily data of this study.

3.4 Model of the study

In order to test the relationship between those independent variables and dependent variables, the models of research will be as follows, according to forty hypotheses that will be presented next.

$$EXC_t = \beta_0 + \beta_1 Retstk_{t-1} + \beta_1 Retstk_{t-2} + \beta_1 Retstk_{t-3} + \beta_1 Retstk_{t-4} + \dots \beta_1 Retstk_{t-n} + \alpha_1 EXC_{t-1} + \alpha_1 EXC_{t-2} + \alpha_1 EXC_{t-3} + \alpha_1 EXC_{t-4} + \dots \alpha_1 EXC_{t-n} + u_t$$

$$Retstk_t = \beta_0 + \beta_1 EXC_{t-1} + \beta_1 EXC_{t-2} + \beta_1 EXC_{t-3} + \beta_1 EXC_{t-4} + \dots \beta_1 EXC_{t-n} + \alpha_1 Retstk_{t-1} + \alpha_1 Retstk_{t-2} + \alpha_1 Retstk_{t-3} + \alpha_1 Retstk_{t-4} + \dots \alpha_1 Retstk_{t-n} + u_t$$

$$EXC_t = \beta_0 + \beta_1 Volstk_{t-1} + \beta_1 Volstk_{t-2} + \beta_1 Volstk_{t-3} + \beta_1 Volstk_{t-4} + \dots \beta_1 Volstk_{t-n} + \alpha_1 EXC_{t-1} + \alpha_1 EXC_{t-2} + \alpha_1 EXC_{t-3} + \alpha_1 EXC_{t-4} + \dots \alpha_1 EXC_{t-n} + u_t$$

$$Volstk_t = \beta_0 + \beta_1 EXC_{t-1} + \beta_1 EXC_{t-2} + \beta_1 EXC_{t-3} + \beta_1 EXC_{t-4} + \dots \beta_1 EXC_{t-n} + \alpha_1 Volstk_{t-1} + \alpha_1 Volstk_{t-2} + \alpha_1 Volstk_{t-3} + \alpha_1 Volstk_{t-4} + \dots \alpha_1 Volstk_{t-n} + u_t$$

Where:

EXC = Percentage change of exchange rate of Chinese Yuan under target country

Reststk = Return of stock market price under target country

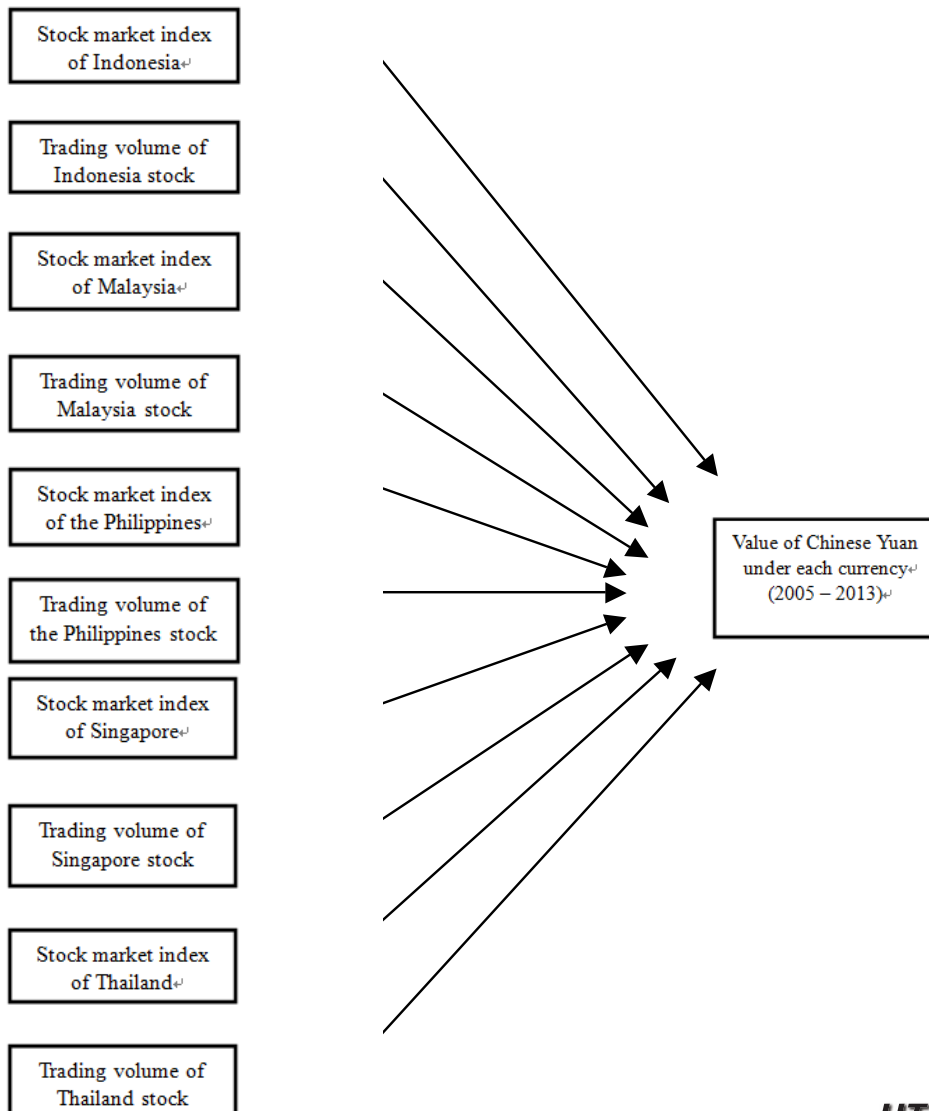
Volstk = Percentage change of trading volume in stock market under target country

t = day t

α , β = regression (granger causality test) coefficient

u = error

Figure 1: Conceptual framework of the study



3.5 Hypotheses of the study

This study employs ten independent variables in total and one dependent variable. Therefore, forty hypotheses are developed according to conceptual framework in this study, in order to test the significant relationships between dependent variable and independent variables during the period from Nov 2005 to Dec 2013. Because of the subprime crisis, the period from Nov 2005 to Dec 2013 will be separated into two parts according to the different situation of each country. These two periods refer to economic recession period and economic recovery period.

4. Results

4.1 The Data Profile

The data profile provides the daily data of the exchange rate between China and Indonesia, China and Malaysia, China and the Philippines, China and Singapore, China and Thailand. Also it includes the stock market index and trading volume of Indonesia, Malaysia, the Philippines, Singapore and Thailand. All the data are shown in term of mean, median, maximum, minimum, standard deviation, skewness, Kurtosis, Jarque-Bera, Probability and number of observation.

Table 1: Summary of Original Data Description

	Mean	Median	Maximum	Minimum	Std. Dev.	Skewness	Kurtosis	Jarque-Bera	Probability	Observations
CNY/IDR	0.000735	0.000744	0.000922	0.000501	9.09E-05	-0.203414	2.545308	33.05307	0	2131
CNY/MYR	2.091301	2.10837	2.49501	1.829826	0.108116	-0.299888	2.194275	89.58412	0	2131
CNY/PHP	0.15267	0.151368	0.181054	0.137353	0.008698	1.028606	3.980555	461.1493	0	2131
CNY/SGD	4.979187	5.015045	5.364807	4.413063	0.173161	-0.847525	3.791197	310.6984	0	2131
CNY/THB	0.211989	0.20935	0.257725	0.186355	0.013383	0.999319	3.650007	392.1983	0	2131
SMIOI	2859.591	2646.813	5214.976	1017.733	1141.189	0.139759	1.734069	149.2333	0	2131
TVOI	3.46E+09	3.10E+09	2.02E+10	2.83E+08	2.18E+09	2.269624	12.46842	9789.785	0	2131
SMIOM	1331.239	1346.1	1872.52	829.41	277.3462	-0.13587	1.936369	107.0076	0	2131
TVOM	1.62E+08	1.37E+08	8.32E+08	24042600	97872193	2.499832	11.57546	8749.109	0	2131
SMIOTP	3748.117	3362.98	7392.2	1704.41	1403.521	0.714852	2.555494	199.0391	0	2131
TVOTP	3.51E+08	2.70E+08	3.07E+09	27074360	2.83E+08	3.38705	21.67819	35051.68	0	2131
SMIOS	2854.323	2963.1	3831.19	1456.95	447.9057	-0.90657	3.637917	328.0333	0	2131
TVOS	3.16E+08	2.89E+08	2.19E+09	41849100	1.36E+08	2.634528	27.04264	39352.51	0	1559
SMIOT	908.1821	819.83	1643.43	384.15	294.3567	0.594596	2.549129	143.617	0	2131
TVOT	3.56E+09	2.86E+09	2.51E+10	7600	2.52E+09	2.418709	11.96516	9214.335	0	2131

Table 2: Summary of Modified Data Description

	Mean	Median	Maximum	Minimum	Std. Dev.	Skewness	Kurtosis	Jarque-Bera	Probability	Observations
CNY/IDR	-0.00022	-0.000267	0.062065	-0.07924	0.007258	0.018452	19.76009	24930.04	0	2130
CNY/MYR	-6.89E-05	-0.000217	0.131002	-0.138199	0.010154	0.060791	37.15678	103544.7	0	2130
CNY/PHP	-3.13E-05	7.80E-05	0.040031	-0.048269	0.004573	-0.276438	13.69375	10176.24	0	2130
CNY/SGD	3.61E-06	0	0.015188	-0.018967	0.002984	0.006866	6.859306	1321.881	0	2130
CNY/THB	-3.11E-05	-0.000327	0.063646	-0.065508	0.007492	0.21561	12.87665	8673.914	0	2130
SMIOI	0.000652	0.000747	0.076231	-0.10954	0.014808	-0.678161	10.11373	4654.469	0	2130
TVOI	0.000633	0	1.441542	-1.242584	0.304474	0.198711	4.448046	200.1119	0	2130
SMIOM	0.000335	0.000272	0.042587	-0.099785	0.007856	-1.287436	19.03376	23404.39	0	2130
TVOM	0.000247	0	1.214336	-1.191197	0.283913	0.125024	4.195736	132.4425	0	2130
SMIOTP	0.000505	0	0.093653	-0.130887	0.013742	-0.757422	11.31599	6341.228	0	2130
TVOTP	0.000179	0	3.130647	-1.795475	0.453044	0.196695	4.917429	340.0269	0	2130
SMIOS	0.000175	0.000204	0.075305	-0.08696	0.012475	-0.198211	8.744262	2942.39	0	2130
TVOS	1.90E-05	0	1.878017	-1.593726	0.336379	0.213034	4.758142	212.4461	0	1558
SMIOT	0.000295	4.08E-06	0.10577	-0.160633	0.013947	-1.03627	17.96431	20255.05	0	2130
TVOT	0.000328	0	13.30695	-13.67364	0.49799	-0.731332	507.0577	22549268	0	2130

4.2 The Stationary Testing

For time series analysis, the data must be stationary to meet the test; otherwise the testing result in this study would be of no meaning in economic terms. ADF test statistic is applied in this study for stationary testing. If the data are stationary, it means there is no problem of unit root. The hypotheses of stationary test will be shown as below.

H0: The variable has unit root.

Ha: The variable has not unit root.

If the ADF test value is greater than all critical values, it means the null hypothesis will be accepted. In contrast, if the ADF test value is less than all critical values, it means that the null hypothesis will be rejected.

Table 3: Summary of Original Data Stationary Testing

Variables	t-Statistic	Critical Value at 1% level	Critical Value at 5% level	Critical Value at 10% level	Result
CNY/IDR	0.466507	-3.433225	-2.862696	-2.567437	Non-stationary
CNY/MYR	-1.067127	-3.433251	-2.862708	-2.567438	Non-stationary
CNY/PHP	-1.275886	-3.433224	-2.862696	-2.567437	Non-stationary
CNY/SGD	-2.546436	-3.433238	-2.862707	-2.567437	Non-stationary
CNY/THB	-1.570955	-3.433259	-2.862711	-2.567439	Non-stationary
SMIOI	-1.121506	-3.43324	-2.862708	-2.567437	Non-stationary
TVOI	-5.084256	-3.433256	-2.86271	-2.567439	Stationary
SMIOM	-0.530911	-3.433224	-2.862696	-2.567437	Non-stationary
TVOM	-4.436872	-3.433248	-2.862704	-2.567436	Stationary
SMIOTP	-0.65337	-3.433248	-2.862707	-2.567437	Non-stationary
TVOTP	-7.040758	-3.433237	-2.862701	-2.567434	Stationary
SMIOS	-2.123848	-3.433247	-2.862706	-2.567437	Non-stationary
TVOS	-5.37092	-3.433276	-2.863205	-2.567705	Stationary
SMIOT	-0.58274	-3.433228	-2.862695	-2.567437	Non-stationary
TVOT	-3.827379	-3.43324	-2.862708	-2.567437	Stationary

In table 3, it shows that most data contain unit roots, which mean non-stationary, as the relevant t-statistic value is greater than critical value. The next step is to transfer the data which are non-stationary to be stationary by using first difference of log, it means that the percentage change in variable from period to period. The modified data will show as below like table 4.

Table 4: Summary of Modified Data Stationary Testing

Variables	t-Statistic	Critical Value at 1% level	Critical Value at 5% level	Critical Value at 10% level	Result
CNY/IDR	-10.56921	-3.433244	-2.862705	-2.567436	Stationary
CNY/MYR	-9.072518	-3.43326	-2.862712	-2.56744	Stationary
CNY/PHP	-9.545465	-3.433258	-2.862709	-2.567438	Stationary
CNY/SGD	-10.63848	-3.433251	-2.862708	-2.567438	Stationary
CNY/THB	-9.073734	-3.43326	-2.862712	-2.56744	Stationary
SMIOI	-11.76886	-3.433248	-2.862704	-2.567436	Stationary
TVOI	-12.69173	-3.433256	-2.86271	-2.567439	Stationary
SMIOM	-40.97758	-3.433224	-2.862696	-2.567437	Stationary
TVOM	-17.79256	-3.433248	-2.862704	-2.567436	Stationary
SMIOTP	-22.42128	-3.43323	-2.862698	-2.567438	Stationary
TVOTP	-17.36325	-3.433248	-2.862704	-2.567436	Stationary
SMIOS	-9.838932	-3.433247	-2.862706	-2.567437	Stationary
TVOS	-12.35265	-3.433398	-2.863218	-2.567709	Stationary
SMIOT	-10.19738	-3.433246	-2.862705	-2.567436	Stationary
TVOT	-15.07591	-3.433254	-2.862709	-2.567438	Stationary

Table 4 shows that all selected data of each variable are stationary, because t-statistic values are less than all critical values. All variables have no unit root.

4.3 Granger Causality Testing

In this process, all the hypotheses are measured from Lag1 to Lag6 under Granger Causality Test model. The purpose of this study is to find and analyze the significant long-run relationship between the value of Chinese Yuan and stock market return in five countries of The Association of Southeast Asian Nations (Indonesia, Malaysia, the Philippines, Singapore and Thailand) from 2005-2013. There are one dependent variable and ten independent variables to be analyzed. In total, there are 2131 observations for all the sample data except one variable (trading volume of stock market in Singapore) with 1559 observations set in this study, and all these data are tested for examining the 40 hypotheses stated in chapter 3. The hypotheses test result are confirmed from the Granger causality test model, that null hypothesis can be rejected if p-value is less than 10% significant level. In contrast, null hypotheses fail to reject when p-value is greater or equal to 10% significant level.

Table 5: The Compared Results of Hypotheses Testing

Hypotheses	Result	
	First period	Second period
Stock market index of Indonesia does not have a significant long-run relationship with (granger causality) value of Chinese yuan under Indonesian currency.	Reject	Reject
Value of Chinese yuan under Indonesian currency does not have a significant long-run relationship with (granger causality) stock market index of Indonesia.	Fail to reject	Reject
Trading volume of Indonesia stock does not have a significant long-run relationship with (granger causality) value of Chinese yuan under Indonesian currency.	Reject	Reject
Value of Chinese yuan under Indonesian currency does not have a significant long-run relationship with (granger causality) trading volume of Indonesia stock.	Reject	Fail to reject
Stock market index of Malaysia does not have a significant long-run relationship with (granger causality) value of Chinese yuan under Malaysian currency.	Reject	Reject
Value of Chinese yuan under Malaysian currency does not have a significant long-run relationship with (granger causality) stock market index of Malaysia.	Fail to reject	Reject
Trading volume of Malaysia stock does not have a significant long-run relationship with (granger causality) value of Chinese yuan under Malaysian currency.	Fail to reject	Reject
Value of Chinese yuan under Malaysian currency does not have a significant long-run relationship with (granger causality) trading volume of Malaysia stock.	Fail to reject	Reject
Stock market index of the Philippines does not have a significant long-run relationship with (granger causality) value of Chinese yuan under Philippine currency.	Reject	Reject
Value of Chinese yuan under the Philippine currency does not have a significant long-run relationship with (granger causality) stock market index of Philippines.	Reject	Fail to reject
Trading volume of the Philippine stock does not have a significant long-run relationship with (granger causality) value of Chinese yuan under the Philippine currency.	Fail to reject	Reject
Value of Chinese yuan under the Philippine currency does not have a significant long-run relationship with (granger causality) trading volume of the Philippines stock.	Reject	Reject
Stock market index of Singapore does not have a significant long-run relationship with (granger causality) value of Chinese yuan under Singaporean currency.	Reject	Reject
Value of Chinese yuan under Singaporean currency does not have a significant long-run relationship with (granger causality) stock market index of Singapore.	Reject	Reject
Trading volume of Singapore stock does not have a significant long-run relationship with (granger causality) value of Chinese yuan under Singaporean currency.	Reject	Reject
Value of Chinese yuan under Singaporean currency does not have a significant long-run relationship with (granger causality) trading volume of Singapore stock.	Fail to reject	Fail to reject
Stock market index of Thailand does not have a significant long-run relationship with (granger causality) value of Chinese yuan under Thailand's currency.	Reject	Reject
Value of Chinese yuan under Thailand's currency does not have a significant long-run relationship with (granger causality) stock market index of Thailand.	Reject	Fail to reject
Trading volume of Thailand stock does not have a significant long-run relationship with (granger causality) value of Chinese yuan under Thailand's currency.	Fail to reject	Reject
Value of Chinese yuan under Thailand's currency does not have a significant long-run relationship with (granger causality) trading volume of Thailand stock.	Fail to reject	Fail to reject

5. Conclusion and discussion

5.1 Conclusion

The global integration of the world economy is deepening; profound changes have taken place in the international financial field. One of the most prominent performances is the exchange rate volatility changing frequently. The frequent fluctuation of exchange rate not only makes people working in the financial sector face more and more uncertainty, but also makes people engaged in daily production activities facing huge risk. At the same time, people want to be able to accurately predict the exchange rate movements, so that they can take corresponding measures to deal with exchange rate volatility ahead of time.

The main purpose of this study is to find if there is long-run relationship between the value of Chinese Yuan and stock market return in five countries of The Association of Southeast Asian Nations (Indonesia, Malaysia, the Philippines, Singapore and Thailand). Data used in this study are daily data from the period of November 2005 to December 2013. Total daily data are 2131 or equal to 2130 returns of observations. The Granger causality model is used to test the long-run relationship between selected variables. The result shows the stock market index can affect the exchange rate between China and each country. That means the exchange rate between China and each country can be forecasted by the movement of stock market index. But the trading volume of the stock market is not a good indicator to predict the movement of the exchange rate between China and each country; the results which related to the trading volume are different in terms of different country and in different period.

5.2 Discussion

From the result of the null-hypotheses of Indonesia, during Nov 2005 to Dec 2008, the stock market index has an impact on the exchange rate between China and Indonesia. But the movement of the exchange rate between China and Indonesia cannot affect the stock market index; the trading volume of Indonesia stock market and the exchange rate between China and Indonesia can affect each other in this period. From Dec 2008 – Dec 2013, the stock market index and the exchange rate between China and Indonesia can affect each other; the trading volume has impact on the exchange rate between China and Indonesia, but the exchange rate between China and Indonesia cannot affect the trading volume of the stock market in Indonesia.

From the result of the null-hypotheses of Malaysia, during Nov 2005 – Apr 2009, only stock market index can affect the exchange rate between China and Malaysia. During Apr 2009 – Dec 2013, the stock market index and the exchange rate between China and Malaysia can affect each other; the trading volume and the exchange rate also can affect each other.

From the result of the null-hypotheses of the Philippines, during Nov 2005 – Nov 2008, stock market index and exchange rate between China and the Philippines can affect each other; the exchange rate has impact on the trading volume but the trading volume cannot affect the exchange rate between China and the Philippines. During Nov 2008 – Dec 2013, the stock market index has impact on the exchange rate between China and the Philippines but the exchange rate between China and the Philippines cannot affect the stock market index; the trading volume and the exchange rate between China and the Philippines can affect each other.

From the result of the null-hypotheses of Singapore, during Nov 2005 – Mar 2009, the stock market index and the exchange rate between China and Singapore can affect each other; the trading volume has impact on the exchange rate between China and Singapore but the exchange rate between China and Singapore cannot affect the trading volume. During Mar 2009 – Dec 2013, the stock market index and the exchange rate between China and Singapore can affect each other; the trading volume has impact on the exchange rate between China and Singapore but the exchange rate between China and Singapore cannot affect the trading volume.

From the result of the null-hypotheses of Thailand, during Nov 2005 – Mar 2009, the stock market index and the exchange rate between China and Thailand can affect each other; there is no long-run relationship between the trading volume and the exchange rate between China and Thailand. During Mar 2009 – Dec 2013, the stock market index has an impact on the exchange rate between China and Thailand. But the movement of the exchange rate between China and Thailand cannot affect the stock market index; the trading volume has impact on the exchange rate between China and Thailand but the exchange rate between China and Thailand cannot affect the trading volume.

Because of the different result of each country under the trading volume parts, the trading volume of the stock market cannot be an indicator which can be a measurement of the changing of exchange rate. Also, the exchange rate between China and each country can hardly affect the stock market index. Only one country's results did not change which is Singapore. But the other four countries which are Indonesia, Malaysia, the Philippines and Thailand all have different results which before and after the crisis. These two periods can also measure as economic recession period and economic recovery period.

From the result of each period of every country, the common point is that the stock market index can affect the exchange rate between China and each country. That means the exchange rate between China and each country can be forecasted by the movement of stock market index. But the trading volume of the stock market is not a good indicator to predict the movement of the exchange rate between China and each country; the results which related to the trading volume are different in terms of different country and different period. Ajayi and Mougoue (1996) pointed that a rising stock market is an indicator of an expanding economy. From the result of this research, the stock market performance is a very important indicator to measure the trend of the exchange rate. Granger, Huang and Yang's (2000) research further indicate that those two markets (stock market and exchange market) have an impact on each other. Parts result of this study has proved this point.

5.3 Limitations and Future Researches

This study only focused on the relationship between exchange rate and stock market return. It could also be applied to find some other variables which also related to the exchange rate. Future studies can also apply variables such as interest rate and inflation.

This study only selected five countries from ASEAN, which are Indonesia, Malaysia, the Philippine, Singapore and Thailand. The other members which are Brunei, Cambodia, Laos, Myanmar (Burma) and Vietnam can also be applied in future studies.

Future studies also can focus on different time periods, or they can be done by several time periods according to the economic cycle, such as during the economic recession, or during the economic recovery. It will provide different results by analyzing different economic periods

This study only use the Granger causality model as the tool for analysis, future studies can apply other models.

5.4 Recommendation

From intuitional stock market performance, investor can easier analyze the cost of investment and hedge the risk. Since Chinese economic growth rate has become lower consistently and the investment environment has become worse, the investors in the country may consider switching investment outside of China. At the same time, the economies of the ASEAN member countries look attractive and have bright future from the time of its formation. Thus, it is more wise for the inventors of China to invest their fund in some ASEAN countries.

This research can give beneficial information to the investors who are from China. With the investigation result of this study, it will provide clear information of the relationship between the value of Chinese currency under five ASEAN countries' currency and the stock market performance of those ASEAN countries. This study is helpful to investors of China to observe and realize how these two variables affect each other, which in turn would guide them on making wise choices.

However, since it will be a huge project for the prospective investors, information in terms of the relationship between the value of Chinese currency and influential ASEAN countries' currency and the stock market performance of those ASEAN countries would be definitely useful and timely.

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UNIVERSITY-ACCREDITATION BRAND ALLIANCE: THE EFFECTS OF THE ALLIANCE MESSAGE ON THE UNIVERSITY'S BRAND EVALUATIONS

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Abstract

A university-accreditation brand alliance occurs when the university forms an association with an accreditation agency; and uses the agency's name or logo in the university's promotional materials, such as their website. Past research shows that brand alliance is a win/win strategy for both brand partners. However, it is important to ascertain how the accreditation brand alliance should be communicated by the university, in order to achieve a favorable response amongst prospective students. This research examines the effect that a university's message strategy has on the university's perceived quality and students' application intention. Results

clearly show that communication of the accreditation brand alliance benefits the university brand; as it significantly influences prospective students' perception of the university brand. The positive impact of the accreditation brand ally's cue is more pronounced in the case of a low equity university brand than that of a high equity university brand. Also the university's communication strategy is more effective when the accreditation brand ally includes descriptive information relating to the accreditation agency, than when only the ally's logo is presented. In the latter's case, the impact of the university's alliance on the students' application intention is less influential.

Keywords: Brand alliance, co-branding, alliance communication, higher education, quality assurance

1. Introduction

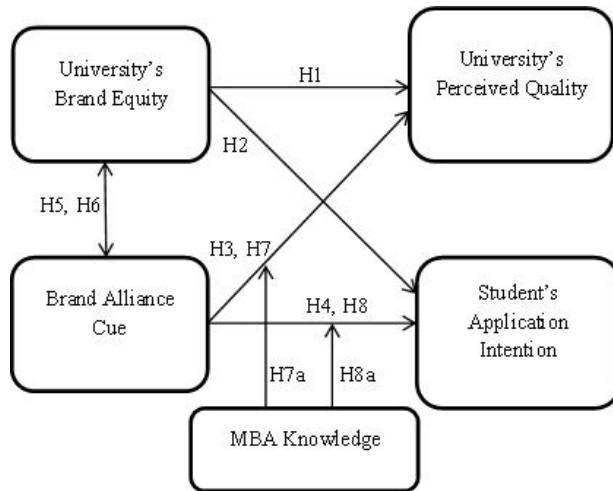
Educational accreditation is a voluntary process under which educational institutions or programs are evaluated by an external agency for quality assurance and improvement. Cornuel (2007) mentions innovative programs, an excellent faculty body, international exposures, and accreditation for any quality improvement program. Whilst most accreditation is institutional, certain academic programs or departments can be accredited independently of their institution. The roles of accreditation are mainly to provide an opportunity for academic institutions to demonstrate their programs' standard of quality and their commitment to continuous quality enhancement. For higher education, accreditation is mostly overseen by government agencies in many countries; however, in the United States the quality assurance process is totally independent of government, and is performed by private, non-profit associations. Students, as well as employers and the society, are interested in good quality higher education, including assurances and demonstrations of that quality, which reflect the expectations of the different stakeholders in education.

When the school is accredited, the information of the accreditation achievement is usually provided in various marketing communication materials (i.e. brochures, and the website). However, the choice of how to promote its accreditation achievement seems to vary. Some schools provide only the logo of the accreditation granted by the agency. Some provide additional information of the accreditation agency and its significance in guaranteeing the school's quality. To date, no research has examined the effect of different communication strategies on students' perceptions and behavioral intentions, particularly in the context of accreditation promotion. The objectives of this study are threefold. Firstly, the study will examine the direct effect that the brand alliance message may have on the perception of the university's quality and the prospective students' application intention. Secondly, the study will explore the impact of three different university-accreditation brand alliance cues on the perception of the university and the students' application intention. And lastly, the interaction effect of the university's brand equity and the different brand alliance cues will also be investigated. This study hopes to extend the understanding of the brand alliance's benefits and applications to the Higher Education sector. An understanding of the marketing application will be beneficial to both the university and the accreditation agency, who seeks to promote the accreditation's benefits beyond its quality assurance achievement. Findings of this study will help to provide preliminary guidelines as to how the university should communicate its accreditation achievement to the prospective students.

2. Literature review and hypotheses

This study draws upon the theoretical concept of brand alliances, signaling theory, and brand equity literature. The linkage between brand alliance and the product's perceived quality and attitudes towards it have largely been explored in past literature. To gain a better understanding of how brand equity and the brand alliance message may influence the student's perception of the university's quality and the student's application intention, the conceptual framework of this study is shown in Figure 1 with the discussion of the related literature follows.

Figure 1: The conceptual framework



2.1 Brand equity

Kirmani and Rao (2000) posit that a signal is most useful for consumers buying goods for which they have limited information about, yet are sensitive to the product's quality. This happens when one is considering the choice of higher education such as a post-graduate program. While there are several ways for a company or institution to provide a signal of the product's quality, the brand name is the focus of this study. Varying definitions of brand equity have been put forward in the literature. Aaker (1997) defines brand equity as consisting of five dimensions, namely brand awareness, brand loyalty, perceived quality, brand association, and other proprietary brand assets. The brand equity in our study adopts the definition from a study by Seno and Lukas (2007), where brand equity is defined as a "financial asset and a set of favorable associations and behaviors" (p.122). Based on signaling theory, a brand with a higher level of equity is expected to send a stronger signal of quality to customers than a brand with lower equity. As a result, higher brand equity increases the likelihood of behavioral intention. Therefore, we propose that the university with a higher level of brand equity will receive higher evaluations on perceived quality as well as generating higher levels of application responses.

H1: Perception of quality is higher for a university with higher brand equity than that of lower brand equity.

H2: Students' application intention is higher for a university with high brand equity than one with lower brand equity.

2.2 The university-accreditation brand alliance

Increasingly, companies are using cooperative marketing activities that involve short-term and/or long-term combinations of two or more brand names. Such marketing actions are referred to as brand alliances (Rao & Ruekert, 1994; Rao, Qu, & Ruekert, 1999). Other terms such as co-branding, co-promotion, and co-advertising are also used in the literature to describe brand alliances (Voss, Gammoh, & Fang, 2012). In our study, a university-accreditation brand alliance is defined as the university's use of the accreditation brand in its promotional materials, such as its brochure or website. Past research on brand alliances primarily focused on either consumer durable products such as automobiles (Akdeniz, Calantone, & Voorhees, 2013; Simonin & Ruth, 1998); televisions (Rao et al., 1999); digital cameras (Gammoh, Voss & Chakraborty, 2006; Voss & Gammoh, 2004); or nondurable products such as potato chips (Washburn, Till, & Priluck, 2000); shoes (Wang & Muehling, 2010); perfume (Baek, Kim, & Yu, 2010); and cake mix (Voss et al., 2012). One exception for this is a study by Lafferty and Goldsmith (2005) on cause-brand alliance. From that study, based on the concept of asymmetric information in the market, signaling theory emerged. The theory explains the use of the brand as a marketing cue, aiding consumers in the decision making process. Asymmetric information often occurs when buyers have limited access to the product and market information (Rao & Ruekert, 1994). This problem is magnified in situations where a product's performance and quality is not easily observable by the buyer prior to the purchase. In situations such as these, the brand is used as a signal of the unobservable quality (Akerlof, 1970; Rao et al., 1999; Wernerfelt, 1988).

In brand alliances, brand partners are utilizing the partner's brand to create or enhance its product's value proposition. Two possible hypotheses are at work here, to explain how brands are used as a quality signal. The first is the risk-reduction hypothesis, in which a brand is used by consumers to reduce the chance of making a bad purchase decision, and to minimize the risk of undesirable outcomes (Montgomery & Wernerfelt, 1992). The second is the bonding hypothesis, whereby the allying brand is used as an indicator of quality due to the potential loss that would occur if the focal brand fails to meet the consumer's expectations (Wernerfelt, 1988). Collaboration between brands can occur in two main forms: (1) a physical representation of brands or products (for example, Compaq and Intel) or (2) a symbolic representation where the association of brand names/logos is used in advertisements (Simonin & Ruth, 1998). In principle, brand alliances help the company to leverage its partner's brand awareness and image. Past research has confirmed that the partner brand produces favorable evaluations of the focal brands (Voss & Tansuhaj, 1999; Washburn et al., 2000). It can also benefit partner brands by allowing them to gain access to the other brand's exclusive markets, and by transferring loyalty to partner brands (Rao et al., 1999). It is therefore important to establish associations with credible partners to gain the maximum benefits of the alliance. In general, the university-accreditation brand alliance message will lead to a positive response towards the university's perceived quality and the students' application intention. This assumption is in-line with the findings from Voss and Gammoh (2004) that the brand alliance improves consumers' evaluations of the unknown focal brand's perceived quality, much more than when no alliance is formed. Thus, the following hypotheses are proposed:

H3: A university-accreditation brand alliance improves the university's perceived quality.

H4: A university-accreditation brand alliance improves the students' application intention.

2.3 Interaction effect between the university's brand equity and the brand ally's cue

A favorable brand ally's image creates a 'spill-over' effect on the focal or main brand features of the marketing message. A positive spill-over effect is particularly strong when the main brand is less well-known than the brand ally (Voss & Gammoh, 2004). This is consistent with findings from Simonin and Ruth (1998) who found that brand alliances generate unequal positive effects on the alliance partners. Lafferty and Goldsmith (2005) examined the effects of cause-brand alliance and found that an alliance with a strong brand improves the image of an unfamiliar cause. In addition, they also reported that an alliance with a cause will benefit the brand, regardless of the level of cause familiarity. A brand partner, with a lower level of brand familiarity than its partner, will contribute less than its alliance counterpart. Washburn et al. (2000) found that co-branding is a win/win strategy for companies, although, a weaker brand tends to obtain more benefits from co-branding than a stronger partner brand. Likewise, we can assume that a strong university brand (with a high level of brand equity) will experience less of the alliance spill-over effects than a weaker university brand. Since the name of the university may already be well-known, and trusted by prospective students, little additional information may be required to verify its program's quality. On the other hand, a lesser known university name with a lower level brand equity will experience higher levels of the alliance's effect.

H5: The positive effect of the university-accreditation brand alliance on perceived quality is more pronounced for a lower equity brand than a higher equity brand.

H6: The positive effect of the university-accreditation brand alliance on students' application intention is more pronounced for a lower equity brand than a higher equity brand.

2.4 Brand alliance message

Communication of the brand alliances may take different forms. Messages about the brand partner may be communicated via written statements about the partner, the partner's brand logo, or an audio message about the partner's collaboration. Consumers who are equipped with prior experiences and information about the product tend to employ different information-processing strategies than those who are lacking in both. This difference in the information-processing strategy is important to the message's effectiveness at persuasion (Chaiken 1980; Petty, Cacioppo, & Goldman, 1981). Individuals with limited information are more likely to verify the persuasiveness of the new information by assessing the superficial cues provided in the advertisement. This process is termed a heuristic strategy, in which the use of general rules are based on their past experiences and observations (Chaiken, 1980). One of the heuristic strategy people use to assess the message's persuasiveness is the message's length. Long messages are believed to be more persuasive than short messages (Petty & Cacioppo, 1984). However, consumers with higher levels of access to product information will conduct a more careful assessment of the message content and the quality of the message argument. In their study, Wood, Kallegren, and Preisler (1985) found that for, high-retrieval recipients, stronger message arguments are judged as more persuasive than weak arguments. At the same time, they discovered that, for this group of high-retrieval recipients, message length played no significant role in enhancing the message's persuasiveness. The strength of a message can be communicated via several routes, such as the use of quantitative versus qualitative information (Artz & Tybout, 1999), the level of quantitative claims, e.g., 55% vs. 5% (Mano, 1997), and sensory cues (Wang and Muehling, 2010). Wang and Muehling (2010) argue that in a context of co-branded advertising, audio and visual cues play a critical role in determining consumer responses. Based on their

arguments and findings, the combination of audio-visual cues in advertisements influences brand association and also purchase intentions. Consumers are left with a somewhat incomplete message when they are provided with only visual advertisements (such as just having a brand ally's logo). Wang and Muehling (2010) argue that, based on their findings, an effective connection between the focal brand (the main brand that features in the advertisement) and the ally brand is lost. Stronger association between the two co-brands in an advertisement is, therefore, enhanced or encouraged when both audio and visual cues are present. In the case of a university, the message of brand alliance can be communicated through the use of different cues to enhance the credibility and validity of the alliance. While several institutions opt for a flash of an accredited agency's brand logo on their web site, some universities offer a short description or even a hyperlink to the accredited agency for more information. We hypothesize that, although the experience of choosing a post-graduate program is new to prospective students, that choice is an important decision to the students. Prospective students' involvement level with the decision will increase, particularly with a student who is more familiar with an MBA program. It requires a higher quality message argument in order to be more persuasive (Petty & Cacioppo, 1979). Thus,

H7: The brand alliance message's strength improves the university's perceived quality.

H7a: The effect of the brand alliance's message strength on the university's perceived quality is more pronounced among students with a high level of MBA knowledge than those with lower MBA knowledge.

H8: The brand alliance message's strength improves the student's application intention.

H8a: The effect of the brand alliance message's strength on students' application intention is more pronounced amongst students with a high level of MBA knowledge than those with a lower MBA knowledge.

3. Methodology

3.1 Experimental design

This study uses a 2 (university brand equity: high or low) x 4 (alliance cue: no alliance, logo only, description only, logo and description) between-subjects design. A total of 243 subjects participated; and all of subjects were third and fourth year Business Administration undergraduate students at Mahidol University International College. Full-time lecturers of the third and fourth year classes were contacted to ask for their participation in the survey distribution, and seven of them agreed to help with the survey distribution and collection. Since the survey contained adequate instructions, the lecturer handed the survey to students in the class (either at the beginning or at the end of the class) and directed them to follow the instruction carefully. Students were allowed reasonable time to complete it and were allowed to opt-out of the study at any time.

3.2 University's brand equity

Subjects were asked to assume that they are considering choices of MBA programs for further study, and that they had received an e-mail message from the university after they had attended the further study exhibition in the previous week. The subjects were then given a quick synopsis of the school to read, which contained general information such as the students profiles, the top area of study, graduates' careers, and the accreditation information. The school's profile, including the logo, and the accreditation information were altered to fit the purpose of the study. In order to manipulate the university's brand equity level, the two university brands used in the experiment were chosen from the Financial Time's list of Global MBA Ranking in 2014. A university from one of the top five was selected to represent the high brand equity university, another was selected from the bottom five of the Financial Time's list to represent the low brand equity university. The Financial Times, university's ranking is based on several common factors such as its international exposure, its graduates' employment rate, and with most emphasis placed on the graduates salaries. Whilst other rankings place their emphasis on other factors such as research output, those rankings may not clearly reflect the true value of the university in the context of brand equity. The ability of graduates to earn higher salaries is an important indicator of university brand equity, the salary (price) premiums of the graduates reflecting the equity of the university. The real university's name was used to increase the realism of the scenario amongst the subjects. However, in order to keep the name of the university anonymous, in this article, the two universities will be referred to as either a high or a low brand equity university. Each university's brand equity was measured with three 7-point scale questions ('I can recognize [university's name] amongst other competing universities', 'I am aware of [university's name]', and 'Some characteristics of [university's name] come to my mind quickly'; $\alpha = 0.889$).

3.3 Alliance cue and message strength

Accreditation brand ally cues are manipulated by providing different types of brand ally information to the student subject. The accreditation information is shown at the end of the university brand message, the logo of AACSB being the one that was chosen to be used in a logo only cue condition. The authors obtained the AACSB's descriptions from the accreditation agency's website. A direct quote from the AACSB's website (AACSB, 2014) was utilized to communicate AACSB accreditation to prospective business students. In a logo and description cue, both the AACSB logo and the above description were provided. No information was provided in a no alliance cue condition. A pre-test of the alliance cue revealed an increase of message strength from a logo only cue to a logo with description cue. Subjects ($N = 91$) in a pre-test were asked to look at one of the alliance cues used in this study and answer five 5-point bipolar items (informative, believable, interesting, persuasive, and strong; $\alpha = 0.776$) (Mano, 1997). A one-way ANOVA yielded significant message strength mean differences across all three conditions - logo only ($M = 2.25$, $SD = 0.77$), description only ($M = 2.92$, $SD = 0.60$), and logo and description ($M = 3.39$, $SD = 0.53$) condition with $F(2, 88) = 24.385$, $p = 0.000$. From the results of the pre-test, we are confident that the three conditions of the brand alliance cues provide different levels of message strength. The manipulation of the three brand ally cues is shown in Appendix A.

3.4 Perceived quality

Adapted from Akdeniz, Calantone, and Voorhees (2013), students' perception of quality was measured with three items using a 1-7 Likert scale (1 = strongly disagree and 7 = strongly agree) and two items using a bipolar scale. The four items of brand attitude measurements are as follows: '[university's name]'s MBA program is most likely going to be of high quality', '[university's name]'s MBA program is likely to be reliable', and 'I would worry about the quality of [university's name]'s MBA program. Two items of brand attitude using bipolar scale (1-7) are 'Compared to the other MBA programs, the quality of [university's name]'s MBA program is (1 = much worse and 7 = much better)' and 'My overall impression of the quality of [university's name]'s MBA program is (1 = very bad and 7 = very good). All five items received satisfactory reliability levels with $\alpha = 0.84$.

3.5 Application intention

A bipolar scale 1-7 (1 = very unlikely and 7 = very likely) was used to measure the subject's behavioral intention. The subjects provided answers to the statement 'I would seriously consider applying to [university's name]'s MBA program'.

3.6 MBA knowledge

MBA program knowledge is measured by four questions adapted from Gammoh, Voss, and Chakraborty (2006). The subjects were asked to respond to four items, using a 1-7 Likert scale (1 = strongly disagree and 7 = strongly agree), 'I feel very knowledgeable about MBA programs', 'If a friend asked me about MBA programs, I could give them advice about different MBA programs', 'If I had to apply for an MBA program today, I would need to gather very little information in order to make a wise decision', and 'I feel very confident about my ability to tell the difference in quality amongst different MBA programs'; $\alpha = 0.761$).

3.7 Demographics information and accreditation knowledge

The subjects were asked to answer a demographic question (gender) and a question related to their AACSB accreditation knowledge at the end of the questionnaire.

4. Results

The sample was composed of 108 males (44.4%) and 135 females (55.6%). From a one-way ANOVA, we found that gender has no impact on the perceived quality and students' application intention towards the university brand. The majority of the respondents had no prior knowledge about AACSB accreditation; only 19 (7.8%) had prior knowledge about AACSB accreditation whilst 224 (92.2%) did not. Almost half of the respondents claimed that they had a high level of MBA program knowledge. Out of 243 samples, 128 (53.1%) actually had less knowledge about MBA programs and 114 (46.9%) had a higher level of knowledge. The brand equity of the two schools used in the scenario was measured. The results of a t-test showed a significant mean difference between a high brand equity university ($M = 4.05$, $SD = 1.37$) and a low brand equity university ($M = 3.07$, $SD = 1.33$) with $p = 0.000$). Table 1 provides summary statistics of key variables in the study, including the reliability and validity test of the questionnaire. For a construct with multiple items, such

as the perceived quality and the MBA knowledge, all Cronbach's alpha exceeded 0.75, suggesting a satisfactory level of the scale's reliability. The analysis of factor loading also showed a substantial loading higher than 0.70. One item, 'I would worry about the quality of [university's name]'s MBA program', was dropped out of the perceived quality variable as a result of its low factor loading score (0.373). The item deletion improved the Cronbach's alpha of perceived quality construct from 0.77 to 0.84. The problem with lower factor loading scores could arise from the nature of the reverse question that the respondent may not have been familiar with or simply did not understand the question well enough.

Table 1: Summary statistics for perceived quality, application intention, and MBA knowledge

Scale items	Mean	SD	Factor loading	Cronbach's alpha
Perceived quality (composite mean)	4.55	1.29		0.84
X's MBA program is most likely going to be of high quality.	4.42	1.20	0.85	
X's MBA program is likely to be reliable.	4.63	1.18	0.85	
Compared to the other MBA programs, the quality of X's MBA program is	4.51	1.10	0.76	
My overall impression of the quality of X's MBA program is	4.63	1.07	0.84	
Application intention				
I would seriously consider applying to X's MBA program.	3.93	1.31		
MBA knowledge (composite mean)	3.48	2.05		0.76
I feel very knowledgeable about MBA programs.	3.62	1.25	0.80	
If a friend asked me about MBA programs, I could give them advice about different MBA programs.	3.38	1.33	0.82	
If I had to apply for an MBA program today, I would need to gather very little information in order to make a wise decision.	3.66	1.79	0.70	
I feel very confident about my ability to tell the difference in quality amongst different MBA programs.	3.26	1.28	0.79	

Table 2: The difference between high and low equity university brands as regards perceived quality and students' application intention (ANOVA)

	High brand equity (n=121)	Low brand equity (n=122)	p-value
	Mean $\pm$ S.D.	Mean $\pm$ S.D.	
Perceived quality	4.81 $\pm$ 1.00	4.28 $\pm$ 0.77	<0.0001
Application intention	4.24 $\pm$ 1.27	3.62 $\pm$ 1.28	<0.0001

An independent-samples t-test was conducted to compare the perceived quality of the high equity university brand and the low equity university brand (Table 2). There was a

significant difference between the perceived quality of the high equity university brand ($M = 4.81$, $SD = 1.00$) and the low equity university brand ($M = 4.28$, $SD = 0.77$); $t(241) = 4.554$, $p = 0.000$. These results suggest that a university with a high level of brand equity leads to an improved perception of quality. This confirms H1. From Table 2, there was a significant difference between students' application intention for high equity university brand ($M = 4.24$, $SD = 1.27$) and low equity university brand ($M = 3.62$, $SD = 1.28$); $t(241) = 3.766$, $p = 0.000$. The results suggest that a university with a high level of brand equity generates an increase in students' application intentions. Thus, H2 is also confirmed.

Table 3: The difference between brand ally cues towards perceived quality and students' application intention (ANOVA)

	Brand Ally Cue								p-value
	No Alliance		Logo only		Description Only		Logo+ Description		
	(n=58)		(n=72)		(n=67)		(n=46)		
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Perceived quality									
Overall	4.38	0.91	4.29	0.86	4.80	0.88	4.80	1.02	0.001
High brand equity	4.76	0.99	4.48	0.96	4.88	0.98	5.21	1.02	0.035
Low brand equity	4.03	0.66	4.11	0.73	4.74	0.81	4.17	0.61	<0.0001
Application intention									
Overall	3.93	1.32	3.69	1.35	4.22	1.14	3.87	1.42	0.122
High brand equity	4.40	1.06	4.56	1.12	4.45	0.99	4.21	1.39	0.516
Low brand equity	3.22	1.38	3.23	1.24	3.84	1.28	3.00	1.15	0.036

4.1 Perceived quality

A one-way ANOVA was conducted to compare the effect of brand ally cues (no cue, logo only, description only, logo and description) on the perceived quality of the university (Table 3). There was a significant effect of alliance strategy on perceived quality of the university at the $p < 0.00$ level for the four conditions [$F(3, 239) = 5.538$, $p = 0.001$]. H3 is confirmed. These results suggest that brand alliance cues positively affect consumers perceived quality of the university. The direct effect of brand alliance cues is more pronounced in a low equity university brand (sig. with $p < 0.000$) than in a high equity university brand (sig. with $p = 0.035$). Compared to a brand ally with no cue, provision of the brand ally with a cue (description of the accrediting agency or the accreditation logo together with its description) increases the perceived quality of the university (sig. with $p < 0.00$).

These results also suggest that provision of a brand ally with no alliance cue or with a logo only cue have no significant effect on the perceived quality of the university. From an independent t-Test, there was no significant difference in the perceived quality of the university for the no alliance cue ($M = 4.38$, $SD = 0.91$) and a brand ally with a logo cue only ($M = 4.29$, $SD = 0.86$); $t(128) = 0.585$, $p = 0.560$. The presence of a brand ally with a description only cue significantly increases the perceived quality of the university, compared to that of a no alliance cue. A brand ally with a description only cue significantly increases perceived quality of the university, compared to a brand ally with a logo only cue. There was a significant difference in the perceived quality of the university for a brand ally with a logo only cue ($M = 4.29$, $SD = 0.86$) and a brand ally with a description only cue ($M = 4.80$, $SD = 0.88$); $t(137) = 3.451$, $p = 0.001$. These results suggest that a brand ally with a logo and a description cue generate significantly more positive effects on the perceived quality of the

university than the provision of a brand ally with a logo only cue. There was a significant difference in the perceived quality of the university for a brand ally with a logo only cue ($M = 4.29$, $SD = 0.86$) and a brand ally with a logo and description cue ($M = 4.80$, $SD = 1.02$); $t(116) = -2.959$, $p = 0.004$. These results also suggest that provision of a brand ally with a description only cue or with a logo and description cue have no significant effects on the perceived quality of the university. There was no significant difference in the perceived quality of the university for a brand ally with a description only cue ($M = 4.80$, $SD = 0.88$) and a brand ally with a logo and description cue ($M = 4.80$, $SD = 1.02$); $t(111) = -0.032$, $p = 0.974$.

4.2 Students' application intention

In Table 3, a one-way ANOVA was conducted to compare the effect of a brand ally cue (no cue, logo only, description only, logo and description) on students' application intention towards the university brand. There was no significant effect of an alliance strategy on students' application intention towards the university brand at the $p < 0.05$ level for the four conditions [$F(3, 239) = 1.953$, $p = 0.122$]. These results suggest that the brand alliance cue has no direct effect on student's application intentions towards the university in a high brand equity group. Thus, H4 is not confirmed. The effect of the brand alliance communication strategy is more pronounced in a low equity university brand [$F(3, 118) = 2.946$, $p = 0.036$] compared to a high equity university brand [$F(3, 117) = 0.765$, $p = 0.516$].

4.3 Brand equity and brand ally cue interaction effect

This study confirms an interaction effect between the university brand equity and the brand ally cue on perceived quality of the university brand [$F(3, 235) = 3.117$, $p = 0.027$]. Significant perceived quality means differences were found mostly in the low brand equity condition, rather than in the high brand condition. H5 is confirmed. Significant differences (with $p < 0.05$) were found between the following pairs of brand ally cue conditions - no cue ($M = 4.03$) vs. description only cue ($M = 4.74$), description only cue ($M = 4.74$) vs. logo only cue ($M = 4.11$), and description only cue ($M = 4.74$) vs. logo and description cue ($M = 4.17$). In a high brand equity condition, the only significant mean difference in perceived quality was found between a logo only cue ($M = 4.48$) vs. logo and description cue ($M = 5.21$) with $p < 0.05$. No significant interaction effect was found on students' application intention [$F(3, 235) = 1.241$, $p = 0.295$]. Thus, H6 is not confirmed.

4.4 Brand alliance message strength

A one-way ANOVA result showed a significant mean difference in the university's perceived quality of three types of brand alliance messages (logo only cue ($M = 4.29$, $SD = 0.86$), description only cue ($M = 4.80$, $SD = 0.88$), and a logo with description cue ($M = 4.80$, $SD = 1.02$); with $F(2, 182) = 6.991$ and $p = 0.001$). This confirms H7. In addition, a Tukey post-hoc test revealed that significant improvements in the university's perceived quality were found between two pairs (logo only vs. description only cue ($p = 0.003$); and logo only vs. logo with description cue ($p = 0.008$)). No significant mean difference was found between a description only and a logo with description cue ($p = 0.999$). Although, there was an increase in students' application intention when the alliance message evolved from a logo only ($M = 3.69$, $SD = 1.35$), to a description only ($M = 4.22$, $SD = 1.14$), and to a logo with description ($M = 3.87$, $SD = 1.42$), the alliance message does not play a significant role in increasing the likelihood of students' application intention [$F(2, 182) = 2.958$, $p = 0.054$]. Thus, H8 is not confirmed.

Table 4: The difference between brand ally cues towards perceived quality and students' application intention (ANOVA): A comparison between MBA knowledge groups

	Brand Ally Cue								p-value
	No Alliance (n=58)		Logo only (n=72)		Description Only (n=67)		Logo+ Description (n=46)		
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Perceived Quality									
High MBA knowledge	4.49	0.94	4.44	0.93	4.98	0.81	4.97	0.95	0.019
Low MBA knowledge	4.22	0.85	4.12	0.74	4.66	0.92	4.47	1.09	0.053
Application Intention									
High MBA knowledge	4.15	1.08	4.03	1.40	4.31	0.60	4.13	1.38	0.809
Low MBA knowledge	3.63	1.58	3.30	1.18	4.16	1.42	3.33	1.40	0.054

The overall mean and standard error of two MBA knowledge groups and four alliance message cues are displayed in Table 4. One-way ANOVA results showed significant mean differences in the perceived quality of the university in the high program knowledge group [$F(3, 129) = 3.418, p = 0.019$]. Thus, this confirms the direct effect of an alliance message on the university's perceived quality amongst groups of students who possess a high level of program knowledge. Based on the results, H7a is confirmed. However, the following points should be looked into for a more detailed analysis. A significant mean difference exists only between a logo only and a description only cue. Results from an independent-samples T test, show that there was a significant difference in the perceived quality of the university in the high program knowledge group for alliance message with a logo only cue ($M = 4.44, SD = 0.93$) and an alliance message with a description only cue ($M = 4.98, SD = 0.81$), $p = 0.015$. Interestingly, there was also a significant difference in the perceived quality of the university in the low program knowledge group for alliance message with a logo only cue ($M = 4.12, SD = 0.74$) and an alliance message with a description only cue ($M = 4.66, SD = 0.92$), $p = 0.008$. No significant differences were found between a brand alliance with a description only and a logo and description cue both in the high program knowledge group (description only cue $M = 4.98, SD = 0.81$; logo and description cue $M = 4.97, SD = 0.95$; $p = 0.948$) and in the low program knowledge group (description only cue $M = 4.66, SD = 0.92$; logo and description cue $M = 4.47, SD = 1.09$; $p = 0.521$). Nevertheless, our ANOVA only confirmed significant mean differences between message types in the high program knowledge group of students.

From the results, we found no significant differences in the application intention of the university in both high and low MBA knowledge groups when using four different brand alliance message cues with all $ps > 0.05$. However, when considering only three alliance message scenario (logo only, description only, and logo with description), the alliance message type affected students' application intention significantly in the group of students with low program knowledge [$F(2, 83) = 4.272, p = 0.017$] compared to the group with high program knowledge [$F(2, 83) = 0.456, p = 0.635$]. The only significant mean difference that was found in the low program knowledge group is between a logo only ($M = 3.30, SD = 1.18$) and a description only cue ($M = 4.16, SD = 1.42$) with $p = 0.008$. Thus, the results do not confirm H8a.

5. Discussion and conclusion

Our results confirm the theoretical and practical value of branding in higher education; the reputation of an institution becomes an important signal of its program's quality (Rao et al., 1999; Wernerfelt, 1992). In our study, we also show that the brand not only affects students' perception of the institution, but also their behavioral intention. When two brands co-exist in a marketing message, more favorable consumers' responses can be expected. This is also confirmed by the results in this study. Regardless of the partner brand's familiarity level, our results show favorable brand evaluations, when a brand alliance is formed, which is consistent with the findings reported in the study by Lafferty and Goldsmith (2005), Voss and Tansuhaj (1999) and Washburn et al. (2000). It is the less known university that realizes more benefits from brand alliance. Whilst past studies on brand alliance report an asymmetric distribution of alliance benefits to partner brands based on the partner's brand familiarity level (Simonin & Ruth, 1998; Voss & Gammoh, 2004; Washburn et al., 2000), our study's main area of investigation is on how the alliance should be communicated. Message strength (the alliance message cue) is found to positively influence the persuasiveness of the argument. This is consistent with findings from the study by Wood, Kallegren, and Preisler (1985) in which a recipient with high ability to use prior experiences has a higher tendency to be influenced by the quality of the message, in our case the amount of descriptive information regarding the accreditation agency. Compared to a logo only alliance message, the MBA program will be evaluated more favorably when more descriptive information is provided. This point is especially important when the university is trying to attract and influence the opinion of students who consider themselves to possess higher level of MBA program experience. Nevertheless, we find contradicting results in the students' application intention where no direct effects of alliance message types are found. Thus, it is possible that other factors besides the quality partnership will be used by the students when deciding which institution to apply for.

In general, the results from our study confirm the power of brand equity and the power of the brand alliance cue in the university's marketing message. A university with stronger brand equity, in terms of ranking, tends to enjoy a favorable perceived quality and receives a higher likelihood of application intentions from prospective students. When the university is accredited by an independent quality agency, the accreditation achievement is usually communicated in the university's public relations materials. Our results provide empirical evidence of how this accreditation alliance can fully benefit the university brand. Providing the prospective students with more 'descriptive' information is a necessary condition to achieve the best brand alliance communication. A logo only cue performs much less effectively as compared to a logo and description cue. In other words, giving your prospective students a flash of an accreditation logo will provide your university with no better results than not showing any accreditation. Considering that the majority of our subjects had no prior knowledge of the accreditation agency in the experiment scenario, this finding stresses the importance of providing complete information. For our subjects, a seemingly less attractive description only cue results in an equally impressive perceived quality outcome as does a logo with a description cue. Although, the presence of accreditation by a brand ally in the university's promotional material helps to improve the perception of quality for the university, the effect of the brand ally cue is not equally distributed. We found that in a lower equity university brand condition, additional information on the accreditation agency is required to achieve a favorable outcome on the perception of quality. This does not hold true for a highly regarded university (based on the ranking status) whose reliance on the external partner to provide a convincing quality cue seem to be very minimal.

6. Limitations and future research

This study is considered to be preliminary research on the effect of a university-accreditation brand alliance on the university's brand evaluation and on students' application intentions. It therefore has its limitations. Firstly, the subjects used in our study are a sample of undergraduate students. Although, the use of a student sample satisfies the research objectives, our samples are restricted to only one university. A broader group of students should be included in further studies to confirm this study's results. Secondly, as regard to the brand equity, different factors such as cultural background (individualism vs. collectivism) also deserves research attention. Students in a collectivist culture may exhibit a stronger reliance on the brand signal; and would therefore respond more favorably to the co-branding message than students from an individualistic culture. Thirdly, an experimental study design can be judged by subjects as being unreal, and so this may affect their responses to the survey questions. A field experiment should be undertaken where feedback is obtained from prospective students from real-life universities' brand alliance promotional materials. Lastly, the university used in the high and low brand equity condition was selected from a third-party list. Brand equity can be measured by different dimensions, as suggested in previous research. Measurements used by independent agencies to rank universities may be different and thus should be taken into account in future research

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Appendices

Appendix A. Experiment scenario

Please assume yourself in the following situation.

You are in your last year at MUIC and are looking for an MBA program for further study.

After attending a study abroad exhibition in downtown Bangkok last week, you have received a follow up e-mail message from the school. Apart from the information provided below, other criteria (such as location, tuition fees, etc) are already acceptable to you.

Student Profile	41% International Students 39% Female 52% Asian Students
Top Area of Study	General Management, Marketing, Finance, Strategy
Graduates' Careers	Top Industry: Consulting 31% Financial Services 19% Consumer Products 13% Technology 10%

Based on the condition of the brand ally cue being assigned to, the subject will see different information about AACSB immediately follows the university's information.

Condition	Manipulation
Logo Only	
Description Only	AACSB Accreditation represents the highest standard of achievement for business schools worldwide. Less than 5% of the world's 13,000 business programs have earned AACSB Accreditation. AACSB-accredited schools produce graduates that are highly skilled and more desirable to employers than other non-accredited schools.
Logo with Description	 AACSB Accreditation represents the highest standard of achievement for business schools worldwide. Less than 5% of the world's 13,000 business programs have earned AACSB Accreditation. AACSB-accredited schools produce graduates that are highly skilled and more desirable to employers than other non-accredited schools.



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University of the Thai Chamber of Commerce, Thailand

In 1940, the Thai Chamber of Commerce founded a non-profit education institution called the College of Commerce to produce graduates in the business field. After the outbreak of World War II in 1941, this institution was closed. In 1963, the College was reopened, and the two-year curriculum was developed into a standard four-year in 1964. In 1970, it was officially accredited under the Private College Act. In 1984, this institution was accredited as a university and the name was changed to the University of the Thai Chamber of Commerce. At present, the University of the Thai Chamber of Commerce provides 39 undergraduate program. The School of Graduate Studies is responsible for 9 graduate programs and 1 graduate diploma program, and the School of Business Administration is responsible for 1 certification programs. All programs are approved by the Ministry of University Affairs.

Thailand Management Association

Thailand Management Association (TMA) is a highly professional body of managers and executives, from all branches of business in Thailand who are dedicated to seeking and transferring knowledge through the exchange of the latest information on advanced managerial principles and practices in various fields. This exchange is considered as a contribution from the business sector to the efficient and productive utilization of human and material resources, which contributes ultimately to the well-being of the nation. In 1962, two top management development conferences, inspired by Mr. W.T.Utting, then Chief of the United Nations International Labor Organization (ILO), were organized, by the Thailand Management Development and Productivity Center. These two conferences concluded that the proper and well organized management training center was urgently needed, to improve the overall management skills of both local and foreign enterprises in Thailand. This led to the establishment of the Thailand Management Association, with the late Khun Snoh Nilkamhaeng, then Director of Lever Brothers (Thailand) Ltd., as its first president. The objectives are: 1) to improve the general abilities, education, technical knowledge and effectiveness of person engaged in management, by providing a forum for members for discussion of management subject, 2) to provide mutual assistance in applying management practices to increase the efficiency of the members' enterprises, 3) to propagate the concept that management is a worthwhile and honorable profession, and 4) to promote and maintain high ethical standards of management practices.

Kellogg College, University of Oxford, United Kingdom

Kellogg College is one of Oxford's largest, most international graduate colleges and membership is diverse. The College was named in honour of W. K. Kellogg on the 1st October 1994, in recognition of the generous support given by the W K Kellogg Foundation to the University over the preceding decades. The College has close connections with the University Department for Continuing Education, the Department of Education and other departments active in areas of professional and part-time study. The College can trace its origins back to the start of university extension movement in the 1870s, and came into being on 1st March 1990 (as Rewley House).



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