

Exploration of Customer-Based Brand Equity: A Case Study of China Eastern Airline

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ABSTRACT

This research proposes to explore customer-based brand equity based on a survey conducted in Chinese airports on China Eastern Airlines (CEA). ANOVA and linear regression are used to test hypotheses developed under the inspiration of prior studies and current market conditions. This research contributes to the investigation of Chinese airlines' brand equity in a domestic market that prior studies rarely focussed on. The results show that differences in demographic factors and flying habits significantly influence people's evaluations of airline brand equity. Brand image, brand authenticity, brand loyalty and perceived quality are strongly correlated with airline brand equity.

Keywords: Brand equity, Branding, Brand equity dimensions, Chinese airlines

1. Introduction

Brand equity can be defined as a set of assets and liabilities linked to a brand (Aaker, 1991). A well-known brand can make its products appear more outstanding, and this additional value, which is not derived from the products themselves, is referred to as brand equity (Keller, 2003). To be more specific, this additional value is imparted by the brand name and logo. If the brand name or logo changes, their associated assets would be greatly affected, even entirely annihilated, despite there being no changes to the products themselves. Hence, brand equity plays an important role in the subject of brand management.

Brand management, also referred to as branding, aims to enhance brand value and capture market share for a certain category of products. Successful branding can benefit both firms and customers. Firstly, a brand, especially one that conjures pronounced brand associations, combines products with critical information which can help customers become aware of the potential products sold and serve as a reference in their purchase decision (Aaker, 1991). Secondly, using premium branding provides extra satisfaction. Customers can sometimes gain perceptions of better consumer experiences despite there being no changes to the actual quality of the product. Furthermore, positive brand equity brings firms forward earning power and long-term cash flow, stock prices, sustainable competitive advantages, leading to market success (Yoo and Donthu, 2000).

In previous studies, scholars proposed theories regarding customer-based brand equity and methodology for measuring it. A number of experiments have been completed, however few of them focus on airlines; not to mention even fewer have focused on the Chinese domestic market. Since variations in brand equity may exist between different industries of different markets, it is essential to conduct research on the airline industry in the Chinese domestic market separately, rather than over-generalising from results of studies on other industries. Hence, this study explores Chinese airline brands in the Chinese market to collect and analyse customers' experiences.

The largest three Chinese airlines, namely, Air China, China Eastern Airlines and China Southern Airlines have dominated the China market for many years, becoming each other's strongest competitors. Since the largest of the three, China Southern Airlines, has lost some shares in the passenger transportation market, which decreased from 32 per cent in 2005 to 25 per cent in 2015 (Yang, 2016), now levelling with those of China Eastern Airlines and Air China, which are 22 per cent and 21 per cent respectively (Yang, 2016), competition between the three giants have since intensified. For China Eastern Airlines, brand equity is intimately connected to its business behaviour, which might contribute to their rise in the Airline Brands Ranking as evaluated by Brand Finance (2017) from 20th in 2010 to 7th in 2017.

The objectives of this research are:

- to explore the differences between brand equity for people of different demographic groups and those who of differing flying habits
- to test the relationship between overall brand equity and its dimensions
- to examine whether external factors (brand authenticity, price fairness) have positive effects on brand equity

The structure of this paper is: a literature review, followed by methodology used in this study, and then the results, findings and conclusion. Also the limitations and further research pathways of this research is addressed.

2. Literature review

A brand is a set of associations linked to a name, mark, or symbol associated with a product or service, which is used to distinguish those seemingly identical products and services offered by competitors (Aaker, 1991; Keller, 2003). Branding has been widely accepted as essential to the creation of a certain level of awareness, reputation, and public prominence of the branded products in the market (Keller, 2002). Aaker (1991) defines brand equity as a set of assets and liabilities linked to a brand, and it has five dimensions: Brand Loyalty, Name Awareness, Perceived Quality, Brand Associations and Other Proprietary Brand Assets. These dimensions would provide value to both customers and firms in many ways. Aaker (1991) also states that there are interrelationships between the brand equity dimensions, meaning that the attainment of one characteristic increases the likelihood of attaining others. In any case, it would be useful to form a brand dimension framework to understand how they contribute to brand equity.

2.1 Brand equity dimensions

2.1.1 Brand awareness

Brand awareness is a key determinant of brand equity identified in almost all brand equity models (Aaker, 1991; Kapferer, 1991; Keller, 1993; Agarwal and Rao, 1996; Krishnan, 1996; Na, Marshall and Keller 1999; Mackay, 2001). Keller (2003) defines brand awareness as “the customers’ ability to recall and recognize the brand as reflected by their ability to identify the brand under different conditions and to link the brand name, logo, symbol, and so forth to certain associations in memory”. Aaker (1996) identifies other higher levels of awareness besides recognition and recall (Aaker, 1991). He includes top-of-mind, brand dominance, brand knowledge and brand opinion. Brand knowledge is the full set of brand associations linked to the brand (Keller, 1993).

Hoyer and Brown (1990) argue that customers can receive plenty of brand knowledge, ranging from crude and simple information to very complex brand information which consists of many details ordered in meaningful structures. The sets of knowledge that customers receive is the awareness and the process of receiving knowledge is recognition.

Zhang and Sood (2002) describe brand awareness as involving information, such as brand name characteristics, surface cues, which are far from the central purpose of brand strategy, creating purchase intention and changing brand favourite. However, it is important to expand salience of brand primarily and it is essential to at least establish some tendency before customers make purchase decisions (Percy and Rossiter, 1992). Zhang and Sood (2002) confirm that younger customers prefer to use more superficial factors to judge brand when they make purchase decisions. Other studies also confirm that brand awareness has critical effects on customer’s purchase choices (Allison and Uhl, 1964).

2.1.2 Brand image and brand association

Keller (1993) defines brand association as the other informational nodes linked to the brand node in memory and contained the meaning of the brand for consumers. Aaker (1991) states that brand associations are anything of the brand which reflected into people’s memory.

Brand association is seen as the most important dimension by some researchers (Cheng-Hsui, 2001). Chen and Chang (2008) find that brand loyalty is heavily affected by brand association. Brand association

can enhance brand equity and be beneficial to business operation in many ways. Aaker (1991) states that brand association can provide value to both customers and firms. Brand association can create social benefits, affecting social image of the firms and getting gains in legitimacy in the field (Virutamasen, et al., 2015). The good social image is critical for the firms to achieve long term growth and adjust to the ever-changing business environment in further (Virutamasen, et al., 2015).

Brand image has widely been accepted as a dimension of the brand associations along with brand symbols (Virutamasen, et al., 2015). Aaker (1991) defines brand image as a set of meaningfully-organised brand associations. In line with the level of abstraction of brand, Keller (1993) suggests classifying brand associations into 3 types, which are attributes, benefits and brand attitude. In some studies, researchers used meaningful associations set (Brand image) to take the place of brand associations (Chen and Tseng, 2010; Yoo and Donthu, 1999).

2.1.3 Brand loyalty

Oliver (1997) states that the loyalty is an immaterial feeling of obligation in consumer's mind that drives him to purchase or disparage a specific item or administration tediously, which is the explanation behind same-brand or same-set buying, disregarding the changing external business sector environment. It additionally is described as a measure of fondness that consumers appear for a brand (Aaker, 1991). The brand loyalty effect how likely the customers re-buy a product and how large the gap of brand switching is, especially, when the product is no longer same. Aaker also distinguishes the loyalty to the brand and to the product. Repurchasing attributable to the internal characters of product is the loyalty to product. It may leave when the product changes. The brand loyalty probably remains while product is changing. Moreover, it is valuable to know that the loyalty to brand can extend between different products under that brand, between different markets, even between parent brand and sub-brand (Keller, 1993).

Grembler and Brown (1996) describe different levels of loyalty. Behavioural loyalty is linked to consumer behaviour in the marketplace that can be indicated by number of repeated purchases (Keller, 1998) or commitment to rebuy the brand as a primary choice (Oliver, 1997). Cognitive loyalty which means that a brand comes up first in a consumers' mind, when the need to make a purchase decision arises, that is the consumers' first choice. The cognitive loyalty is closely linked to the highest level of awareness (top-of-mind), where the matter of interest also is the brand, in a given category, which the consumers recall first. Thus, a brand should be able to become the respondents' first choices (cognitive loyalty) and is therefore purchased repeatedly (behavioural loyalty) (Keller, 1998).

Chaudhuri & Holbrook (2001) mention that brand loyalty is directly related to brand price. Aaker (1996) identify price premium as the basic indicator of loyalty. Price premium is defined as the amount a customer will pay for the brand in comparison with another brand offering similar benefits and it may be high or low and positive or negative depending on the two brands involved in the comparison.

2.1.4 Perceived quality

Perceived quality is referred as the consumer's judgment about a product's overall excellence or superiority (Zeithaml, 1988). Perceived quality is a high level abstraction and is usually created in customer's mind. Zeithaml (1998) also emphasise there is different between perceived quality and objective quality which is referred to actual technical excellence or superiority. Perceived quality is widely accepted as having positive effects on consumer's purchase behaviour (Chen and Chang, 2005). Perceived quality accompanied by experiential benefits, contributes consumers' overall evolution of a brand (Keller, 1993). Perceived quality can be measured by preference, feature, conformance, reliability, durability, serviceability, fit and finishes (Aaker, 1991).

Pakdil and Aydın (2007) state the quality are becoming more and more important in airline industry. Both business and leisure passengers have high expectation of quality nowadays. In airline industry, the quality is fully customer-based. Customers are the only ones who can truly evaluate the service quality. However, with the difficulties of heterogeneity, intangibility, and inseparability, the service of airline need a new measure which is totally different from other industries. Based on survey, they used SERVQUAL to develop measure of airline services. They have 35 questions. According to the factor analysis result, they suggest using 8 valuables to evaluate service quality of airlines, which are Employees, Tangibles, Responsiveness, Reliability and assurance, Flight patterns, Availability, Image and Empathy

2.2 External factors on brand equity

2.2.1 Brand authenticity

As the increasing number of exposed scandals that large brands were involved in environmental, legal, parasitical issues, brands are not away being thought positively (Beverland, 2005). On the other hand, in order to be against with expanding commercialization, a flood of the fake, and an inescapability of useless advertising, customers are more eager for relevant, reliable brand. Hence, brand authenticity which can be used to understand a brand's genuineness, truthfulness and communicate meaning, has been critical in both brand conceptualization and strategy (Morhart et al., 2013).

Brand authenticity can be interpreted by using four brand authenticity dimensions, which are continuity, credibility, integrity and symbolism (Morhart et al., 2013).

1. Continuity is the character of a brand which services a certain product category and has no change for a long time. The long-tested brands are not only a proof of their steadiness in the past, but also a promise that there have ability and high probability to suffer from future risks.
2. Credibility is defined as that brand's straightforwardness and genuineness toward the customers, and additionally its eagerness and capacity to achieve what it promised.
3. Integrity relates to the social responsibility and morality of a brand. Also, brand's attitude to their customers is an important factor. Researchers found it would enhance customer's loyalty.
4. Symbolism signifies a brand's capability to serve as an asset for personality building by giving personal associations conveying value, social state, and experience. These cues are important parts to construct associations and the complex cues channel will be helpful in brand recall process.

Napoli et al. (2014) defines brand authenticity as subjective evaluation of genuineness ascribed to a brand by consumers. They stated brand authenticity plays important roles when they are forced to make purchasing choose in a short time. Some of cues of brand authenticity may evoke customer's preference onto a certain product.

2.2.2 Price fairness

Martín-Consuegra, Molina and Esteban (2007) believe that price fairness is judgement of comparing actual price with a pertinent standard, reference, or norm. Malc, Mumel and Pisnik (2016) defined price fairness as customers' perceptions and their related emotions about how fair, acceptable, and reasonable the difference is between two prices. Price fairness is involved in loyalty (Keller, 1993, Martín-Consuegra, et al, 2007), perceived value (Xia, Monroe and Cox, 2004), purchase intention (Malc, et al, 2016), and satisfaction (Martín-Consuegra, et al, 2007).

3. Methodology

3.1 Hypothesis development

In line with the literature review, scholars believe that characteristics of consumers have effects on the brand equity extension (Keller, 2002), Brand awareness (Hoyer and Brown, 1990). Compared with young consumers, elders rely more on deep cues to evaluate brand (Zhang and Sood, 2002). Socio-demographic variables such as income, age, social class, gender, occupation, education, marital status, and nationality have been identified in the literature as having a significant influence on the dimensions of service quality (Clemes et al., 2001; Jiang and Zhang, 2016; Oyewole, 2001). Clemes et al. (2008) mentioned that age and income differ with regards to the passengers' perception of international air travel. Hence, H1 have been developed to assess whether demographic variables including gender, age, income, education does have an impact on passengers' perception of brand equity for CEA.

Hypothesis H1a: *There is no significant difference between genders of Brand Equity for CEA.*

Hypothesis H1b: *There is no significant difference between age groups of Brand Equity for CEA.*

Hypothesis H1c: *There is no significant difference between education groups of Brand Equity for CEA.*

Hypothesis H1d: *There is no significant difference between income groups of Brand Equity for CEA.*

Hypothesis H1e: *There is no significant difference between occupation groups of Brand Equity for CEA.*

The second hypothesis is derived from personal needs. There are three major reasons passengers need to travel: namely for business, for holiday and to visit friends/relatives, and it is believed that each group's expectations would be different (Gilbert and Wong, 2003).

Hypothesis H2: *There is no significant difference between passenger's travel purposes of Brand Equity for CEA.*

In order to evaluate the brand equity, Yoo and Donthu (2001) create and verified a scale measure for customer-based brand equity. Their scale has 10 items representing the three dimensions of brand loyalty, perceived quality, and brand awareness/associations that contribute to the brand equity. Chen and Tseng (2010) confirm that in airline industry, brand loyalty has direct positive effects on brand equity. Meanwhile, brand image and perceived quality have indirect positive effects on brand equity, via the moderating effects from brand loyalty. Other scholars present there are strong relationships between brand awareness (Hoyer and Brown, 1990, Percy and Rossiter, 1992), brand image (Krishnan, 1996, Haugtvedt et al., 1993), brand loyalty (Oliver, 1997), perceived quality (Zeithaml, 1988) and branding. Hence, the hypothesis is:

Hypothesis 3 (H3): *There is no relation between brand equity and brand equity dimension (Brand awareness, brand loyalty, brand image, and perceived quality).*

Beside the brand equity dimensions, there apparently exist other factors which can affect the brand equity. As mentioned in previous sections, brand authenticity can contribute to brand equity by affecting brand equity dimensions, especially affecting brand awareness and brand associations. Price fairness is involved in loyalty, perceived value, purchase intention, and satisfaction. Hence, current research suggests exploring the relationship between brand equity and brand authenticity as well as brand equity and price fairness. The hypotheses are:

Hypothesis H4a: *There is no relation between brand equity and brand authenticity;*

Hypothesis H4b: *There is no relation between brand equity and price fairness.*

3.2 Questionnaire design

Questionnaires were designed in line with previous literature (Napoli et al, 2014). The questionnaires were broken down into three sections: The first part of the questionnaires is concerned with personal information including gender, age, income, nationality, education, occupation, travel purpose, and travel frequency. The second part of the questionnaires is about brand equity variables: The first variable was brand equity which had 4 items drawn from Chen and Tseng (2010) and the consumer-based brand equity scale developed by Yoo and Donthus (2001). The second variable was brand image (associations), which used 3-items 5-points Likert scale from Park, Robertson and Wu (2004, 2005). The third variable was brand Awareness. There were 5 items based on Chen and Tseng (2010). In light of Bejou and Palmer (1998) and Gures, Arslan and Tun (2013). The fourth variable was 5-items 5-points Likert scale to obtain participants' brand loyalty information. The fifth variable was price fairness with 4 questions based on Yoo et al. (2000). The sixth variable had 7 questions that related to brand authenticity, under the inspiration of

Morhart et al. (2013) and Napoli et al. (2014). The last variable was perceived quality which had 11 questions under the inspiration of Aaker (1991), Park, et al (2004, 2005), and Pakdil and Aydin (2007).

The participants were required to rate each items with 5-point Likert scale, ranging from “1=strongly disagree” to “5=strongly agree” and perceived quality were rated from “1=very dissatisfied” to “5=very satisfied”. The questionnaires had been tested by 10 participants who were selected randomly. Several imprecise statements were fixed to reduce the confusion.

3.3 Data collection

The target sample for this research is the passengers in China’s domestic market. The survey was done at the domestic terminals of several hub airports of CEA in China, which include Shanghai Hongqiao International Airport (Hub and home base for CEA), Beijing Capital International Airport (Hub but non-based), Nanjing Lukou International Airport (Regional hub but based) Xiamen Gaoqi International Airport (regional and non-based), and Tianjin Binhai International Airport (regional and non-based). All questionnaires were paper based and were distributed to passengers randomly who at the check-in area, restaurants, cafe bars, bookshops, and waiting lounges. The survey was timed to coincide with the opening hours of the airports. It was conducted between Monday and Sunday from morning flights to night flights to minimise any biases of the results. Respondents were required to complete a two–page survey questionnaire. The survey took approximately 10 minutes to complete and was completely anonymous and voluntary.

528 questionnaires were distributed at Tianjin Binhai International Airport, Shanghai Hongqiao International Airport, Beijing Capital International Airport, Xiamen Gaoqi International Airport and Nanjing Lukou International Airport from 22 August to 31 August 2016 and 475 of them were identified as valid.

3.4 Data analysis methods

The SPSS 24 software package is used for data analysis in the study. Descriptive statistics are used to describe the mean, variance and the categories and characteristics of data. Factor analysis, regression analysis, and Analysis of Variance (ANOVA) were used for data analysis.

4. RESULTS

4.1 Sample characteristic

Table 1 shows the characteristics of the sample. Among the data, 51.4% are males and 48.6% are females. Majority participants have bachelor degree or higher (71.8%), and 64.5% passengers earning RMB 5,000 to 20,000 per month. Around 55.6% passengers are travelling for holidays; 26.5% for business; and 9.3% for Visiting Friends/Relatives (VFR).

4.2 Descriptive statistics data

Table 2 indicates the means of 39 items. Passengers rated highest three items are: Q8 I am aware of CEA (mean=4.14), Q30 Flight safety (mean=4.11) and Q4 Overall level of CEA’s services (mean=3.93). And they rated lowest three items are: Q16 I will not consider flying on other airline if they provide better products (mean=2.23), Q17 I will not consider flying on other airline although they provide lower prices (mean=2.39), and Q9 I have difficulty in imagining CEA in my mind (mean=2.64).

4.3 Exploratory Factor Analysis (EFA)

To assess and reduce the dimensionality of the service item scale, Exploratory Factor Analysis (EFA) was performed on the 39 items for brand equity and its dimensions using the Principal Factor/Component (PF) method, followed by Varimax rotation. Table 3 shows the results of the factor analysis test for the 41

variables. The Kaiser-Meyer-Olkin (KMO) value, which is a measure of sampling adequacy, was found to be 0.934, suggesting that the factor analysis had proceeded correctly and that the sample was adequate. The results of Bartlett's Test of Sphericity were also significant, which indicated that the factor analysis processes were correct and suitable for testing multidimensionality. All of the items loaded more than 0.40 which met the requirement of a factor loading of 0.30 to be significant for a sample size of 350 or greater (Hair et.al., 1998). Five factors were extracted for SERVPERF; labelled as Brand equity (Factor 1), Brand Image (Factor 2), Brand awareness (Factor 3), Brand Loyalty (Factor 4), Price fairness (Factor 5), Brand Authenticity (Factor 6), and Perceived Quality (Factor 7). Cronbach's Alpha reliability test was used to determine the reliability of the data.

4.4 Hypothesis testing

4.4.1 Test of H1 and H2

Analysis of variables (ANOVA) was used to test H1 and H2, Table 4 shows that there are no significant differences of Gender, but there are significant differences of Age, Education, Occupation, Income, and Travel Purpose.

Therefore, Hypothesis H1a is accepted, and Hypothesis H1b, Hypothesis H1c, Hypothesis H1d, Hypothesis H1e, and Hypothesis H2 are rejected.

Post hoc tests were conducted for Age, Education, Occupation, Income, and Travel Purpose.

Age

The post hoc test shows that the group "under 20" differs significantly to other four groups (p-values <0.05) and there aren't significant differences between other groups. The mean of "under 20" is greater than others.

Education background

The post hoc test shows that there are significant differences between senior high or below and bachelor group and higher group (p value <0.05); significant difference between diploma group and bachelor group and higher group (p value <0.05), and no other differences. Passengers in the group of senior high or below rated brand equity higher than other groups.

Occupation

The significant differences only occur between retired-government and retired-private sector employee (p-value<0.05). Retiree ranked brand equity higher than others.

Income

A post hoc test shows there are significant differences between the people whose income is less than RMB3,000 and other income groups except the group in the range of RMB 10,001-20,000 (p <0.05), and there are no significant differences between other groups. Lower income passengers rated brand equity higher.

Travel proposes

The only significant difference occurs between “travel for business” and who “travel for tourism/holiday” ($p < 0.05$). Compared to the business traveller (mean = 3.46), leisure travellers (mean = 3.65) rated higher than the overall average (mean = 3.59).

4.4.2 Test of H3 and H4

Multiple regressions were used to test H3 and H4.

4.4.2.1 Testing of the relationship between overall brand equity and brand equity dimensions (H3)

Multiple regressions were done to test the relationship between overall brand equity and brand equity dimensions. Overall brand equity is the dependent variable and all brand equity dimensions are independent variables.

The results of multiple regression analysis (Table 5) shows that there is a linear relationship between the variables except brand awareness ($R^2 = 0.648$, $F(3, 471) = 47.967$, $p < 0.001$), hence the brand awareness has no contribution to the linear regression model. Therefore, H3 is rejected.

4.4.2.2 Testing of the relationship between overall brand equity and both brand equity dimensions and external factors (H4)

Multiple linear regression models for brand equity with both brand equity dimensions and external factors. Overall brand equity is the dependent variable and all brand equity dimensions are independent variables.

The testing results (Table 6) have confirmed the linear relationships between brand image, brand loyalty, perceived quality, brand authenticity and brand equity. But there is no relationship of brand awareness and price fairness with Brand equity. Therefore, H4a and H4b are rejected.

5. Conclusions

This research aims to explore the airline's customer-based brand equity by using CEA as a case study. Based on the survey results, passengers with different demographics and flight experience differ significantly in term of evaluating brand equity. Significant differences exist between the evolutions of brand equity for different age, education background, income, occupation, and travel proposes. Young people (under 20) differ significantly to other age groups; brand received better evaluation from this group. Passengers in the group of senior high or below rated brand equity higher than other groups. The group “monthly income less than 3000 yuan” differs to other groups, and this group rated brand equity higher. Leisure travellers rated brand equity higher than other groups. The results show both of brand authenticity and price fairness can positively affect brand equity.

For the airlines who want to enhance brand equity, this research implies that they can make it by working on development of brand image, brand authenticity, brand loyalty and perceived quality.

6. Limitation and further research

This research suffers from the limitation of selection of case and collection of data. CEA is one of the largest airlines in China, with a large service scope as well as large customer bases. The findings from CEA likely cannot be generalised for other Chinese airlines. Then, all of the airports where the survey was conducted, are located in China's southeast coastal areas, where are relatively well-developed. It may affect the composition of the sample as well as the evaluations of the variables. Also, the results from questionnaire are not fully consistent with passenger's decision in real purchases. Lastly, current research merely tested direct linear relationships to brand equity. Further researches can focus on the indirect effects and the interrelationships between effectors.

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Domestic Tourists' Sustainable Behavior in Dibeen Nature Reserve

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ABSTRACT

The purpose of this study was to investigate the behavior of the local tourist in Dibeen Forest Reserve as it represents the tourist destination distinctive for local tourism, the behavior of the tourist of the most important problems facing the reserves in general and protected Debbin has been particularly the study found that despite the decrease in negative behaviors that are issued by the local tourist that there are still behaviors affect biodiversity in Dibeen Forest Reserve the study recommended the application of responsible tourism and provide facilities that serve the protected site and intensify awareness campaigns

Keywords: Dibeen forest reserve, tourist behavior, ecotourism, responsible tourism

Out of Many, One: Culture and Identity in 21st Century Germany

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ABSTRACT

The article addresses the current political, social, and cultural situation in Germany after having taken in more than one million refugees, asylum seekers, and migrants over the last two years. It looks at polls taken since 2014 that study the opinions and feelings Germans have about the migrant crisis, primarily national views on Muslims and Islam, and about integration and the question of a “guiding cultural concept.”

In addition, it looks at data collected by the European Union Agency for Fundamental Rights about the basic rights situation of people arriving in those member states – Austria, Germany, Greece, Italy, Sweden, and a few others – that have been particularly affected by this migration inflow. Their findings are as disheartening as they are alarming as they hint at widespread xenophobic threats and persistent violence against migrants and asylum seekers. Outlining its primary assessments, the agency reprimanded member states for their lackadaisical collection or publication of statistical data on incidents and hate crimes against asylum seekers and migrants, as well as inadequate victim support services tailored to the needs of asylum seekers and migrants even though vicious harassment and brutal attacks are committed on a regular basis.

The study will try to address and possibly answer questions, concerns, and challenges the German nation must now tackle: what significance do Germans place on the notion of national identity? Is there a collective will and sense of responsibility to make German society more inclusive? What defines German culture and why is the concept of “Leitkultur” such a highly controversial topic? And what happens to a society and its integration efforts if migrants and asylum seekers refuse to conform to German values and the German constitution?

The crucial charge for Germany, and many other countries of immigration, remains challenging vis-à-vis this ever-changing and fluid crisis: to recognize cultural diversity while rebuilding a societal as well as political cohesion that addresses inherent conflicts and dangers that inevitably come along with reconciling racial and religious diversity with notions of homogenous community and national identity. However necessary this public discourse is, it cannot occur if it is ideologically or politically invested in simply polarizing the issues at hand, and any criticism, be it from the political right or left, is labeled as either xenophobic or traitorous.

Keywords—Germany, Islam, migration crisis, xenophobia

**VOLATILITY TRANSMISSION BETWEEN REAL ESTATE AND STOCK MARKETS: A
MULTIVARIATE GARCH PERSPECTIVE**

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ABSTRACT

Over the past decade, the significant changes in the prices of stock and real estate markets have intensified the interest of heightened concern about volatility in these markets. This paper deals with the dynamic return and volatility transmissions across real estate and stock markets in European countries over the period from 1985: Q1 through 2017: Q1. Using VAR-BEKK-GARCH model, we find significant evidence supporting shock and volatility spillover effects from real estate to stock markets in Denmark, Finland, Ireland and Spain whereas that evidence running from stock to real estate markets is found in Spain, Sweden and Italy. However, there is no evidence of any spillovers among these markets in Belgium. Overall, these empirical findings provide fresh insights and policy implications in cross-market volatility spillovers for domestic and international investors through the risk management and efficient portfolio diversification benefits and for policy makers as well.

JEL Code: C5, G11, G15, F3

Keywords: Real Estate Markets, Stock Markets, Volatility Spillover, Multivariate GARCH

REVIEWING DEA APPLICATIONS IN EMPIRICAL ENERGY EFFICIENCY STUDIES

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ABSTRACT

Energy is indispensable in the creation of value added, and energy efficiency is critical not only for the existence and growth of any entity, but also for achieving the sustainable development goals in general. Hence, improving energy efficiency and consequently environmental efficiency has become one of the most important energy, economic and ecological policy challenges which requires a comparable longitudinal measurement and monitoring of the same as a major prerequisite.

To raise awareness and knowledge of researchers, practitioners and policy authorities on how to measure energy efficiency, which is a part of environmental efficiency, this paper introduces the basic data envelopment analysis (DEA) models and explains their main assumptions, benefits and limitations. It also briefly reviews the literature covering DEA applications related to energy efficiency for which considerable growth has been recorded in the past two decades. The findings indicate that recent applications of DEA in the field of energy efficiency obviously go beyond pure energy efficiency towards its explicit integration with various environmental concerns. This fact will mark future trends of DEA applications in energy efficiency and energy economics in general.

Key words: Data envelopment analysis (DEA), Energy efficiency, Environmental efficiency

1. INTRODUCTION

Energy is indispensable in the creation of value added, and energy efficiency is critical not only for the existence and growth of any entity, i.e., organization, institution or territorial unit such as a country or region, but also for achieving the sustainable development goals in general. The European Union (EU) has recognized the need for efficient use of energy in order to accomplish its targets set for the years 2020 and 2030 (see [1-2]). The targets set for 2020 and 2030 include a significant cut in greenhouse gas emissions compared to 1990 levels (20% and 40%, respectively), an increase in the share of renewable energy consumption (at least 20% and 27%, respectively), and an improvement in energy efficiency (at least 20% and 27%, respectively). In short, the EU wants to become a low-carbon economy with competitive, secure and sustainable energy systems [3]. Hence, improving energy efficiency and consequently environmental efficiency has become one of its most important energy, economic and ecological policy challenges. Thereby, its realization requires a comparable longitudinal measurement and monitoring of the same as a major prerequisite.

Energy efficiency can be measured in different ways. It is usually measured by energy intensity, i.e., by dividing energy input by output. For example, Eurostat [3] calculates it as the ratio between gross inland consumption of energy and gross domestic product (GDP) for a given calendar year. Since gross inland consumption is expressed in kilogram of oil equivalent (kgoe) and GDP in 1,000 EUR, Eurostat measures it in kgoe per 1,000 EUR. However, Hu and Wang [4] have stated that taking into consideration energy as the only production input used to generate output, and therefore ignoring other inputs such as labor and capital, can be misleading for energy policy formulation and implementation. Additionally, it cannot be used as the appropriate benchmark. Many other scholars have also criticized the use of this measure for management and policymaking (e.g., [5-6]).

As a useful alternative to a single energy intensity measure, Hu and Wang [4] have created so-called total factor energy efficiency which is determined in a multi-factor framework. According to these authors, total factor energy efficiency can be defined as the ratio of the target energy input, as determined by data envelopment analysis (DEA) to actual energy input. They suggested using DEA for total factor energy efficiency calculation since it explicitly indicates the potential savings of inputs, including energy, through efficiency calculation.

DEA is a nonparametric technique originally developed by Charnes, Cooper and Rhodes (CCR [7]) to evaluate nonprofit and public sector organizations. They have described DEA as a “mathematical programming model applied to observational data that provides a new way of obtaining empirical estimates

of relations – such as the production functions and/or efficient production possibility surfaces – that are cornerstones of modern economics” [7, p. 8]. For a history of DEA, see Cooper, Seiford and Zhu [8]. Today, DEA is a well-known mathematical technique that has been extensively used for performance measurement. It aims to unveil a relationship between inputs and outputs within a production function framework or an entity in a general way, whatever it is. Since efficiency is an important dimension of performance, DEA has also been extensively applied to that end. Efficiency of an entity under consideration is commonly defined as the ratio of a weighted sum of the outputs yielded by this entity over a weighted sum of its inputs. Despite this simple definition and simplicity of the method itself, it has found limited understanding among decision makers at all levels of decision making.

In recent decades, academic scholars in energy economics have started to pay more research attention to environmental consequences related to energy generation and consumption, including environmental efficiency (for a review of these studies, see [9-13]). Environmental issues have started to be explicitly integrated into the energy economics papers.

To raise awareness and knowledge of researchers, practitioners and policy authorities on how to measure energy efficiency which is a part of environmental efficiency, as well as interpret the results obtained, this paper introduces the most widely used DEA models and explains their main assumptions, benefits and limitations. It also briefly reviews the literature covering DEA empirical applications related to energy efficiency for which considerable growth has been recorded in the past two decades. The purpose of this literature review covering papers published in the journals indexed by the ScienceDirect database from 2000 to 30 January 2018 is to provide an overview of applications of DEA models in energy efficiency with regard to the latest tendencies in the scope and applications as well as handling various environmental issues. Hence, the paper aims to extend the existing knowledge already acquired through review papers published on the same subject [9-13].

The literature analysis in the present paper is conducted using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analysis) methodology. This methodology turns out to be a useful basis for making and reporting systematic reviews and providing directions for further research (see Moher et al. [16]).

The paper is organized as follows. In Section 2, the fundamental facts about the basic DEA models are given, the DEA models are expressed in mathematical form and the economic interpretation of the key DEA terms is given. Section 3 explains the methodology applied to extract the papers dealing with energy efficiency, while Section 5 provides and discusses the main results. The last section draws main conclusions.

2. DEA MODELS: BASIC FACTS AND ECONOMIC INTERPRETATIONS

As already mentioned, DEA has been initially used to assess the performance of nonprofit and public sector organizations. However, various profit organizations and territorial units of different levels have become very quickly the subjects of DEA. DEA uses the term “decision making unit” (DMU) to describe any entity under consideration in terms of its managerial abilities to transform inputs into outputs.

The wide applications of DEA have been the results of its simplicity and practicality. Its strengths come to the force especially when it is compared with alternative techniques, parametric techniques in particular, such as stochastic frontier analysis (see [14]). Namely, DEA enables researchers to explicitly handle both multiple inputs and outputs, whereby they can have very different units. It does not require an assumption about a specific functional form relating inputs to outputs. Additionally, it objectively determines the individual factor weights and the efficiency reference set for each DMU. That means that a DEA user does not need to know which weights should be attached to each input and output. Moreover, the relative efficiency of each DMU is determined using the best performer(s) as a reference or benchmark.

DEA models can be classified according to its orientation to input- and output-oriented models. The former intends to minimize the inputs keeping thereby the output at its current levels, while the latter intends to maximize the output keeping thereby the inputs at their current level. This paper is focused on the basic models found in literature and known under the name the CCR and the BCC model, according to the initials of their proposers, Charnes, Cooper and Rhodes [7] and Banker, Charnes and Cooper (BCC, [17]), respectively. The main difference between these two models is related to the assumption on returns to scale. While the former assumes constant returns to scale (meaning that that a proportional increase in all inputs results in the same proportional increase in outputs), the latter assumes variable (either increasing or decreasing) returns to scale (implying that a change in inputs would result in a disproportional change in outputs).

The initial performance model can be presented by model (1) following CCR [7]. It is about the fractional programming model that aims to calculate the efficiency scores, θ_0 , for a sample consisting of peer DMUs ($j = 1, \dots, n$). The efficiency scores are calculated for the selected outputs (y_{rj} , $r = 1, \dots, s$) and inputs (x_{ij} , $i = 1, \dots, m$).

$$\text{Max } \Theta_0 = \frac{\sum_{r=1}^s u_r y_{r0}}{\sum_{i=1}^m v_i x_{i0}} \quad (1)$$

subject to

$$\frac{\sum_{r=1}^s u_r y_{r0}}{\sum_{i=1}^m v_i x_{i0}} \leq 1$$

$$u_r, v_i \geq 0 \text{ for all } r \text{ and } i, \\ i = 1, \dots, m; r = 1, \dots, s;$$

where u_r and v_i stand for the weights for the outputs and inputs, respectively. They have to be determined for each DMU, and they are determined entirely from the output and input data of all DMUs in the sample. The input (x_i) and output values (y_r) as well as all weights should be greater than or equal to zero. Furthermore, “0” denotes a DMU to be evaluated. This fractional program can be converted to the equivalent linear programming model (2) to be solved more easily using the Charnes-Cooper transformation (see [7]).

$$\text{Max } \Theta_0 = \sum_{r=1}^s u_r y_{r0} \quad (2)$$

subject to

$$\sum_{r=1}^s u_r y_{rj} - \sum_{i=1}^m v_i x_{ij} \leq 0$$

$$\sum_{i=1}^m v_i x_{i0} = 1$$

$$u_r, v_i \geq 0 \text{ for all } r \text{ and } I,$$

$$j = 1, \dots, n; r = 1, \dots, s; i = 1, \dots, m.$$

The linear programming model (2) is usually solved by taking into consideration its dual form expressed in the following way:

$$\text{Min } \Theta_0 \quad (3)$$

subject to

$$\sum_{j=1}^n \lambda_j x_{ij} \leq \Theta x_{i0}$$

$$\sum_{j=1}^n \lambda_j y_{rj} \geq y_{r0}$$

$$\lambda_j \geq 0$$

$$i = 1, \dots, m; r = 1, \dots, s; j = 1, \dots, n.$$

The solution of model (3) is determined by considering two sets of inequality [18]. The first one stresses that the weighted sum of inputs of other DMUs should be less than or equal to the inputs of DMU to be evaluated, while the second one demands that the weighted sum of the outputs of other DMUs should be greater than or equal to the output of the DMU under consideration. The weights are the lambda (λ) values; they are equal to one if a DMU is efficient, while for an inefficient DMUs the λ values are less than one and they are expressed in their efficiency reference set. This set includes the group of DMUs against which each inefficient DMU was found to be most directly inefficient. The efficient DMUs are boundary points. As is

well known, for the CCR model, the efficiency frontier is a straight line passing through the origin, while for the BCC model, it is a convex curve passing through all efficient DMUs.

One should note that if the convexity constraint $\sum_{i=1}^n \lambda_i = 1$ is added to model (3), the dual of the BCC model (BCC, [17]) is obtained.

To put it simply, DEA first determines an efficiency frontier formed by a set of DMUs representing best practices, and then establishes an efficiency frontier set and assigns the efficiency score for each non-frontier, i.e. an inefficient DMU, according to its distance to the efficiency frontier.

A DMU which is efficient under constant returns to scale is considered to be overall technically efficient, whereas a DMU which is efficient under variable returns to scale is purely technically efficient. Overall technical efficiency can be decomposed into two mutually exclusive and non-additive components: pure technical efficiency and scale efficiency. The former reflects the managerial ability of a DMU to process inputs to achieve its output, as compared to the best performer(s). The latter, which is the ratio of overall technical efficiency to pure technical efficiency, indicates the ability of management to choose the optimum size of resources. Both kinds of efficiency are used as well-known means of estimating technical and energy efficiency, respectively.

An inefficient DMU can improve its efficiency by reducing certain inputs up to the difference between one (or 100%) and its efficiency score (possibly expressed as a percentage). These input reductions and/or output augmentations are known under the name total inefficiencies. It includes not only the amount of proportional reductions, but also an amount called “slack”. By adequately treating the slacks, an inefficient DMU can reach the frontier (target). However, some boundary points may have nonzero slacks. In that case, they are weakly efficient. CCR [7] have precisely defined when a DMU is fully or weakly efficient. They say that the performance of a DMU under consideration is fully efficient if and only if both the optimal solution, θ^* , is equal to one and all slacks are zero. On the other hand, a DMU under consideration is weakly efficient if and only if θ^* is equal to one and at least one slack is different from zero.

In the language of mathematics, the following model [7] enables researchers to handle the slacks:

$$\begin{aligned} & \text{Max } \sum_{i=1}^m s_i^- + \sum_{r=1}^s s_r^+ \\ & \text{subject to} \\ & \sum_{j=1}^n \lambda_j x_{ij} + s_i^- = \theta^* x_{i0} \\ & \sum_{j=1}^n \lambda_j y_{rj} - s_r^+ = y_{r0} \\ & \lambda_j, s_i^-, s_r^+ \geq 0 \text{ for all } i, j \text{ and } r, \\ & i = 1, \dots, m; r = 1, \dots, s, \end{aligned} \tag{4}$$

where θ^* is the DEA efficiency score resulting from running model (3), s_i^- and s_r^+ represent input and output slacks, respectively. Thereby, the superscripted minus sign on input slacks indicates reduction, while the superscripted positive sign on output slacks requires augmentation of outputs. Hence, to solve the problem of efficiency measurement, one should combine models (3) and (4), i.e. to solve the following input-oriented CCR model [7]

$$\begin{aligned} & \text{Min } \theta^* - \varepsilon \left(\sum_{i=1}^m s_i^- + \sum_{r=1}^s s_r^+ \right) \\ & \text{subject to} \\ & \sum_{j=1}^n \lambda_j x_{ij} + s_i^- = \theta x_{i0} \\ & \sum_{j=1}^n \lambda_j y_{rj} - s_r^+ = y_{r0} \end{aligned} \tag{5}$$

$$\lambda_j, s_i^-, s_r^+ \geq 0 \text{ for all } i, j \text{ and } r, \\ i = 1, \dots, m; r = 1, \dots, s,$$

where ε is called the non-Archimedean and is defined as infinitely small, or less than any real positive number. Its presence allows a minimization over efficiency scores. Charnes, Seiford and Zhu [8] have underlined that this is equivalent to solving model (5) in two stages: first, minimizing θ by ignoring the slacks (model 3), and second, optimizing slacks by fixing $\theta = \theta^*$ as in model (4).

If it is about the BCC model, the convexity constraint ($\sum_{i=1}^n \lambda_i = 1$) has to be added to models (4) and (5).

Alternatively, the model can be output-oriented, and it has to be solved as a two-stage process, too. For model formulations as well as for more information on DEA, see [7-8, 17-19].

Certainly, DEA is faced with some shortcomings compared with parametric techniques [14], which each researcher has to bear in mind. Since DEA is a nonparametric method, statistical hypothesis tests are difficult or cannot be performed. Similarly, it does not allow for estimation of the measurement error or other noise. Though, despite these limitations, DEA is extensively used, particularly in the area of energy efficiency (e.g., [9, 10, 11, 18]), what will be also confirmed in this paper.

2. METHODOLOGY

In order to provide an overview of applications of DEA models in energy efficiency as well as to find out whether the authors have started to pay more attention simultaneously to environmental issues, the present paper follows the PRISMA methodology, which was also applied in many review papers including Mardani et al. [10]. The PRISMA methodology is conducted in three steps: literature search, selection of eligible papers, and data extraction and summarizing (for details, see [16]).

A literature search in this paper was based on the ScienceDirect online database, which is one of the most respectable databases. ScienceDirect is Elsevier's platform that contains more than 1,000 Elsevier Science journals in the major scientific disciplines. Currently, it covers 27 subjects including agricultural and biological sciences; arts and humanities; biochemistry; genetics and molecular biology; business, management and accounting; chemical engineering; chemistry; computer science; decision sciences; earth and planetary sciences; economics, econometrics and finance; energy; engineering; environmental science; immunology and microbiology; linguistics; materials science; mathematics; medicine and dentistry; neuroscience; nursing and health professions; pharmacology, toxicology and pharmaceutical science; philosophy; physics and astronomy; psychology; social sciences; sports and recreation; veterinary science and veterinary medicine.

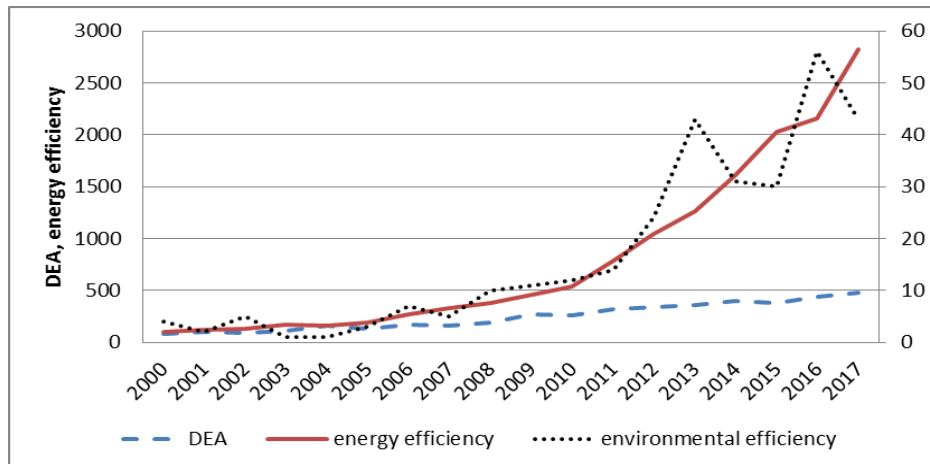
Since we wanted to provide the freshest overview of DEA applications in energy efficiency, the research period covers the period from 2000 to 30 January 2018. We searched only journals referenced in this database using thereby "energy efficiency" and "DEA" as key words for identification and selection of scientific papers. We only looked at the title, abstract and key words of each paper published in a journal that met our key words. A sample of 153 journal papers was retrieved. Then, in advanced search, we selected again "energy efficiency" as a key word and got 70 hits (or papers). These papers were exposed to data extraction and analysis. However, a preliminary analysis pointed out to the need to drop three papers from further analysis since one of them was a review paper, while the other two papers employed stochastic frontier analysis in energy efficiency assessment. All extracted papers have empirical character.

3. RESULTS AND DISCUSSION

3.1. Applications of DEA in energy and environmental economics

DEA has been extensively applied to the performance evaluation of selected entities in various scientific disciplines. This can be supported by Figure 1 that illustrates its significant growth over the research period. The same tendencies have been discovered by Liu et al. [20], who have observed that energy and environment as well as finance are the areas that have recently recorded the highest growth, or by Emrouznejad and Yang [15], who have already noticed that by looking into its applications in the last four decades. Hence, it is plausible to expect that DEA will continue to be a popular research technique for energy efficiency assessment.

Figure 1
Number of papers focused on energy efficiency, environmental efficiency and DEA per year



Note: The right axis refers to the number of papers focused on environmental efficiency

Energy efficiency is a very popular research subject. Since the first paper on energy efficiency written by Faere and Grosskopf [21] was published in the early 1980s, the interest in this area has been rapidly growing (Figure 1). In contrast, the interest in studying environmental efficiency is more recent; but, a continuous growth tendency can also be observed over the research period. An increase in the total number of papers published in these areas has already been noted in all review papers [11-12].

3.2. Publications outlets

As can be seen in Table 1, most of the extracted papers were published in journals that cover the field of energy economics. In contrast, only several journals such as Chinese Journal of Chemical Engineering, Mathematical and Computer Modeling, Economic Modelling, Engineering Applications of Artificial Intelligence are more related to the STEM (science, technology, engineering and mathematics) field. In 18 journals, 37% of papers (25) were published in Energy Policy and Energy.

Table 1
Distribution of analyzed papers among journals

Journal	Total number of papers
Energy Policy	13
Energy	12
Applied Energy	9
Journal of Cleaner Production	9
Energy Procedia	5
Energy Economics	3
Chinese Journal of Chemical Engineering	2
Ecological Indicators	2
Mathematical and Computer Modeling	2
Renewable and Sustainable Energy Reviews	1
The Social Science Journal	2
Economic Modelling	1
Engineering Applications of Artificial Intelligence	1
International Journal of Production Economics	1
Journal of Environmental Management	1

Science of the Total Environment	1
Technological Forecasting and Social Change	1
Transportation Research Part D: Transport and Energy	1
Total	67

This is not unexpected; many other review papers (e.g., [9-15]) found a natural relationship between energy journals and DEA, but also with journals covering the STEM field such as the European Journal of Operation Research.

3.3. Research scope and application areas

To analyze the research scope, we looked at the geographical area DEA applications were set in. With respect to this criterion, we classified papers into those dealing with cross-country comparisons or those focused on an individual country. The papers with cross-country orientation have studied energy efficiency across OECD countries, BRICS countries, G7 countries, and a group of developed or developing countries. Thereby, slightly less than one quarter of the selected papers have been focused on cross-country comparison (Table 3), while the rest of them have analyzed energy efficiency from the national, regional, urban or micro level. Moreover, almost two thirds of the selected papers come from China, while only four papers cover one of the EU countries. It seems that the efforts invested by academia in this area do not completely follow the strategic intention of the EU to become a low-carbon economy and its strategic energy goals and targets set in energy documents [1-3].

Table 2
Distribution of papers with respect to geographical scope and perspective level

Scope	Total number of papers	Perspective level	Total number of papers
China	43	Cross-country	12
Spain	2	Macro-perspective	44
Sweden	3	Micro-perspective	11
Iran	1	Total	67
Taiwan	1		
Korea	1		
USA	3		
France	1		
Cross-country	12		
Total	67		

The majority of papers (66%) are related to the macroeconomic perspective in studying energy efficiency within the DEA framework, whereby this perspective includes papers dealing with country, regions, provinces or cities. Among them, most of the papers (40%) have been occupied with regional or provincial levels. The microeconomic perspective is taken by papers focused on individual firms.

The extracted papers may also be classified according to their sectoral focus. As shown in Table 3, the majority of papers with sectoral focus have been dealing with industry regardless of whether it is about industry defined as a sector or a specific industry such as chemical or textile industry or heavy and light industry.

Table 3
Distribution of papers with respect to sectoral application focus

Sectors	Total number of papers
Industry	33
Agriculture	2
Transport	1
Non-sectoral	31
Total	67

This is expected since industry is considered as both a significant value added generator which should do that efficiently and a source of environmental pressures whose adverse consequence should be minimized.

3.4. Environmental concerns

Environmental concerns have become an important challenge related to economic and sustainable development. Hence, environmental impacts arising from energy generation and consumption have become of great interest to academia in recent decades. This can be observable from this literature review and illustrated by Figure 2.

Simultaneously with an increase in the use of DEA in energy efficiency, there is an increase in its use in environmental assessment. Figure 2 indicates that this happened particularly after 2009. The strength of association between the year of publication and environmental concerns added to energy efficiency, measured by Cramer's V, indicates a positive strong association (the value is 0.4 and the significance 0.554). Zhou et al. [13] have related this growing interest to the United Nations Climate Change conference in 2009, which raised climate change policy to the highest political level, and consequently the attention of scholars to the issue of sustainability. One should note that the category "energy efficient" in Figure 2 refers to papers applying DEA which did not explicitly integrate environmental concerns in any of the forms mentioned below into their title, abstract or key words.

The authors that explored energy efficiency have started to pay their research attention to environmental concerns in different ways. Many of them have separated outputs into desirable and undesirable categories, where undesirable categories take the form, for example, of various greenhouse gas emissions or different types of waste. Thereby, undesirable outputs were usually treated as inputs in DEA models. In addition, they have started to underline the importance of increasing energy efficiency in order to reduce the adverse environmental impacts and pressures as well as to increase energy saving potentials. Hence, key words such as "sustainability", "energy saving potential", "energy conservation", "environmental impact", "environmental pressures", "CO₂ releases", "GHG emissions", "renewable energy sources", "environmental performance" or "environmental performance" have started to appear in the journal paper titles, abstracts or key words.

In their literature review considering the applications of DEA in sustainability for the period 1996 – March 2016, Zhou et al. [13] have also confirmed the increasing interest of academia in environmental issues. They have provided evidence that the current research path in this field is related to environmental sustainability; thereby, they classified this concern into four research clusters: corporate sustainability assessment, regional sustainability assessment, sustainability composite indicator construction, and sustainability performance analysis. Similarly, Emrouznejad and Yang [15] have found that "eco-efficiency, undesirable output, directional distance function, environmental efficiency, carbon dioxide emissions, pollution, sustainable development, sustainability, environmental protection" were the most popular research areas in 2015 and 2016.

Figure 2
Distribution of DEA application in energy efficiency per year

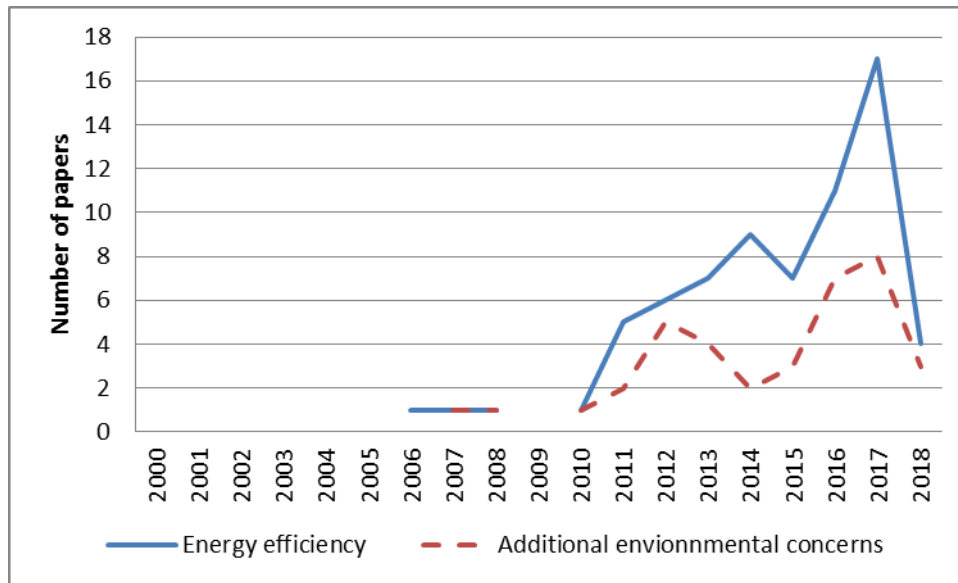


Figure 2 indicates that recent applications of DEA in the field of energy efficiency obviously go beyond pure energy efficiency. The recent papers have started to integrate various environmental issues such as energy conservation, environmental impact and pressures with energy efficiency. We believe that this integration will mark future trends of DEA applications in energy economics.

4. CONCLUSIONS

Since energy is indispensable in the creation of value added and energy efficiency is critical for future sustainable growth and development, how to increase energy efficiency has become a top policy and management priority. To achieve energy efficiency targets, comparable longitudinal measurements and monitoring of energy efficiency development are of critical importance. Consequently, the focus of academia on energy efficiency measurements has switched from focusing on partial energy efficiency indicators towards measurements in a multi-factor framework.

As a nonparametric technique, DEA provides such required multi-factor framework, and it has been consequently extensively used in energy efficiency assessment in the last several decades. Though, despite its simplicity, it has experienced a limited understanding among decision makers at all levels of decision making. Hence, the present paper has tried to raise awareness and knowledge of researchers, practitioners and policy authorities on how to measure energy efficiency and interpret the results obtained. So far the paper has introduced the most widely used DEA models and explained their main assumptions, benefits and limitations. Moreover, in order to unveil further research directions, it has conducted a literature survey following the PRISMA methodology. In this paper, the ScienceDirect online database was used as the data source for identifying, selecting and extracting scholarly papers related to applications of DEA in energy efficiency.

The literature review has confirmed a rapid growth in DEA applications in energy efficiency. Based on the statistics on extracted journal papers, we found out that: 1) most of the papers are published in energy economics journals; 2) three quarters of papers focus on the territory of one country; 3) almost two thirds of the selected papers come from China, while only several papers cover one of the EU countries; 4) many of the analyzed papers (40%) have been occupied with regional or provincial levels of study; 5) the majority of papers with sectoral focus have dealt with industry regardless of whether it is about industry defined as a sector or a specific industry such as chemical or textile industry; 6) the majority of papers did not consider any environmental issue in their title, abstract or key words. Though, the interest in connecting more tightly energy efficiency with environmental efficiency and the issue in general with the means of DEA is more recent.

To sum up, the literature review has led us to conclude that assessing energy efficiency in diverse entities (e.g., countries, regions or firms) within the DEA framework may have strong policy and practical implications. Although DEA is not the only method that deals with energy and environmental efficiency, it

has confirmed itself as a valuable technique, and hence it is plausible to expect that it will continue to be used in the future. Moreover, recent applications of DEA in the field of energy efficiency obviously go beyond pure energy efficiency. They have explicitly started to integrate various environmental concerns such as energy conservation, environmental impact and pressures with energy efficiency.

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Macro Explanatory Variables of Tourism Firm's Stock Returns in the US

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ABSTRACT

Recently, empirical studies on tourism firms' performance got a noticeable attention. Meanwhile, this study is the first dealing with tourism stock return alone in US market. In this study, we examine the return of the tourism firms' stock return in the US as the function of some economic and financial variables namely tourism sector development, stock market, credit to private sector, industrial production and exchange rate in VAR environment. Testing the structural break for the unit root of the firms' stock return suggests a significant break in during the 2008 financial crisis. Thus two models have been developed one with the dummy of the financial crisis and another without it. Although the dummy variable of the 2008 financial crisis is significantly granger cause the tourism firms' stock return, both models suggest the same result. The findings suggest that credit to private sector; exchange rate and industrial production granger cause the tourism firms' stock return while stock market and tourism sector development do not.

Keywords: *Tourism firms, economic indicators, US, Granger causality*

The Role of Co-orientation Model in Intercultural Communication: An Example from N. Cyprus

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ABSTRACT

In history, Cyprus – the third largest island in Mediterranean has been home to many nations and naturally has been home to many different cultures; such as the Assyrians, Babylonians, Egyptians, Persians, Romans, etc.

Today the largest ethnic communities and the main cultures on the island are the Turkish Cypriots and the Greek Cypriots, and they have been living together on the island which has 9251 km² total area - since 1571.

In 1878 Great Britain obtained the right to establish a military base in Cyprus. During the hostilities of the I. World War, the British Government declared the annexation of Cyprus as a British Colony, and the island became a British Crown Colony till 1960 when Turkey, Great Britain and Greece together with both the Greek and the Turkish Communities of Cyprus agreed upon the independence of Cyprus. Thus the Republic of Cyprus was born. The Republic based upon the existence of two different communities having their own parliaments and having equal rights. Turkey, the UK and Greece were equally guarantors of the independence of this Republic.

But because of the violence that occurred in the island starting in 1963 and because the Greek troops entered to the island in 1964 to annex the island to Greece, Turkish army intervened in 1974 – exercising its guarantor agreed in the Treaty of Zurich. The relationship between two communities was interrupted. And the negotiations between the two communities for an effective solution and to reunite the island under a federal structure and for a comprehensive settlement under the auspices of the UN have been going on since then.

The “twin referendum” on uniting Cyprus under Annan Plan (a United Nations proposal) which was held in 2004 was rejected by Greek Cypriots while the Turkish Cypriots approved the plan. While 75.83% of the Greek Cypriot community said “no” for the unification of the island, 64.90% of the Turkish Cypriot community said “yes”.

Today the Greek side of the island is member to EU; representing the whole island, while the Turkish Cypriots has been suffering from political isolation, and economical barriers. The economy of the North Cyprus largely depends on tourism and higher education, and North Cyprus administration believes that these two sectors are the main ones that will help to achieve the economic isolations. There are 13 universities and news are on the way, and around 100 thousand students from all over the world (from different countries) who are having education right now.

The main objective of the research is to compare the attitudes of different publics (nations) on specific issues majorly based on Cyprus issue mentioned below. The findings are supposed to offer practical advice on solving the communication issues especially through the perspectives of the “others”. The paper will focus on opinions, beliefs and attitudes of different cultures on the north side of the island towards life and political issues between the two sides of Cyprus within the light of co-orientation model.

In the paper the possibility of applying the co-orientation model in researching the communication behaviors not only between the two major cultures of the island – Turkish and Greek Cypriots but among the publics of different cultures who are on the island for different reasons; majorly because of education and touristic reasons will be questioned. The paper will examine basic elements of the co-orientation model which are the relations between ideas and evaluations and between perceived ideas and evaluations, and what members of

different cultures think on basic issues that concern the island, and how their thoughts are perceived by the “others”.

Key words: Culture, intercultural communication, the co-orientation model, Turkish Cypriots, Greek Cypriots.

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THE PATTERNS OF TOP MANAGEMENT REMUNERATION: DOES FOREIGN VS DOMESTIC OWNERSHIP MAKE A DIFFERENCE?

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ABSTRACT

Top management compensation is considered among most important mechanisms to align interests of managers and company owners. This paper presents results of an explorative study of top management remuneration in Croatian companies. The aim of the research was to determine the impact of ownership origin, domestic or foreign, on top management remuneration practices. Top rated determinant of top management remuneration in Croatian companies is manager's personal characteristic. Statistically significant differences were found between domestic and foreign owned companies with the determinant position attractiveness. Several differences were found with respect to the usage of different forms of compensation. Foreign owned firms provide annual bonus, long term compensation and additional benefits at higher percentages of top managers than domestically owned companies. Domestically owned companies provide annual bonuses at higher ratios towards base pay compared to foreign owned companies and position managerial pay at higher levels compared to foreign owned firms.

Key words: compensation, post-transition countries, top management

I. INTRODUCTION

The separation of ownership and control in contemporary organizations creates a context where top managers govern and coordinate all firm activities, however in case of the unlikely event that they engage in self-serving behaviors or show signs of moral hazard and make decisions suboptimal from owners' point of view, they do not bear any financial loss for malperformance except for their possible job loss and lost pay. This problem of managerial power and discretion, also known as the agency problem, creates prerequisites for potentially conflicting interests of top managers and owners [Jensen & Meckling, 1976; Fama & Jensen, 1983; Mehran, 1992]. Due to the fact that managerial actions cannot be perfectly observed by shareholders, agency theory predicts that under such circumstances compensation policy for top management must provide incentives to select and implement actions that increase shareholder wealth [Jensen & Meckling, 1976].

The amounts of top management compensation rose dramatically during the 1980s and 1990s which initiated much debate on the determinants and consequences of managerial pay [Frydman & Saks, 2008]. Due to these extremely high levels of compensation the topic of executive remuneration had a strong proliferation both with the popular press and the academic literature, with critics claiming that amounts paid to executives are excessive [Kaplan, 2008]. Abundant executive compensation academic literature covers numerous theoretical and practical issues within top management compensation, with most of these contributions being based on data from Anglo-Saxon countries with Anglo-American system of corporate governance. Still, the issue of executive compensation is very country specific and dependent upon the country-specific regulation and level of separation of ownership and control [Pereira & Esperança, 2015].

Very little is still known about top management compensation within continental system of corporate governance, especially among European (post)transition economies [Eriksson, 2005]. Central and Eastern European economies have undergone transition processes which have established new ownership structure, a

change in managers' profile and change in the reward system. The controlled wages of the centrally planned systems were liberalized which resulted with stronger wage differentials between employees. With respect to top managers, a key feature of new reward system was abandoning egalitarian compensation practices and introducing higher levels of compensation relative to other wage earners [Eriksson, 2005:660].

Existing studies on general trends in compensation management in transition economies emphasize major differences in compensation practices with respect to ownership structure with foreign owned companies offering higher levels of compensation [e.g. Hannula & Tamm, 2003; Eriksson, 2005]. Researches on compensation management in Croatia support this finding. In Croatia, youngest EU member state and post transition economy, the average employee pay among companies that are in mostly foreign ownership is about 13% higher than the average pay (in companies in domestic ownership it is about 5% below general average) [MojaPlaća, 2017]. Out of the 25 companies with highest salaries in Croatia in 2016, 23 are owned by foreign owners [FINA, 2018]. Additionally, top managers in companies that are majority owned by foreign owners are paid 47% more than managers in companies with majority domestic ownership [MojaPlaća, 2013]. Based on these findings, the focus of this exploratory research was to identify the dominant determinants and structure of top management compensation packages among large companies in Croatia and to determine possible differences among companies with respect to domestic and/or foreign owners.

This paper is organized as follows: in the following section we present an overview of the existing knowledge on determinants and structure of executive remuneration. This is elaboration is followed by methodology of research, discussion and conclusions. An extensive list of references is listed at the end of the paper.

II. THEORETICAL BACKGROUND

Top management compensation package can be structured on different basis, regarding on its intended purpose. Compensation components have differing effects on employee motivation as well as different costs for the organization [Jensen & Murphy, 1990]. Most common components of compensation are salary, bonus, long term incentives such as stock options and stock grants, pensions, benefits and perks [Balsam, 2001]. Among these, base pay will have the greatest impact on attracting and retaining top managers, short term incentives will be important for executive's motivation and as a form of recognition. Long term incentives will have an impact on retaining top managers. Benefits are the most important as the form of recognition [Ellig, 2007]. A well-designed compensation plan must make trade-offs between the components to maximize the net benefit to both the corporation and the executive.

In publicly traded companies executive compensation package is determined by the compensation committee. Committee's task is to propose the content of executive directors' compensation package, which is then to be confirmed by the full board. Research has found that the overall compensation package can depend upon the number of factors related to the committee and the corporate governance such as members. These factors include size and composition of the compensation committee (board of directors), board member independence, types of shareholders, ownership structure, executive directors' share ownership [Conyon & Peck, 1998; Daily et al., 1998; Vafeas, 2003; Gregory-Smith, 2012]. It is worth mentioning that an alternative view to the pay-setting process is offered by Bebchuk & Fried (2004) who argue that top executives can control the pay-setting process by controlling nominations to the board, through which they appoint sympathetic like-minded individuals, and extracts higher compensation than would normally earn.

The process of structuring executive compensation packages in transition economies does not necessarily follow theoretical expectations established within Anglo-American system of corporate governance where equity based compensation in the form of stock options has been considered the cause of rapid growth of the overall amounts received by top executives [Jensen & Murphy, 2004]. Beer & Katz (2003) found that the egalitarian social values of Europeans cause them to have negative views of executive incentive systems known in the USA. An earlier research of executive remuneration in Croatia by Načinović (2012) indicated that almost ¼ (23.68%) of companies still do not use any form of variable compensation at all. Equity compensation that is a very popular form of compensation among the developed countries is offered by only 18.42% of sampled Croatian companies. On average, compensation package includes 82.92% of fixed pay and 17.08% of variable pay.

In general, top management remuneration is determined by numerous factors that can be classified into two major groups: external labour market factors and internal organisational process [Brown & Samson, 2003]. With respect to internal organisational processes we can further distinguish among economic, behavioral and strategic constructs determining executive remuneration [Rajagopalan & Prescott, 1990]. Barkema & Gomez-Mejia (1998) offered even more detailed list of determinants by grouping them in three categories: criteria used to set compensation (performance, behavior, size, market, peer comparison, individual characteristics, role or position) [Gomez-Mejia & Wiseman, 1997], governance factors (ownership structure, composition of board of directors, remuneration committee, market for corporate control and general public) and contingency factors such as strategy, R&D level, market growth, demand instability, industry regulation, national culture and prevailing tax system.

Empirical research on the determinants of executive remuneration has accumulated many individual factors that can have an impact on compensation packages. These include firm performance [O'Reilly et al., 1988; Core et al. 1999; Conyon & Sadler, 2001; Combs & Skill, 2003; McKnight & Tomkins, 2004], company size [O'Reilly et al., 1988; Finkelstein & Hambrick, 1989; Core et al., 1999; Conyon & Schwalbach, 2000; Singh & Agarwal, 2003; Chalmers et al., 2006; Sakawa & Watanabel, 2008], level of growth [Firth et al., 1999], job complexity [Core et al., 1999; Santalo & Knock, 2009], company complexity (diversification) [Matolcsy & Wright, 2006], strategy [Singh & Agarwal, 2003].

Some determinants are related to executive tenure [O'Reilly et al., 1988; McKnight & Tomkins, 2004], executive age [McKnight & Tomkins, 2004; Lincoln, 2003], internal/external promotion to the position [Johnston, 2005], education [O'Reilly et al., 1988; Pereira & Esperança, 2015], work experience [O'Reilly et al., 1988] or gender [Kulich et al., 2011].

Although academic literature recognizes an abundance of executive remuneration determinants, some of them have been more often emphasized. The size construct has been an unanimously confirmed predictor of compensation by many authors [e.g. Schaefer, 1998; O'Reilly et al., 1988; Tosi & Gomez-Mejia, 1994; Finkelstein & Boyd, 1998]. The size of the firm can be measured in different forms, either in terms of sales, assets, number of employees, market share. Furthermore, Tosi et al. [2000] show that firm size accounts for more than 40% of the variance in total CEO pay, while firm performance accounts for less than 5% of the variance.

Firm performance is also an important determinant of executive compensation, directly following from the agency theory perspective. It is probably the most researched determinant of executive remuneration with still lacking finite conclusions. Research on different data sets and different measures of performance (e.g. aggregate/relative financial performance, non-financial performance etc., see Jensen & Murphy, 1990; Perry & Zenner, 2001; Epstein & Roy, 2005] produced sometimes contradictory conclusions.

Ownership structure has been an often researched determinant of executive remuneration [Parthiban et al., 1998; Chalmers et al., 2006; Sakawa & Watanabel, 2008]. However, the focus of such research is on the dispersion of ownership [Wade et al., 1997], executive ownership [Hambrick & Finkelstein, 1995], institutional ownership [David et al., 1998, Victoravich et al., 2012], family ownership [Cheng et al., 2015] or employee ownership [Jones & Mygind, 2011] and its impact on numerous aspects of remuneration. Research on the impact of the foreign ownership on executive remuneration is very scarce. To the best of our knowledge, only a few studies analyse the effects of ownership origin (private/foreign) on the general compensation system [Zadia & Lipsey, 1999; Aitken et al., 1996, Almeida, 2003]. These studies all tend to find a wage premium in foreign owned firms. In terms of executive remuneration, except for higher total remuneration among foreign owned firms, Cho et al. (2014) found that ownership structure in Taiwan is unassociated with long term executive compensation. Yoshikawa et al. (2010) found that foreign owned firms in Japan reduce cash bonus payments when their invested firms choose to increase R&D or pursue diversification strategy.

Based on the existing findings on top management remuneration, and country specific situation in Croatia, the objective of this paper is to provide additional information on the practice of top management compensation in Croatia and to compare practices of companies with domestic and foreign ownership. For this purpose we proposed two hypotheses:

H1: Determinants of top management remuneration in Croatian companies in domestic and foreign ownership greatly differ.

H2: Foreign owned firms use variable compensation more often than domestic owned firms.

III. METHODOLOGY OF RESEARCH

This research is part of a larger project funded by the Croatian Science Foundation that aims at examining reward management practices of Croatian companies. The population for the primary research were large and medium-sized Croatian companies since those are expected to have more sophisticated HRM practices in general and reward practices in specific. The population of Croatian companies (excluding banking and finance sector) that employ more than 100 employees was obtained through Croatian Chamber of Commerce where it was revealed that approximately 1700 companies in Croatia employ more than 100 people, out of which 386 companies employ more than 250 people (labelled as “large companies”). This paper is based on the currently filled questionnaires (sample of 60 companies).

A questionnaire that was designed for the purpose of conducting empirical research consisted of 46 questions in total. Majority of the questions were closed-ended and referred to different pay modalities as well as various attitudes, behavior-based indicators or organizational outcomes that were of interest as potential independent variables. Certain number of variables were treated as dummy variables (e.g. whether certain pay element existed in organization or not), while majority was of nominal and continuous character for which respondents were asked to make an assessment by using Likert-type 5-point scale (1= not important at all, 5= of the utmost importance). Other parts of questionnaire included different questions about company background and those were almost exclusively closed-ended questions (e.g. ownership type, profitability in the last three years, legal form of the company etc.).

With respect to ownership structure, our sample consisted of 56.7% of companies with private domestic owners (n=34), 33.3% of companies with private foreign owners (n=20) and 10% of companies with either state (public) ownership or mixed ownership. Since our objective was to compare companies with private domestic and foreign ownership companies with mixed ownership were omitted from further research.

The independent characteristics of the companies in the sample are given in a summary table below (Table 1). A statistical analysis of the primary data was conducted by using IBM SPSS 21 software.

Table 1 - Data distribution by sample characteristics

Company characteristic	Total sample (n=60)	Private domestic companies (n=34)	Private foreign-owned companies (n=20)
<i>Industry</i>	Manufacturing – 52.54% Services – 47.46%	Manufacturing – 52.9% Services – 47.1%	Manufacturing – 42.86% Services – 57.14%
<i>Year of establishment</i>	Before 1990 – 46.70% After 1990 – 53.30%	Before 1990 – 44.1% After 1990 – 55.9%	Before 1990 – 35.00% After 1990 – 65.00%
<i>Number of employees</i>	Less than 250 – 51.70% More than 250 – 48.30%	Less than 250 – 50.00% More than 250 – 50.00%	Less than 250 – 65.00% More than 250 – 35.00%
<i>Legal form</i>	Joint stock company – 33.30% Limited liability company – 66.70%	Joint stock company – 29.40% Limited liability company – 70.60%	Joint stock company – 30.00% Limited liability company – 70.00%
<i>Profitability in the last 5 years</i>	Cannot assess – 1.70% Unprofitable – 5.00% Around or below average – 23.30% Profitable – 70.00%	Cannot assess – 0% Unprofitable – 5.90% Around or below average – 20.60% Profitable – 73.50%	Cannot assess – 5.00% Unprofitable – 5.00% Around or below average – 20.00% Profitable – 70.00%

As can be seen from Table 1, our sample included companies with long tradition (46.7%) and those established during the transition period that started in 1990 (53.3%). Among foreign owned companies, our sample included more companies that were established during 1990 or later (65.0%). We had similar proportion of companies with less than 250 employees (51.7%) and more than 250 employees (48.3%). Among foreign owned companies more of them employed less than 250 employees (65%). Our research covered both joint stock companies (33.3%) and limited liability companies (66.7%). According to the companies' self-

reported profitability in the last 5 years, 70% of companies were profitable, 23.3% were of average or below average profitability and 5% were unprofitable.

We started our exploration of top management compensation in Croatian companies by examining determinants of top management remuneration. As can be seen from Table 2, most important determinant of top management compensation is managers' personal characteristics. It is even more important for companies in domestic ownership ($\bar{x}=4.3$, s.d.=.68) than for those in foreign ownership ($\bar{x}=4.05$, s.d.=.89). Except for personal characteristics, domestic owned companies rated skills important for the position ($\bar{x}=3.85$, s.d.=.82) and economic situation in the industry ($\bar{x}=3.41$, s.d.=.86) as relatively important determinants. Foreign owned companies reported that besides personal characteristics, they also find skills important for the position a determinant of top management compensation ($\bar{x}=3.45$, s.d.=1.1), equally important as company size and complexity ($\bar{x}=3.45$, s.d.=1.0). When we compared answers provided by foreign and domestic owned companies, Mann-Whitney U test showed statistically significant difference only for the determinant position attractiveness (at $p<0.1$). This determinant was more important for foreign owned companies.

Table 2 - Determinants of top management remuneration in Croatian companies

	Private domestic ownership N=34	Private foreign ownership N=20
	Mean (Standard deviation)	Mean (Standard deviation)
<i>Benchmark at the industry level</i>	2,529 (1,2119)	2,900 (1,1192)
<i>Company size and complexity</i>	3,088 (0,9331)	3,450 (0,9987)
<i>Market position and status</i>	3,029 (0,9996)	3,200 (1,0563)
<i>Position attractiveness*</i>	2,500 (1,1612)	3,100 (1,1653)
<i>General economic situation</i>	2,882 (1,0080)	3,000 (1,1698)
<i>Skills important for the specified position</i>	3,853 (0,8214)	3,450 (1,0990)
<i>Personal characteristics (e.g. qualifications, work experience, work outcomes)</i>	4,324 (0,6840)	4,050 (0,8870)
<i>Current economic situation in the industry</i>	3,412 (0,8570)	3,350 (1,2258)

* $p<0,1$

After we identified most important determinants of top management remuneration, we examined the occurrence of different forms of compensation. Several differences have been found when comparing domestic and foreign owned companies: (1) annual bonus is more often used by foreign companies (a high proportion of 29.4% of domestic companies still do not offer it to its top managers, whereas 80% of foreign firms provide it to most or all top managers); (2) long term bonus is very rarely offered to top managers, it is slightly more often offered by foreign owned companies but these percentages are still very low; (3) equity based compensation is also just sporadically used; (4) benefits are more often used by foreign owned companies, a high proportion of 44.1% of domestic owned companies do not offer additional perks to top managers.

Table 3 - Distribution of compensation components among private and foreign owned companies

		Not offered	1-25% managers	26-50% managers	51-75% managers	76-100% managers
<i>Annual bonus</i>	<i>Domestic</i>	29.4	32.4	2.9	2.9	32.4
	<i>Foreign</i>	10.0	10.0	0	0	80.0

<i>Long term bonus</i>	<i>Domestic</i>	91.2	5.9	0	0	2.9
	<i>Foreign</i>	75.0	5.0	10.0	0	10.0
<i>Shares, options and other forms of equity</i>	<i>Domestic</i>	85.3	5.9	0	0	8.8.
	<i>Foreign</i>	75.0	10.0	5.0	0	10.0
<i>Additional benefits</i>	<i>Domestic</i>	44.1	17.6	11.8	5.9	20.6
	<i>Foreign</i>	10.0	25.0	0	5.0	60.0

Results presented in Table 3 suggest that the top management practices in Croatia differ than those adopted by companies in Anglo-Saxon countries. Although this was expected considering different corporate governance systems and ownership structures, our research results indicate absence of any convergence of Croatian practices towards practices in these countries. Annual bonus, as the basic form of variable remuneration for managers, is for more than half of sampled domestic-owned companies either non-existent or offered to just 1-20% of top managers (very likely just to CEO). More sophisticated reward practices (e.g. equity-based compensation) are almost non-existent among Croatian companies although we acknowledge that this might be the consequence of company sample. However, a general conclusion that can be drawn from table 3 is that compensation practices among foreign owned companies are slightly more developed since all examined forms of compensation are offered to a higher percentage of managers.

In the following step we examined the ratio of top management annual bonus compared to annual base pay. In the previous table we concluded that many companies in domestic ownership do not offer annual bonus to its employees, however, as can be seen from Table 4, it seems that companies in domestic ownership tend to use higher relative amounts of annual bonus. This information is somewhat surprising, since we would expect that foreign owners due to their inability for direct supervision use some form of pay for performance schemes. However, as can be seen from Table 3, foreign owned firms offer other forms of compensation (long term incentives and benefits) and thus possibly offer lower relative amounts of annual bonuses. Also, we did not consider ownership concentration that is possibly moderating the amount of annual bonus.

Table 4 - The approximate ratio of yearly bonus to annual base pay for companies offering annual bonus

	Domestic	Foreign
<i>Up to 10%</i>	13,64%	20,0
<i>10-20%</i>	18,18%	30,0
<i>20-50%</i>	18,18%	30,0
<i>50-100%</i>	22,73%	10,0
<i>Double or more than double salary</i>	27,27%	10,0

Since statistics confirms that foreign owned firms offer higher salaries than domestic owned companies, we examined companies intended positioning of managerial compensation relative to comparative firms in the sector. Table 5 indicates that majority of foreign owned companies (65%) aim at paying their top managers around relevant market median. Among domestic companies many of them aim at paying top managers above average amounts. We find that this finding might result from the fact that foreign owned firms have a more systematic approach to executive remuneration, and use salary surveys and benchmark information when determining compensation packages. Additional reason for this might be that foreign owned firms have an image of more attractive employer thus domestic companies must increase offered compensation amounts to attract top talent top managers. Also, foreign owned firms as a part of the compensation package offer long term incentives and benefits that are sometimes neglected by companies in domestic ownership.

Table 5 - Positioning of managerial compensation relative to comparative firms in the sector

	Domestic	Foreign
<i>Within the bottom 10% (10th percentile) of sectoral comparators</i>	2,9	0
<i>Within the lower quartile (25th percentile) of sectoral comparators</i>	0	5,0

<i>At or close to the relevant market median (e.g. mid-point of sectoral range for group)</i>	38,2	65,0
<i>Within the upper quartile (75th percentile) of sectoral comparators</i>	20,6	10,0
<i>Within the top 10% (90th percentile) of sectoral comparators</i>	26,5	20,0
<i>Don't know/do not collect this information</i>	11,8	0
<i>Total</i>	100%	100%

Descriptive analyses showed some clear differences in executive remuneration practices between sampled foreign and domestic companies in Croatia. As a part of the paper we examined whether these can be generalized to the population of medium sized and large Croatian companies. We found some statistically significant differences in the distribution of compensation packages in foreign and domestic companies, precisely annual bonus ($z=-3,050$, $p=0.002$), long term bonus ($z=-1,667$, $p=0,095$) and additional benefits ($z=-2,938$, $p=0,003$). As shown earlier, foreign owned companies provide these forms of compensation to a higher percentage of top managers.

Research results indicate a statistically significant difference in the ratio of yearly bonus to annual base pay between domestic and foreign owned Croatian companies. Descriptive research showed that private companies with domestic owners tend to provide annual bonuses that are at higher percentages of base salary for top managers.

Table 6 - Statistically significant differences between domestically and foreign owned companies

<i>Remuneration characteristic item</i>	<i>Test statistics</i>	<i>p</i>
<i>Distribution of annual bonus</i>	U = 183,000 Z=-3,050	P=0,002
<i>Distribution of long term bonus</i>	U = 282,500 Z=-1,667	P=0,095
<i>Distribution of additional benefits</i>	U = 183,000 Z=-2,938	P=0,003
<i>Ratio of yearly bonus to annual base pay</i>	U = 155,000 Z=-3,035	P=0,002

IV. DISCUSSION AND CONCLUSIONS

Executive remuneration is an often-researched topic, however possibilities for generalizing conclusions globally are somewhat limited. The practice of top management remuneration depends upon country-specific factors such as corporate governance system, ownership concentration, legal and tax system etc. Current knowledge on top management remuneration in transition economies is highly limited. During the transition period many of these countries supported foreign investments which resulted with increased number of companies being owned by foreign investors. In most of these countries companies in majority foreign ownership are usually known for higher compensation levels compared to companies in domestic ownership. The purpose of this paper was to determine the patterns of top management remuneration in Croatian companies, and specifically to compare practices in domestic and foreign owned companies. For this purpose we used results of a primary research conducted in Croatia.

When making decisions about compensation, among the determinants that were researched as a part of this study, the most important determinant of top management compensation for Croatian companies is managers' personal characteristics. Managers' personal characteristics such as age, education, work experience etc. have been an often-recognized determinants of executive remuneration [Lincoln, 2003; McKnight & Tomkins, 2004; Pereira & Esperança, 2015 etc.]. Considering that top managers negotiate on their salaries and receive a unique compensation package, such finding does not come as a surprise. Our research results indicate that besides formal qualifications, companies also emphasized the importance of skills necessary for the job position. On the other hand, benchmark at the industry level was rated as a determinant of minor importance. Other determinants which have been empirically proved to impact overall compensation

such as company size and market position (performance) have been perceived by Croatian companies as moderately important for the overall compensation package.

When comparing determinants of top management compensation in companies with domestic and foreign ownership, it can be concluded that companies in domestic ownership give more attention to managers' attributes and skills than companies in foreign ownership. Companies in foreign ownership value company size and complexity, market position and economic situation in the company more than companies with domestic owners. Despite these differences in the importance of compensation determinants, additional testing did not provide many statistically significant differences among domestic and foreign owned companies. The only compensation determinant that has proven statistical difference between companies in domestic and foreign ownership is position attractiveness. This determinant is perceived by companies in domestic ownership as just moderately important whereas companies in foreign ownership rated it as just slightly more important. However, these results are statistically significant and therefore it can be generalized that in the population of Croatian companies those companies in foreign ownership acknowledge more position attractiveness as a determinant of top management remuneration ($p=0.061$). All other determinants did not show any statistically significant difference with respect to ownership origin. These findings provide only partial support H1, since our research did not find statistically significant differences between determinants of top management remuneration among domestic and foreign owned firms.

The exploration of distribution of compensation components among top managers has revealed that foreign owned companies more often combine different forms of compensation. Similarly to research by Načinović (2012), it has been confirmed once again that there are still quite a few companies that do not use any form of variable compensation for their top managers. For example, for companies in domestic ownership, 29.4% do not provide annual bonuses, 91.2% do not provide long term bonuses, 85.3% do not provide equity compensation and 44.1% of sampled companies do not provide additional benefits.

Research findings suggest that there is still a large gap between top management remuneration in companies in transition economies and those in more developed countries. Although some of these differences can be the result of country-specific systems of corporate governance, we still find the rate of use for variable compensation in companies with domestic ownership as very low. Foreign owned companies provide slightly higher coverage of top managers with examined compensation components, but even these rates are much lower than among developed countries. The differences in the utilization of selected compensation components are statistically significant (annual bonus $p=0.002$, long term bonus $p=0.095$ and additional benefits $p=0.003$). These results provide support for H2, since foreign owned firms use variable compensation more often than domestic owned firms.

There are some additional differences between domestic and foreign owned companies. For example, although foreign owned firm usually pay higher salaries, our research has shown that foreign owned firms initially aim at paying compensation at or close to the relative market median, whereas majority of domestic companies aim either at market median or above.

The practice of top management remuneration in Croatia depends upon numerous factors. This research has confirmed that the origin of ownership, either domestic or foreign, is an influential determinant of the top management remuneration practices.

There are several limitations to this study. We classified firms as foreign-owned if more than 50 percent of the firm's capital was in foreign hands. In case companies had a smaller foreign capital share they were included either in the category domestic ownership or mixed ownership although they might have transferred compensation practices from the foreign owner. Our research included both joint stock companies and limited liability companies so some forms of compensation (e.g. equity remuneration) are more often applicable by public limited companies.

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The development of management and service quality of boutique hotels in Bangkok.

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ABSTRACT

The research aims to study the management and quality of services of Bangkok Boutique Hotels in the form of qualitative research. The sample population is those who are involved in hotel services. Management staff, etc., 5 people. The researcher will provide in-depth interviews. The content analysis will be used to determine the readiness of hotel management and analysis to develop the management and service quality of Bangkok Boutique Hotels. The results showed that the management and service quality of Bangkok Boutique Hotel Those who are involved in hotel services will need to plan their operations and meet regularly, taking the guest's comments as part of improving or developing their hotel.

INTRODUCTION

The tourism industry is a large and rapidly growing service industry. The industry is based on the cooperation of a wide range of businesses, such as food and beverage businesses, transportation businesses, tour operators. Currently, the tourism industry is an industry that plays an important role in the economy of every country in the world, because it can generate income for the country rather than find a court. It is also possible to create jobs for the people of the country as well. The main income of the hotel industry is the provision of guest rooms. At present, travel is more convenient and faster. The tourists are traveling and overnight to use the hotel room more. Therefore, hotel rooms are important for satisfaction. And the impression of the customer. Customers return to the hotel room again. At present, the accommodation. Growth has increased. As a result, hotel operators should study how to develop, manage and analyze trends in hotel rooms. To provide their services with a high standard and cost-effective, they should create the most comfortable and satisfying customer needs and quality of service is at the heart of success. Therefore, the quality of service is an important weapon in gaining competitive advantage. It will help to create a good image. Customers are willing to pay more in exchange for superior service. It is one of the reasons that customers are loyal to the hotel, because loyalty is one of the reasons for the repeat purchase and may lead to more purchases. To use the service. Based on the above factors, the organizers have recognized the importance of quality of service, therefore, they are interested in the development of management and service quality of boutique hotel in Bangkok. Relevant personnel in the hospitality department and the services include procedures for performing duties, good service Features and troubleshooting.

OBJECTIVES

- 1) To study the development of boutique hotels in Bangkok.
- 2) To study the management and service quality of boutique hotels in Bangkok.

RESEARCH METHODOLOGY

Research on the development of hotel management and service quality in boutique hotels. The research method consists of document research and qualitative research, in-depth interviews, as well as survey research.

Step 1: Study and collect relevant documents for research.

- 1) The researcher studied relevant documents and research such as the history of the Thai and international institutions. Management Process And quality of service.
- 2) Synthesized as a guideline for conducting research.
- 3) Summarize the synthesis of the documents for further research.

- 4) A draft document on guidelines for hotel management and service quality development in boutique hotels in Bangkok. Synthesized to attend group discussions with individuals or lecturers in the field of tourism and services. Suggestions and other guidelines.

Step 2 Explore the components of the hotel management and service quality management in Bangkok.

- 1) Study the relevant research papers to develop the research instrument as in-depth interview. A question for the interview. Open style The same issues and interviews were conducted to study the management and service quality of the boutique hotel in Bangkok.
- 2) The population is responsible for the management of the hotel. The researcher will provide in-depth interviews.
- 3) The researcher analyzes the data by means of content analysis and document the group discussion. After collecting data for in-depth interviews.
- 4) The researcher organized a group discussion on Use the brainstorming method. (Brainstorming) from the experts. Faculty of Tourism and Hospitality Suan Sunandha Rajabhat University Related to the management approach to the management and quality of service in Bangkok Boutique Hotel.

This is important to management. Suan Sunandha Rajabhat University had a brainstorming session to find out how to improve the management and service quality of the hotel. In Bangkok, the most effective.

Step 3 presents a guideline for the development of hotel management and service quality in the Bangkok Boutique Hotel.

- 1) As a result of the Brainstorming Conference, the results are summarized and written as a guideline for improving the management and service quality of the Boutique Hotel in Bangkok.

RESULTS AND DISCUSSION

Results of data analysis in research, development, management and service quality of boutique hotels in Bangkok. The researcher divided the data analysis into qualitative data analysis by interviewing administrators, faculty, staff and related persons. In hotel services.

Data analysis from in-depth interviews, administrators, faculty staff And those involved in the various departments in the hotel services. From interviews with administrators, faculty, staff, and staff involved in hotel services, five were used as a guideline for the development of hotel management and service quality in boutique hotels in Bangkok. The researchers analyzed the content of the interviews.

The data is classified according to the concept of research. The point is to see the concept of people involved in hotel management. Include the idea of seeing each other and different opinions on the issue, and provide details support the issue. Finally, the researcher reviewed the answers to the research questions. The results of the interview were as follows.

The first interview. Dr. Supasak Shadowprasertwong. (Managing Director, Weisley Hotel Silom)

- 1) The receptionist is like a friend, a friend, a customer, a customer, a problem solver, and the right knowledge to the customer. (Travel Information) Employees must pay attention to and remember the specific needs of the customer, as well as the correct coordination.
- 2) Trust is going to happen.
 - a) Must be straight, such as punctuality in service.
 - b) Must have honesty, such as recover lost, not Over Charge
 - c) Must be fair
- 3) We provide a questionnaire to determine the customer's needs.
- 4) Make an impression when customers Check in-Welcome drink
 - a) Serious problem, customer problem
 - b) Deliver products and services timely. (Not overbook)
 - c) Check in time to follow up after sales service.
 - d) Service beyond expectation in some occasions (birthday surprise)
- 5) We have to pay close attention to customer service when customers have problems to listen and help. (When the customer needs sympathy and understanding)
- 6) Policy planning will be developed and updated every 1 year by using Customer Center. Customer focus is important, using information derived from internal / external SWOT analysis. Prepare annual plans and policies.

- 7) Employees must have a systematic thinking attitude, positive thinking and ready to tackle immediate problems. Happens to support the emotions of the customer to solve the problem consciously and timely.
- 8) The format is also available at the hotel as well.
- 9) Have an internal audit system. Managers will supervise the work of the employees and will evaluate the performance every three months.
 - a. Will receive feed back through the reviews through the Internet.
 - b. CCTV can watch the work of employees 24 hours a day.
- 10) Budget estimates are forecast based on sales of 20-25%

The second interview ms. kamonwan (receptionist suan sunandha hotel)

- 1) the dress code of employees. (to create a unique)
 - a) Check equipment and facilities before sending customers.
 - b) Find the latest in customer service.
- 2) The staff must provide clear information to guests. The reception staff should be trained and introduced to the new staff. Include old employees to know the goods and services available. To build credibility for tourists.
- 3) Improve the use of Call Center services that customers often think of first. If problems arise, call center should understand all the services that are clear and able to communicate to solve problems for customers as quickly as possible.
- 4) Ensure every booking with the hotel. Will not miss by the date and time booked. No booking will be made to ensure that the room.
- 5) We need to listen to our customers' opinions with care, not to ignore the problems encountered by customers and to solve problems for our customers.
- 6) The hotel organizes corporate policies every year using customer satisfaction surveys.
- 7) Able to communicate Maybe add a third or fourth language. Employees must be passionate about the service and be ready to make changes and always serve the customer with a personality that is good.
- 8) The hotel has regular meetings, seminars, workshops and conventions.
- 9) Listen to guest feedback on problems and solve problems for customers, whether customers are satisfied or not, through channels such as Facebook, Booking, Traveloka, etc.
- 10) The budget is forecast every year.

The third interviewer Mr. Panya patoomsomboon (reception manager, theater residence)

- 1) To express opinions on the development and improvement of service quality in the hotel business.
 - a) In the first stage of service, all employees in each department must perform their work in accordance with the sop (standard operation procedure), which defines procedures for systematic work.
 - b) The use of information technology inside the hotel and outside the hotel to increase efficiency to meet the needs of more customers.
 - c) Include inquiries of customers during the period of stay in the hotel or when the customer leaves the hotel (guest comment and complaint).
 - d) Checking the feedback from customers through internet website.
 - e) Creative activities are organized in the hotel to provide customers with more activities.
 - f) There are inquiries and inspection hotels in the same area.
- 2) Reliable service is the sincerity of giving the truthful information of the hotel to customers in the room and in other facilities as well as providing useful information to customers. Most likely
 - a) In response to customer needs to improve the quality of service to customers satisfaction is subject to the rules of the hotel as well. In case the requirement is beyond the rules of the hotel, the highest authority in the hotel must decide. Responsible customer responsibility
 - b) To provide directions to customers with the opening time of the place.
 - c) Usually, one guest per room will be in the second room. In the case of a customer, more than that must be presented in the extra bed with charge or baby cot without charge.
- 3) In cases where guests may have accidents in the hotel, they must assist the guests in coordinating the guests to the hospital.
- 4) Services need to assist guests in most situations. For example, guests at wheel chair must provide special assistance. Or guests can not communicate in the language, need to coordinate with customers to impress the customer.

- 5) Ensuring customer safety is a must in terms of security, such as the equipment in the room, the efficiency of work. As well, it has been pointed out to customers about such a fire exit is located in the visible area. It has 24-hour staff to coordinate customer needs.
- 6) Planning is a policy that every member of every department participates in and follows, such as organizing important festivals at that time, so that customers can participate in the activities. To the customer there will be good memory with our hotel and will make customers come back again.
- 7) All employees in each department are equally important, but different in the content of each department's work is important. Service staff must have service mind calm and listen to clients to help as much as possible. Need help with a colleague in the event of seeking help from a colleague who needs to look like an open mind. Listen to your colleagues' feedback. Always
- 8) In every department, there will be a meeting. The department may be a weekly meeting or monthly meeting. To get a summary of the work to improve performance, guest comment or guest complaint. Every meeting
- 9) Employees must abide by the rules of the hotel, have an understanding of the work system in the department, and be able to provide customer service and make the most of customer service. As appropriate, as an example, and as a case study.
- 10) budget management can be classified as follows.
 - a) The budget of the personnel that both in the department need to have personnel.
 - b) Budget for basic equipment and necessary equipment in the department.
 - c) Budget for other major festivals.

The Fourth Interviewer Ms. Srikanya on Santia (receptionist, Bossotel Inn)

- 1) Employees must pay attention to their customers and ready to provide services willingly to correct problems immediately and accurately.
- 2) To build credibility for our customers, all employees and other departments in the hotel must be honest, such as picking up and disposing of lost goods. This will make the impression and reliability of the hotel even more.
- 3) All employees must be able to meet customer needs accurately and promptly, such as bringing customers to the hospital. If the customer is sick, etc., the customer will feel that the hotel is ready to provide assistance at any time, the customer stays in our hotel, then they must feel relaxed and feel safe.
- 4) To assure the customer that the hotel will have to talk and plan the operations of all sectors of the hotel. Whether it's a security department or a customer information department, there's a quick fix to the problem.
- 5) Some services are something that customers need and want, such as extra beds for children. Wheelchairs, etc., employees need to deliver service and problem solving to their customers sympathetically.
- 6) Hotel policy planning The hotel provides a guest satisfaction survey with a feedback box and a discussion forum for all staff to express their opinions and problems. Edit for policy and improvement.
- 7) All employees must be willing and willing to provide good customer service and good English language skills so that they do not interfere with service and customer support.
- 8) In every department and every year, there will always be meetings and follow-up of action plans for the development and planning of services.
- 9) Employees must abide by the rules established by the hotel to ensure that the operations are in the same direction.
- 10) The budget of the hotel must always be in place to share ideas, suggestions, and parts of each department in the hotel to allocate the correct budget.

The fifth interviewer: Ms. Panchayon Chonlichit (Front Office Manager, Lemong Hotel)

- 1) Maintain brand value. The standard service. When customers mentioned hotel name Must think about service quality.
 - a) Improve work process. Easy to operate. By analyzing the service process as well as the data. Considered to be prepared. To reduce the time and work.
 - b) Improve the service. Appropriate and consistent.
 - c) Pet Supplies Equipment and Facilities To be clean and modern.
- 2) Check and inform customer information from various aspects. Also, let employees share their views on how to maintain the service level. The quality has changed according to the service. Changed
 - a) Provide employees with quality, quantity, and time of service agreed upon with the customer. The hotel has provided the service right from the first time.

- b) When customers have problems. The hotel is sincere to solve the problem for customers.
- 3) All employees know the quality of service to meet the needs of customers. And the staff to meet the needs of customers willingly and ready to serve. For example, employees must tell their customers exactly when they can be available, and they are ready to provide timely service.
 - 4) Enhance skills in service and knowledge in various fields. And security. Include risks in various aspects with employees.
 - a) Focus on expressing the customer's confidence in the service, and feel secure. When entering the hotel,
 - b) employees are knowledgeable and can answer customer questions. And choose the right thing. Or recommend a safe place to customers.
 - 5) Providing views and attentions to customers. Pay attention and serve each customer with different needs. To provide customer satisfaction service. The staff takes care of individual customers. Or employees understand the specific needs of each trade.
 - a) The hotel will focus on the customer's attention is key.
 - 6) Targets to improve the work required, the value of performance indicators (Hpi) is how much. By collecting data. To compare the metrics before and after the operation or compare with other hotels and consider It is good to set goals at what level to be satisfied.
 - 7) Not necessarily the first thing to look at. Employees who apply for a job have a lot of heart. Tested by interview. Interview with at least 2-3 people and interviewers will scramble to ask the mood. Because we think the service is good. Must come out of mind and good mood. Can not control emotions. Service is not good, followed by. English is the first language. No need to add a third or fourth language, just communicate with a savvy customer. Dare to speak English with customers.
 - 8) Make the service is standard and consistent. Set clear, achievable and consistent service goals. With customer requirements
 - 9) All employees must understand and accept service quality goals. Monitoring the performance of the work on a regular basis.
 - 10) Organize budgets for seminars on topics related to services to employees. Set up a budget for organizing a social event for employees to have fun during the holidays.

CONCLUSIONS

The researcher reviewed the literature. And collects relevant research papers. To develop an in-depth interview. The analysis of the data in the form of Content Analysis found that the development of management and service quality of boutique hotels in Bangkok. Planning and meetings should be planned regularly to ensure better and more effective service development.

Guidelines for the development and improvement of service quality in terms of the tangible service of the hotel. Employees must pay attention to their customers and ready to serve willingly to correct problems immediately.

To develop and improve the quality of service in terms of reliability, trust in the service of the hotel to enhance the quality of service.

Trust is going to happen.

- a. Must be straight, such as punctuality in service.
- b. Must have honesty, such as recover lost, not Over Charge
- c. Must be fair. Dr. Supasak Shadowprasertwong

The development and improvement of service quality to meet the needs of customers to improve the quality of service of the hotel should improve the use of call center services that customers often think of first. If problems arise, call center should understand all the services that are clear and able to communicate to solve problems for customers as soon as possible.

The way to develop and improve the quality of service in the empathy of the hotel that service needs to help guests in the most situations. For example, guests at wheel chair must provide special assistance. Or guests can not communicate in the language, need to coordinate with customers to impress the customer.

Planning and policy in the hotel to improve the quality of service and meet the needs of customers. Planning is a policy that every member of every department participates in and follows, such as organizing important festivals at that time, so that customers can participate in the activities. GOOD MEMORY will be available to our customers.

Employees must be willing to volunteer and be willing to have good personality and good command of English so that they do not interfere with the service and help the customer. Srikanya on the front of the hotel (receptionist Bossotel Inn) The structure of management is organized in a way that all employees understand the organization. All employees should strictly follow the quality guidelines for the factory and the customer.

Guidelines for Employee Control Controlling the hotel to improve the quality of service and better meet the needs of customers.

- a. Make the service is standard and consistent.
- b. Set clear, achievable and consistent service goals.
- c. With customer requirements
- d. All employees must understand and accept service quality goals.
- e. Monitoring the performance of the work on a regular basis.

Budgeting in the hotel.

- a. Organize budgets for seminars on topics related to services to employees.
- b. Set up a budget for organizing staff meetings to provide leisure among employees. To reduce conflict and dissolve negative behaviors caused by work, etc.

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Behavior of Social Media and Tourism of Thai adolescents in Bangkok.

Case studies of adolescents aged 15-30 years.

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ABSTRACT

Abstract—The aim of this research was to study behavior of Social Media and Tourism of Thai adolescents in Bangkok, Case studies of adolescents aged 15-30 years. In Bangkok. The contemporary society emphasizes individuality. It has become a globalization society. That is the boundless society. Due to the continuous development of technology and communication equipment. Including network signal. Communication is so easy. And more convenient. The influence of these new technologies. It is important to live. In addition, Social media also plays a role in everyday life. In education, entertainment. Including business. To develop competitiveness. And to be accepted to others in society. Social media has become a part of everyday life in today's society

INTRODUCTION

In the field of tourism, social media has contributed to the change in tourism patterns in a new way, namely, search for information, travel, social conversation. Photo publishing Activities related to business services. And the tourism industry. The tourism business has brought social media to use successfully. Because it is a service business that does not have to transport goods is a substance, but customers are tourists. To be a party. And use the service as agreed on the Internet. For example, Flight Ticket Every airline creates a website and an app. To accommodate the passengers. Customers do not have to travel to the airport. But check flight schedules. Prices are available when you book tickets.

In addition to the reservation. Compare prices, such as price review website Agoda. And when tourists need information on tourism, such as study of tourist information, preparation of travel in each area of interest, as well as planning travel routes. Travelers can search on the Internet. And the forums are published. Comments are in the social network. And another channel is to publish photos. Tell the story Facebook, Instagram, twitter, which are very popular among teenagers. Social media is a part of effective tourism business. And to make tourism business grows.

OBJECTIVES

A survey research of behavior of Social Media and Tourism of Thai adolescents in Bangkok having objectives of this research as follows:

1. In order to benefit the new tourism business.
2. To make plans as well as expanding the market in tourism.
3. To study travel needs. By the way, the sympathizers have a single.
4. To study the use of social media and tourism of Thai youth.

RESEARCH METHODOLOGY

The samples of the research were 400 Thai ADOLESCENTS 1-31 January 2018. This research was quantitative research [6] . A questionnaire was constructed, used as a tool to collect data and combined with three parts as follow:

Part 1: Personal data: sex, age, nationality, income and travelling expense

Part 2: THAI YOUTH AGED 15-25 RANDOM SAMPLING WAS USED FOR 400 SAMPLES.

Part 3: Opinion and suggestion to improve the Social Media

The data from the questionnaire was to verify the authenticity and integrity [7]. The researcher analyzed data by importing the data into the code to process the data from the computer by using a statistical program used to calculate the static and hypothesis testing as prescribed. The confidence level of 95% is using the hypothesis in the analysis of correlation coefficients Pearson (Pearson's Correlation) [8].

-This research is a study of the use of social media and the tourism of Thai youth. Affecting travel through social media outlets such as Facebook, Instagram, Twitter, and searching for destinations through the Internet.

Part 4: -JANUARY – MARCH 2018

RESULTS AND DISCUSSION

The results of this research were divided into 4 parts as follows:

Part 1: Analysis of the sample data.

Part 2: Analysis of general behavior of tourists using Social Media

Part 3: Analysis of Factors Influencing Social Media Use of Thai Adolescents on Tourism.

Part 1 General data analysis results

Table1 Gender of Thai adolescents

Gender	Frequency	percent
Male	63	31.5
Female	137	68.5
Total	200	100.0

As show in the table, The majority of respondents were female (137) or 68.5%, followed by male (63%) or 31.5%

Table 2 Age range of respondents

Age	Frequency	percent
15-20 Year	92	46.0
20-25 Year	60	30.0
25-30 Year	27	13.5
Above 30 Year	21	10.5
Total	200	100.0

As show in the table, it was found that 92 respondents were aged 15-20. 46.0% were in the age group of 20-25 years old, 30% were in the age group of 20-25 years, and 27% were in the 25-30 years old group. Came down to No. 4 In the age of 30 years, 21 people accounted for 10.5%.

Table 3 Status of Thai adolescents

Status	Frequency	Percent
Single	167	83.5
Married	30	15.0
Divorced, Widowed, Separated	3	1.5
Total	200	100.0

As show in the table, 3The majority of respondents were 167 (83.5%), followed by the second (30%), 15.0% (3%), and the third There are 3 people, 1.5%

Table 4 the education of respondents

Education	Frequency	Percent
Primary School	6	3.0
Secondary School	13	6.5
Diploma	17	8.5
Bachelor degree	161	80.5
Master degree	3	1.5
Total	200	100.0

As show in the table,4 it was found that most of the respondents had 161 bachelors degree or 80.5%. Secondly, there were 17 vocational graduates, 8.5, followed by 13 students at the secondary level, 6.5 percent, followed by six students at the elementary level. 3.0, followed by # 5, with a masters degree or higher, of 3, or 1.5%.

Table 5 the occupation of respondents

Occupation	Frequency	Percent
Student	133	66.5
Maid	13	6.5
Owner Business	11	5.5
Employee	27	13.5
Government officials, state enterprises	12	6.0
Hire	4	2.0
Total	200	100.0

As show in the table, 5 shows that most of the respondents had career, 133 students or 66.5%, followed by the second ranked 27 persons, 13.5%, followed by the third. 13 housekeepers accounted for 6.5

percent, followed by government employees, 12 state enterprises, or 6.0 percent, followed by the private sector, 11 persons, or 5.5 percent. G 6 is an employee number 4 was 2.0 percent.

Table 6 Percentage of sample by salary

Salary	Frequency	Percent
below 5000	67	33.5
5001-10000	64	32.0
10001-20000	39	19.5
20001-30000	23	11.5
Above 30000	7	3.5
Total	200	100.0

As show in the table, 6 shows that most respondents had less than 5000 baht per month, accounting for 67%, or 33.5%, followed by 2 persons with a monthly income of 5001-10,000 baht, or 64%. 32.0, followed by No. 3 with monthly income of 1,0001-20000 baht, 39 baht or 19.5%, followed by the fourth rank of 20001-30000 baht per month, or 23.5%, respectively. 5 have a monthly income of more than 30000 Baht, 7 people or 3.5%

Part 2 General behaviors of tourists using Social Media

Table 7 Percentage of sample by type of Social media.

Social Media	Frequency	Percent
Notebook	29	14.5
PC	19	9.5
Telephone	116	58.0
Ipad	36	18.0
Total	200	100.0

Table 7 shows that the majority of respondents used social media via the mobile phone number one, 116 people, or 58.0%, followed by the second most used social media via Ipad, 36 people. Were 18.0%, followed by the third most used by the media, 29 people accounted for 14.5%, followed by the fourth most used social media through PC media, 19 people accounted for 9.5 %

Table 8 Percentage of respondents by experience in using the Internet and Social Media.

Experience in using Internet and Social Media	Frequency	Percent
Below 1 Year	2	1.0
1-3 Year	32	16.0
4-6 Year	67	33.5
Above 6 Year	99	49.5
Total	200	100.0

As show in the table,8 shows that most respondents had more than six years of Internet and social media experience for more than six years, of which 99 (49.5%) followed by 32 (4-6). 32%, 16.0%, followed by 4%, less than 1 year, 2%, 1.0%

Table 9 Percentage of respondents by type of information about travel through computer program

Program Computer	Frequency	Percent
Internet Explorer	29	14.5
Firefox	21	10.5
Google Chrome	150	75.0
Total	200	100.0

From Table 9, it was found that most respondents searched information about travel through the Google Chrome computer program, of which 150 were 75.0 percent, followed by Internet Explorer with 29, or 14.5 percent. Firefox came in third with 21, or 10.5 percent

Table10 Percentage of sample by type of publication related to tourism published the most media.

Media distribution	Frequency	Percent
Facebook	125	62.5
Twitter	13	6.5
Instagram	30	15.0
YouTube	17	8.5
Line	15	7.5
Total	200	100.0

As show in the table, 10 The majority of respondents were disseminated through the 125 Facebook media, representing a percentage. 62.5 followed by No. 2 with 30%, followed by No. 17 with 8.5, followed by No. 15 with 7.5, followed by No. 13, with 6.5. 15.0 percent

Table 11 Percentage of samples classified by your purpose of using internet and social media.

Objective in Using internet and social media	Frequency	Percent
Education	50	25.0
Entertainment	135	67.5
For other transactions	15	7.5
Total	200	100.0

Table 11 The majority of respondents used the Internet and social media for entertainment. Of these, 135 (67.5%) followed the second, 50 (25.0%), followed by the third. 15 people, 7.5%

Table 12 Percentage of respondents classified by the benefits of using the Internet and Social Media in most matters.

Benefits of using Internet and Social Media	Frequency,	Percent
Learn to optimize with education.	82	41.0
Get information and information on tourism.	38	19.0
Reduce communication costs.	20	10.0
Entertainment	53	26.5
Order products and services	7	3.5
Total	200	100.0

As show in the table, 12 Most respondents benefited from the use of Internet and social media in their perceptions. Eighty-one percent (41.5%) followed the second, followed by the third (53.5%), followed by the third (38.5%). 19.0%, followed by # 4, 20%, and 10.0%, followed by # 7 and 7%, respectively.

Table 13 Percentage of respondents classified as having Internet connection and social media

Cost of internet connection and social media	Frequency	Percent
NO	27	13.5
Yes	173	86.5
Total	200	100.0

As show in the table 13 It found that most of the Internet and social media costs were 173 people, 86.5 percent, followed by the second, 27 people, or 13.5 percent.

Table 14 Percentage of sample by social media usage

Times of using the social media	Frequency	Percent
1 time / week	10	5.0
2 time / week	12	6.0
3 time / week	35	17.5
More than 4 times / week	143	71.5
Total	200	100.0

Table 14 shows that most of the social media users were more than four times a week, 143 people, or 71.5 percent, followed by the second, three times a week, or 35 percent. 17.5 Third place twice a week, 12 per cent, or 6.0 per cent, followed by a fourth, one per week, or ten per cent, or 5.0 per cent.

Table 15 Percentage of respondents by length of time using social media

Time to use social media	Frequency	Percent
Less than 1 hour / session	16	8.0
1-3 hours/times	61	30.5
3-6 hours/times	57	28.5
More than 6 hours/times	66	33.0
Total	200	100.0

Table 15, it was found that most respondents had more than six hours of social media usage per session, of which 66 persons were 33.0%, followed by 61%, 61%, and 61% respectively. 30.5 followed by No. 3, 3-6 hours / session, 57%, 28.5%, followed by 4% less than 1 hour / session, or 8.0%

Table 16 Percentage of sample by time spent using social media most frequently.

Time to use social media	Frequency	Percent
06.00-12.00	12	6.0
12.01-18.00	48	24.0
18.01-00.00	129	64.5
00.01-05.59	11	5.5
Total	200	100.0

Table 16 shows that most respondents used social media during the period 18.01-00.00 am, 129 persons or 64.5%, followed by the second at 12.01-18.00 hours, 48% or 24.0%. Twelve of them were from

06.00 to 12.00 hours, accounting for 6.0%, followed by the fourth, the period of 00.01-05.59 hours, or 11.5%.

Table 17 Percentage of respondents by type of internet and social media in most places

The place to use internet and social media	Frequency	Percent
home	136	68.0
Internet shop	13	6.5
library	10	5.0
Wireless Lan area	41	20.5
Total	200	100.0

From Table 17, it was found that 136 respondents mostly used internet and social media at home. Accounted for 68.0 percent, followed by Wireless Lan with 41.5 percent. The number of Internet users was 13, accounting for 6.5%, followed by the number of libraries, 10 persons, or 5.0%.

Table 18 Percentage of sample by location related to popular tourism published on Social Media most.

Publication location	Frequency	Percent
Siam Square /Department store	59	29.5
place of education	43	21.5
Natural Attractions	44	22.0
Restaurants / Restaurants	38	19.0
Hotel / Resort	16	8.0
Total	200	100.0

Table 18, it was found that most respondents rated the places related to tourism on social media as Siam Square / Shopping Centers 59, or 29.5%. Second place was 44 natural tourists, 22.0%, followed by 43 schools, 21.5%, followed by 38 restaurants or 19.0%. The number of hotels / resorts was 16, accounting for 8.0 percent.

Table 19 Percentage of respondents by most influential persons using social media

People who influence the use of social media	Frequency	Percent
self	71	35.5
Friend / acquaintance	80	40.0
Singer, actress, artist	19	9.5
Popularity	27	13.5
News / Media	3	1.5
Total	200	100.0

As show in the table, 19, most respondents were influenced by the use of social media, ie 80 friends, 40.0%, followed by self, 71%, 35.5%. The top three were 27 hits, representing 13.5%, followed by the 19th, 19.5%, 19.5%, and the fifth (3%). 1.5 percent

Part 3 Factors Influencing Social Media Use of Thai Adolescents on Tourism The criteria for analysis and interpretation are as follows.

Note Meaning of Meaning

4.20 - 5.00 Comments on the behavior of using social media at the highest level.

3.40 - 4.19 Comments on the behavior of using social media at the high level.

2.60 - 3.39 The opinions about the use of social media were moderate.

1.80 - 2.59 The opinions about the use of social media are low.

1.00 - 1.79 The opinions about the use of social media is minimal.

Part 1 How to use Social Media

Factors Influencing Social Media Use of Thai Adolescents on Tourism. Part 1 How to use Social Media	Level Comments					average (\bar{X})	standard deviation	meaning
	1	2	3	4	5			
You use Social Media to find information on tourism.	39 (19.5)	93 (46.0)	61 (30.5)	8 (4.0)	0 (0.0)	2.19	.792	less
You use Social Media to contact your business.	33 (16.5)	74 (37.0)	63 (31.5)	26 (13.0)	4 (2.0)	2.47	.982	less
You use Social Media to exchange knowledge (chat)	67 (33.5)	85 (42.5)	43 (21.5)	4 (2.0)	1 (0.5)	1.94	.821	less
You use Social Media to disseminate information. Travel & Business News	65 (32.5)	77 (38.5)	45 (22.5)	13 (6.5)	0 (0.0)	2.03	.902	less
Total						2.16	.665	less

Table 1 shows the factors influencing the use of social media among Thai youths. In the overall picture of how to use social media, the mean was 2.16 (S.D. = .665). The use of Social Media for business contact was rated at a low level, with an average of 2.47 (S.D. = .982). Regarding the use of media for tourism in the second level is low, with an average of 2.19 (S.D. = .792) followed by. Use of social media to chat (third) is low, with an average of 1.94 (S.D. = .821) and the use of Social Media to disseminate information. Tourism and business travel was ranked at a low level with an average of 2.03 (S.D. = .902), respectively.

Table 2. Factors influencing the use of social media among Thai youths for tourism.

Factors Influencing Social Media Use of Thai Adolescents on Tourism. Side 2 publishing place	Level Comments					average (\bar{X})	standard deviation	meaning
	1	2	3	4	5			
Shopping center	37 (18.5)	81 (40.5)	c	17 (8.5)	6 (3.0)	3.37	.979	moderate
place of education	51 (25.5)	82 (41.0)	45 (22.5)	13 (6.5)	9 (4.5)	2.24	1.047	less
Restaurants and restaurants	49 (24.5)	86 (43.0)	47 (23.5)	14 (7.0)	4 (2.0)	2.19	.953	less
Nature attractions such as the sea, waterfalls, mountains, gardens, plants and forests, etc.	59 (29.5)	72 (36.0)	43 (21.5)	15 (7.5)	11 (5.5)	2.24	1.121	less
Hotel / Resort	55 (27.5)	79 (39.5)	51 (25.5)	12 (6.0)	3 (1.5)	2.15	.943	less
Amusement Park Entertainment	64 (32.0)	70 (35.0)	less	17 (8.5)	10 (5.0)	2.19	1.128	less
Total						2.23	.694	less

Table 2 shows the factors influencing the use of social media among Thai youths. The average level of information dissemination was 2.23 (S.D. = .694) when classified by locations. The shopping center was ranked at a moderate level with an average of 3.37 (S.D. = .979). Second place was at a low level with an average of 2.24 (S.D. = 1.047). Natural attractions such as the sea, waterfalls, mountains, gardens, plants and forests were ranked at a low level, with an average of 2.24 (SD = 1.121) followed by restaurants and restaurants ranked fourth. The mean score was 2.19 (SD = .953), followed by the amusement park (5) and low (2.19) (SD = 1.128). The average was 2.15 (S.D. = .943), respectively.

Table 3 Factors influencing the use of social media among Thai youths in both areas.

Factors Influencing Social Media Use of Thai Adolescents on Tourism.	Level Comments	average (\bar{X})	standard deviation	meaning
How to use Social Media	2.16	.665	43.12	less
Place of publication	2.23	.694	44.56	less
Total	2.19	.564	43.84	less

Table 3 shows that the respondents had an average level of opinion about factors influencing the use of social media among Thai youth on tourism in terms of using social media at low level. The respondents had an average of opinion about the factors influencing the use of social media among Thai youth in tourism in terms of publishing place was low. Was 44.56% with an average of 2.23

CONCLUSIONS

Research on Behavior Using Social Media and Tourism of Thai Adolescents in Bangkok the research was conducted with the population aged 15-30 years in Bangkok. The sample was sampled using 3-stage sampling. The sample size was 200 persons. The research instrument was a questionnaire. Use SPSS computer program for data analysis. Frequency, Percentage, Mean and Standard Deviation.

The research found that the female. At the age of 15-20 years old, the status of a single person using the mobile phone media to access the Internet 6 times a time to use Social Media to find information and most tourist attractions. Travel information from the Facebook application from the Post and Share of tourists and business owners.

Smartphones have played a huge role in communicating and receiving information. With many features and applications. Smart Phone has become the channel used by the people to disseminate information, 18.0 percent are used as the media. And most of the people 49.5 percent have experienced using the Internet or Social Media over 6 years. Facebook is the social network that has published about 62.5 percent of travel. Facebook is the most popular. Because Facebook is a social networking online community (Community) to help build a network of old friends and find new friends. Can share the comments. Traveling to friends in social media can be seen closely.

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Knowledge Sharing, Firm Innovation Capability, Competitive Advantage & Financial Performance: A Conceptual Paper

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ABSTRACT

This paper aims to develop a conceptual model that links knowledge sharing enablers, processes and outcomes dimensions in the U.A.E. It explains the influence of six factors (Enjoyment in helping others, knowledge self-efficacy, top management support, organizational rewards, information and communication technology use, end user focus) on knowledge sharing donating and collecting (knowledge sharing). Furthermore, it explains the influence of knowledge donating and collecting on firm innovation capability, firm competitive advantage, and firm financial performance. The data is collected from recent literature that was analyzed and discussed in order to develop a new knowledge sharing conceptual model. Introducing a model that combines enablers, processes and outcomes dimensions will provide an added value in the context of the U.A.E, especially for knowledge-intensive organizations. This paper provides a number of theoretical and practical implications, as well as limitation and future study opportunities.

Keywords: Knowledge sharing, firm innovation capability, firm competitive advantage, firm financial performance, United Arab Emirates

INTRODUCTION

Knowledge sharing is one of the building blocks for any organization's success and acts as a survival strategy in this knowledge era (Witherspoon Et al., 2013). Knowledge is first originated from the intelligence of individuals and is visible in the tasks, systems, and customs that is very difficult or imitate (Davenport & Prusak, 1998). Experts were of the opinion that knowledge sharing is opposite to the human nature because people feared that by sharing their knowledge, they will lose their status and power in their organizations a (Davenport & L, 1997). As stated by Gruefeld Et al. (2000), knowledge sharing not only reduce the cost of the production or service, it also contribute to the success of the organization because sharing knowledge helps develop its innovation capability. It is, as well, essential for any business because it creates opportunities to maximize organization ability to meet its needs and to generate solutions and efficiencies to provide its business with competitive advantage (Reid, 2003), as well as to enhance its financial performance (Wang, Wang, & Liang, 2014).

The research paper aims to develop conceptual model that follows a three dimensions knowledge sharing: enablers, processes and outcomes. It explains the influence of six factors (Enjoyment in helping others, knowledge self-efficacy, top management support, organizational rewards, information and communication technology use, end user focus) on knowledge sharing donating and collecting, which both make up the bidirectional perspective of knowledge sharing (van den Hooff & de Ridder, 2004). Furthermore, it explains

the influence of knowledge sharing donating and collecting on firm innovation capability, firm competitive advantage as well as firm financial performance.

This research is considered significant and provides added value, especially for knowledge-intensive organizations. Knowledge sharing is considered significantly essential for knowledge-intensive firms such as law enforcement institutions (Collier, 2006). First, this study extends the work of similar studies conducted previously such as the work of Lin (2007) and Kumar & Rose (2012), where it introduces more enablers (technology factors) and outcomes (firm competitive advantage) for knowledge sharing, thus the proposed model considered is more comprehensive, novel and never introduced before in the area. Moreover, the role of knowledge sharing is neglected in firms in U.A.E due to scarcity in research in the field of knowledge sharing in the area (Ahmad & Daghfous, 2010). This paper is intended to provide many practical implications as it will provide a model that will enrich and develop knowledge sharing strategies in the firms in the context of the U.A.E.

LITERATURE REVIEW

Knowledge Sharing Defined

In literature, knowledge exists in many different viewpoints. Some researchers view knowledge as an object (Zack, 1998), while others view it as a process (Schubert, Lincke, & Schmid, 1998). In general, knowledge can be described as “*a state of knowing that constitutes facts, concepts, principles, laws, casual relationships, insights, judgments, intuition, and feelings*” (Koenig & Srikantaiah, 2004). There are mainly two types of knowledge: tacit and explicit. Explicit knowledge denotes knowledge that is articulated, objective and captured, and which has a more tangible format (Nonaka, Krogh, & Voelpel, 2006). On the other hand, tacit knowledge describes the personal, subjective, and intangible knowledge (ibid). The ability to go through the processes related to identifying tacit knowledge and encouraging the worker to share it is very difficult to develop (Howells, 1996).

Knowledge sharing can be defined as a social interaction culture that involves the exchange of employees' experience, skills and tacit and explicit knowledge throughout the organization (Hogel, Partboteeah, & Munson, 2003). Organizations increasingly depend on building and creating shared knowledge base as an important resource capability (Huber, 1996). Bock and Kim (2002) consider knowledge sharing the cornerstone of knowledge management. Also, Inkpen (2000) describes it as “unless individual knowledge is shared throughout an organization, the knowledge will have a limited impact on organizational effect”. Knowledge sharing occurs at two levels, individual and organizational. For individuals, it is about talking to colleagues to help them get something done better, more rapidly and efficiently (Calantone, Cavusgil, & Zhao, 2002). For organizations, it is experience-based knowledge that is available in the organization and making that knowledge available to others in the business (ibid).

Knowledge sharing behavior is viewed by many scholars using either unidirectional or bidirectional perspectives depending on the point of view used to view the process (Tangaraja, Rasdi, Ismail, & Abu-Samah, 2015). According unidirectional perspective, sharing of knowledge occurs in one direction, from the provider to the recipient (Yi, 2009). On the other hand, bidirectional perspective claims that sharing of knowledge involves of exchange of knowledge in two directions, donating and collecting knowledge (van den Hooff & de Ridder, 2004). These perspectives were first introduced by Van der Rijt (2002) and then were supported by many other scholars (Karkouliau, Harake, & Messarra, 2010; Lin, 2007; Tohidinia &

Mosakhani, 2010).

Knowledge donation is defined as employee's willingness to actively communicate with colleagues (Darroch & McNaughton, 2002). The purpose of donating knowledge is to see tacit knowledge become explicit and owned by the entire organization (von Krogh, Nonaka & Rechsteiner, 2012). Contrary to knowledge donating, knowledge collecting means actively consulting with colleagues to learn from them (Darroch & McNaughton, 2002). It refers to consulting people and seeking knowledge out, which in turn improves the entire amount of knowledge available to the organization (von Krogh, Nonaka & Rechsteiner, 2012).

Theorizing Knowledge Sharing

In the past, majority of studies conceptualized knowledge sharing behavior using the theory of reason action (TRA) (Fishbein & Ajzen, 1975) or its extension theory of planned behavior (TPB) (Ajzen, 1991), which are both well-established theories that have pre-determined variables that influence actual behavior and behavior intentions (Tangaraja Et al., 2015). Later on, they integrated these theories with other such as social capital theory (SCT), self-determination theory (SDT), social exchange theory and so forth to show how other factors can affect employees attitude toward knowledge sharing behavior, subjective norm and perceived behavioral control (Tohidinia & Mosakhani, 2010). Therefore, TRA, TPB and SCT are examined in details. TRA by Ajzen & Fishbein (1975) has been widely accepted (Davis, Bagozzi, & Warshaw, 1989). As per TRA, employees' attitude and subjective norms influence the intentions, therefore develops the behaviors. If it is perceived that the behavior will have a positive outcome, an individual will express positive attitude in order to perform some specific behavior and vice versa (Iqbal, Et al., 2011). TRA assumes the human being to be rationale and explains that the human behavior is the determinant of three elements: 1) attitude toward the behavior, 2) subjective norms, and 3) behavior intention (ibid). In different studies, attitude and subjective norms, independently and collectively, have shown positively relations with actual knowledge sharing (Bock Et al., 2005; Kim and Lee, 2006; Kurland, 1995).

In addition, TPB by Ajzen (1991) has been developed with including a new determinant, perceived behavioral control, in TRA. Perceived power and control belief are the determinants of perceived behavioral control. According to the theory, the behavioral intentions are the combined effect of attitude, subjective norms and perceived behavioral control (ibid). TPB further suggested that the behavior intention directly determines the performance of behavior. It is assumed that if someone has strong intentions to perform behavior, there is more chances that their performance increases. The intentions of an employee for knowledge sharing can be forecasted with high accuracy from the approaches toward the behavior of knowledge sharing, the subjective norms, and the perceived behavioral control (Iqbal, Et al., 2011).

Finally, SCT by Bourdieu (1984, 1986) refers to the levels of trust that groups or individuals may have, relations based on reciprocal systems, sets of norms, and networks between social communities. The theory of social capital is based on social relations and benefits for the peoples (Iqbal, Et al., 2011). In general, social capital can be seen in terms of five dimensions, trust, reciprocity-expectation, networks associations, social norms, and personal and collective efficacy (Bourdieu, 1984; Coleman, 1988). In light of the foregoing discussion, it can be assumed that people share knowledge with the people with whom they have some reciprocal relations. In this context, it can be considered that people share their knowledge with those who share their knowledge with them (Iqbal, Et al., 2011).

Enablers, Processes and Outcomes Dimensions

Many studies focused on the relationship between knowledge sharing enablers and processes (Yeh, Lai, & Ho, 2006; Bock, Zmud, & Kim, 2005). While other studies focused on the relationship between enablers and outcomes such as innovation capability (Syed-Ikhsan & Rowland, 2004). A paper by Lin (2007) suggested a framework that consists of three dimensions for knowledge sharing: knowledge sharing enablers, processes and outcomes. A similar framework was also introduced by Kumar & Rose (2012), which also used the knowledge sharing enablers, processes and outcomes dimensions with an addition of a moderator variable between the processes and the outcome (Kumar & Rose, 2012).

Knowledge sharing behavior enablers are the mechanism for developing individual and organizational learning and also facilitating employees' learning among teams and organization's units (Wasko & Faraj, 2005; Lin & Lee, 2006). Knowledge sharing enablers includes employee's motivators, organization contexts and information technology applications (ibid). Moreover, knowledge sharing behavior, processes, refer to how organization's employees share their work-related expertise, experience, know-how and information with other colleagues (Darroch & McNaughton, 2002). The bidirectional knowledge sharing behavior perspective is used in this research paper, which includes knowledge donating and knowledge collecting.

The outcomes dimension refer to the effect of knowledge sharing on different positive outcomes including firm effectiveness (Yang, 2007), innovation capability (Yesil & Dereli, 2013), competitive advantage (Lin & Chen, 2008), improve productivity (Noaman & Fouad, 2014), team task performance (Cheng & Li, 2011) and financial performance (Wang, Wang, & Liang, 2014). This paper will focus on firm innovation capability, competitive advantage and financial performance as they are reviewed more often in literature (Lin, 2007; Yesil & Dereli, 2013; Lin & Chen, 2008; Almahamid, Awwad, & McAdams, 2010; Wang, Wang, & Liang, 2014).

Enablers of Knowledge Sharing

There are many enablers that are identified for knowledge sharing behavior. Literature agrees that knowledge sharing depends on individual characteristics, which includes experience, values and beliefs such as enjoyment in helping others, self-efficacy and (Wasko & Faraj, 2005). It includes intrinsic motivational factors (enjoyment in helping others, knowledge self-efficacy, public service motivation) (Luthans, 2003; Painter, 2001; Park & Word, 2012), extrinsic motivational factor (reciprocity) (Olatokun & Nwafor, 2012) and organizational socialization factors (trust, social network) (Nahapiet & Ghoshal, 1998; Kim Et al., 2013). In addition, referring to organizational factors, organizational climate is usually made to capture efficiently the benefits of innovation-supportive culture (Saleh & Wang, 1993). Many factors related to organizations were identified including top management support (Connelly & Kelloway, 2003; Lin, 2006), organizational rewards (Cabrera & Bonache, 1999; Bartol & Srivastava, 2002; Al-Alawi, Al-Marzooqi, & Mohammed, 2007) and reciprocity (Hung & Chuang, 2009).

Furthermore, referring to technology factors, Information and communication technology can be effectively used to facilitate codification, integration and distribution of organizational knowledge (Song, 2002). Technology factors include Information and communication technology (ICT) use (Huysman & Wulf, 2006; Yeh, Lai, & Ho, 2006) and end user focus (Kim & Lee, 2006). Other factors include are contextual factors such as trust (Al-Alawi, Al-Marzooqi & Mohammed, 2007; Hooff & Huysman, 2009), identification (Hooff

& Huysman, 2009; Johnson Et al., 1997) and pro-sharing norms (Hung & Chuang, 2009), as well as subjective norms factors such as organizational culture (Nguyen & Mohamed, 2001), and leadership (Hai & Sherif, 2011; Politis, 2002). In this research paper, we focus on six enablers that belongs to personal, organizational and technology factors groups which are: *enjoyment in helping others*, *knowledge self-efficacy*, *top management support*, *organizational rewards*, *information and communication use* and *end user focus*.

Enjoyment in helping others is derived from the concept of altruism. Organ (1988) definition of altruism includes discretionary behaviors that help others with relevant tasks or problems. Previous research shows that employees are naturally motivated to contribute knowledge because engaging in intellectual pursuits and solving problems is challenging or pleasurable, and because they enjoy helping others (Wasko & Faraj, 2005). Moreover, *knowledge Self-efficacy* is defined as the judgments of individuals regarding their capabilities to organize and execute courses of action required to achieve specific levels of performance (Bandura, 1986). Self-efficacy can help motivate employees to share knowledge with colleagues (Wasko & Faraj, 2005). Employees with high confidence in their ability to provide valuable knowledge are more expected to achieve specific tasks (Constant, Kiesler, & Sproull, 1994).

Top management support is one of the important influences on organizational knowledge (Connelly & Kelloway, 2003). It was found essential to create a supportive climate and providing adequate resources (Lin, 2006). MacNeil (2004) highlighted the importance of the top management support to organizational knowledge sharing climate. Moreover, Lin and Lee (2004) proposed that the perception of top management encouragement of knowledge sharing intentions is necessary for creating and maintaining a positive knowledge sharing culture in an organization. In addition, *Organizational rewards* indicate what the organization value shape employee behaviors (Cabrera & Bonache, 1999). If employees believe they can receive organizational rewards by offering their knowledge, they would develop positive willingness to both donate and receive knowledge (Bartol & Srivastava, 2002). Another study in Bahrain found that trust, communication, information systems, rewards and organization structure are positively correlated knowledge sharing in organizations (Al-Alawi, Al-Marzooqi, & Mohammed, 2007).

ICT use and knowledge sharing are closely linked, because ICT can enable rapid search access and retrieval of information, and can support communication and collaboration between employees in organizations (Huysman & Wulf, 2006). Also effective knowledge sharing requires employees sharing their knowledge through ICT facilities because it can provide communication channel for obtaining knowledge, correcting flow processes, and identifying the location of knowledge owners and requesters (Yeh, Lai, & Ho, 2006). Additionally, an important component of technology related to knowledge sharing is the level of *end user focus* on the information system development (Kim & Lee, 2006). The user-friendly systems will encourage user acceptance and use to support knowledge sharing practices. The design and delivery of a system that addresses user needs is one of the most important factors affecting the benefits of the system (ibid).

Knowledge Sharing and Firm Innovation Capability

Hurley and Hult (1998) define firm innovativeness as openness to new ideas as a characteristic of an organization's culture. Innovation is often described in terms of changes in what a firm offers the world (product/service innovation) and the ways it creates and delivers those offerings (process innovation)

(Francis & Bessant, 2005). Much of the work on firm innovation capability is found in the literature on innovation diffusion (Rogers, 1995). A research paper suggests that for a firm must be innovative to survive in a volatile environment (Johnson Et al., 1997).

Important challenges for organizations are that motivations influence both knowledge donating and collecting, and lead to superior firm innovation capability (Jantunen, 2005). A firm that promotes employees to contribute knowledge within groups and organizations is likely to produce new ideas and develop new business opportunities, thus facilitating innovation activities (Darroch & McNaughton, 2002). Additionally, Hansen (1999) suggested that knowledge collecting represents a key aspect of successful project completion, especially for organizations heavily involved in innovation projects. Moreover, there was found a significant relationship between knowledge sharing and innovation capability in both public sector (Kumar & Rose, 2012) and academic organizations (Iqbal Et. al., 2011).

Knowledge Sharing and Firm Competitive Advantage

Firm competitive advantage is “*a holistic conceptualization of a product or service design quality, including the superiority, or uniqueness of features, in addition to its fitness for use*” (Swink & Song, 2007). Competitive advantage refers to the benefits that customers get from the new product or service (Calantone & Di Benedetto, 1988). Previous papers suggested that new product or service attributes such as quality, reliability uniqueness, newness, provides a competitive advantage for the firm, therefore more solid picture of a firm’s ability to meet customer’s needs (Crawford, 1997; Griffin & Hauser, 1993). Many scholars also found firm’s competitive advantage to be significantly associated with product or service success and market performance (Im & Workman, 2004; Li & Calantone, 1998).

Knowledge sharing creates opportunities to maximize organization ability to meet those needs and generates solutions and efficiencies that provide a business with competitive advantage (Reid, 2003). The first step towards eliminating the lack of trust requires a comprehensive understanding of the sustainable competitive advantage and long-term superior performance offered by knowledge sharing practices (Ahmad & Daghfous, 2010). Moreover, Shared knowledge is one of the unique, valuable, and critical resources that are central to having a competitive advantage (Nonaka & Takeuchi, 1995). In manufacturing firms that adopted knowledge sharing practices, they were able to gain competitive advantage (Almahamid, Awwad, & McAdams, 2010). Similarly, in high technology firms they indicated that team members’ shared knowledge enables them to improve their innovation capability and competitive advantage (Lin & Chen, 2008).

Knowledge Sharing and Firm Financial Performance

Firm financial performance can be defined as “*a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues*” (Investopedia LLC, 2015). This term is also used as a general measure of a firm's overall financial health over a given period of time, and can be used to compare similar firms across the same industry or sector. It is also an important resource of knowledge that tells a company how well it’s doing (ibid). In addition, exchange of knowledge within a firm can bring disparate knowledge sources together and turn this into a driving force for financial performance (Lawson Et al., 2009).

Firms financial performance both benefits from sharing both the explicit and implicit knowledge of its firm

and employees (Wang, Wang, & Liang, 2014). Lee (2001), for example, found that once successful explicit knowledge sharing takes place directly in outsourcing projects, firms' financial outcomes would be enhanced. Carr and Kaynak (2007) suggested that information sharing within a firm and between firms is necessary for helping firm members identify critical issues, and eventually led to product quality improvement and financial performance. Wang and Wang (2012), as well, confirmed that explicit knowledge sharing practices facilitated innovation capability and financial performance. Moreover, regarding sharing implicit knowledge, the value-creating capability that resides in the sharing of know-how or tacit knowledge of the engineers, managers and marketing staff creates a sustainable competitive advantage (Harold, 2008). A firm's financial performance tends to increase when the firm improves its tacit knowledge sharing, especially when it is related to outsourcing, sales, cost reduction, quality assurance, R&D, and customer management (ibid).

CONCEPTUAL MODEL DISCUSSION

The following conceptual model is proposed from the review of literature. This model follows a three dimensions structure: enablers, processes and outcomes of knowledge sharing. The enablers/factors of knowledge sharing belong mainly to three factors groups: personal factors, which are enjoyment in helping others and knowledge self-efficacy, organizational factors which are top management support and organizational rewards, as well as technology factors, which are information and communication technology use and end user focus. These six factors are often reviewed in literature and proved to a great impact on knowledge sharing (Kumar & Rose, 2012; Lin, 2007; Kim & Lee, 2006).

In addition, the processes on the model are knowledge collecting and knowledge donating, which both combined make up the bidirectional perspective of knowledge sharing behavior (van den Hooff & de Ridder, 2004). Finally, the outcomes of knowledge sharing includes in the conceptual model are firm innovation capability, firm competitive advantage and firm financial performance. Some literature showed an influence of firm innovation capability on firm competitive advantage but it is excluded from this model (Kumar & Rose, 201). In general, the proposed conceptual model can be summarized into the following relationships:

- Enjoyment in helping others positively influences employee's willingness to (a) donate and (b) collect knowledge.
- Knowledge self-efficacy positively influences employee's willingness to (a) donate and (b) collect knowledge.
- Top management support positively influences employee willingness to (a) donate (b) collect knowledge.
- Organizational rewards positively influence employee willingness to (a) donate (b) collect knowledge.
- ICT use positively influences employee's willingness to (a) donate and (b) collect knowledge.
- End user focus positively influences employee's willingness to (a) donate and (b) collect knowledge.
- Employees' willingness to (a) donate and (b) collect knowledge positively influence firm innovation capability.
- Employees willingness to (a) donate and (b) collect knowledge positively influence firm competitive advantage.

- Employees willingness to (a) donate and (b) collect knowledge positively influence firm financial performance.

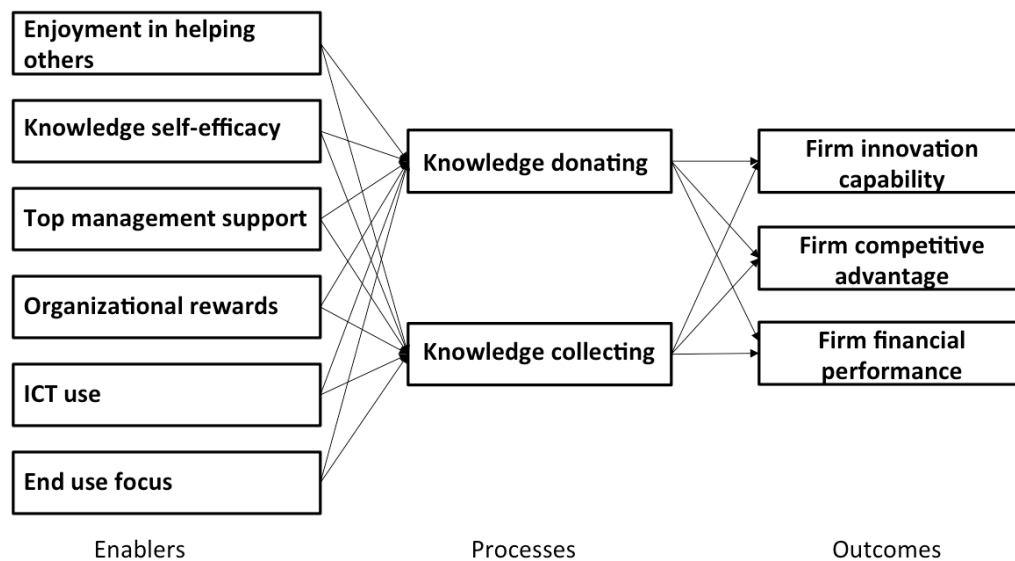


Figure1: Conceptual model

CONCLUSION

Implications

This study is interesting from both theoretical and practical perspectives. Theoretically, this study propose an conceptual model knowledge sharing that includes six different factors/enablers (Enjoyment in helping others, knowledge self-efficacy, top management support, organizational rewards, information and communication technology use, end user focus), two processes (donating, collecting) and three outcomes (firm innovation capability, firm competitive advantage, firm innovation). The proposed conceptual model confirms the previous literature in the context of the U.A.E and and can be utilized and developed by future scholars for acedemic and educational purposes.

From a practical perspective, the identified factors affecting knowledge sharing processes may provide a clue regarding how firms in the U.A.E, specially knowlledge-intensive intitutions such as law enfocement, can promote knowledge sharing processes (donating, collecting) to sustain their innovation performance and organizational performance (von Krogh, Nonaka & Rechsteiner, 2012). The study can also provide a number of implications for helping managers establish a successful knowledge sharing strategy (Lin, 2007). For example, descision makers must consider factors like top management support and information and communication technology use, which are confirmed by the litertaure review to have a significant influence on knowledge sharing. Following such model will lead to improving the knowledge sharing factors/enablers that are very important, yet unintentionally neglicated by the decision makers in an organization. In general, firms in U.A.E that neglect the importance of knowledge sharing will understand the significant of it to their firm innovation capability, firm competitive advantage as well as firm financial performance.

Limitations and Future Study

This research has three limitations that can be considered an opportunity for future studies. First, the study is limited in the context of U.A.E. A future study might consider generalizing the study findings to other regions in the world such as other Arab countries or the Middle East. Second, the study examines six enablers/factors influencing knowledge donating and collecting (Enjoyment in helping others, knowledge self-efficacy, top management support, organizational rewards, information and communication technology use, end user focus). A future study might include more enablers such as conceptual factors (trust, identification, pro-sharing norms) (Hooff & Huysman, 2009; Johnson Et al., 1997; Hung & Chuang 2009) and subjective norms factors (organizational culture, leadership) (Nguyen & Mohamed, 2001; Hai & Sherif, 2011). Finally, very few studies are available in knowledge sharing in the U.A.E (Ahmad & Daghfous, 2010). Subsequently, a future study might conduct further investigation and testing of the proposed model using quantitative methods to validate it in the context of the U.A.E.

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Qualitative Study on the Involvement of Human Resource Director in Strategy Development and Implementation in the Saudi Banking Industry

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ABSTRACT

Although the link between strategy and human resource management, and its theoretical and practical concepts began to develop in the 1980s, it was to be more than a decade the importance of this new development and its relevance to the involvement of HR director's at board level began to emerge. Prior to this event, the perception of the role of and duties of personnel managers and leaders at executive level was deemed to be solely focused upon issues and policies that were directly related to the internal workforce of the firm.

However, the transition from a 'workforce' based role for HR directors to one that saw them having a greater involvement with and influence over the corporate strategy 'decision making' process has not been smooth. As research has shown, there have been many obstacles to the effectiveness of this transfer of duties and responsibilities. Responsibility for these obstacles has variously been attributed to the CEO leadership style, the perception of other board members, industry factors and even the HR directors' themselves. However, little research has been conducted that establishes the extent to which these issues arise and are address within an industry sector located in a specific country. In an effort to establish the extent to which these factors have a limiting effect on the involvement of HR directors with corporate strategy, this study conducted primary research aimed at gathering the views and opinions of HR directors in a specific industry sector and geographical location. The sector chosen was the banking industry in Saudi.

Our findings suggest that all of the issues raised have, to a lesser or greater extent, occurred within the chosen location and industry sector. Based on these findings, recommendations are made which, when implemented, are likely to lead to improvements in the current involvement of HR directors with corporate strategy in the banking industry.

Supply chain coordination using options contract under simultaneous price and inventory competition

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ABSTRACT

Supply chain network consisting of a common supplier and multiple downstream retailers faces channel conflict due to both price and inventory competition. In this context wholesale price contract fails to coordinate the channel and leads to conflicts of interest between supply chain agents. In this article we establish that such a supply chain network can be coordinated by option contract mechanism. We show that in the presence of option contract a pure strategy unique Nash equilibrium exists for the retailers' game; the supplier can coordinate the entire supply chain system to achieve the best performance, even in the presence of retailer competition in both price and inventory. Through a numerical analysis, we corroborate our finding. We conclude by discussing the managerial implications of the results and the directions of future research.

Keywords: Option contract, coordination, supply chain management, equilibrium analysis, pricing, inventory

1. Introduction and Literature Review

In a supply chain, retailers prefer to have ordering flexibility due to demand uncertainty and it also helps her to avoid high inventory cost. On the other hand, suppliers prefer to have full orders in place so that she can avoid situations of either over production or under production. This results in conflict between the supply chain agents and often leads to inefficient performance of the supply chain due to sub-optimal decisions taken by the individual stakeholders of the chain. From apparel retailers¹ to toy makers (Mattel Inc.), various companies have faced situations of over-ordering or unexpected change in market demand. In today's world of globalization, supply chains are increasingly turning into supply networks and designing coordination mechanism for such network is also becoming more challenging. In order to achieve coordination, supplier-retailer relationship has dramatically changed in recent years and has led to partnerships or collusive arrangements among stakeholders. Channel coordinating contracts like, buy-back contract (Pasternack, 1985), quantity-discount contract (Weng, 1995), revenue-sharing contract (Cachon and Lariviere, 2005) etc. have been designed to align supply chain agents' incentives to adopt the optimal action throughout the supply chain network. These feasible coordinating supply contracts vary in terms of profit allocation (Wu et al. 2002). However, these contract forms cannot necessarily enforce retailers to place full orders upfront, as they prefer to have ordering flexibility in order to accommodate fluctuating market demand. Therefore, suppliers fail to hedge against the risks of over- or under-production (Zhao et al. 2010).

¹ "Apparel Retailers Full of Hot Air", Published on February 6, 2012. WSJ Report. Retrieved from: <http://blogs.wsj.com/>

These conflicts between the retailer and the supplier lead to sub-optimal actions by supply chain agents and eventually results in an inefficient supply chain

In the context of dyadic relationship between a supplier and a retailer, option contract provides us with a simple mechanism such that the retailer can commit to a quantity at early stage of production so that the supplier can plan for her production and reduce her production related risks (Zhao et al., 2010). In the contexts of different industries those face high degree of market uncertainty industry and large inventory carrying cost, like fashion apparel, toys, electronics etc. option contract has been extensively applied (Eppen and Iyer, 1997; Carbone, 2001; Billington, 2002; Barnes-Schuster et al., 2002). Option contract is characterized by two parameters: (i) option price, o , and (ii) exercise price, e . The option price (o) designates an allowance paid by a buyer to the supplier for reserving one unit of the production capacity. While exercising the option, buyer has to pay the exercise price (e) to the supplier for purchase of every unit of product. The extant literature on option contract mostly focuses on dyadic supply chain relationship (Eppen and Iyer, 1997; Wu et al. 2005; Zhao et al. 2010). Motivated by these observations, we look into option contract mechanism for answering one key question: whether it can coordinate a supply chain network comprising of one supplier and multiple heterogeneous retailers. We analyze under what condition(s) pure-strategy Nash equilibrium can be achieved in such scenario.

The rest of the article is organized as follows: We describe the option contract model, retailer's game, supplier's game, and existence of pure-strategy Nash equilibrium in Section 2. In Section 3 we present a numerical analysis of our model. We conclude in Section 4 by presenting managerial implications and directions of future research.

2. Model Description

We consider a two-echelon supply chain consisting of a single supplier and n retailers. The supplier's product is sold through these retailers in the market. Prior to the selling season, the supplier announces the option price, o_i , and exercise price, e_i , to each retailer i for $i = 1, \dots, n$. Contract parameters can be different for each retailer. Subsequently, the retailers simultaneously make decisions about order quantities and prices before the realization of the demand. Retailers book their respective order quantities to the supplier by paying option price (o_i). During the selling season, the retailers obtain their realized demand quantity from the supplier by paying the exercise price (e_i). We assume that there is no lead time associated with product delivery. All the prices (p_i) and cost parameters (c_i) are adjusted to inventory-clearing salvage value (v). In order to avoid triviality of results, we assume: (I) $p_i > c_i > 0$, (II) $0 \leq o_i < c_i$ and (III) $e_i > 0$, where supplier's adjusted marginal cost of production for i^{th} retailer is c_i . The first assumption indicates that supplier is not risk-free for her production and the second assumption represents that the retailers do not always exercise all the option purchased by them.

2.1. Retailer's Game

The demand function of the i^{th} retailer has the following form, $L_i(\vec{p}) + \varepsilon_i$, where $\vec{p} = (p_1, p_2, \dots, p_n)$. $L_i(\vec{p})$ represents the deterministic part of the demand, ε_i represents the price-independent stochastic part of the demand. $(\varepsilon_1, \varepsilon_2, \dots, \varepsilon_n)$ follows independent and known continuous demand distributions with positive support. ε_i has a probability distribution function (pdf), $f_i(\cdot)$, and cumulative distribution function (cdf), $F_i(\cdot)$. $L_i(\vec{p})$ captures the economics of price competition among the retailers in the following way: $L_i^{(i)}(\vec{p}) \equiv \partial[L_i(\vec{p})]/\partial p_i < 0$ and $L_i^{(j)}(\vec{p}) \equiv \partial[L_i(\vec{p})]/\partial p_j > 0$. Retailer i makes the following decisions: (i) retail price (p_i) and (ii) safety stock (y_i), before realization of demand. The safety stock y_i protects the retailer i against demand uncertainty and establishes service level. Therefore the total inventory level to be maintained by the i^{th} retailer is, $Y_i = L_i(\vec{p}) + y_i$.

We assume that a fixed exogenous proportion, γ_{ji} , of the lost sales from retailer j switches to retailer i ; this proportion is called *spill rate* and it is independent of the price levels p_i and p_j . The actual stochastic demand faced by retailer i is given by, $D_i^s(y_{-i}) = \varepsilon_i + \sum_{j \neq i} \gamma_{ji} (\varepsilon_j - y_j)^+$, where $y_{-i} = (y_1, \dots, y_{i-1}, y_{i+1}, \dots, y_n)$. $D_i^s(y_{-i})$ is the *effective stochastic component of demand*; pdf and cdf of $D_i^s(y_{-i})$ are given by $f_{D_i^s}(\cdot)$ and $F_{D_i^s}(\cdot)$ respectively. Thus the total effective demand faced by the i^{th} retailer: $D_i(y_{-i}) = L_i(\vec{p}) + D_i^s(y_{-i}) = L_i(\vec{p}) + \varepsilon_i + \sum_{j \neq i} \gamma_{ji} (\varepsilon_j - y_j)^+$. Retailer i 's problem is to choose, (p_i, y_i) , such that she maximizes her expected profit function, given as below:

$$E[\pi_{oi}(\vec{p}, \vec{y})] = (p_i - e_i)E\{\min[D_i(y_{-i}), Y_i]\} - o_i Y_i = \pi_{oi}^d(\vec{p}) - o_i y_i + (p_i - e_i)E\{\min[D_i^s(y_{-i}), y_i]\} \quad (1)$$

where, $\pi_{oi}^d(\vec{p}) = (p_i - o_i - e_i)L_i(\vec{p})$, represents the profit of the deterministic part of the demand. The expectation function of equation (1) is defined as,

$$E[\min\{D_i^s(y_{-i}), y_i\}] = D_i^s(y_{-i})\Pr\{D_i^s(y_{-i}) < y_i\} + y_i \Pr\{D_i^s(y_{-i}) > y_i\}$$

The retailers' strategy sets are assumed to be compact: $\{(p_i, y_i) : c_i \leq p_i \leq p_i^{\max}, 0 \leq y_i \leq y_i^{\max}\}$. The upper limits p_i^{\max} and y_i^{\max} are large enough to not to restrict either the retailers or the mathematical optima (Cachon and Netessine, 2004).

2.2. Supplier's Game

In the presence of simultaneous price and inventory competition, we aim to find a supply contract that maximizes the total system-wide profit. In an integrated system, the expected profit is given by,

$E(\Pi_C) = \sum_{i=1}^n E(\pi_i^C)$ where, $E(\pi_i^C)$ is the expected profit by serving the customers of the i^{th} retailer.

$$E(\pi_i^C) = \pi_i^{C(d)} - c_i y_i + p_i E\{\min[D_i^s(y_{-i}), y_i]\} \quad (2)$$

where c_i is the marginal cost associated with retailer i and $\pi_i^{C(d)} = (p_i - c_i)L_i(\bar{p})$. Therefore the total expected profit of the supply chain is given by,

$$E(\Pi_C) = \sum_{i=1}^n E(\pi_i^C) = \sum_{i=1}^n (\pi_i^{C(d)} - c_i y_i + p_i E\{\min[D_i^s(y_{-i}), y_i]\}) = \sum_{i=1}^n (p_i - c_i)L_i(\bar{p}) - \sum_{i=1}^n c_i y_i + \sum_{i=1}^n p_i E\{\min[D_i^s(y_{-i}), y_i]\}$$

The supplier's problem is to optimally set (o_i, e_i) , so that it coordinates the entire supply chain. In a

decentralized supply chain, by entering into an option contract agreement with i^{th} retailer, the profit made the supplier is presented by the following equation

$$E(\pi_i) = (o_i - c_i)Y_i + e_i E\{\min[D_i(y_{-i}), Y_i]\} = (o_i + e_i - c_i)L_i(\bar{p}) + (o_i - c_i)y_i + e_i E\{\min[D_i^s(y_{-i}), y_i]\}$$

The total expected profit made the supplier is given by, $E(\Pi) = \sum_{i=1}^n E(\pi_i)$. In the following section, we

investigate the existence of a pure strategy Nash equilibrium of the aforementioned game.

2.3. Pure Strategy Nash Equilibrium

Two additional conditions are required to be satisfied for the existence of a Nash equilibrium and they are as follows: (a) $\partial^2 \pi_i^d(\bar{p})/\partial p_i^2 < 0$ and $\partial^3 \pi_i^d(\bar{p})/\partial p_i^3 < 0$

(3)

(b) The distribution of $D_i^s(\cdot)$ is IFR, so that the failure rate, defined by $r_{D_i^s}(\cdot) = f_{D_i^s}(\cdot)/(1 - F_{D_i^s}(\cdot))$, is

increasing in nature

(4)

These assumptions are consistent with those presented in Zhao (2008). Assuming that conditions (3) and (4) hold, then using the mathematical lemma proposed by Zhao and Atkins (2008, pp. 541), we can establish that pure-strategy unique Nash equilibrium exists in the presence of option contract and combined price-inventory competition. The Nash equilibrium is described in Theorem 1.

Theorem 1: If (3) and (4) hold, then

(i) The retailer i 's expected profit function, $E[\pi_{oi}(\bar{p}, \bar{y})]$, is jointly quasi-concave in (p_i, y_i) , and

therefore a pure strategy Nash equilibrium, where $\frac{\partial E[\pi_{oi}(\bar{p}, \bar{y})]}{\partial p_i} = 0$ and $\frac{\partial E[\pi_{oi}(\bar{p}, \bar{y})]}{\partial y_i} = 0$

exists.

(ii) The best response of retailer i is given by the solution of (6) and (7).

$$\partial E[\pi_{oi}(\bar{p}, \bar{y})]/\partial p_i = [\partial \pi_{oi}^d(\bar{p})/\partial p_i] + E[\min(D_i^s, y_i)] = 0 \quad (5)$$

$$\partial E[\pi_{oi}(\bar{p}, \bar{y})]/\partial y_i = -o_i + (p_i - e_i) \Pr(D_i^s > y_i) = 0 \quad (6)$$

(iii) The sufficiency condition for existence of unique Nash equilibrium is as follows:

$$\{\partial^2 \pi_{oi}^d(\bar{p})/\partial p_i^2\} + \Pr[D_i^s > y_i(p_i)] \{ (p_i - e_i) r_{D_i^s(y_i)} [y_i(p_i)] \} < 0 \quad (7)$$

Theorem 1 gives the pricing and inventory equilibrium with exogenous contract parameters. From Theorem 1, we can easily derive the fractile solution of optimal ordering quantity for retailer i . It is given by, $F(y_i) = (p_i - e_i - o_i)/(p_i - e_i)$. The obtained result also conforms to the solution form presented by Zhao et al. (2010) in the context of dyadic relationship of supplier and retailer.

We subsequently study channel coordination in a decentralized supply chain with simultaneous price and inventory competition among independent retailers. The global optimal solution for the integrated supply chain is given by the following two first order conditions,

$$\partial E(\Pi_C)/\partial p_i = L_i(\bar{p}) + (p_i - c_i) L_i^{(i)}(\bar{p}) + \sum_{j=1, j \neq i}^n (p_j - c_j) L_j^{(i)}(\bar{p}) + E\{\min[D_i^s, y_i]\} = 0 \quad (8)$$

$$\partial E(\Pi_C)/\partial y_i = -c_i + p_i \Pr(D_i^s > y_i) - \sum_{j=1, j \neq i}^n p_j \gamma_{ji} \Pr(D_j^s < y_j, \varepsilon_i > y_i) = 0 \quad (9)$$

By comparing (8) and (9) with equations (5) and (6), we identify the difference between the global optima and a competitive equilibrium in the presence of option contract. It is indicative of the source of inefficiency when option contract tries to enforce channel coordination. This comparison is represented by the following set of equations.

$$\partial E(\Pi_C)/\partial p_i = \{\partial E[\pi_{oi}(\bar{p}, \bar{y})]/\partial p_i\} - (c_i - o_i - e_i) L_i^{(i)}(\bar{p}) + \sum_{j=1, j \neq i}^n (p_j - c_j) L_j^{(i)}(\bar{p}) \quad (10)$$

$$\partial E(\Pi_C)/\partial y_i = \{\partial E[\pi_{oi}(\bar{p}, \bar{y})]/\partial y_i\} - (c_i - o_i) + e_i \Pr(D_i^s > y_i) - \sum_{j=1, j \neq i}^n p_j \gamma_{ji} \Pr(D_j^s < y_j, \varepsilon_i > y_i) \quad (11)$$

From (10) and (11) we can see that the effect of double marginalization and competition are identical to those observed in other channel coordinating contracts like buy back. $(\bar{p}^C, \bar{y}^C) = \{(p_i^C), (y_i^C)\} (\forall i = 1, 2, \dots, n)$ denotes the global optima that maximizes the total supply chain profit; these global optima satisfy (8) and (9). Using this definition, we obtain the channel coordinating option contract and it is represented by Theorem 2.

Theorem 2: The unique option contract mechanism, (o_i^*, e_i^*) , that coordinates the entire supply chain is characterized as follows:

$$(i) \quad 0 \leq o_i^* < c_i \text{ and } e_i^* > 0$$

$$\begin{aligned}
(ii) \quad o_i^* &= \frac{\Pr(D_i^s > y_i^c)}{1 - \Pr(D_i^s > y_i^c)} \left\{ (p_i^c - c_i) + \left[\sum_{j=1, j \neq i}^n (p_j^c - c_j) L_j^{(i)}(\bar{p}^c) / L_i^{(i)}(\bar{p}^c) \right] \right\} \\
(iii) \quad e_i^* &= p_i^c - [o_i^* / \Pr(D_i^s > y_i^c)]
\end{aligned}$$

It is possible to have multiple equilibria under the existence of coordinating contract, (o_i^*, e_i^*) . However, in the case of symmetric retailers there exists a unique equilibrium for the retailer's game.

3. Numerical Analysis

In this section, we numerically analyze the individual retailer's profit and integrated supply chain profit. We demonstrate that joint concavity of the system-wide profit function $[E(\Pi_C)]$ of an integrated supply chain holds in the central planner's decision set, (\bar{p}^c, \bar{y}^c) . We set the following parameter values for the purpose of the numerical study. We consider a supply chain comprising a single supplier and two retailers. The retailers face identical linear deterministic demand function, given as: $L_1(p_1, p_2) = 100 - p_1 - 0.5p_2$ and $L_2(p_1, p_2) = 100 - p_2 - 0.5p_1$. The supplier incurs a marginal costs, $c_1 = 40$ and $c_2 = 50$, for producing the order that she receives from retailer 1 and retailer 2 respectively. The stochastic component of the market demand can be a maximum of 10% of the deterministic demand component for retailer 1 and that for retailer 2 is 20%. The safety stock policy for a retailer varies between 0% - 15% of the deterministic demand component. For expositional simplicity, marginal cost of the retailer and the salvage price are taken to be zero. For the vertically integrated system, the behavior of the system-wide profit function is presented through Figures (1) – (2).

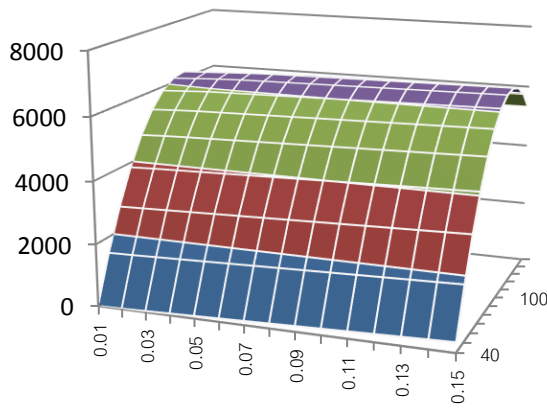
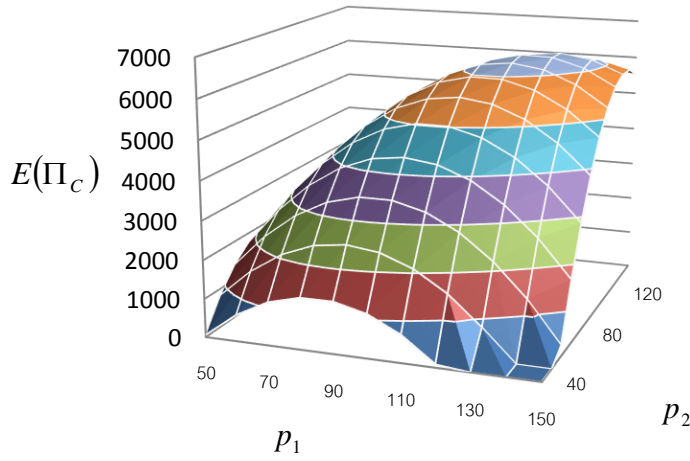


Figure 1: Profit $[E(\Pi_C)]$ vs Prices (p_1, p_2) **Figure 2:** Profit $[E(\Pi_C)]$ vs Retailer's decision (p_1, y_1)

From the aforementioned figures we can observe that system-wide profit function $[E(\Pi_C)]$ is jointly concave in the central planner's decision set, (\bar{p}^c, \bar{y}^c) .

Through the numerical analysis we see that both the system-wide profit of an integrated supply chain and the individual profits of the retailers of a decentralized supply chain hold the joint quasi-concavity property in the retail price and safety stock. Therefore there exists a global optimum solution (\bar{p}^c, \bar{y}^c) , that maximizes the system-wide profit of the integrated supply chain and this solution is given by: $(\bar{p}^c, \bar{y}^c) = \{(p_1^c, p_2^c), (y_1^c, y_2^c)\} = \{(120, 120), (0.15, 0.15)\}$. Using this global optimum solution we can calculate the optimal option contract mechanism and. Optimal option contracts that the supplier would offer to the buyer 1 is given by: $(o_1^*, e_1^*) = (20, 60)$. For the same setting of the supply chain the optimum wholesale price that maximizes the supplier's profit is $w^* = 66.67$. Therefore, through option contract, the supplier can not only coordinate the supply chain but also extract an extra profit margin of $(20+60) - 66.67 = 13.33$ units for every unit of realized demand from buyer 1. Similarly, supplier can have excess profit margin

form buyer 2 as well. It presents us with the insight that option contract can help the supplier to extract larger profit level from the retailers, while coordinating the entire supply chain.

4. Conclusion

Our analysis reveals that, an option contract mechanism can coordinate a supply chain network of single supplier multiple retailers with Pareto-improvement. Our study demonstrates that, in the presence of heterogeneous retailers it is possible to have multiple equilibria under the existence of coordinating contract. However, in the case of symmetric retailers there exists a unique equilibrium for the retailer's game. This result is similar to those reported by Zhao and Atkins (2008). From this analysis, we can understand that in the case of price competition game, competition increases the option price level. As a result, the supplier increasingly becomes risk-free for her production. As the supplier would be able to charge higher option price, the retailers are forced to charge higher prices to the end customers. In the case of inventory competition, the retailers are required to pay the supplier for overstocking. Such a scheme requires extensive inventory monitoring by the supplier and might not be feasible to implement. Therefore, in the case of price competition option contract might prove to be an implementable coordinating mechanism.

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The Influence of Service Quality and Customer Satisfaction on Customer Loyalty of the Bank for Agriculture and Agricultural Cooperatives, Thailand

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ABSTRACT

Nowadays, customer service is very important, especially for financial institutions, which are service-based businesses. The excellent service providing to the bank's customers always affects customers' satisfaction and the choice of bank. In high competitive business environment, most financial institutions in Thailand including the Bank for Agriculture and Agricultural Cooperatives in Roi Et area have realized the importance of excellent service quality to increase customer satisfaction and to enhance customer loyalty in the long run. This research study aimed to investigate the influence of service quality and customer satisfaction on customer loyalty of the Bank for Agriculture and Agricultural Cooperatives in Roi Et area, Thailand. The research study was a quantitative research method. The population of this research was the bank's customers with the samples of 400 respondents determined by using simple random sampling based on Taro Yamane formula. Data were collected through 5-point Likert scale questionnaire surveys[1]. Cronbach's alpha coefficient of service quality, customer satisfaction, and customer loyalty of 0.929, 0.930, and 0.896. Data were analyzed by descriptive statistics and inferential statistics including the Pearson Product-Moment Correlation and Path Analysis.

The results of this research study showed that customers' opinion on service quality, customer satisfaction, and customer loyalty were at the highest levels; mean of 4.46, 4.44, and 4.46, respectively. The research results from hypothesis testing found that service quality and customer satisfaction can explain the variation of customer loyalty up to 64.90% (Adjusted R-Square 0.649) at 0.05 significant level. The service quality and customer satisfaction had statistically significant positive influenced on customer loyalty with standardized coefficients (β) of 0.415 and 0.436, respectively. The service quality had a statistically significant positive influenced on customer satisfaction with standardized coefficients (β) of 0.794. Service assurance had a statistically significant positive influenced on customer loyalty with the highest standardized coefficients (β) of 0.330. Service empathy had a statistically significant positive influenced on customer satisfaction with the highest standardized coefficients (β) of 0.357. Service cost had a statistically significant positive influenced on customer loyalty with the highest standardized coefficients (β) of 0.216. In conclusion, service quality and customer satisfaction had significantly influenced on customer loyalty of the Bank for Agriculture and Agricultural Cooperatives in Roi Et area in Thailand providing management to make excellent assurance on service quality and bring about customer satisfaction on service cost in order to promote customer loyalty.

Keywords– Service Quality, Customer Satisfaction, Customer Loyalty

INTRODUCTION

Nowadays, financial institutions concentrate on quality of service as this factor is one of the critical key successes. Good service providing to targeted customers can enhance satisfaction and raise bank performance in competitive arena. The ability of the management to response to a customer's satisfaction is

necessary to build customer loyalty in the long run. Most financial institutions need to assure their service providing in compatible with the demands of the 21st century customer. Consequently, Thai banks develop core banking system to provide customers assurance, trustworthiness and responsiveness. In order to increase customer satisfaction, financial institutions including the Bank for Agriculture and Agricultural Cooperatives in Roi Et area in Thailand is launched many campaign to promote satisfaction such as transaction convenience and quality of care, which can drive customer loyalty. Although the influence of service quality on customer satisfaction is well explored, a variable of customer loyalty that explain consequence of customer satisfaction remain unclear. The importance of the above reasons is the cause of the research.

The objectives of this research are as follows. (1) To investigate the level of service quality, customer satisfaction, and customer loyalty of the Bank for Agriculture and Agricultural Cooperatives in Roi Et area, Thailand. (2) To explore the influence of service quality and customer satisfaction on customer loyalty of the Bank for Agriculture and Agricultural Cooperatives in Roi Et area, Thailand. (3) To apply the results of the research study as guidelines for determining the strategies in providing excellent service quality of financial institutions in the Thailand. The paper begins with a review of the concepts related to service quality and customer satisfaction affecting on customer loyalty in order to conceptualize the framework and hypotheses. Next, the research methodology, analysis of data and findings are presented. Finally, conclusion and discussion of the research results as well as managerial implications and suggestions for future research are described.

LITERATURE REVIEW

Service Quality

Service quality is critically significant in providing a competitive advantage to organization especially for service company like financial institution, as it is influential on various factors such as customer satisfaction by Amin, M. *et al.*, [21], customer loyalty by Kim, T.H. *et al.*, [22], and customer value perceptions by Wu, H.C. [23]. Zeithaml, V.A. *et al.* [4], stated that the quality of service is the concept and practice in the assessment of patients by making comparisons between service expectations to service providing, which is a real perception from service providers. It can be seen that if the provider can give a consistent service to meet the needs of the client; or the service creates a higher level of pleasure, it will make customer tremendous satisfaction with the service received. Parasuraman, A. *et al.* identified service quality as the perception of the customer after the act of buying [6]. Another research study on service quality is presented by Grönroos, C. who focuses on a comparison between customer expectations of the service and their experience of the service they have received before. This model is named “total perceived service quality”. Various researchers emphasize on what customer is really looking for and what they actually receive [13]. Thus, service quality is one of the most important factors to promote customer contentment and loyalty. Several instruments have been developed to measure and explain service quality dimensions. Service quality model, SERVQUAL, is the most commonly used instrument which links the perception of service quality receiving to the expectations by Ali, J.F. *et al.*, [20]. The conceptual framework of this research was applied service quality model (SERVQUAL) based on Zeithaml, V.A. *et al.*, including five dimensions; tangibility, trustworthiness, responsiveness, assurance, and empathy [4]. In addition, various research studies have empirically explored the relationships between service quality, satisfaction and loyalty of customers in businesses by Caruana, A.; Mosahab, R. *et al.*, ; consequently, this study aimed to investigate such relationships [10].

Customer Satisfaction

Definition of customer satisfaction from the literature reviews are documented in various studies. The literature on customer satisfaction is based on many definitions relating the concepts of experience or quality of service, expectations, perceived value and consequent measurement of service by Ali, J.F. and Amin, M., [24]. Kotler, P. stated that satisfaction is a person's sense of pleasure as a result of a comparison of the product or service performance and the expectations [8]. Hill, N. and Alexander, J. defined customer

satisfaction as a performance measurement of product or service providing in correspondence to the needs and requirements of customers [12]. Customer satisfaction is also described as the capability of business to accomplish the emotional, business and psychological needs of the targeted customers by Pairot, R., [14]. The level of satisfaction is the difference between the service receiving and the visible expectations. If the person recognizes the service's performance lower than expected, it will result in the person dissatisfaction, but if the level of the service meets the expectations, the person will satisfy and affect the decision making together with being a repeat customer by Kotler, P., [8]. The conceptual framework of this research was applied Aday, L.N. and Andersen, R. specified the basic theory of six categories related to the satisfaction of the customers as follows; convenience, coordination, information, courtesy, quality of care, and service cost [3]. Satisfied customers are more intended to be loyal or to be good relationship, in which producing several benefits for business by Chang, H.H. and Wang, H.W.,; Jamal, A. and Anastasiadou, J.,[19],[15]. High customer satisfaction brings many advantages that support sustainable businesses, including sustained profitability, increased long-term customer retention and loyalty, improved image and enhanced sustainability by Ahearne, M. *et al.*, [11]. As many previous studies show that there are the relationships among service quality, customer satisfaction, and customer loyalty by Emre, S.D.; Subrahmanyam, A. and Raja, S.B.; as results, this study aimed to investigate such relationships [25], [28].

Customer Loyalty

Loyalty of customer is quite important concept in the study of organization theory and behavior. Oliver, R.L. defined customer loyalty as the true commitment of a customer to repeat a purchase [7]. It seems that despite the changing circumstances and other marketing efforts, it does not change the customers' behavior of buying such product or service. Grönroos, C. explained that customer loyalty is defined as the willingness of customers to support or provide benefits to the organization in the long run. Customer loyalty; or in other words customer retention, is very essential [13]. As customer retention can retain existing targeted purchaser or service receiver. It can be achieved by establishing attitudinal and behavioral loyalty leading to not much interest in competitive offerings by Dick, A. and Basu, K., [5]. It can be seen that the importance of customer loyalty is well documented in services literature. Loyal customers are likely to purchase more, generate more benefit, forgive unintentional service failure, resist competitive offerings, and cost less to retain refer to Dahlia, E.M., [9]. There are three main conceptualizations of customer loyalty by Bowen, J. and Chen, S., [26]; a behavioral perspective, attitude perspective, and composite construct combining both a behavioral and attitudinal dimension. The conceptual framework of this research was used customer loyalty adapted from Hoy, W.K. and Rees, R., in which characterized by three components; cognitive aspect, behavioral aspect, and affective aspect. [2], As Ali, J.F. *et al.* investigated a model for the relationship of service quality, customer satisfaction and customer retention and found strong relationships among them; more exploration in financial institution in Thailand should be further investigated [16]. To conclude, from the literature reviews, it was seen that there are some relationships among these three variables to further investigate and conceptualize in the conceptual framework with hypotheses development.

CONCEPTUAL MODEL AND HYPOTHESES

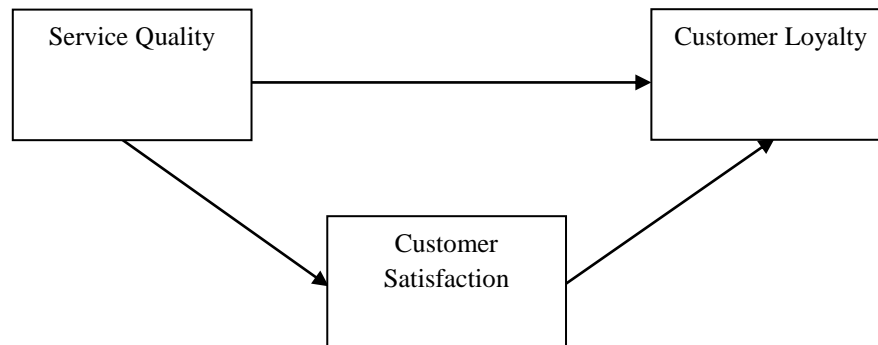
From the reviews of the literature, the conceptual framework of this research study was presented in figure 1. It depicts the influence of service quality and customer satisfaction on customer loyalty of the Bank for Agriculture and Agricultural Cooperatives in Roi Et area, Thailand. The conceptual framework has been tested on the basis of the bodies of literature including service quality, customer satisfaction and customer loyalty, cited above, as well as the researcher's own context about the relationship among variables.

Base on the reviews of the literature of the constructs with the conceptualization of the relationships among variables, the hypotheses suggested by the conceptual framework can be laid out as follows:

H₁: Service quality and customer satisfaction had significantly positive influenced on customer loyalty of the Bank for Agriculture and Agricultural Cooperatives in Roi Et area, Thailand.

H₂: Service quality had a significantly positive influenced on customer satisfaction of the Bank for Agriculture and Agricultural Cooperatives in Roi Et area, Thailand.

Figure1
Research Conceptual Framework



The research hypotheses can be explained in the forms of structural equations in order to show the relationship among variables and predict the dependent variable for hypotheses testing. The symbols used to represent the variables stated as follows:

SVQ = Service Quality
 CMS = Customer Satisfaction
 CML = Customer Loyalty

The structural equation can be described as follows:

$$\begin{aligned} \text{CML} &= \beta_1 \text{SVQ} + \beta_2 \text{CMS} \\ &\dots\dots\dots (1) \\ \text{CMS} &= \beta_3 \text{SVQ} \\ &\dots\dots\dots (2) \end{aligned}$$

RESEARCH METHODOLOGY

This research study aimed to investigate the influence of service quality and customer satisfaction on customer loyalty of the Bank for Agriculture and Agricultural Cooperatives in Roi Et area, Thailand. The research study was a quantitative research method. The population of this research was 215,032 bank customers registered with the Bank for Agriculture and Agricultural Cooperatives. The samples of 400 respondents were determined by using simple random sampling based on Taro Yamane formula. Data were collected through 5-point Likert scale questionnaire surveys [1]. This research study was cross-sectional as the data were collected at a single point of time from the key respondents. Content validity was applied to ensure the accuracy of an assessment tool. Cronbach's alpha was conducted to test for reliability with cronbach's alpha coefficient of service quality, customer satisfaction, and customer loyalty of 0.929, 0.930, and 0.896, respectively as shown in Table 1. The cronbach's alpha value of the scale of all variables is greater than 0.7, so it shows that the scale has very good reliability. Data were analyzed by descriptive statistics including frequency, percentage, mean, standard deviation; and inferential statistics including the Pearson's Product-Moment Correlation and Path Analysis. The research results can be significantly analyzed with 95% confidence interval.

Table 1
Cronbach alpha coefficient of variables

Variables	Cronbach's Alpha
Service Quality	0.929
Customer Satisfaction	0.930
Customer Loyalty	0.896

ANALYSIS OF DATA AND RESULTS OF THE STUDY

The research results were analyzed by using the statistical package for social science. The research finding and the hypotheses testing in this study were presented as follows.

For description of the respondents, the research finding showed that the survey data of the respondents were made up of 52.50% male. The averages ages of the respondent were between 41-50 years up to 30.80%. In terms of the marital status, the respondents were married of 68.50%. For the education, the respondents had earned primary school of 55.20%. They were farmer up to 81.00%. The average monthly income is amounted to less than 50,000 Baht up to 46.50% as stated in Table 2.

Table 2
The results of the first hypothesis testing

n = 400			
Demographic Information		Numbers of respondents (NR)	Percentage of NR to number of TR*
Sex	Male	210	52.50%
	Female	190	47.50 %
Age	Under 20 Years	5	1.20 %
	20-30 Years	31	7.80 %
	31-40 Years	69	17.20 %
	41-50 Years	123	30.80 %
	51-60 Years	114	28.50 %
	More Than 60 Years	58	14.50 %
Marital Status	Single	54	13.50 %
	Married	274	68.50 %
	Divorce	37	9.20 %
	Widow(er)	35	8.80 %
Education	Primary School	221	55.20 %
	Secondary School	68	17.00 %
	High School	63	15.80 %
	Diploma	15	3.80 %
	Bachelor's Degree	33	8.20 %
Career	Government Officer	10	2.50 %
	State Enterprise Officer	4	1.00 %
	Farmer	324	81.00 %
	Trade Owners	18	4.50 %
	Contractors	41	10.20 %
	Freelance	3	0.80 %
Monthly Income	Less Than 50,000 Bath	186	46.50%

	50,001–100,000 Bath	133	33.30%
	100,001–150,000 Bath	64	16.00%
	More Than 150,000 Bath	17	4.20%

* TR denotes total respondents.

For descriptive statistics, the collected data were analyzed by using means and standard deviation. The means score of customers' opinion on service quality, customer satisfaction, and customer loyalty were at the highest levels; mean of 4.46, 4.44, and 4.46, respectively. To explain in details; tangibility, trustworthiness, responsiveness, assurance, and empathy, means score were at 4.48, 4.51, 4.40, 4.45, and 4.48, respectively. In addition, convenience and coordination mean score were at 4.44 and 4.43, respectively. For information, courtesy, quality of care, and service cost, mean score were at 4.45.

For inferential statistics, in this research study, the analysis of the correlation coefficient between the two independent variables was explored. Pearson's Product-Moment Correlation was used to determine the relationship of the independent variables according to research conceptual framework. The objective was to find the magnitude of correlation among the variables. Path Analysis was used to test hypotheses in order to investigate the influence of service quality and customer satisfaction on customer loyalty. Multicollinearity was tested on predictor variables to avoid unreliable and unstable estimates of regression coefficients. Thus, correlation analysis between the independent variables was shown in Table 3.

Table 3
Correlation analysis between independent variables

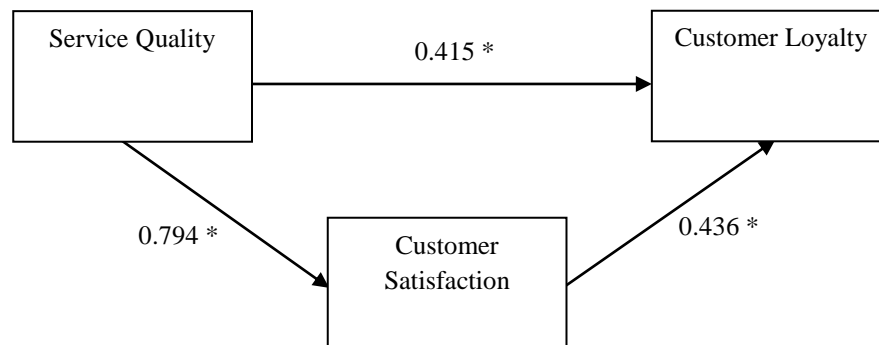
	SVQ	CMS	CML
Mean	4.46	4.44	4.46
S.D.	0.435	0.461	0.462
SVQ	1		
CMS	.794*	1	
CML	.762*	.766*	1
Adjusted R² = 64.90% SEE = 0.274			

**. Correlation is significant at the 0.05 level

Table 3 showed the relationship between the independent variables that correlation coefficients (r) are not exceed 0.80. As Hair *et al.* described the relationship between the variables that must be less than 0.80; if such relationship is more than 0.80, it may cause Multicollinearity [17]. This research study found that the relationship between the independent variables with the highest value was 0.794, in which it was not exceed 0.80. Multicollinearity problem was not found. Therefore, it can be tested by using Path Analysis, in which estimating linear models.

The research results from hypotheses testing on the influence of service quality and customer satisfaction on customer loyalty of the Bank for Agriculture and Agricultural Cooperatives in Roi Et area, Thailand were presented in the forms of path diagram as showed in Figure 2.

Figure 2
Research Results



In addition, the research results from hypotheses testing can be depicted in the following structural equations as presented below:

$$\begin{aligned}
 \text{CML} &= 0.415 \text{ SVQ} + 0.436 \text{ CMS} \\
 &\dots\dots\dots (3) \\
 &\quad\quad\quad (8.511) \quad (8.939) \\
 \text{CMS} &= 0.794 \text{ SVQ} \\
 &\dots\dots\dots (4) \\
 &\quad\quad\quad (26.038)
 \end{aligned}$$

The hypotheses testing found that service quality and customer satisfaction can explain the variation of customer loyalty up to 64.90% (Adjusted R-Square 0.694) at 0.05 significant level. Service quality and customer satisfaction had statistically significant positive influenced on customer loyalty with standardized coefficients (β) of 0.415 and 0.436, respectively. Service quality had a statistically significant positive influenced on customer satisfaction with standardized coefficients (β) of 0.794. The measurement factors of service quality and customer satisfaction should be further investigated to find the most impact. The symbols used to represent the predictors stated as follows:

SVQ1 = Tangibility	CMS1 = Convenience
SVQ2 = Trustworthiness	CMS2 = Coordination
SVQ3 = Responsiveness	CMS3 = Information
SVQ4 = Assurance	CMS4 = Courtesy
SVQ5 = Empathy	CMS5 = Quality of Care
CML = Customer Loyalty	CMS6 = Service Cost

The research results of measurement factors showed the statistically significant positive influenced of assurance, empathy, tangibility, and responsiveness on customer loyalty with standardized coefficients (β) of 0.330, 0.231, 0.166, and 0.158, respectively. Furthermore, service cost, convenience, coordination, quality of care, and information had statistically significant positive influenced on customer loyalty with standardized coefficients (β) of 0.216, 0.207, 0.177, 0.156, and 0.114, respectively as presented in the forms of structural equations below:

$$\text{CML} = 0.330 \text{ SVQ4} + 0.231 \text{ SVQ5} + 0.166 \text{ SVQ1} + 0.158 \text{ SVQ3}$$

..... (5)

(7.113) (4.610) (3.418) (3.478)

$$\text{CML} = 0.216 \text{ CMS6} + 0.207 \text{ CMS1} + 0.177 \text{ CMS2} + 0.156 \text{ CMS5} + 0.114 \text{ CMS3}$$

..... (6)

(4.745) (4.683) (3.577) (3.040) (2.319)

In conclusion, according to hypotheses testing, service quality and customer satisfaction had significantly influenced on customer loyalty of the Bank for Agriculture and Agricultural Cooperatives in Roi Et area, Thailand providing management to focus on these critical factors in order to promote customer loyalty.

CONCLUSIONS AND FUTURE WORK

This research study aimed to investigate the influence of service quality and customer satisfaction on customer loyalty of the Bank for Agriculture and Agricultural Cooperatives in Roi Et area, Thailand. The results shown that service quality and customer satisfaction had significantly influenced on customer loyalty. Thus, the following suggestions from the research results can be applied as management guidelines. Firstly, service quality seems to be very critical success factor to raise customer satisfaction and keep targeted customer in the long run for financial institution in Thailand. To increase satisfaction of the customer, empathy, tangibility, assurance, and responsiveness should be strengthening. Secondly, most customer satisfaction dimensions, except for courtesy can enhance customer loyalty in the long run. Thirdly, financial institution in Thailand should focus on assurance, empathy, tangibility, and responsiveness in order to increase customer loyalty. To conclude, service quality and customer satisfaction had significantly influenced on customer loyalty of the Bank for Agriculture and Agricultural Cooperatives in Roi Et area, Thailand. However, there are many other factors that can be expected to promote customer loyalty such as corporate image, service environment, or motivation for further research.

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Bank Product and Behavioral Factors Influencing on Outstanding Loan Creation of the People's Bank Project of Government Savings Bank, Thailand

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ABSTRACT

The People's Bank Project of Government Savings Bank was established by Thai government to provide small scale financing, especially for retail businesses. Appropriate credit granting and good credit discipline with on time repayment are most critical factors to avoid outstanding loan and finally, non-performing loan. The financial institutions including Government Savings Bank in Buengkan Region have realized the key factors on credit management in order to decrease bad debt in the long run. This research study aimed to investigate bank product factors and behavioral factors influencing on outstanding loan creation of the People's Bank Project of Government Savings Bank in Buengkan Region in Thailand. The research study was a quantitative research method. The population of this research was the outstanding loan's customers with the samples of 283 respondents determined by using stratified random sampling, and then simple random sampling based on Taro Yamane (1973) formula[1]. Data were collected through 5-point Likert scale questionnaire surveys. Cronbach's Alpha was conducted to test for reliability with cronbach's alpha coefficient of behavioral factors and outstanding loan creation of 0.943 and 0.905, respectively. Data were analyzed by descriptive statistics including frequency, percentage, mean, and standard deviation; and inferential statistics including One-way ANOVA, the Pearson's Product-Moment Correlation and Stepwise Multiple Regression Analysis.

The results of this research study showed that customers' opinion on behavioral factors was at a high level with mean of 3.43 and on outstanding loan creation was at a moderate level with mean of 3.05. The research results from hypothesis testing found that behavioral factors can explain the variation of outstanding loan creation up to 38.10% (Adjusted R-Square 0.381) at 0.05 significant level. There are statistically significant differences of the bank product factors on outstanding loan creation. The behavioral factors had statistically significant positive influence on outstanding loan creation with standardized coefficients (β) of 0.546. Family economic management, technique and farming patterns, and professional knowledge and skills had significantly influenced on outstanding loan creation of the People's Bank Project of Government Savings Bank in Buengkan Region with standardized coefficients (β) of 0.610, 0.148, -0.140, respectively. Consequently, bank management team has to pay attention on providing specific product and concentrate on customer behavior in order to avoid outstanding loan creation.

Keywords– Bank Product Factor, Behavioral Factor, Outstanding Loan Creation

INTRODUCTION

Financial institution; including the Government Savings Bank (GSB), is one of the important mechanism in economics in which established under the Ministry of Finance. This specialized financial institution provides small scale financing and enhances working capital in the community. Many projects have been launched to support the credit granting for farmers; such as the People's Bank Project, and all banks need to monitor the ability to repay as this factor is one of the critical key successes of the bank. Appropriate bank product development in compatible with the new context has reduced the potential on

outstanding loan creation in the 21st competitive arena. The ability of the bank on credit analysis and debt management is necessary to decrease outstanding debt problem in the long run. Thus, in order to control outstanding loan creation of the People's Bank Project, financial institution including the Government Savings Bank in Buengkan region in Thailand has launched many guidelines to understand customer credit behavior and provide specific bank product. Although the influence of behavioral factors on outstanding loan creation is well explored, contexts of the People's Bank Project that explain the specific financial institution remain question. The importance of the above reasons is the cause of the research.

The objectives of this research are as follows. (1) To investigate the level of behavioral factors and outstanding loan creation of the People's Bank Project of Government Savings Bank in Buengkan Region, Thailand. (2) To explore the difference of bank product on outstanding loan creation of the People's Bank Project of Government Savings Bank in Buengkan Region, Thailand. (3) To investigate the influence of behavioral factors on outstanding loan creation of the People's Bank Project of Government Savings Bank in Buengkan Region, Thailand. (4) To apply the results of the research study as guidelines for determining the strategies in providing appropriate credit analysis of the People's Bank Project in Thailand. The paper begins with a review of the concepts related to bank product factors and behavioral factors affecting on outstanding loan creation in order to conceptualize the model and hypotheses. Next, the research methodology, analysis of data and findings are presented. Finally, conclusion and discussion of the research results as well as managerial implications and suggestions for future research are described.

LITERATURE REVIEW

Outstanding Loan Creation

The reviews of the relevant literatures provide the meanings of outstanding loan as stated in many researches. The investopedia defines outstanding balance as "the unpaid, interest-bearing balance of a loan or loan portfolio averaged over a period of time, usually one month." The inability to pay of bank customers practically bring about non-performing loan in the long run. This research had applied the concept of the 5 C's of credit considering when the bank had received a request for loan from the bank customer and this concept is a common reference to the major elements of the banker's analysis. The five C's of credit is a system implemented by banks to analyze the creditworthiness of potential borrowers. The system uses five characteristics of the borrower and conditions of the loan, predicting the chance of credit default. The 5 C's of credit namely, cash flow capacity, collateral, capital, character, and conditions (Grammenos[2], C.T., 2002; Abrahams[4], C.R. and Zhang[4], M., 2008[4]), is very important to the bank. This concept of overdue loans generally uses to consider customer credit such as financial liquidity, ability of expense control, debt capacity, and business ability in order to determine the credit approval. The bank considers enough capacity of cash flow to repay the loan, appropriate assets as collateral, sufficient equity for failure protection, personal character as the assurance for loan granting, and finally, economic condition that affects capability to loan management. It can be seen that the 5 C's of credit is well-known guideline for credit analysis (Yang, Y.C. and Pin Liu, H., 2016) [9]. The ability of the bank on debt management and credit analysis is necessary to reduce outstanding debt problem in the long run. The credit granting to the bank customer needs to be carefully considered; however, outstanding loan or unable to repay debt still occurs due to many factors such as bank product, rule and regulation, customer behavior, and external factors. As many research studies show that there are the relationship among bank product factors, behavioral factors, and outstanding loan creation; this study aimed to investigate such relationship.

Bank Product Factors

Banking products are financial products providing to targeted customers of financial institutions. Commercial banks have shown variety interests in marketing their products or services to their customers more effectively. (Kaynak, E. and Harcar, T. 2005.)[3]. There are many types of financial products such as deposit, transactional accounts, mortgages, loans, debit and credit cards. The Government Savings Bank (GSB), one of the important mechanism in economics, is specialized financial institution provides small scale financing and loan granting for the community. In this research, credit analysis of loan granting and personal character of loan requisition have been considered. Loanable funds theory has developed to

describe this credit granting concept. Bank loan practically charges the interest rate in which determined by the demand for loans and the supply of loans (Jiranthorn Techvanich, 2009)[5]. The conceptual framework of this research was applied the five elements of loan banking products described as follows; (1) loan approved limit, (2) loan proposal, (3) repayment period, (4) terms of monthly installment, and (5) guarantee securities. As many previous studies show that there are the relationship between bank product and outstanding loan creation; as a results, this study aimed to investigate such relationship.

Behavioral Factors

Consumer behavior in banking has definitely been in a transition in recent years. It's important to understand customer behavior and having a suitable known of customers' actions and needs are essential for making key decisions related to product development and loan granting. Bank behavior is one important determinant of credit developments. However, today customer behavior is often more complex than that in the past. The banks are defining strategies and the way in which banks adapt their products and services to the clients' needs in order to attract potential and to retain existing customers (Westerman, G. et al., 2012)[7]. No rational lender would grant a loan that will certainly not be repaid (Livshits, I., 2015)[8]. The ability to provide more specialized and targeted product to banking customers decreases outstanding loan creation. The conceptual framework of this research was used behavioral factors analyzed from many previous researches in which the behavioral factors further characterized by six components as follows: (1) professional knowledge and skills, (2) household debt management, (3) family economic management, (4) living habits and environment, (5) technique and farming patterns, and (6) government service accessibility. The bank needs to carefully considering the customer behavior in order to understand the potential of outstanding loan creation and to reduce the expected non-performing loan. From the literature reviews, it was seen that there are some relationship among these three variables to further explore and conceptualize in the conceptual model with hypotheses development.

CONCEPTUAL MODEL AND HYPOTHESES

From the reviews of the literature, the conceptual model of this research study was presented in figure 1. It shows the difference of bank product factors and the influence of behavioral factors on outstanding loan creation of the People's Bank Project of Government Savings Bank in Buengkan Region, Thailand. The model has been tested on the basis of the bodies of literature including bank product, customer behavior and outstanding loan creation, cited above, as well as the res The on the reviews of the literature of the constructs with the conceptualization of the relationships among variables, the hypotheses suggested by the conceptual model can be described as follows:

H₁: Bank product factors had significant differenced on outstanding loan creation of the People's Bank Project of Government Savings Bank in Buengkan Region, Thailand.

H₂: Behavioral factors had positive influenced on outstanding loan creation of the People's Bank Project of Government Savings Bank in Buengkan Region, Thailand.

The research hypotheses can be explained in the forms of structural equations in order to show the relationship among variables and predict the dependent variable. The symbols used to represent the variables stated as follows:

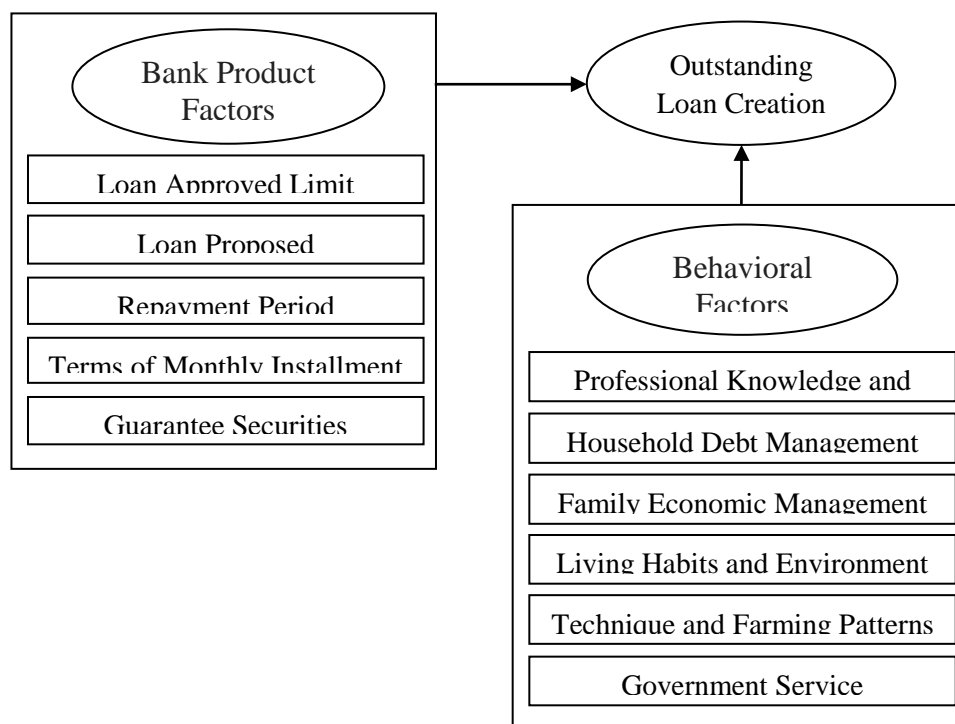
BV1	=	Professional Knowledge and Skills
BV2	=	Household Debt Management
BV3	=	Family Economic Management
BV4	=	Living Habits and Environment
BV5	=	Technique and Farming Patterns
BV6	=	Government Service Accessibility
OLC	=	Outstanding Loan Creation

The structural equation can be described as follows:

$$OLC = \beta_1 BV1 + \beta_2 BV2 + \beta_3 BV3 + \beta_4 BV4 + \beta_5 BV5 + \beta_6 BV6 \quad \dots\dots\dots (1)$$

Figure1

Research Conceptual Framework



RESEARCH AND METHODOLOGY

This research study aimed to investigate bank product factors and behavioral factors influencing on outstanding loan creation of the People's Bank Project of Government Savings Bank in Buengkan Region in Thailand. The research study was a quantitative research method. The population of this research was 966 bank loan customers with 1-3 months overdue debt in the People's Bank Project of the Government Savings Bank in Buengkan Region. The samples of 283 respondents were determined by using stratified random sampling, and then simple random sampling based on Taro Yamane (1973)[1] formula. Data were collected through 5-point Likert scale questionnaire surveys. This research study was cross-sectional as the data were collected at a single point of time from the key respondents. Cronbach's alpha coefficient of behavioral factors and outstanding loan creation of 0.943 and 0.905, respectively as shown in Table 1. The cronbach's alpha value of the scale of all variables is greater than 0.7, so it shows that the scale has very good reliability. Content validity was conducted for scale measurement. Data were analyzed by descriptive statistics including frequency, percentage, mean, standard deviation; and inferential statistics including One-way ANOVA, the Pearson's Product-Moment Correlation and Stepwise Multiple Regression Analysis and Path Analysis. The research results can be significantly analyzed with 95% confidence interval.

Table 1
Cronbach alpha coefficient of variables

Variables	Cronbach's Alpha
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Behavioral Factors	0.943
Outstanding Loan Creation	0.905

ANALYSIS OF DATA AND RESULTS OF THE STUDY

The research finding and the hypotheses testing in this study were described as follows. For description of the respondents, the research finding showed that the survey data of the respondents were made up of 66.80% female. The averages ages of the respondent were between 31-40 years up to 37.10%. In terms of the marital status, the respondents were married of 58.70%. For the education, the respondents had earned Bachelor's Degree of 54.40%. They were State Enterprise Officer up to 30.80%. The average monthly income is between 10,001-20,000 Baht up to 45.90%. For frequency of credit requisition, the respondents proposed 2-3 years before due date or 28.30% and most of them had outstanding loan period not more than 1 month up to 43.10% as stated in Table 2.

Table 2
The results of the first hypothesis testing

Demographic Information		Numbers of respondents (NR)	Percentage of NR to number of TR*
Sex	Male	94	33.20%
	Female	189	66.80 %
Age	Under 20 Years	50	17.70 %
	20-30 Years	105	37.10 %
	31-40 Years	74	26.20 %
	41-50 Years	27	9.50 %
	51-60 Years	27	9.50 %
	More Than 60 Years	52	18.40 %
Marital Status	Single	166	58.70 %
	Married	40	14.10 %
	Divorce	25	8.80 %
	Widow(er)	51	18.00 %
Education	Primary School	61	21.60 %
	Secondary School	154	54.40 %
	High School	17	6.00 %
	Diploma	53	18.70 %
	Bachelor's Degree	87	30.80 %
Career	Government Officer	39	13.80 %
	State Enterprise Officer	10	3.50 %
	Farmer	10	3.50 %
	Trade Owners	84	29.70 %
	Contractors	50	17.70 %
	Freelance	105	37.10 %
Monthly Income	Not More Than 10,000 Bath	19	6.70%
	10,001–20,000 Bath	130	45.90%
	20,001–30,000 Bath	34	12.00%
	30,001–40,000 Bath	83	29.40%
	40,001–50,000 Bath	17	6.00%

Table 2-continue

Demographic Information		Numbers of respondents (NR)	Percentage of NR to number of TR*
Frequency of Credit Requisition	1 Year Before Due Date	10	3.50%
	2-3 Years Before Due Date	80	28.30%
	4-5 Years Before Due Date	35	12.40%
	6 Years Up Before Due Date	28	9.90%
	Due Date	130	45.90%
Outstanding Loan Period	Not More Than 1 Month	122	43.10%
	1-5 Months	96	34.00%
	6-11 Months	15	5.30%
	12-23 Months	10	3.50%
	24-35 Months	40	14.10%

* TR denotes total respondents.

For descriptive statistics, the collected data were analyzed by using means and standard deviation. The means score of behavioral factors including professional knowledge and skills, household debt management, family economic management, living habits and environment, technique and farming patterns, and government service accessibility were at moderate to high levels; mean of 3.47, 3.45, 3.38, 3.32, 3.34, and 3.62, respectively. In addition, outstanding loan creation means score was at moderate level with mean of 3.05.

For inferential statistics, the analysis of the correlation coefficient between the independent variables was explored. Pearson's Product-Moment Correlation was used to determine the relationship of the independent variables according to research conceptual model. The objective was to find the magnitude of correlation among the variables. Stepwise Multiple Regression Analysis was used to test hypotheses in order to investigate the influence of behavioral factors on outstanding loan creation. Multicollinearity was tested on predictor variables to avoid unreliable and unstable estimates of regression coefficients. Thus, correlation analysis between the independent variables was shown in Table 3.

Table 3
Correlation analysis between independent variables

	BV1	BV2	BV3	BV4	BV5	BV6	OLC
Mean	3.47	3.45	3.38	3.32	3.34	3.62	3.05
S.D.	0.747	0.700	0.815	0.904	0.903	0.869	0.727

BV1	1						
BV2	0.678*	1					
BV3	0.733*	0.795*	1				
BV4	0.675*	0.630*	0.562*	1			
BV5	0.458*	0.691*	0.650*	0.772*	1		
BV6	0.135*	0.381*	0.465*	0.430*	0.630*	1	
OLC	0.376*	0.507*	0.604*	0.378*	0.481*	0.309*	1
Adjusted R² = 38.10% SEE = 0.572							

*. Correlation is significant at the 0.05 level

Table 3 showed the relationship between the independent variables that correlation coefficients (r) are not exceed 0.80. As Hair *et al.* (2010)[6] described the relationship between the variables that must be less than 0.80; if such relationship is more than 0.80, it may cause Multicollinearity. This research study found that the relationship between the independent variables with the highest value was 0.795, in which it was not exceed 0.80. Multicollinearity problem was not found. Therefore, it can be tested by using Stepwise Multiple Regression Analysis, in which estimating linear models.

The research results from hypotheses testing on differences of the bank product factors on outstanding loan creation of the People's Bank Project of Government Savings Bank in Buengkan Region, Thailand were presented in Table 4.

Table 4
Differences of bank product factors on outstanding loan creation

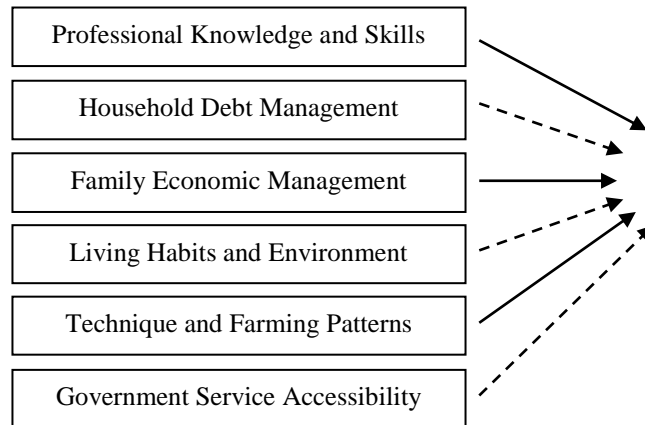
Variable	Bank Product Factors	F	Sig.
Outstanding Loan Creation	Loan Approved Limit	3.653	0.013*
	Loan Proposed	3.573	0.029*
	Repayment Period	55.490	0.000*
	Terms of Monthly Installment	15.923	0.000*
	Guarantee Securities	7.745	0.000*

*. Significant at the 0.05 level

In addition, the research results from hypotheses testing on the influence of behavioral factors on outstanding loan creation of the People's Bank Project of Government Savings Bank in Buengkan Region, Thailand were presented in the forms of diagram as showed in Figure 2.

Figure 2
Research Results





In addition, the research results from hypotheses testing can be depicted in the following structural equations as presented below:

$$\text{OLC} = 0.610 \text{ BV3} + 0.148 \text{ BV5} - 0.140 \text{ BV1} \quad \dots\dots\dots (2)$$

(7.574) (2.407) (-2.027)

The hypotheses testing found that behavioral factors can explain the variation of outstanding loan creation up to 38.10% (Adjusted R-Square 0.381) at 0.05 significant level. Family economic management and technique and farming patterns had statistically significant positive influenced on outstanding loan creation with standardized coefficients (β) of 0.610 and 0.148, respectively. Professional knowledge and skills had a statistically significant negative influenced on outstanding loan creation with standardized coefficients (β) of -0.140 due to insufficient knowledge and skill providing by the bank[1].

In conclusion, according to hypotheses testing, there are statistically significant differences of the bank product factors on outstanding loan creation of the People's Bank Project of Government Savings Bank in Buengkan Region, Thailand and behavioral factors had significantly influenced on outstanding loan creation of the People's Bank Project of Government Savings Bank in Buengkan Region, Thailand leading the bank to provide appropriate banking product and consider customer behavior in order to decrease outstanding loan creation and finally reduce non-performing loan.

CONCLUSIONS AND FUTURE WORK

This research study aimed to investigate bank product factors and behavioral factors influencing on outstanding loan creation of the People's Bank Project of Government Savings Bank in Buengkan Region, Thailand. Bank product factors had significantly differenced on outstanding loan creation and behavioral factors had significantly influenced on outstanding loan creation of the People's Bank Project of Government Savings Bank in Buengkan Region, Thailand. Thus, the following suggestions from the research results can be used as guidelines. Firstly, outstanding loan creation seems to be varied by bank product. In order to reduce outstanding loan and finally, non-performing loan, the bank needs to provide suitable credit product to customer, especially for the People's Bank Project of Government Savings Bank. Secondly, the Government Savings Bank in Buengkan Region, Thailand should concentrate on customer behavior, especially for family economic management, technique and farming patterns, and professional knowledge and skills in order to decrease outstanding loan creation in the long run. The research results can be used as guidelines for improving the bank policy and quality of credit services effectively and efficiently. These valuable results will be beneficial to the Government Savings Bank.

To conclude, bank product factors and behavioral factors had statistically significant influenced on outstanding loan creation of the People's Bank Project of Government Savings Bank in Buengkan Region,

Thailand. However, there are many other factors that can be expected to affect outstanding loan creation such as bank service quality or external environment factor for further research.

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Job Characteristic and Work Experience Factors Influencing on Organizational Commitment of the Provincial Office of the Auditor General of Thailand (OAG) Staffs

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ABSTRACT

The Office of the Auditor General of Thailand (OAG), as the government agency, is responsible for auditing government accounts and performing financial audits to assessment of economy, efficiency, and effectiveness. The integrity, professional and accountability in job are indicators of staff's responsibilities; therefore, job characteristic and work experience of staffs are most important factors to enhance their performance, increase job satisfaction, reduce staff turnover rate, and finally, promote organizational commitment in the long run. This research study aimed to investigate job characteristic factors and work experience factors influencing on organizational commitment of the Provincial Office of the Auditor General of Thailand (OAG) staffs in the Northeastern region. The research study was a quantitative research method. The population of this research was the Provincial Office of the Auditor General of Thailand (OAG) staffs with the samples of 207 respondents determined by using stratified random sampling, and then simple random sampling based on Taro Yamane formula [2]. Data were collected through 5-point Likert scale questionnaire surveys. Cronbach's alpha was conducted to test for reliability with cronbach's alpha coefficient of job characteristics, work experience, and organizational commitment of 0.946, 0.936, and 0.964, respectively. Data were analyzed by descriptive statistics including frequency, percentage, mean, standard deviation; and inferential statistics including the Pearson's Product-Moment Correlation and Multiple Regression Analysis.

The results of this research study showed that staffs' opinion on job characteristic factors, work experience factors, and organizational commitment were at high levels; mean of 3.90, 3.78, and 4.17, respectively. The results from hypothesis testing found that job characteristic and work experience factors can explain the variation of organizational commitment up to 57.70% (Adjusted R-Square 0.577) at 0.05 significant level. Job characteristic and work experience factors had statistically significant positive influenced on organizational commitment with standardized coefficients (β) of 0.429 and 0.384, respectively. The results of analysis in each dimension shown that opportunity for interaction, job identification, and task feedback had statistically significant positive influenced on organizational commitment with standardized coefficients (β) of 0.508, 0.205, and 0.189, respectively. Personal importance, organization dependence, and group attitude had statistically significant positive influenced on organizational commitment with standardized coefficients (β) of 0.397, 0.290, and 0.166, respectively. In conclusion, job characteristic factors and work experience factors had significantly influenced on organizational commitment of the Provincial Office of the Auditor General of Thailand (OAG) staffs in the Northeastern region providing management to focus on these critical factors in order to promote organizational commitment.

Keywords– Job Characteristic Factors, Work Experience Factors, Organizational Commitment

INTRODUCTION

As the government agency, the Provincial Office of the Auditor General of Thailand (OAG) plays important roles and duties in financial audit. With the specific job characteristic and highly responsible task, government staffs are one of the key success factors that will enable the organization to achieve its goals. As the dynamic changes in the workplace, knowledge economy, innovative technologies and government policy, these challenges require higher level of skill, experience, flexibility and willingness on the part of the staffs [16]. To be smart and efficient government staffs, they need to use both their knowledge and skills to perform their task. As the nature of the audit work is related to laws and orders, rules and regulations, government documents, and coordination with various parties, staffs have faced with stress and excessive workload. Therefore, staff management seems to be very significant for reducing the incidence of turnover, job hopping, and resignation. In order to continually sustain staffs within the organization, government agency aims at exploring key factors that enhance organizational commitment in the long run. Although, organization aims at increasing commitment and the influence of critical factors on organizational commitment is well explored, the variables of job characteristic and work experience that explain such relationship remain unclear, especially for special government agency. The importance of the above reasons is the cause of the research.

The objectives of this research are as follows. (1) To investigate the level of job characteristic factors, work experience factors, and organizational commitment of the Provincial Office of the Auditor General of Thailand (OAG) staffs in the Northeastern region. (2) To explore the influence of job characteristic factors and work experience factors on organizational commitment of the Provincial Office of the Auditor General of Thailand (OAG) staffs in the Northeastern region. (3) To apply the results of this research study as guidelines for human resource management of government agency. The paper begins with a review of the concepts related to the job characteristics and work experience factors influencing on organizational commitment in order to conceptualize the model and develop the hypotheses. Next, the research methodology, analysis of data and findings are presented. Finally, conclusion and discussion of the research results along with managerial implications and suggestions for future research are described.

LITERATURE REVIEW

Job Characteristics

The Definitions of job characteristics from the literature reviews are documented in many studies. Job characteristics refer to an individual's general appraisal of the job role; job demands and job resources, to meet role expectations [8]. Piya Tongjarean has defined the job characteristics as the type of duty assigned to accomplish the task consisting of task autonomy, task diversity, and task progress opportunity [9]. In addition, Chatnapha Tilakul has defined the job characteristics as the nature of work performed based on the model [12], of Richard Hackman and Greg Oldham which defines five core job characteristics; task identity, task significance, skill variety, autonomy and feedback, these facets of work have the potential to motivate staffs [3],[4]. Salami, S.O. and Ajitoni, S.O. stated that skill variety is the degree to which a task requires performance of different activities and the use of various skills and talents. Task identity is the degree to which the job requires performing the whole process from the starting to the end with distinct outcome. Task significance is the degree of task effect on the work of other staff in the organization or outside it. Autonomy is the degree to which the task provides substantial freedom and independence to the individual in planning the work and determining the procedure to be used in carrying it out. Feedback is the extent to which the task provides information on how effective or ineffective the individual is performing [18]. As job characteristics influence personal and positive work outcomes; it is, therefore, expected that the five job characteristics will decrease burnout [4], reduce work absenteeism, job dissatisfaction, and resignation [16]. This paper had applied job characteristic model; job autonomous, skill variety, job identification, task feedback, and opportunity for interaction, adapted to the government agency context. Furthermore, this research study had explored the relationship between job characteristics and organizational commitment as job characteristics have been presented to act as antecedents of organizational commitment [6],[14];

consequently, this study aimed to investigate such relationship in the Provincial Office of the Auditor General of Thailand (OAG).

Work Experience

The reviews of the relevant literatures conceptualized the meanings of work experience as stated in many previous researches. Pirincha Samansin has defined work experience as what a person knows and learns when they enter the organization [11]. While Thitima Luktong has defined work experience as the working conditions that a worker receives, including the following dimensions; the sense that he or she is important to the organization, the feeling that the organization is dependable, the attitudes toward colleagues and organizations, and the expectations for organizational responses [15]. In addition, Thanarat Natong has defined work experience as the feeling of the employees in working for years in their position with the ability and expertise in the job. It includes the feeling of staffs on importance to the organization, the feelings of dependable of organization, the reliability and reputation of the organization, and the relationship with colleagues [13]. Work experience plays a crucial role in the process of job performance. Staffs with more experience in the current organization are expected to have lesser intention to quit their job. This paper had applied work experience model; group attitude, organization response, personal important, and organization dependence, adapted to the government agency context. The presence of experience with the current organization is expected to strengthen the work engagement and organizational commitment as the experience of working has highly influenced on job involvement [19]. As many previous studies show that there are the relationship between work experience and organizational commitment [17],[19]; as a results, this study aimed to investigate such relationship.

Organizational Commitment

The concept of organizational commitment is very well-known in human resource management and this topic is one of the famous variables investigating in management field. Kanter, R.M. organizational commitment as the cooperative types of behaviors and attitudes conceptualized as the willingness of staffs to cooperation [1]. Allen, N. J., and Meyer, J. P. has been defined organizational commitment as a psychological binding a staff to an organization. The findings from previous researches show that organizational commitment is correlated with the rate of absence, productivity, performance, and quality of work. It highly links to absence and resignation of staffs. The survey of employee attitudes found that the employees without organizational commitment always not satisfied with their job and personal lives as well. Thus, organizational commitment seems to be critical variable in management study [7]. This research had applied the organizational commitment based on the concept of Mowday, R., Porter, L., and Steers, R. in which characterized organizational commitment by three components as stated follows; (1) a strong belief in and acceptance of the organization's goals and values, (2) a willingness to focus effort on helping the organization to achieve its goals, and (3) a strong desire to maintain membership in the organization. From the literature reviews, it can be seen that there are some relationship among these three variables to further investigate and conceptualize in the conceptual model with hypotheses development [5].

CONCEPTUAL MODEL AND HYPOTHESES

From the reviews of the literature, the conceptual model of this research study was presented in figure 1. It described the influence of job characteristic and work experience factors on organizational commitment of the Provincial Office of the Auditor General of Thailand (OAG) staffs in the Northeastern region. The conceptual model has been tested on the basis of the bodies of literature including job characteristic factors, work experience factors and organizational commitment, cited above, as well as the researcher's own context about the relationship among variables.

Base on the reviews of the literature of the frameworks with the conceptualization of the relationships among variables, the hypotheses suggested by the conceptual model can be explained as follows:

H₁: Job characteristic factors had positive influenced on organizational commitment of the Auditor General of Thailand (OAG) staffs in the Northeastern region.

H₂: Work experience factors had positive influenced on organizational commitment of the Auditor General of Thailand (OAG) staffs in the Northeastern region.

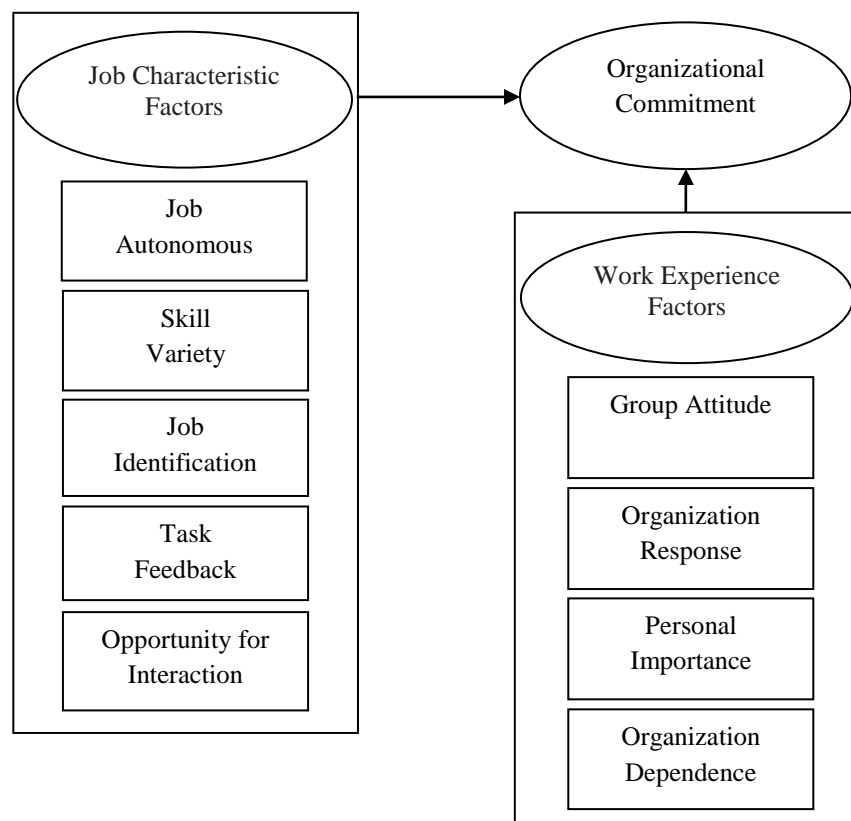
The research hypotheses can be described in the forms of structural equations in order to show the relationship among variables and predict the dependent variable for hypotheses testing. The symbols used to represent the variables stated as follows:

JCF = Job Characteristic Factors
 WEF = Work Experience Factors
 ORC = Organizational Commitment

The structural equation can be described as follows:

$$ORC = \beta_1 JCF + \beta_2 WEF \quad \dots\dots\dots (1)$$

Figure 1
Research Conceptual Framework



RESEARCH AND METHODOLOGY

This research study aimed to investigate job characteristic factors and work experience factors influencing on organizational commitment of the Provincial Office of the Auditor General of Thailand (OAG) staffs in the Northeastern region. The research study was a quantitative research method. The population of this research was the Provincial Office of the Auditor General of Thailand (OAG) staffs with the samples of 207 respondents determined by using stratified random sampling, and then simple random sampling based on Taro Yamane formula [2]. Data were collected through 5-point Likert scale questionnaire surveys. This research study was cross-sectional as the data were collected at a single point of time from the key respondents. Cronbach's alpha was conducted to test for reliability with cronbach's alpha coefficient of job characteristic, work experience, and organizational commitment of 0.946, 0.936, and 0.964, respectively as shown in Table 1. The cronbach's alpha value of the scale of all variables is greater than 0.7, so it shows that the scale has very good reliability. Data were analyzed by descriptive statistics including frequency,

percentage, mean, standard deviation; and inferential statistics including the Pearson's Product-Moment Correlation and Multiple Regression Analysis. The research results can be significantly analyzed with 95% confidence interval.

Table 1
Cronbach alpha coefficient of variables

Variables	Cronbach's Alpha
Job Characteristic Factors	0.946
Work Experience Factors	0.936
Organizational Commitment	0.964

ANALYSIS OF DATA AND RESULTS OF THE STUDY

The research results were analyzed by using the statistical package for social science. The research finding and the hypotheses testing in this study were described as follows.

For description of the respondents, the research finding showed that the survey data of the respondents were made up of 76.30% female. The averages ages of the respondent were between 30-40 years up to 69.10%. For the education, the respondents had earned Bachelor's degree or below of 55.10%. In terms of the marital status, the respondents were single of 61.40%. They work for the Department of Provincial Audit Office up to 61.40% as Knowledge Worker of 93.20%. For government position level, they are practitioner up to 59.40%. They work here for less than 5 years up to 60.90%. The average monthly income is amounted to 25,001 – 35,000 Baht up to 41.10% as stated in Table 2.

For descriptive statistics, the collected data were analyzed by using means and standard deviation. The means score of staffs' opinion on job characteristic factors, work experience factors, and organizational commitment were at high levels; mean of 3.90, 3.78, and 4.17, respectively. To explain in details; job autonomous, skill variety, job identification, task feedback, and opportunity for interaction, means score were at 3.73, 3.99, 3.93, 3.72, and 4.14, respectively. In addition, group attitude, organization response, personal importance and organization dependence mean score were at 3.94, 3.75, 3.86, and 3.58, respectively.

For inferential statistics, in this research study, the analysis of the correlation coefficient between the two independent variables was explored. Pearson's Product-Moment Correlation was used to determine the relationship of the independent variables according to research conceptual model. The objective was to find the magnitude of correlation among the variables. Multiple Regression Analysis was used to test hypotheses in order to investigate the influence of job characteristic factors and work experience factors on organizational commitment. Multicollinearity was tested on predictor variables to avoid unreliable and unstable estimates of regression coefficients. Thus, correlation analysis between the independent variables was shown in Table 3. The result found that correlation coefficients (r) are not exceed 0.80. As Hair stated the relationship between the variables that must be less than 0.80; if such relationship is more than 0.80, it may cause Multicollinearity. This research found that the relationship between the independent variables with the highest value was 0.755, in which it was not exceed 0.80. Multicollinearity problem was not found. Therefore, it can be tested by using Multiple Regression Analysis [10].

Table 2

Description of the respondents

Demographic Information		Numbers of respondents (NR)	Percentage of NR to number of TR*
Sex	Male	49	23.70%
	Female	158	76.30%

Table 2-continue

Demographic Information		Numbers of respondents (NR)	Percentage of NR to number of TR*
Age	Under 30 Years	39	18.80%
	30-40 Years	143	69.10%
	41-50 Years	18	8.70%
	More Than 50 Years	7	3.40%
Education	Bachelor's Degree or Below	114	55.10%
	Master Degree or Above	93	44.90%
Marital Status	Single	127	61.40%
	Married	74	35.70%
	Divorce	6	2.90%
Department	Special Audit Office	80	38.60%
	Provincial Audit Office	127	61.40%
Position Category	Knowledge Worker	193	93.20%
	General Worker	14	6.80%
Government Position Level	Practitioner	123	59.40%
	Professional	67	32.40%
	Senior Professional	3	1.40%
	Operational	14	6.80%
Number of Years in Work	Less Than 5 Years	126	60.90%
	5-10 Years	48	23.20%
	11-15 Years	22	10.60%
	More Than 15 Years	11	5.30%
Monthly Income	Less Than 15,000 Baht	4	1.90%
	15,000-25,000 Baht	84	40.60%
	25,001-35,000 Baht	85	41.10%
	More Than 35,000 Baht	34	16.40%

* TR denotes total respondents.

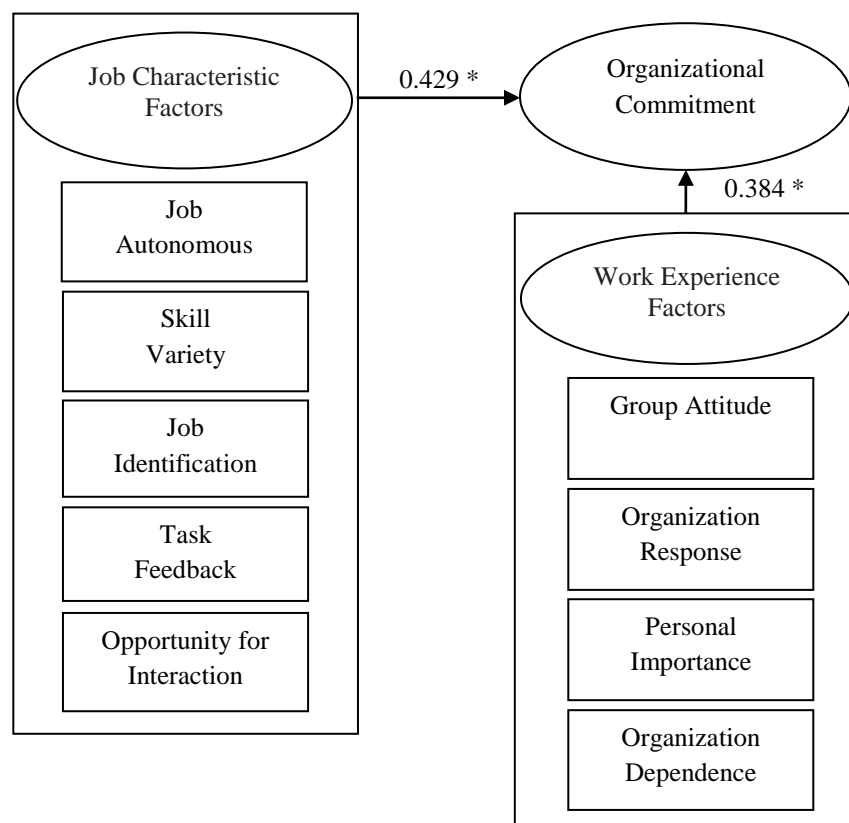
Table 3
Analysis between independent variables

	BV1	BV2	BV3
Mean	3.47	3.45	3.38
S.D.	0.747	0.700	0.815
JCF	1		
WEF	0.755*	1	
ORC	0.719*	0.708*	1
Adjusted R ² = 57.70% SEE = 0.376			

*. Correlation is significant at the 0.05 level

The research results from hypotheses testing on the influence of job characteristic factors and work experience factors on organizational commitment of the Auditor General of Thailand (OAG) staffs in the Northeastern region were presented in the forms of diagram as showed in Figure 2.

Figure 2
Research Results



In addition, the research results from hypotheses testing can be presented in the following structural equation as presented below:

$$\text{ORC} = 0.429 \text{ JCF} + 0.384 \text{ WEF} \quad \dots\dots\dots (2)$$

(6.215) (5.558)

The hypotheses testing found that job characteristic and work experience factors can explain the variation of organizational commitment up to 57.70% (Adjusted R-Square 0.577) at 0.05 significant level. Job characteristic and work experience factors had statistically significant positive influenced on organizational commitment with standardized coefficients (β) of 0.429 and 0.384, respectively. The measurement factors of

job characteristic and work experience should be further investigated to find the most impact. The symbols used to represent the predictors stated as follows:

JCF1 =	Job Autonomous	WEF1 =	Group Attitude
JCF2 =	Skill Variety	WEF2 =	Organization Response
JCF3 =	Job Identification	WEF3 =	Personal Importance
JCF4 =	Task Feedback	WEF4 =	Organization Dependence
JCF5 =	Opportunity for Interaction		
ORC =	Organizational Commitment		

The research results of measurement factors showed the statistically significant positive influenced of opportunity for interaction, job identification, and task feedback on organizational commitment with standardized coefficients (β) of 0.508, 0.205, and 0.189, respectively. Furthermore, personal importance, organization dependence, and group attitude had statistically significant positive influenced on organizational commitment with standardized coefficients (β) of 0.397, 0.290, and 0.166, respectively as presented in the forms of structural equations below:

$$\text{ORC} = 0.508 \text{ JCF5} + 0.205 \text{ JCF3} + 0.189 \text{ JCF4} \quad \dots\dots\dots (3)$$

(7.760) (3.096) (2.581)

$$\text{ORC} = 0.397 \text{ WEF3} + 0.290 \text{ WEF4} + 0.166 \text{ WEF1} \quad \dots\dots\dots (4)$$

(5.715) (3.795) (2.518)

In conclusion, according to hypotheses testing, job characteristic factors and work experience factors had significantly influenced on organizational commitment of the Provincial Office of the Auditor General of Thailand (OAG) staffs in the Northeastern region providing management to focus on these critical factors in order to promote organizational commitment.

CONCLUSIONS AND FUTURE WORK

This research study aimed to investigate job characteristic factors and work experience factors influencing on organizational commitment of the Provincial Office of the Auditor General of Thailand (OAG) staffs in the Northeastern region. The results shown that job characteristic factors and work experience factors had significantly influenced on organizational commitment. Thus, the following recommendations from the research results can be used as management guidelines. Firstly, job characteristic seem to be critical success factor to raise organizational commitment for staffs in government agency. To motivate staffs working with the organization, opportunity for interaction, job identification, and task feedback should be strengthening. Secondly, work experience, especially personal importance, organization dependence, and group attitude can increase organizational commitment in the long run. With good job characteristic and work experience, the staffs would dedicate themselves to put their efforts for the organization and to remain working with the government agency. To conclude, job characteristic factors and work experience factors had significantly influenced on organizational commitment of the Provincial Office of the Auditor General of Thailand (OAG) staffs in the Northeastern region. However, there are many other factors that can be expected to enhance a commitment to the organization such as leadership, quality of work life, or organizational climate for further research.

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Marketing Mix and Psychological Factors Affecting on Decision Making Behaviors of 2BClean Shoe Cleaner Product Purchasing in Bangkok Metropolitan Area, Thailand

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ABSTRACT

Currently, small and medium-sized enterprises (SMEs) play a vital role in most economies, particularly in developing countries. The new product development seems to be significant for achieving business success due to business environment quickly changes. This research study aimed to investigate marketing mix factors and psychological factors affecting on decision making behaviors of 2BClean shoe cleaner product purchasing in Bangkok Metropolitan area in Thailand. The population of this research was 2BClean shoe cleaner product customers in Bangkok Metropolitan area in Thailand. In this research, the data of 385 operative information were collected from 2BClean shoe cleaner product customers in Bangkok Metropolitan area in Thailand.

The results of this research study showed that customers' opinion on marketing mix factors, psychological factors, and decision making behaviors were at high levels; mean of 3.77, 3.83, 4.19, respectively. The results from hypothesis testing found that the marketing mix factors and psychological factors can explain the variation of decision making behaviors on product purchasing of 24.00% (Adjusted R-Square 0.240) at 0.05 significant level. The marketing mix factors and psychological factors had statistically significant positive influenced on decision making behaviors of product purchasing with standardized coefficients (β) of 0.269 and 0.336, respectively. The results of analysis in each dimension shown that physical evidence and process had statistically significant positive influenced on decision making behaviors of product purchasing with the standardized coefficients (β) of 0.304 and 0.154, respectively. Motivation and recognition had statistically significant positive influenced on decision making behaviors of product purchasing with the standardized coefficients (β) of 0.321 and 0.146, respectively. In conclusion, the marketing mix factors and psychological factors had significantly influenced on decision making behaviors of 2BClean shoe cleaner product purchasing in Bangkok Metropolitan area in Thailand providing management to concentrate on specified factors in order to enhance customer decision making.

Keywords– Marketing Mix Factors, Psychological Factors, Decision Making Behaviors

INTRODUCTION

Bellezza, Ackerman, and Gino Have comment Business management on small and medium-sized enterprises (SMEs), especially for new business launching new product in Bangkok and its suburbs, is a response to the demand for customers as they are often faced with the opportunity to buy a new product [24]. Today's competitive business management realizes the importance of environmental change and complex consumer decision making. To get the highest operating profit, there are many key factors affecting on consumer behavior of product purchasing. Afif, Hardiyanto, and Suwandari In order to accomplish its goals, the business should focus on customer behavior of product selection process which plays a significant role in understanding how customers make a decision in a purchase [23]. Although the influencing factors on

decision making behavior are various explored in many well-known companies, the newly SMEs businesses remain question. It seems that if the company could meet the needs of customers in terms of marketing mix, they will be satisfied and selected the product as same as understanding their psychological factors. The importance of the above reasons is the cause of the research.

The objectives of this research are as follows. (1) To investigate the level of marketing mix factors, psychological factors and decision making behaviors of 2BClean shoe cleaner product purchasing in Bangkok Metropolitan area in Thailand. (2) To explore the influence of marketing mix factors and psychological factors on decision making behaviors of 2BClean shoe cleaner product purchasing in Bangkok Metropolitan area in Thailand. (3) To apply the results of this research study as guidelines for determining the strategies in conducting business plan and operations of 2BClean shoe cleaner product in Bangkok Metropolitan area in Thailand. The paper begins with a review of the concepts related to the marketing mix and psychological factors influencing on customer decision making behaviors in order to conceptualize the framework and hypotheses. Next, the research methodology, analysis of data and findings are described. Finally, conclusion and discussion of the research results together with managerial implications and suggestions for future research are presented.

LITERATURE REVIEW

Marketing Mix Factors

The reviews of the relevant literatures conceptualized the meanings of marketing as stated in previous researches. Kotler have described a definition of marketing as “a social and managerial process by which individuals and groups obtain what they need and want through creating and exchanging products and values with others” [11]. Marketing theories and concepts have been largely applied by large businesses and many researches continue to focus on the implementation of the marketing mix factors, which are more suitable for well-known businesses. Moriarty, Stokes and Wilson However, it may not fully apply to the context of small and medium-sized enterprises (SMEs) which are unique characteristics [10],[18]. The marketing practices and implementation of marketing mix factors in SMEs need to be more investigated and the findings provide meaningful implications. Kotler has defined the marketing mix as a response to demand, which can be controlled and responded to the needs of the customer [8]. While Armstrong, Adam, Denize, and Kotler have defined marketing mix as a set of marketing tools [21]. They stated that marketing mix is a tactic that combines various factors to meet the needs of the target market. Kotler and Jobber have comment Marketing theories focus on marketing activities including planning, marketing research, strategy and the implementation of the marketing mix, the “4Ps” (product, price, place, promotion) in which are the attributes of businesses that require both skills and resources [11],[13]. Product is included both goods and services the firm offered to the customers in order to fulfill their needs. Price is the amount of money the customers paid to purchase specified goods or services. Armstrong, Adam, Denize, and Kotler Place is the activity of placing their goods and services in the targeted market. Finally, promotion is the activity of communicating the customers to quickly make decision on the products [21]. However, as dynamic business environment, there are the expansions from the conventional model (4Ps) to the 7Ps model to include more dimensions. These additional marketing mixes are as follows. People are employees who deliver the services. Process is entire system on business running. Lastly, physical evidence is the presence in the marketplace or branding. This paper had applied the 7Ps model of the marketing mix adapted to the SMEs context in Bangkok Metropolitan area in Thailand. Kotler and Keller, Afif, Hardiyanto and Suwandari have comment furthermore, as many research studies show that there are the relationship between marketing mix factors and decision making behaviors of product purchasing [12],[23]. Consequently, this study aimed to investigate such relationship.

Psychological Factors

Definitions of psychological factors from the literature reviews are documented in various studies. Psychological factors defined as individuals’ behavior and perception towards something on making a decision. Kolesnik has provided psychological implications for the study of human response processes

including the process of feeling for stimuli [2]. Songkarn has given the meaning of psychology to human behavior as the process of mind. Psychological factors are involved in a customer's behavior [15]. According to Keller the consumer's awareness, perceived attributes, perceived image and opinion on products are closely associated with the consumer's overall understanding of a brand [7], Eagly and Chaiken has attitude is a psychological state and results in a perception of business [4]. The conceptual framework of this research was applied psychological factors based on Solomon including motivation, recognition [6], and attitude. As Alam and Sayuti found that attitude poses a strong effect on customer purchase intention, having high or positive attitude seem to have greater intended to purchase the products [19]. In addition, some other studies Lada also found a positive relationship between attitude and consumer purchase decision; as a results, this study aimed to investigate such relationship [16].

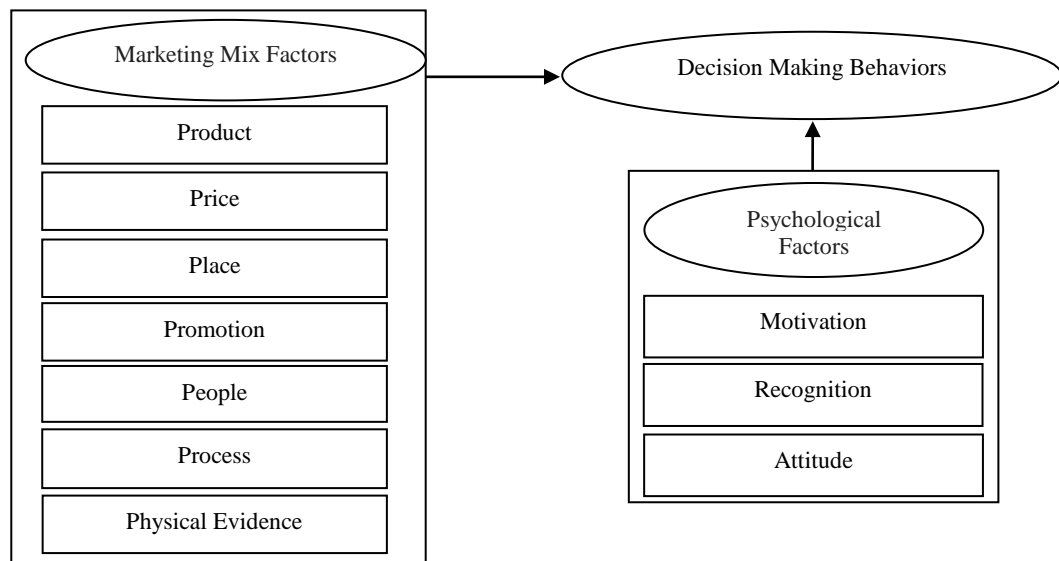
Customer Decision Making Behaviors

Decision making behavior of customers is not a new concept in the study of business management. Kotler has analyzed that consumer behavior as an approach on making decision to buy products [5]. Hoy and Miskel have defined the meaning of decision making as an important tool in business management by using the information to determine among alternatives [9]. Peter has given the meaning on decision as selection one of the many choices [14]. Kardes, Cronley, and Cline have defined consumer behavior decision as referring to all consumer activity related to purchasing, disposals, and services [20]. Jarunee has also defined consumer behavior as a means of expressing the consumer's decision to buy consumer products [22]. Understanding consumer preferences and behaviors can benefit business in terms of marketing strategy creation to meet the satisfaction of consumers and enhance decision-making. Sproles has the consumer decision making patterns are initially described as "a mental orientation characterizing a consumer approach to making choices" [3]. The previous researches further suggested that the concept of the decision making patterns of the basic consumer is similar to the individual personality in psychology. Researchers have attempted to analyze several aspects and factors influencing on decision making. Marketing mix and psychological factors are interesting to explore in this research. From the literature review, it was shown that there are some relationships among these three variables to further investigate and conceptualize in the conceptual framework with hypotheses development.

CONCEPTUAL MODEL AND HYPOTHESES

From the reviews of the literature, the conceptual framework of this research study was presented in figure 1. It depicts the influence of marketing mix factors and psychological factors on decision making behaviors of 2BClean shoe cleaner product purchasing in Bangkok Metropolitan area in Thailand. The model has been tested on the basis of the bodies of literature including marketing mix factors, psychological factors and customer decision making behaviors, cited above, as well as the researcher's own context about the relationship among variables.

Figure 1
Research Conceptual Framework



Based on the reviews of the literature of the constructs with the conceptualization of the relationships among variables, the hypotheses suggested by the conceptual framework can be laid out as follows:

H₁: Marketing mix factors had significantly positive influenced on decision making behaviors of 2BClean shoe cleaner product purchasing in Bangkok Metropolitan area in Thailand.

H₂: Psychological factors had significantly positive influenced on decision making behaviors of 2BClean shoe cleaner product purchasing in Bangkok Metropolitan area in Thailand.

The research hypotheses can be explained in the forms of structural equations in order to show the relationship among variables and predict the dependent variable for hypotheses testing. The symbols used to represent the variables stated as follows:

MMF	=	Marketing Mix Factors
PSF	=	Psychological Factors
DMB	=	Decision Making Behaviors

The structural equation can be described as follows:

$$DMB = \beta_1 MMF + \beta_2 PSF \quad \dots\dots\dots(1)$$

RESEARCH AND METHODOLOGY

This research study aimed to investigate marketing mix and psychological factors affecting on decision making behaviors of 2BClean shoe cleaner product purchasing in Bangkok Metropolitan area in Thailand. The research study was a quantitative research method. The population of this research was 2BClean shoe cleaner product customers in which unknown population. The samples of 385 respondents were determined by using simple random sampling based on Cochran formula [1]. Data were collected through 5-point Likert scale questionnaire surveys. This research study was cross-sectional as the data were collected at a single point of time from the key respondents. Cronbach's alpha was conducted to test for reliability with cronbach's alpha coefficient of marketing mix factors, psychological factors, and decision making behaviors of 0.940, 0.811, and 0.745, respectively as shown in Table 1. The cronbach's alpha value of the scale of all variables is greater than 0.7, so it shows that the scale has good reliability. Data were analyzed by descriptive

statistics including frequency, percentage, mean, standard deviation; and inferential statistics including the Pearson's Product-Moment Correlation and Multiple Regression Analysis. The research results can be significantly analyzed with 95% confidence interval.

Table 1
Cronbach's alpha coefficient of variables

Variables	Cronbach's alpha
Marketing Mix Factors	0.940
Psychological Factors	0.811
Decision Making Behaviors	0.745

ANALYSIS OF DATA AND RESULTS OF THE STUDY

The research results were analyzed by using the statistical package for social science. The research finding and the hypotheses testing in this study were presented as follows.

For description of the respondents, the research finding showed that the survey data of the respondents were made up of 63.60% male. The averages ages of the respondent were between 20-40 years up to 43.10%. In terms of the marital status, the respondents were single of 54.30%. For the education, the respondents had earned diploma or below degree of 49.90%. They were business owners up to 27.00%. The average monthly income was amounted to 10,000-20,000 Baht up to 57.40%

For descriptive statistics, the collected data were analyzed by using means and standard deviation. The means score of customers' opinion on marketing mix factors, psychological factors, and decision making behaviors were at high levels; mean of 3.77, 3.83, and 4.19, respectively. The 7Ps; consist of product, price, place, promotion, people, process, and physical evidence, means score were at 3.44, 3.57, 3.77, 3.91, 3.90, 3.86, and 3.98, respectively. In addition, motivation, recognition, and attitude mean score were at 4.13, 3.67, and 3.69, respectively.

For inferential statistics, in this research study, the analysis of the correlation coefficient between the two independent variables was investigated. Pearson's Product-Moment Correlation was used to determine the relationship of the independent variables according to research conceptual model. The objective was to find the magnitude of correlation among the variables. Multiple Regression Analysis was used to test hypotheses in order to study the influence of the marketing mix and psychological factors on decision making behaviors. Multicollinearity was tested on predictor variables to avoid unreliable and unstable estimates of regression coefficients. Thus, correlation analysis between the independent variables was shown in Table 2.

Table 2
Correlation analysis between the independent variables

	MMF	PSF	DMB
Mean	3.77	3.83	4.19
S.D.	0.434	0.466	0.524
MMF	1		
PSF	.321*	1	
DMB	.377*	.423*	1
Adjusted R² = 24.00% SEE = 0.456			

*. Correlation is significant at the 0.05 level

Table 2 showed the relationship between the independent variables that correlation coefficients (r) are not exceed 0.80. As Hair described the relationship between the variables that must be less than 0.80; if such relationship is more than 0.80, it may cause Multicollinearity. This research found that the relationship between the independent variables with the highest value was 0.423, in which it was not exceed 0.80. Multicollinearity problem was not found. Therefore, it can be tested by using Multiple Regression Analysis, in which estimating linear models [17].

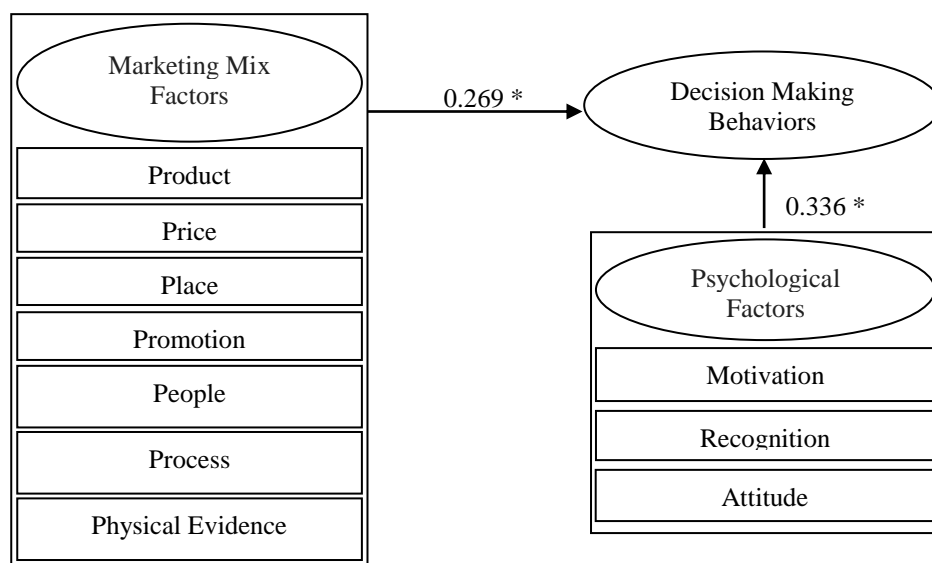
The research results from hypotheses testing on the influence of marketing mix and psychological factors on decision making behaviors of 2BClean shoe cleaner product purchasing in Bangkok Metropolitan area in Thailand were presented in the forms of diagram as showed in Figure 2.

In addition, the research results from hypotheses testing can be described in the following structural equation as presented below:

$$(2) \quad \begin{array}{ccccc} \text{DMB} & = & 0.269 \text{ MMF} + 0.336 \text{ PSF} & & \text{.....} \\ & & (5.729) & (7.159) & \end{array}$$

The hypotheses testing found that marketing mix and psychological factors can explain the variation of decision making behaviors up to 24.00% (Adjusted R-Square 0.240) at 0.05 significant level. Marketing mix and psychological factors had statistically significant positive influenced on decision making behaviors with standardized coefficients (β) of 0.269 and 0.336, respectively. The measurement factors of marketing mix and psychological factors should be further investigated to find the most impact. The symbols used to represent the predictors stated as follows:

Figure 2
Research Results



P1 =	Product	P5 =	People	S1 =	Motivation
P2 =	Price	P6 =	Process	S2 =	Recognition
P3 =	Place	P7 =	Physical Evidence	S3 =	Attitude
P4 =	Promotion	DMB = Decision Making Behaviors			

The research results of measurement factors showed the statistically significant positive influenced of physical evidence and process on decision making behaviors of product purchasing with standardized

coefficients (β) of 0.304 and 0.154, respectively. Furthermore, motivation and recognition had statistically significant positive influenced on decision making behaviors of product purchasing with standardized coefficients (β) of 0.321 and 0.146, respectively as presented in the forms of structural equations below:

$$\begin{array}{lcl} \text{DMB} & = & 0.304 \text{ P7} + 0.154 \text{ P6} \\ (3) & & (5.162) \quad (2.203) \end{array}$$

$$\begin{array}{lcl} \text{DMB} & = & 0.321 \text{ S1} + 0.146 \text{ S2} \\ (4) & & (6.337) \quad (2.524) \end{array}$$

In conclusion, according to hypotheses testing, the marketing mix factors and psychological factors had significantly influenced on decision making behaviors of 2BClean shoe cleaner product purchasing in Bangkok Metropolitan area in Thailand providing management to concentrate on specified factors in order to enhance customer decision making.

CONCLUSION AND DISCUSSION

This research study aimed to investigate marketing mix factors and psychological factors affecting on decision making behaviors of 2BClean shoe cleaner product purchasing in Bangkok Metropolitan area in Thailand. The marketing mix factors and psychological factors had statistically significant positive influenced on decision making behaviors of product purchasing. Thus, the following suggestions from the research results can be used as guidelines. Firstly, marketing mix factors seem to be one of the key success factors to enhance decision making behaviors of 2BClean shoe cleaner product purchasing in Bangkok Metropolitan area in Thailand. To increase decision making on product purchasing, business should strengthen the physical evidence and process aspects. The presence of 2BClean shoe cleaner product in the marketplace or good branding and efficient entire systems on business running can reflect customer satisfaction and enhance decision making behavior. Secondly, psychological factors, especially motivation and recognition can increase product purchasing behavior. The consumer's awareness, stimulation, perceived attributes, and perceived image on products are closely associated with the consumer's decision making. To conclude, the marketing mix factors and psychological factors had significantly influenced on decision making behaviors of 2BClean shoe cleaner product purchasing in Bangkok Metropolitan area in Thailand. However, there are many other factors that can be expected to influence decision making behaviors of product purchasing such as marketing strategy or service delivery for further research.

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Factors Affecting Consumer Decision Making of Thai Barbecue Buffet Service

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ABSTRACT

The objective of this research was to examine how consumer behavior factor and service marketing mix factor affected consumer decision making to use Thai barbecue buffet service. This research was used a quantitative approach; however, the population is not clear in number. Therefore, sample size calculated by Cochran (1977) formula. Data was collected from 400 customers of Thai Barbecue Buffet in Muangmuk Moo Kratha, Mukdahan Province, and sampling method was simple random sampling. Questionnaires used as data collecting instrument. Descriptive statistic composed of frequency, standard deviation, percentage used for explaining general data of respondents, and inferential statistic as follows: t-test, F-test (One-Way ANOVA), and multiple regression analysis were used in hypothesis testing.

The research findings revealed that the consumer behavior factors including, frequency of service, opportunity to use the service, people they with, cost per meal, eating time, were statistically significant at 0.05 level difference in consumer decision making to use Thai barbecue buffet service. While using service period was not. In addition, the result showed that service marketing mix factors composed of product, process, and physical evidence was statistically significant at 0.05 level which having impact on consumer decision making.

Keywords- Consumer behavior, Service marketing mix, Consumer decision making

INTRODUCTION

Food is the one of the most important factor in human life. Consuming nutritious foods and adequate amounts of the daily body needs will keep human healthy. The dietary habits of Thai people have changed over time. There is a growing acceptance of western and eastern food cultures. Therefore, people start eating semi-finished foods. Then food preparation is also worth to eat outdoors instead of cooking in the household because it is more convenient and faster. As a result, the restaurant business continues its growing. Whether, it is expanding the branch of the original operator or investment of new entrepreneurs. Social and economic conditions of attitudes and values are as well as the acceptance of foreign cultures. Consequently, consumer behavior in both lifestyle and food consumption has changed. It can be seen that most people from various countries enjoy the buffet style such as Japanese buffet or Korean buffet [4]. Buffet is a form of food and beverage service that is popular and widely used in the restaurant business for entrepreneurs to reduce staff costs [15].

Grilled pork and seafood buffets are very popular in Thailand. Observed by the increase in the number of restaurants, seafood and pork buffet restaurants are growing rapidly and continuously. To meet the needs of consumers today, in order to compete with other buffet restaurants. Moreover, the competition is higher as well. The competition in the market includes various aspects of the service, which are pricing strategy, location, and marketing promotion. As the food business is a must-do business with the sale of goods in the operator's field, it is imperative to control the service staff and to satisfy the customer. Listening to customer feedback is to survey customer satisfaction data to pledge information and improve service.

Muangmuk is the buffet restaurant which serves grilled pork and seafood. It is located in Muang district, Mukdahan province, Thailand. It has been opened for 8 years with good reputation and it not only well-known for people in Mukdahan but also people from neighboring provinces. Recently they opened a second

branch in Phang khon district, Sakon Nakhon province, Thailand. It is a proof of the growth of the business with a well-known reputation. From the reasons mentioned, the researchers are interested to study in factors affecting the selection of people in Mukdahan downtown. The research finding can be used as a guideline to improve the business and as a database for those who are beginning to do business.

LITERATURE REVIEW

Consumer Behavior

Consumer behavior refers to human behavior that involves searching, buying, using, evaluating, and spending on products and service, which is expected to meet their needs [14]. It is the action of the person involved in the decision to purchase, use, and dispose of the rest in products and services to meet their needs and desires. And according to the definition of the customer behavior is one's behavior influenced by personal factors such as attitudes, acquisition, perception, life style, and memory [14]. In the researchers' opinion, the customer behavior is defined as a study on person, group of people, organization, and process that are used to choose, keep, get rid of things concerned of products, services, experiences, or concepts in order to meet the needs of customers [13]. Also, the effects of behavior that these processes have on the customers and societies. In conclusion, the customer behavior is how each person directly behaves or acts on product use and economics service; this includes the process of decision making which influences each one's different behavior.

Analyzing consumer behavior is to search or do research for consumer buying and using behavior to understand purchasing behavior and use of the consumer. The answer that is marketers can strategically market their marketing strategies to satisfy the consumers. The question is used to find consumer behavior is 6Ws and 1H to find 7 or 7Os. Consumer Behavior Model is a study of the motivations for purchasing decisions. The Stimulus is the causes of the demand. The buyer's black box is a black box. The manufacturer or seller cannot be expected. The buyer's mood is influenced by the characteristics of the buyers, and the buyer's response or buyer's purchase decision is at the beginning of the model. Stimulus of first demand, the model can be called S-R Theory [7].

Decision Making in Services

The consumers decision-making is influenced by these personal characteristics composed of; age: the people are different years of ages have some different needs of any products and services; family life cycle: every single step of living has influenced their product need and purchasing behavior which are corresponding to their interests and financial status; career: ones' different careers need different products and services, so the marketing experts have to study target groups to know which groups are interested in their products and services in order to prepare their services for the customers appropriately; economics status or salary: this status includes their salaries, savings, purchasing power, and attitudes towards paying that could affect the buyers' decision-making, the marketing experts have to pay attention on the buyers' personal income tendencies which have effects on their purchasing power; education: buyers with higher education seem to buy higher quality products than those with lower education background because customers with higher education could earn more money; and life style: the life style concerned with ones' interests in any activities and opinions based on their own cultures, social classes, and different careers [9].

Decisions need based on the subject matter which considered using basic knowledge. And the conclusion is acceptable. Combining with the summary to reach the goal shows direction to the decision. Consumer buying decision is to choose products or services alternatively. There are three levels of decision-making; limited decision and extensive decisions are among the major theories of decision-making. There may be at least two types of classification [10]. Firstly, Normative Theory is a critical decision theory. It will be taken into account how the decision-making process should be or should not be. It can achieve the goal you want to make. It is up to the individual's judgment to determine which approach is or should be. This may be similar or different. Nevertheless, the use of this theory to decide the issue, so it has characteristics that depend on the standards or criteria. It is an instrument that determines whether the problem should be solved with the best solution. The views of other people with different standards of satisfaction may not be appropriate. For this reason, decision-making is based on an ideological rather than analytical model.

Secondly, Descriptive Theory is a theory of decision that differs from the first one, that is, the critical theory that the decision to solve a problem must be achieved. The decision is whether the decision maker is satisfied or not, or in other words. Decision making using this theory is trying to avoid any of the thoughts or personal values of decision makers as a basis for decision-making. The focus is to make decisions that are rational, accurate, and acceptable to the public, so the rules have been set. In addition, modern techniques are used to help make decisions that will be most appropriate. Thus, the decision is the final result or the final result of the thought process, in order to choose the right approach to the situation, the resources and the person to practice, and achieve the goal. Objectives are as needed as part of the role of executive management and the official power is the entrepreneurial role include disturbance handler, resource allocator, and negotiator.

Service Marketing Mix

Marketing mix refers to the marketing tools that a business needs to achieve its objectives in the target market or as an important component of marketing strategy [6]. Business must share marketing mix that meets the needs of the target market [2]. Internal marketing factors are business control tools. In general, the marketing mix (4Ps) consists of product, price, promotion. However, the marketing mix (4Ps) is not enough to explain the main view of service, so there are three additional components include people (employee), processes (service process), and the presentation of physical [7]. The marketing mix elements are as follows: 1) Product refers to what is offered by the business to meet the need. The customer needs satisfaction which can be used for marketers to define marketing strategies; 2) Price refers to the value of the product in the form of money. Deliverables must be greater than costs or the price of the product. Consumers feel the difference between different products; 3) Place (distribution) refers to the structure of the channel. It consists of institutions and activities using to transfer products and services from the organization to the market; 4) Promotion refers to motivation of demand and to remind the memory of the product is expected to influence the feeling [8]. Marketing promotion is as follows advertising, sales, personal selling, sales promotion, publicity and public relation; 5) People who are service providers whose quality depends on the selection, training, and motivation to be able to satisfy the customers. The staff must be competent, having good attitude in responding to users. Initiatively, they must have the ability to solve problems which can create values for the organization; 6) Process is the method of providing services to deliver quality service to customers fast and impressive. Users are considered in two aspects: complexity and diversity. The complexity of the process is determined by the process and continuity of the process, such as the ease of access to the service, the length of waiting time diversity must consider the freedom, flexibility, ability to change the stage or sequence of work as well as the service process. It is an activity related to the methodology and practice in the service to provide the quick service to the users and makes the uses impressed; 7) Physical Evidence and Presentation are the creation and presentation of the physical appearance of the customers. Physical property environment which are design, divided decoration or divided area of the building and other physical characteristics that appeal to the customer and clearly visualize the service mix [8].

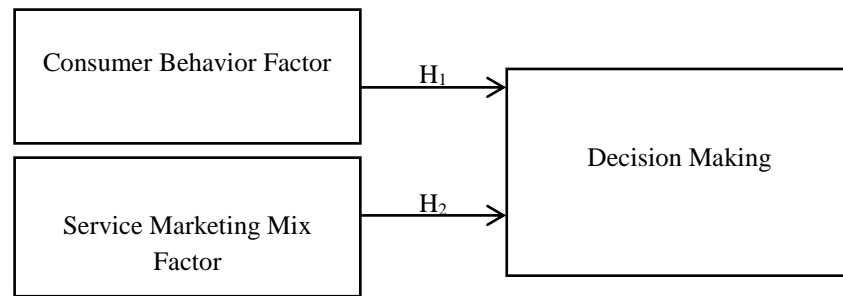
CONCEPTUAL MODEL AND HYPOTHESES

The aim of this research was to investigate factors affecting consumer decision making of Thai barbecue buffet service. The research hypotheses are as follow:

H₁: Consumer decision making of Thai barbecue buffet service was different when classified by consumer behavior.

H₂: Marketing mix (7P's) can predict consumer decision making of Thai barbecue buffet service.

Figure1
Research Conceptual Framework



RESEARCH AND METHODOLOGY

This research is a quantitative study. The population of this research was the customers of Thai barbecue buffet in Muangmuk Moo Kratha, Mukdahan province, Thailand. The population was a large group of people, which the exact number was unidentified. Thus, the sample size calculated by using formula of the sample size was at least 385 samples [1]. To facilitate the evaluation and data analysis, 400 samples were used. Questionnaires were used to collect the data. Cronbach's alpha coefficient used for reliability measurement. The Cronbach's alpha value of the scale of all variables was greater than 0.7, so it showed that the scale had good reliability. This study measurement using a five-point scale ranging from 1= "strongly disagree" and 5= "strongly agree". Data were analyzed by descriptive statistics including frequency, percentage, mean, standard deviation; and the statistical methods including t-test, and F-test (One-way ANOVA), inferential statistics, Pearson's Product-Moment Correlation and Multiple Regression were used to assess hypothesizes in this study. The research results can be significantly analyzed with 95% confidence interval. The reliability of all variables presented the Cronbach's alpha showed in table 1.

Table 1
Cronbach's alpha coefficient of variables

Variables	Cronbach's Alpha
Product	0.766
Price	0.788
Place	0.710
Promotion	0.858
People	0.805
Physical evidence	0.826
Process	0.886

ANALYSIS OF DATA AND RESULTS OF THE STUDY

The analysis of data was presented consist of the research objectives as follows.

1. The analysis of the respondents' data showed that respondents 36.8% were male and 63.2% were female, age of respondents was mainly between 18 – 25 years 61.8%, and marital status 87% was single. The education level of respondents is a high school 57.3%, occupation student 61.8%, and the average income under 5,000 baht 58.3%.

2. Behavior of using the service, come with the friends group was 33.5%, cost per meal was between 100-300 baht was 81.5%, period of service using per meal 1.30 hour was 67.5%, and the most frequent of eating time was 18.00 p.m. was 57.0%.

3. There were two research hypotheses in this study. The results were as follows.

H₁: The level of consumer decision making in Thai barbecue buffet service was different when classified by consumer behavior.

Table 2
The results of the first hypothesis testing

Frequency of service	The level of consumer decision making			
	\bar{x}	S.D.	F	Sig.
More than 3 times/week	4.003	.155	9.663	.000**
1-2 times/week	4.365	.482		
1-2 times/month	4.522	.443		
Less than 1-2 times/month	4.614	.530		
Opportunity to use the service	The level of consumer decision making			
	\bar{x}	S.D.	F	Sig.
Intend to eat particular food	4.426	.506	35.835	.000**
Meet with friends	4.711	.265		
Customer confirmation	3.760	.392		
Celebrate	4.561	.463		
Other reasons	5.000	.000		
People they eat with	The level of consumer decision making			
	\bar{x}	S.D.	F	Sig.
Eat alone	5.000	.000	15.288	.000**
Friends	4.590	.480		
Lover	4.487	.292		
Family	4.310	.493		
Customer/Colleague	5.000	.000		
Cost per meal	The level of consumer decision making			
	\bar{x}	S.D.	F	Sig.
Less than 301 Baht	4.501	.528	9.868	.000**
301-500 Baht	4.166	.000		
501-700 Baht	5.000	.000		
More than 700 Baht	4.333	.000		

Table 2- Continued

Period of eating	The level of consumer decision making			
	\bar{x}	S.D.	F	Sig.
Less 1 hour	4.401	.590	23.195	.000**
1 hour	4.556	.442		
1.30 hour	4.161	.532		
Using service period	The level of consumer decision making			
	\bar{x}	S.D.	F	Sig.
10.00 am.-12.00 pm.	4.633	.490	1.458	.225
12.01 pm.-14.00 pm.	4.333	.000		
16.00 pm.-18.00 pm.	4.497	.493		
After 18.00 pm.	4.501	.523		

The results of the first hypothesis testing found that, the consumer behavior composed of; frequency of service; opportunity to use the service; people they eat with; cost per session; eating time were statistically significant at 0.05 level. at the difference of level of consumer decision making. While using service period was the only factor that was not statistically significant at 0.05 level on the difference of level of consumer decision making. The details of the analysis found that; in frequency of service the group who used the service less than 1-2 times/month was highest mean (\bar{X} =4.614), while more than 3 times/week group was lowest mean (\bar{X} =4.003). Opportunity to use the service with other reasons group was at highest mean (\bar{X} =5.000). Customer confirmation group was at lowest mean (\bar{X} =3.760). In the aspect of people they eat with was customer/colleague and eat alone group were at highest mean (\bar{X} =5.000). Family group was lowest mean (\bar{X} =4.310). In the aspect of cost per meal of 501-700 baht group was at highest mean (\bar{X} =5.00), while more than 700 Baht group was at lowest mean (\bar{X} =4.333). Time period of people using the service in 1- hour group was at highest mean (\bar{X} =4.556), but less than 1- hour group was at lowest mean (\bar{X} =4.161).

H₂: Marketing Mix (7Ps) can predict consumer decision making of Thai barbecue buffet service.

The second hypothesis is to predict the influence of independent variables on dependent variable, using Pearson's Product Moment Correlation Coefficient to determine the relationship of the independent variable. Multiple regression analysis used to predict the influence of the Marketing Mix on consumer decision making of Thai barbecue buffet service. The symbols used to analyze in this research were as follows.

CDM	Represent	Consumer decision making
MKX1	Represent	Product
MKX2	Represent	Price
MKX3	Represent	Place
MKX3	Represent	Promotion
MKX3	Represent	People
MKX3	Represent	Process
MKX3	Represent	Physical Evidence

Table 3
Correlation analysis between independent variables

Marketing mix	MKX1	MKX2	MKX3	MKX4	MKX5	MKX6	MKX7
MKX1	1						
MKX2	.487**	1					
MKX3	.472**	.230**	1				
MKX4	.580**	.658**	.265**	1			
MKX5	.702**	.678**	.154**	.658**	1		
MKX6	.647**	.767**	.167**	.798**	.797**	1	
MKX7	.508**	.265**	.286**	.301**	.420**	.453**	1

*p< .05, **p< .01

Table 5, showed that the relationship between the variables that are related not exceed than 0.80, the relationship between the variables must be less than 0.80, which is more than 0.80 may cause of multicollinearity [12]. This research found the relationship between the independent variables at the highest

value of .798, it was not higher than 0.80. Multicollinearity problem was not found; however, it can be tested by using multiple regression analysis to the next.

Table 4
The results of the second hypothesis testing

Independent variables	Standardize coefficients (B)	t	Sig.
MKX1	.322	1.410	.000**
MKX2	-.053	4.500	.492
MKX3	.084	-.687	.135
MKX4	-.138	1.499	.066
MKX5	-.057	-1.843	.564
MKX6	.203	-.578	.003**
MKX7	.279	2.962	.009**

*p< .05, **p< .01

The results of multiple regression found that the marketing mix in the aspect of product, process, and physical evidence were statistically significant at 0.05 level of the influence on the consumer decision making of Thai barbecue buffet service, by product had higher standardize coefficients level than process and physical evidence, the standardize coefficients were .322, .203, and .279 respectively. While price, place, promotion, people were not statistically significant at 0.05 level of the influence on the consumer decision making of Thai barbecue buffet service.

CONCLUSIONS AND FUTURE WORK

The objective of this research was to examine how consumer behavior factor and service marketing mix factor affected consumer decision making to use Thai barbecue buffet service. The results of the first hypothesis testing found that the consumer behavior composed of; frequency of service; opportunity to use the service; people they eat with; cost per meal; eating time; were statistically significant at 0.05 level on the difference of level of consumer decision making, while only using service period was not statistically significant at 0.05 level on the difference of level of consumer decision making. The second hypothesis testing found that, the marketing mix in the aspect of product, process, and physical evidence were statistically significant at 0.05 level of the influence on the consumer decision making of Thai barbecue buffet service.

The entrepreneur of Thai Barbecue Buffet in Muangmuk Moo Kratha could apply the results of this study to develop their business. They should emphasize on customer opinions which have low mean, because all of these opinion could help them to improve their disadvantages in the right direction. In addition, the entrepreneur should be focus on the Marketing mix factors as follows; product, process, and physical evidence, in the following aspects; 1) product, should be increased in choices of product line such as sea food and deserts; 2) process, it should be speed up the service process when the customers have questions or requests for additional services; 3) physical evidence, should the layout of the customer's table be improved to provide space for convenience as well as adding ventilation system, bringing the ornamental trees to make the restaurant nicer. Future research may extend this research by studying with qualitative techniques including focused-group or in-depth interview to inquire the causes of problems in using the service.

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Factors Influencing Customer Satisfaction and Customer Loyalty: A Case Study of Retail Pharmacy Chain in Mukdahan Province, Thailand

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ABSTRACT

The Objectives of this research was to study how consumer behavior factors and service marketing mix factors affected to customer satisfaction and customer loyalty. A sample of 400 customers, who have bought a medicine from retail pharmacy chain in Mukdahan province, were selected. Data was analyzed and interpreted by using statistical protocol of frequency, percentage and standard deviation. Moreover, One-Way ANOVA and Multiple regression analysis were used for testing hypothesis.

The result of this research presented that consumer behavior factors including the persons who influence the buying centre's buyer and deciders (influencer), period of time for buying medicine, the average time of buying medicine, types of medicine, frequency of using service and average cost of buying medicine were significantly different on customer satisfaction. Service marketing mix factors (Product, Price, Place, Promotion, Process, People and Physical evidence) affected on customer satisfaction loyalty.

The research showed that customer satisfaction also affected on customer loyalty. The major finding were discussed, and directions for future research were suggested.

Keywords– Chain drugstore, Customer satisfaction, Customer loyalty

INTRODUCTION

Background

Medication is one of the four factors that human beings need in life. Due to the change of consumer behavior. It is the reason that the drugstore business is one of the non-hospital groups that is interesting in expanding the investment and is likely to increase. The drug store is another channel to provide health services when consumers have a primary or mild illness without the need to go to the hospital such as diarrhea, colds, headaches, etc. Most consumers choose to buy medications themselves because it is convenient, fast, and inexpensive compared to private hospitals. Moreover, they do not have to wait in a long queue like when they do at government hospitals. Trend of the drugstore business in 2017, consumer demand for businesses related to the elderly. Food service for patients in hospitals and pharmacies is one of the increasing business, with intense competition and market value continues to expand. Consumers continue to increase in tandem with the growing consumer health and free trade (AEC). This is an opportunity for the drugstore business to grow. The major retailers are interested in the chain store business; although, the economy is still slowing down. In the year 2017, the pharmacy business is expected to have a market value of 40 billion baht. Increased by 8-10% compared to last year. Now, there are about 18,500 pharmacies 30% located in Bangkok and 70% located in the provinces. This growth has resulted in more intense competition among stand-alone pharmacies. 16,900 drug stores, mostly SMEs [13], accounted for 80% of the total number of drugstores. And chain stores. 1,600 major operators with branches investment in both in the form of individual investment and the expansion of business in the form of franchise, especially the modern

trade [20] the entrepreneurs. The factors influencing customer satisfaction and consumer loyalty are increasing, so that business strategies implemented to dominate the market share.

Mukdahan is one of the border provinces adjacent to Laos and it has convenient transportation to Vietnam. It is also a special economic province with rapid business growth. From 2012, there was only one chain store. In 2017, there are more 7 chain store pharmacies included 1 stand-alone pharmacy. Because of the expansion of the city, pharmacy business is increasingly interested by the entrepreneurs. Consumers have more choices in service. Pharmacists must pay attention to the behavior of consumers, factors affecting marketing mix, consumers' satisfaction and loyalty to the drug store to develop and keep their business.

For this reason, the researchers are interested in studying the factors influencing customer satisfaction and customer loyalty of the chain store in Muang District, Mukdahan Province. Consumer behavior and service marketing mix were influenced by consumer preferences from the chain store and study consumer loyalty to apply to the traditional drugstores.

LITERATURE AND THEORY

Concept of Pharmacy Business

Model of drug store in Thailand has changed in the pattern of drug distribution, according to consumption behavior of consumers. From the general drug store. Established as a company. Since its inception in 1996, foreign companies operating in the modern retail store chain have come into operation. Establishment of chain store in Thailand, there are 1,082 chain stores in Thailand. There are 3 types of pharmacies listed in Thai pharmacy companies [7].

1. Chain Store is divided into two groups

Group 1, Stand alone is located in a large retail store. The community center is comprised of chain stores of Thai and foreign chain stores such as Boots (UK), Watsons (Central Group). Sussupha (SahaPatana Branch), Bangkok (Thailand), Doctor YaPhalaSa(Thailand).

Group 2 Chain stores that are owned by large retailers. Convenience stores include Pure (Big C), Tesco Pharmacy (Tesco), Extra (CP All). There is also a chain store that is a joint venture with foreign companies, which is in the early stages of operation, including Japan, with Osotspa and Saha Group. Japanese Cosway stores have a systematic management in the form of the company which they have managers of the warehouse purchase. Because of the high cost, it is popular in shopping centers where crowded with people such as Silom, Ploenchit, etc.

2. Wholesalers in Thailand

It is a family system which relying in individual ability to succeed in the business. The major duty of this kind of retailer is to help the pharmaceutical company to distribute the goods to the pharmacy. The business owners have high bargaining power because there is one a few stores in the area. It has a cost advantage.

3. General drug stores, shopkeepers, in their own stores.

For this kind of business, the owners have long hour work. The advantage is there are regular customers and very flexible. The disadvantage is not systematic management.

Consumer Theory and Consume Behavior

Consumer behavior means the behavior of an individual's expression in the search, purchase, use, evaluation or management with products and services consumers are expected to meet their needs. That is the reason why consumer behavior is studied because consumer behavior affecting business success. So, study consumer behavior will make it possible to create a marketing strategy the consumer satisfaction and ability in search of behavioral solutions of decision making before purchasing of the customers in society. To do so helps business owner know more accurate and related information of the customers to reach their needs. The differences of local consumers consisting by various factors such as culture, tastes, education level, age, income, etc. The different lifestyle differentiates purchasing and the service. So, marketers need to study and analyze customer behavior to know the actual needs of the consumers. Doing so helps marketer able meet the needs of consumers correctly. Consumer behavior analysis questions to look for behavioral behaviors consumers are 6Ws and 1H, which consists of WHO? WHAT? WHY? WHO? WHEN? WHERE? And HOW? to find the answer [5]

Theory and Concepts of Satisfaction

Satisfaction is the customer's purchasing sensation arises from a comparison between perceived performance of a service provider or perceived performance. Products with customers expect. The customer will feel satisfied in 3 levels; Level 1 if the customer service experience is lower than expected; Level 2 if the customer service performance is equivalent to the expectations they set; Level 3 if customer service is higher than expectations [20].

Theories and concepts of Service Loyalty

Loyalty to the service. The factors used to measure service loyalty are as follows: Repeat Purchase Behavior is a representation of customer commitment. Referring to the words of mouth, As a result, good loyalty measurement and effectiveness of words of mouth. Include recommendations and loyal people often give positive feedbacks back to the service provider when they choose to use the service (Period of Usage). These feedbacks are used to measure whether the service is continuous. How many times a month? Which can reflect the situation. Consumption whether it is a long-term loyalty? Price Tolerance is where prices are higher, loyal consumers choose our services. The price does not affect the choice of consumer service. Repeat purchase Intention is a regular purchase on a regular basis. Preference the more loyal consumers are, the more likely they are to show their preference in choice reduction behavior. First-in-Mind Service is always the first choice if consumers are loyal [3].

Marketing Mix Factors

Marketing Mix for services which is associated with the service business is different from general business, and it requires Marketing Mix (7P's) to determine marketing strategies. Marketing Mix (7P's) consisted of 1) Product, 2) Price, 3) Place, 4) Promotion, 5) People, 6) Process, and 7) Physical Evidence [5].

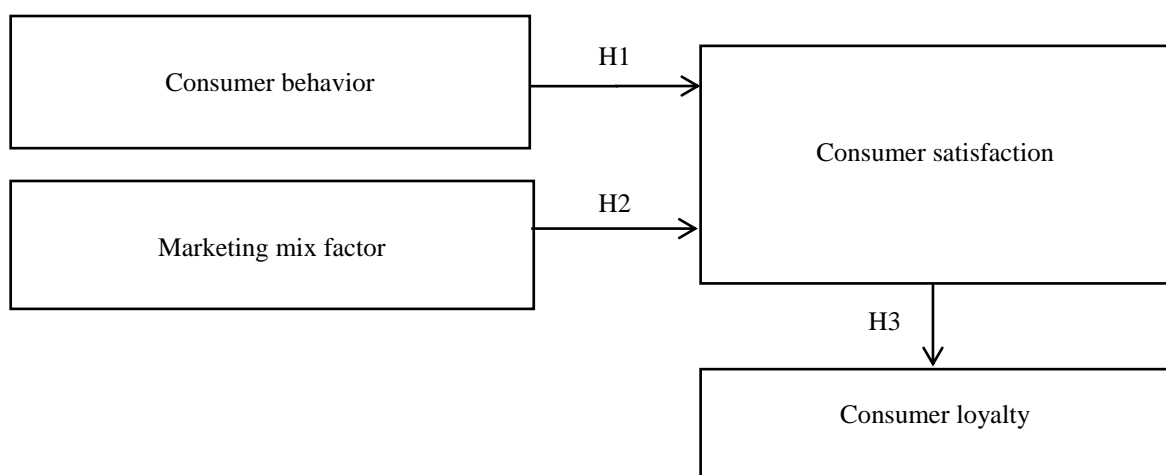
CONCEPTUAL MODEL AND HYPOTHESIS

H₁: Consumer behavior influences on satisfaction of selective chain stores.

H₂: Marketing mix factor influences on customer satisfaction of chain stores.

H₃: Consumer satisfaction factors influence on consumer loyalty.

Figure 1
Conceptual Framework for Research



RESEARCH METHODOLOGY

Sample Selection and Data Collection

In this research, the researcher determines the population of consumers who have experience in chain store service in Muang district, Mukdahan province. The samples used in this research were 400 respondents. The sample size was calculated based on the Yamane formula [1] . The researchers set the research period from August to December 2017.

Method

One-way ANOVA or F-test was used to test the hypothesis and examine the effect of independent variables on the variables using multiple regression analysis. Cronbach alpha coefficient was used for reliability of measurement. The reliability of measurement in this study was assessed by Cronbach alpha. Reliability scale of Cronbach alpha is higher than 0.7. For multiple-item used in this study, Cronbach's alphas are higher than 0.7 as show in table 1.

Table 1
Reliability

Factor	Chronbach's alphas
Marketing mix factor	
1. Product	.800
2. Price	.804
3. Place	.760
4. Promotion	.864
5. People	.908
6. Process	.781
7. Physical Evidence	.856
Consumer Satisfaction with Chain Store	.861
Consumer loyalty to the chain store	.996

RESULTS

The Descriptive Statistics

1. General information: most participants of the samples were female, 87.30 percent were female, 63.70 percent had bachelor's degree, and 23.30 percent were bachelor's degree. Occupation of participants; government officials and state employees accounted for 45.50 percent. Their salary is over 20,001 baht per month, or 56.5 percent, followed by employees whose salary is 10,001-15,000 baht.

2. Drug use behavior: The person who influences most drug purchases are self-consumption. The respondent were 55.50% followed by pharmacist / pharmacist 32.80% . Most products purchased were medicine of 77.50 % , followed by supplementary food was 19.30 % . Service cost was from 101-400 baht, 56.00 % . Brand name does not affect the decision 70.00 % .

3. Consumer opinion on chain store: the results of consumer opinion survey revealed that the consumers had opinions on the chain stores in the overall at the highest level. When considering consumer groups, the sample had various opinions from the highest to lowest level of feedback. People, Physical Evidence, Place, Process, Product and Price were 4.56, 4.49, 4.43, 4.41, 4.31 and 4.14 respectively.

Hypothesis Testing

H₁: Consumer behavior influences on satisfaction of selective chain store.

The result of hypothesis testing were shown in the table 2 below.

Table 2
Consumer Satisfaction with Chain Store

Consumer Satisfaction with Chain Store		Mean	S.D.	F-Test	Sig
Consumer behavior	Persons who influence the buying centre's buyer and deciders (influencer)	4.0890	0.51297	9.058	.000
	Period of time for buying medicine	4.0890	0.51297	7.707	.000
	The average time of buying medicine	4.0890	0.51297	17.956	.000
	Types of medicine, frequency of using service	4.0890	0.51297	19.065	.000
	frequency of using service	4.0890	0.51297	27.964	.000
	The average cost of buying medicine	4.0890	0.51297	2.666	.032

The study found that consumer behavior factors including the persons who influence the buying centre's buyer and deciders (influencer), period of time for buying medicine, the average time of buying medicine, types of medicine, frequency of using service and average cost of buying medicine were statistically significant at less than 0.05. Thus H₁ was all supported.

Table 3
Correlation analysis between independent variables

Marketing mix	Product	Price	Place	Promotion	People	Process	Physical	Satisfaction
Product	1							
Price	.623**	1						
Place	.625**	.434**	1					
Promotion	.556**	.688**	.550**	1				
People	.472**	.560**	.467**	.447**	1			
Process	.470**	.566**	.678**	.557**	.564**	1		
Physical	.602**	.425**	.644**	.500**	.542**	.710**	1	
Satisfaction	.471**	.626**	.327**	.582**	.592**	.416**	.486**	1

*p< .05, **p< .01

The analysis of the relationship between the independent variables the relationship between the variables must be less than 0.80 [17] because if it is more than 0.80, it may cause the multicollinearity. This meant the multicollinearity phenomenon was not found in the study. Therefore, it could be analyzed in the next stage using Multiple Regression.

H₂: Marketing mix factor influences on customer satisfaction of chain stores.

Table 4
Marketing Mix Factors of Drug Stores Influenced Satisfaction in Selecting Chain Stores

Factor	B	Std.E	Beta	t	Sig
Product	0.507	0.048	0.471	10.653	.000
Price	0.476	0.030	0.626	16.002	.000
Place	0.390	0.057	0.327	6.895	.000
Promotion	0.436	0.031	0.582	14.277	.000
People	0.515	0.035	0.592	14.671	.000
Process	0.336	0.037	0.416	9.132	.000
Physical	0.458	0.041	0.486	11.092	.000

Table 4 presented the result by using Multiple Regression Method. It showed that the marketing mix factors (Product, Price, Place, Promotion, Process, People and Physical evidence) affected on customer satisfaction was statistically significant at less than 0.05. Therefore, H₂ was all supported.

H₃: Consumer satisfaction factors influence on consumer loyalty.

Table 5
Consumer Satisfaction Factors Influence Consumer Loyalty in Choosing Chain Store Services

Factor	B	Std.E	Beta	t	Sig
Satisfaction	1.163	0.680	0.648	16.995	.000

Table 5 presented the result by using Multiple Regression Method. It showed that the consumer satisfaction have direct positive effect on consumer loyalty in the decision to choose chain store services at a statistically significant at less than 0.05, which supports H₃.

CONCLUSIONS AND FUTURE WORK

According to studies, it has been found that customer behavior, influencers of the purchase of drugs, average time of the purchase, type of products purchased the frequency of access to the pharmacy, the drug cost per purchase. Moreover, these factors; Product, Price, Place, Promotion, People, Process and Physical Evidence; affecting consumer satisfaction and the marketing mix factor. The results of this study are consistent with the research conducted [5] [16]. They showed the importance of the marketing mix that influenced on the decision. When considering the issue, it was found that the attitude level was the personnel attitude, which corresponds with the research [12] [14]. In addition, customer satisfaction is positively correlated with loyalty to service in accordance with the research [13] [17].

The result of this research study is useful information for the interested entrepreneurs, especially for pharmacy business. They can use the research data as a guideline in planning, developing, increasing sales volume and determining marketing strategies in order to compete in the market and meet more consumers' needs. For example, the entrepreneurs should realize, develop and offer the best thing of marketing mix and service for all customers. Satisfied customers will support your business through tough times and you can grow customer loyalty.

For the future research, more information of consumer behaviors should be collected from diverse consumer segments relating to their shopping habits. Moreover, in this study the researcher used merely sample of consumers who have experience in chain store service in Mukdahan area. Hence, the researcher

can examine the sample of other area in the future investigation in order to suggest them develop their business in the right position.

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Factors Affecting Customer Satisfaction: A Case Study of Wanon Niwat Provincial Electricity Authority, Sakon Nakhon Province, Thailand

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ABSTRACT

The purpose of this research was to investigate the influence of demographic factors and service quality factors on customer's satisfaction. The sample used in this research were 400 respondents who were a customer of Wanon Niwat Provincial Electricity Authority, Sakon Nakhon Province, Thailand. To collect the data, questionnaire was developed by two steps as follows. Firstly, it was checked by academic experts for content validity. Secondly, Cronbach's Alpha was conducted to test reliability. Then, correlation analysis, t-test, One-Way ANOVA and Multiple Regression Analysis were used for analyzing data.

The result of this study revealed that the demographic factors, including gender, age, marital status, occupation and salary showed a statistically significant difference in satisfaction. However, it showed that education level were not statistically significant difference. In addition, the findings also presented that the service quality factors which were the service quality of reliability, performance, response of customer and customer access had a positive influence on consumer's satisfaction. The results of this research were very useful for developing the organization into the suitable direction. Research contribution and avenue for future research was offered.

Keywords– Service Quality, Customer Satisfaction, Provincial Electricity Authority

INTRODUCTION

Background

The Provincial Electricity Authority is a state-owned enterprise in the field of utilities. The Provincial Electricity Authority has been established on 28 September 1960 following the Provincial Electricity Authority Act B.E. 2503, and it is under the Ministry of Interior. The assets, liabilities, and responsibilities of the Provincial Electricity Organization at that time have been transferred to be continuously proceeded. The main missions of the organization are to produce and distribute electricity to customers, businesses, and industries in the 74 service areas all over Thailand except Bangkok, Nonthaburi, and Samut Prakan. The service areas cover 510,000 square kilometers or 99 percent of the country. The operation goal of the organization is to develop the supply and service of the electric power to be effective, secure, reliable, sufficient, and able to keep pace with the demand which is increasing. Also, it could consort with any changing situations [14].

The Provincial Electricity Authority in Wanon Niwat District, Sakon Nakhon Province, Thailand is the organization under Phangkhan District, Sakon Nakhon Province that is directly under the Provincial Electricity Authority Area 1 (Northeast), Udon Thani. The Provincial Electricity Authority in Wanon Niwat District has been promoted from the Provincial Electricity Authority Wanon Niwat Branch in 2012. It is located at No.132 Moo 9 Wanon Niwat District, Sakon Nakhon Province, Thailand. The Wanon Niwat District organization is responsible for the other three districts that are Wanon Niwat, Ban Muang, and Kham

Ta Kila [15]. In terms of the customers, there are 59,732 electricity consumers [16]. The organization has paid attention to improve the service quality and continuous operations. Those are the expansion of the distribution system, replying to requests for an electricity installation, meter installation, power failure solution, and electricity bill payment in order to satisfy consumers. In terms of the organization missions, the ones that are always taken into consideration are to provide the quality services and to satisfy the customers.

However, from the past operations, there have been some complaints about the blackout, brownout, late meter installation, late electricity bill delivery, and stop distributing electricity. This was due to the complicated procedures and orders, and these problems also caused delayed services, employees' dysfunctions, inadequate staff, or no updated tools.

In the present study, the researcher is interested in studying on the factors affecting the customers' satisfaction with the service of the Provincial Electricity Authority in Wanon Niwat District, Sakon Nakhon Province. With the results of the present study, it could be used in the service development in order to meet the customers' needs. Also, the researcher aims to study on the problems affecting the service and the customers' opinions. This could help developing the service that will be satisfying the future customers.

Objective

This research has two objectives as follows:

1. To study on the demographic factors affecting the customers' satisfaction with the service of the Provincial Electricity Authority in Wanon Niwat District, Sakon Nakhon Province, Thailand.
2. To study on the service quality affecting the customers' satisfaction with the service of the Provincial Electricity Authority in Wanon Niwat District, Sakon Nakhon Province, Thailand.

LITERATURE REVIEW

Demographic

According to the study of the concepts and theories of the demography, the different demographic factors have effects on consumer behaviors. This is because each person is different following his own demographic characteristics. The characters mentioned earlier such as gender, age, marital status, and working period are the basic factors affecting the different satisfactions [10]. This corresponds to the theory of individual differences of De Fleur, 1996. The theory states that human behavior depends on an external force. So, it is believed that any person who has a different demographic feature behaves differently. Therefore, those who are in the same social level will choose and respond to any information similarly [6].

Customer Satisfaction

The definitions of a customer satisfaction has been defined by some scholars and are reported in this section. Satisfaction is the consumer's fulfillment response [8]. It is a judgment that a product or service feature or the product or service itself provided (or is providing) a pleasurable level of consumption-related fulfillment, including levels of under- or over-fulfillment. On the other hand, customer satisfaction stems from the client's reaction as result of evaluating the perceived expectations and the actual performance of a product or service [4]. Consumer satisfaction "reflects comparative judgments of a person connected to the difference between the perceived performance of a purchased product (or of a provided service) and the expectations that he made concerning this performance [9]. If the performance fails to meet expectations, the client will be unsatisfied or disappointed. If the performance meets expectations, the client will be satisfied. If the performance exceeds expectations, the client will be extremely satisfied or delighted. In conclusion, customer satisfaction is thus a particularly special indicator for evaluating the persons who formulate the demand. To be aware about the satisfaction or the dissatisfaction degree of consumers means to evaluate the success or the failure of some action, but also forecasting on their future behavior. At the same time, it allows comparisons between different market segments. Satisfaction refers to a person's sense of satisfaction that means customers will be satisfied when they receive the right things [7]. Satisfaction levels are measured by the thought and sensory reactions. Customer satisfaction is the key to future business goals [5].

Maslow's Theory of Motivation

1. Physical needs are the basic human needs and are the essential for life. These requirements include air, clothing, medicines, housing, sexual needs.
2. Safety or security needs include physical security and security
3. Social needs include demand for recognition, generosity, good friendship, good human relations, love from the boss and colleagues.
4. Esteem needs include Self Confidence, Success, Knowledge Self-esteem Independence and freedom of work.
5. Self - Actualization needs include when given the four levels of response, humans will work for the job. Try to develop your potential to peak performance [2].

Quality of Service

Service refers to an activity or abstract benefit one offers to the other; however, the consumer do not possess such service possession of the goods [12]. Quality of service means attitude. Long - term occurrences on all performance assessments [11]. Studying on the research papers related to the quality of the service, the researcher found that many scholars viewed that the successful service quality must include the key features such as reliability, responsiveness, access to services, gentle communication, honesty, stability, understanding, creation of tangible things, and so on [3]. With these features, it can be said that the quality of service will be the one that follows a professional standard in order to provide customers excellent services and to meet their expectations or more than what they expected. For the four main qualities, those include the reliability, competence, customer service, and customer access.

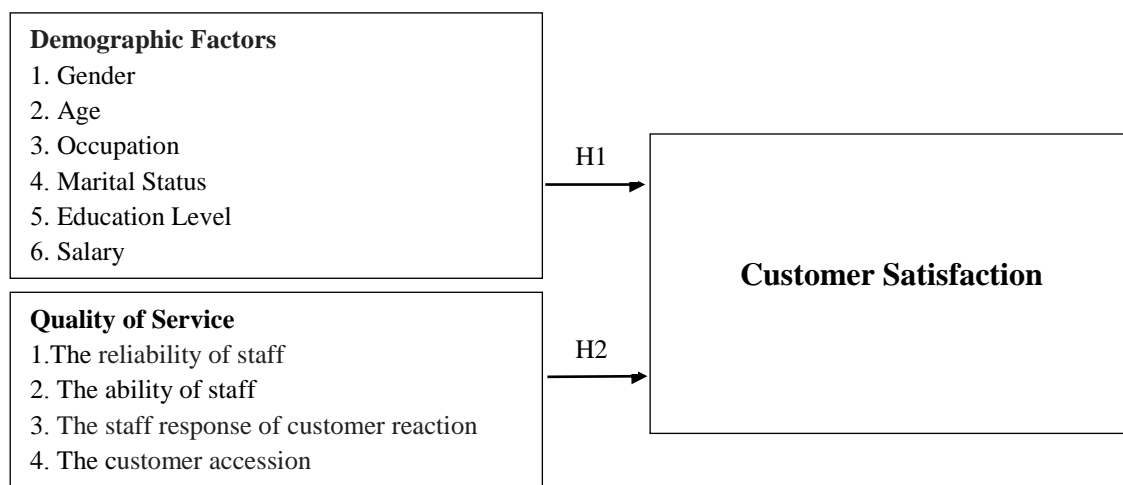
CONCEPTUAL MODEL AND HYPOTHESIS

The present research mainly aimed to investigate the factors affecting the customer satisfaction. With this aim, the researcher has set the two following hypotheses that are:

H₁: Customer satisfaction of the service of the Provincial Electricity Authority in Wanon Niwat District, Sakon Nakhon Province is difference when classified by demographic factors.

H₂: The quality of service factors of the Provincial Electricity Authority in Wanon Niwat District, Sakon Nakhon Province will affect the customer satisfaction.

Figure 1
A Conceptual Model Factors Affecting Customer Satisfaction



RESEARCH METHODOLOGY

Sample Selection and Data Collection

The samples used in this research were 400 respondents who were the customers of the Provincial Electricity Authority in Wanon Niwat District, Sakon Nakhon Province, Thailand. The sample size was calculated and based on the Yamane formula [1]. The error rate was not more than 0.05.

Data Collection and Method

A questionnaire was used in the data collection. The dependent variables of this study were measured by using a five-point scale ranging from 1=“strongly disagree” to 5= “strongly agree”. In the hypothesis assessment, the statistical methods which included t – test, F – test (One way ANOVA), and Multiple Regression Analysis were used. Cronbach’s alpha coefficient was used for measuring the reliability. As a result, the reliability of all scales was higher than 0.7 as showed in Table 1.

Table 1
Result of the Reliability Measurement

Variables	Cronbach Alpha Coefficient
Quality of Service	
1. The reliability of staff	0.734
2. The ability of staff	0.866
3. The staff response of customer reaction	0.818
4. The customer accession	0.886
Customer Satisfaction	0.769

From the Table 1, it showed the reliability measurement, and the determined coefficient of the Cronbach’s alpha must be higher than 0.7. After all variables were measured, it revealed that they all were higher than the determined value. In the other words, the reliability of staff was 0.734, The ability of staff was 0.866, the staff response of customer reaction was 0.818, the customer accession was 0.886, and the customer satisfaction was 0.769. This meant all items were higher than the acceptable level.

RESULT

The Demographic Factors Analysis

The analysis of the data showed that the majority of the respondents was male (50.7%) while female ones were around 49.3%. For the respondents’ ages, the most of them were lower than 30 years old (36%). In terms of the marital status, most of them (57%) were single. For the educational level, most of them (55.5%) hold a Bachelor's Degree, and they mostly worked for the government organizations (45%).

Hypothesis Tests

H₁: Customer satisfaction of the service of the Provincial Electricity Authority in Wanon Niwat District, Sakon Nakhon Province is difference when classified by demographic factors.

The results of this present study revealed that the demographic factors, including the gender, the age, the occupation, the marital status, and the salary showed a statistically significant difference at 0.5 in the customer satisfaction. However, it showed that the education level had no statistically significant difference at 0.5. Thus, H₁ was partially supported.

Table 2
The hypotheses (H₁) testing

Demographic Factors	Customer Satisfaction
Gender	✓
Age	✓
Occupation	✓
Marital Status	✓
Education Level	✗
Salary	✓

✓Had different statistically significant at 0.05

✗Had not different statistically significant at 0.05

Table 3
Result of the Customer Satisfaction is classified by education level

Education Level	Mean	S.D.	F-test	Sig.
Less than Bachelor	4.24	.416	.880	.416
Bachelor	4.25	.379		
Master	4.11	.000		

* P < .05

Table 3 showed the results of the One-way ANOVA statistic. In the customer satisfaction, it revealed the mean of the respondents who hold a Master's Degree was the lowest (4.11) while the one of those with a Bachelor's Degree was the highest (4.25). Moreover, the result revealed that the different educational levels had no statistically significant difference at 0.5.

Pearson's Correlation was used to determine the relationship of the independent variables according to research conceptual model. The objective was to find multicollinearity among the independent variables to avoid unreliable and unstable estimates of regression coefficients. Thus, correlation analysis between the independent variables was showed in Table 4.

Table 4
Result of the Correlation analysis between Independent Variables

Variables	CSF	RE	AB	RP	CA
Mean	4.24	3.93	4.15	3.90	4.11
Standard deviation	0.38	0.61	0.60	0.69	0.54
Customer Satisfaction CSF	1				
Reliability RE	.691**	1			
Ability AB	.627**	.630**	1		
Response RP	.544**	.547**	.528**	1	
Customer Access CA	.601**	.342**	.374**	.218**	1

* P < .05, ** P < .01

(CSF = Customer Satisfaction, RE = Reliability, AB = Ability, RP = Response, CA = Customer Access)

Table 4 showed the analysis of the relationship between the independent variables. After the analysis, it showed that the highest value was 0.691. So, this was supported by Hair et al who stated that the relationship between the variables must be less than 0.80 [13]. This was because if it is more than 0.80, it may cause the

multicollinearity. This meant the multicollinearity phenomenon was not found in the study. Therefore, it could be analyzed in the next stage by using Multiple Regression.

H₂: The quality of service factors of the Provincial Electricity Authority in Wanon Niwat District, Sakon Nakhon Province will affect the customer satisfaction.

Table 5
The hypotheses (H₂) testing

Quality of Service	Customer Satisfaction
The reliability of staff	✓
The ability of staff	✓
The staff response of customer reaction	✓
The customer accession	✓

✓Had different statistically significant at 0.05

✗Had not different statistically significant at 0.05

From Table 5, the findings showed the differences of those four items (the reliability of staff, the ability of staff, the staff response of customer reaction, and the customer accession) had a statistically significant difference at 0.5 in the customer satisfaction. Thus, H₂ was all supported.

Table 6
Result of the Multiple Regression Results

Quality of Service	Beta	t	sig
The reliability of staff	.360	9.13	.000
The ability of staff	.165	4.17	.000
The staff response of customer reaction	.178	4.99	.000
The customer accession	.378	12.09	.000

* P < .05

Table 6 presented the results analyzed by the Multiple Regression Method. It showed that the differences of the quality of service factors including the reliability of staff, the ability of staff, the staff response of customer reaction, and the customer accession had a statistically significant difference at 0.5 in the customer satisfaction. It affected the customer satisfaction (P < .05). Therefore, H₂ was all supported.

CONCLUSIONS

From the study of factors affecting satisfaction of Provincial Electricity Authority at Wanon Niwat District, Sakon Nakhon Province, it found that personal factors such as gender, age, occupation, status and salary affected on the customer satisfaction. There was only one variable, education level, which did not affect. In addition, the result revealed that the quality of service factor, including of the reliability of staff, the ability of staff, the staff response of customer reaction and the customer accession, all affected to the customer satisfaction.

The result of this study could be used as a model in the organization to adjust appropriately with the customer requirement in changed time. For example, at the present as Thailand 4.0 period, customers always stress on the convenience; hence, Provincial Electricity Authority created Application PEA Smart Plus to be easier to pay for electricity bill, find payment counter, request for a new electricity account, request for a meter returning in stopped electricity case, calculate electricity bill, inform electricity problems, inform information and show contact details.

If the organization takes the result from this study to be advantage, it would influence to customers to be satisfied with PEA service and it would react that PEA is the leading organization of the excellent and modern service.

For the limitation in this study is the specific data collecting in Provincial Electricity Authority area of Wanon Niwat District, Sakon Nakhon Province; therefore, the researcher could access particular data. In the further research might provide the data collecting to Provincial Electricity Authority and study other factors that have the effects on the organizations such as work motivation or organizational commitment.

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