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RMUTT Global Business Accounting and Finance Review (GBAFR) is an academic journal prepared by Graduate Studies (Ph.D. Program), Faculty of Business Administration, Rajamangala University of Technology Thanyaburi (RMUTT). The GBAFR journal aims to disseminate good academic output related to business administration, accounting, and finance aspects of individuals from both within and outside the university. It is an intermediate for exchanging academic views as well as a source for promoting and developing research competency of faculty staffs, academicians, researchers, students, and any persons in terms of business administration, accounting, and finance fields.

This journal is the first journal which published four research papers, one academic paper and one book review. In addition, each of the research articles presented such interesting concepts leading to creating new knowledge to the readers. Therefore, this journal is a channel disseminating the knowledge of business administration, accounting, and finance which related persons could apply it for further benefits.

Lastly, the editorial department and editorial team would like to considerably thank you for supporting and pushing forward this journal to occur and well accomplish. We are hopeful of your good cooperation and continuing support in the future.

Dr. Umawasee Sriboonlue  
Editor-in-Chief

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# **Behavioral Finance Factors and Investment Decision on Thai Mutual Fund**

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## **Abstract**

Thai mutual funds have grown rapidly for the past decade. This research intends to study investment decision making of Thai mutual fund investors. Behavior finance concepts, including self-control bias, overconfidence bias, loss aversion bias, mental accounting bias, and degree of risk aversion, are employed in determine decision on investing in mutual fund. Experimental survey research is conducted by using self-reported questionnaire from 600 Thai investors. Multivariate Probit models are employed in analyzing the investment decision of respondents on top three Thai mutual funds. Estimated results indicate that behavior finance factors have significantly impacts on investment decision of investors. Additionally, perception on asset management companies of the mutual fund plays an important role in determining investment decision of respondents. Therefore, asset management companies should focus on their mutual fund performance and also building up their company image in order to motivate investors to invest in their mutual fund.

**Keywords:** Mutual Fund, Behavioral Finance, Self-control Bias, Overconfidence Bias, Loss Aversion Bias, Mental Accounting Bias, Degree of Risk Aversion

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## 1. Introduction

Thai mutual funds have been rapidly grown from total value of 435.4 Million Baht in 2002 to 3 Billion Baht in 2013. This huge expansion of Thai mutual funds implies that investment and saving behavior of Thai investors has switched from money market, traditional saving in bank deposit, to capital market by investing through mutual funds. With high growth rate of mutual fund, the mutual fund asset management companies are currently facing high competition. Figure 1 shows market share of mutual fund asset management companies in 2013 which indicates that Thai mutual fund market has been dominated by three major mutual fund asset management companies, including Kasikorn Asset Management, SCB Asset Management, and Krungthai Asset Management. Therefore, it becomes interesting to know how investors make their decision in choosing which mutual fund to invest. According to traditional financial theory, investor should invest based on expected risk and expected return by assuming rational choice behavior (Markowitz, 1952).

However, behavioral financial theory has argued that investors can be irrational, thus, their investment behavior can be biased based on several behavior factors biases, including self-control bias, overconfidence bias, loss aversion bias, mental accounting bias, and degree of risk aversion, are employed in determine decision on investing in mutual fund (Thaler & Richard, 1990; Kahneman & Tversky, 1979; Odean, 1998). This study intends to reveal factors influencing investment decision making of Thai mutual fund investors based on behavioral finance concepts.

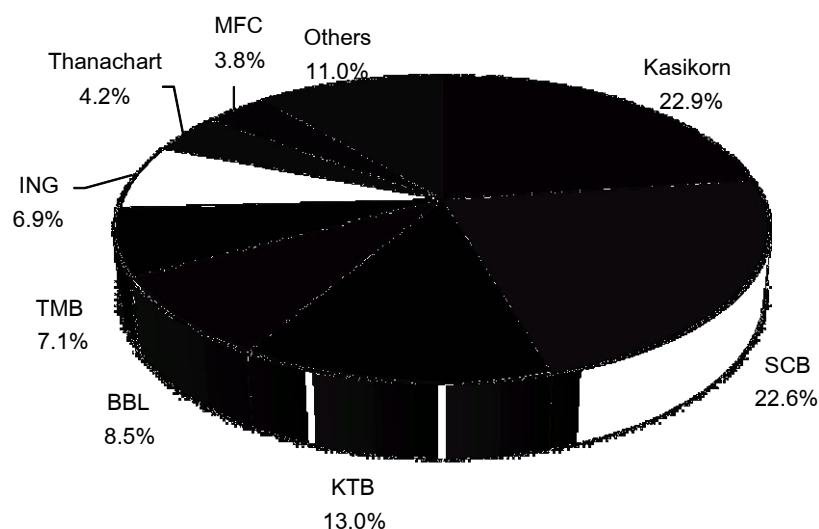


Figure 1: Market Share of Mutual Fund Asset Management Companies in 2013



## **2. Conceptual Framework**

Studies concerning on factors determining investment decision can be classified into two groups. First group follows on traditional financial theory based on rational choice assumption while second group emphasizes on behavioral financial theory assuming investors can be irrational.

### **2.1 Traditional Financial Theory**

In the modern era of financial theory, Markowitz (1952), who pioneered the Modern Portfolio Theory (MPT), which is the foundation of Capital Asset Pricing Model (CAPM) by Sharpe (1964), proposed that, at certain level of individual's risk tolerance, investor should select a security as if it maximizes expected return. This means that one should invest in a high risk security, at acceptable risk level, because it might pay him a high payoff. According to the intuition of MPT and CAPM, it means that risk-return tradeoff and investor's degree of risk aversion should be important factors that investors consider for portfolio choice. The assumptions underlying CAPM are, first, markets are efficient and, second, investors are "rational." However, in real world financial markets, the market anomalies have been observed and seem to challenge these assumptions. The violations indicate that MPT and CAPM cannot capture all the activities that actually occur in financial markets. In portfolio selection perspective, it can be implied that there could be factors other than risk-return tradeoff and degree of risk aversion that are considered as determinants of portfolio choice.

Many researchers have identified violations of CAPM assumptions. Some irrational investors randomly trade by using non-informative news (Black, 1986). Noise traders were also found as they have a persistent impact on markets (De Long, Shleifer, Summers, & Waldman, 1990). Heterogeneity in investors' beliefs and trading styles can lead to irregularities (Farmer & Joshi, 2002). The evidence of disposition effect (i.e., the tendency to sell winners quicker than losers) is also found (Odean, 1998). Lastly, irrational behavior like investors' overconfidence bias and mental accounting bias were also identified (Thaler & Richard, 1990).

### **2.2 Behavioral Financial Theory**

Behavioral finance is the study of the influence of psychology on finance and behavior. Behavioral finance is field of study that attempts to apply cognitive psychology study to help explain the anomalies of the standard financial theories and why individuals make irrational financial decisions. Behavioral finance models can be applied at both macro and micro levels. Behavioral finance micro examines behaviors or biases of individual investors that distinguish them from the rational actors envisioned in classical economic theory. Behavioral finance macro

detects and describes anomalies in the efficient market hypothesis that behavioral models may explain (Pompian, 2012).

There are many behavioral finance biases, including self-control bias, overconfidence bias, loss aversion bias, and mental accounting bias. Additionally, among these biases are related to portfolio investment decisions.

#### (1) Self-control bias

It is a human behavioral tendency that causes people to consume today at the expense of saving for tomorrow. It can be described as a conflict between people's overarching desires and their inability, stemming from a lack of self-discipline, to act concretely in pursuit of those desires. The technical description of self-control bias is best understood in the context of life-cycle hypothesis, which describes a well-defined link between the savings and consumption tendencies of individuals (Pompian, 2012).

Life-cycle hypothesis, saving decision theory, employs expected utility theory assuming that individuals make rational choices about their consumption and saving to reach optimal saving decision at different stage of life with limited resources available over their lifetime (Modigliani & Brumberg, 1954). In addition, the theory assumed that, for each individual, the increases in life-time resources lead to proportionate increases in consumption in all periods of life. As a result, consumption is proportionate to life-time resources or to average income over the life span (Thaler & Benartzi, 2004).

The main prediction of the life-cycle hypothesis is a lifetime saving profile characterized by a hump-shaped curve of saving as a function of time. The income profile of individual over the life cycle starts with low income during early working years, followed by increasing income that reaches a peak prior to retirement (Pompian, 2012). Therefore, at the young age, individuals have to borrow to finance their consumption. At the middle age, they would save money and accumulate their wealth for retirement as their incomes are high during this stage of life. Then, they will reduce their savings or their investment during retirement when their income is substantially low.

Simply put, the life cycle hypothesis implies that individuals try to smooth their consumption path by putting money aside for use at retirement and the amount of saving is proportionate with the increase in resources over the life cycle. It also implies that savings and investment rates vary with age and income level. Also, other factors, lifetime wealth, and the interest rate affect the saving rate of individuals. The underlying behavior of this theory is self-control. Individuals need to trade off their current consumption with future savings by setting money aside for future consumption and they need the will power to do so. However, the self-control bias or self-control problem prevents individuals from making rational decisions for

retirement. Why do people struggle with the decision making to save for retirement? There are many possible reasons. One of which is the complexity of retirement saving planning. How much money is needed to live comfortably after retirement? When to start saving? And what instruments to invest? These questions require a lot of work and assumptions on the unknown factors such as future earnings, inflation rate, longevity, retirement age, etc. Another obstacle that affects the retirement saving decision is the 'hyperbolic discounting behavior'. Hyperbolic discounters apply high discount rates to the near term and lower discount rates to the future. In this case, one dollar's worth of saving today is perceived to grow rapidly in the short run and less in the long run. Hyperbolic discounters place a lower value on the future benefits and higher value on the present. They would over consume today because of self-control problems when it comes to saving for retirement (Mitchell & Utkus, 2006).

From the theory aforementioned, self-control has correlation with decision to save for retirement and it should have a positive relationship. It is also expected that individuals with high level of self-control would be likely to save in the long-term instruments such as RMF, LTF, and insurance. Those who have low level of self-control tend to value today's consumption and would prefer short-term retirement saving plans.

## (2) Overconfidence bias

It is a cognitive bias that can be summarized as unwarranted faith in one's intuitive reasoning, judgments, and cognitive abilities (Pompian, 2012). Overconfidence implies an overly optimistic assessment of one's knowledge or control over a situation. This behavior trait is widely studied for investing abilities. Individuals with this bias tend to believe they are better than others when choosing the best stocks and the best timing. However, with the retirement planning complication previously mentioned and to seek information for retirement saving decision making, individuals may need to turn to others for advice. It is likely that their advisors would be someone close such as spouses, friends, or their colleagues at work. Therefore, overconfidence level should have an impact on decision making for retirement saving. Those who need other's help are considered as low-overconfidence and vice versa. Moreover, low overconfidence level may create procrastination and inertia and prevent individual from saving.

The evidence of peer effects is documented in the study by Duflo & Saez (2002). They investigate whether peer effects play an important role in retirement savings decisions by studying the employee decisions to enroll in a Tax Deferred Account plan sponsored by the university, and the choice of mutual fund vendor for people who choose to enroll, are affected by the decisions of other employees in the same department. The results show that peer effect may be an important determinant of saving decisions. One possible reason for peer effect is the conformity behavior. Savings decisions may be influenced by social norms or beliefs about social norms. By observing

co-workers, people can learn about proper behavior of their social group and they may want to maintain the same consumption level as what is common in their social group. Another reason is the lack of knowledge or information necessary for decision making. A convenient way to get information is to ask for advice from peers. One example of such behavior is shown in 'Heuristics and Biases in Retirement Savings Behavior' by Thaler & Benartzi (2004) regarding the behavior of retirement plan participants of a chain of supermarkets in Texas. The plan provider noticed that participants' behavior in each supermarket was remarkably homogeneous, but the behavior across supermarkets was fairly heterogeneous. It turns out that most of the supermarket employees considered the store butcher to be the investment maven and would turn to him for advice.

### (3) Risk Attitudes

Risk is a concept that denotes the negative impact to an asset or some characteristics of value that may arise from some process or future events. Risk normally involves the unknown future or uncertainty and its perception are essential factors for human decision making. Individuals have different risk attitudes and there are three types of risk attitudes as follows (Chavas, 2004):

- (a) Risk aversion: a person is risk averse if he/ she is willing to pay a positive amount of money or positive risk premium to eliminate risk. This positive willingness-to-pay means that he/ she is made worse off by risk exposure.
- (b) Risk neutral: a person is risk neutral if he/ she is made neither better off nor worse off when his/ her risk exposure is modified. A person will accept exactly the same interest rate for all assets.
- (c) Risk seeking (or risk loving): it is a person who has a preference for risk. A person is a risk lover if he/ she must be compensated when his/ her risk exposure is eliminated. This means that he/she likes risk and is made worse off when risk is removed.

How does risk attitude of individual relate to the retirement saving decision? The retirement savings is money saved for future consumption when earnings from employment no longer exist. Intuitively, the retirement saving instruments offered to individuals should be the safe investment to ensure gains and reduce losses. In case of Thailand, much of personal savings are in form of bank deposits which individuals deem as a risk-free investment.

In addition, prospect theory by Kahneman & Tversky (1979) suggests that individuals make decision to maximize the s-shaped value function. The value function is (i) defined on deviations from the reference point; (ii) generally concave for gains and commonly convex for losses; (iii) steeper for losses than for gains. If a person is given two equal choices, one

expressed in terms of possible gains and the other in possible losses, people would choose the former – even when they achieve the same economic end result. Moreover, people exhibit the certainty effect when making choices in that they underweight outcomes that are merely probable in comparison with outcomes that are obtained with certainty. A certainty effect contributes to risk aversion in choices involving sure gains and to risk seeking in choices involving sure losses. Gain and losses in choices discussed here are defined by the amounts of money that are obtained. It can also be considered in terms of status quo or one's current assets [3]. The status quo is a reference point individuals use to measure gain and loss. This implies that the gains over status quo or current assets are likely to influence individuals' choices to invest and that they tend to be risk averse.

### **3. Data and Methodology**

#### **3.1 Data**

Data is collected from experimental survey questionnaire, which is organized into four sections to collect the following information:

The first section consists of general information and demographic information of the respondents including age, gender, marital status and number of children (if any), and income level. In addition, this part includes question as well as their current investment in the three mutual fund asset management companies, including Kasikorn Asset Management, SCB Asset Management, and Krungthai Asset Management.

The second and the third sections of the questionnaire aim to measure the respondent's self-control and overconfidence level respectively. Self-control or self-discipline is assessed on planning and motivation to reach their goals. Overconfidence measures the respondent's self-assessment of their knowledge, their expertise, and their competency about retirement saving investment and decision. The five-point Likert scale will be adapted to identify the respondent's self-control and confidence in their own decision to choose the retirement saving option. The scale of one implies that the respondent has the least self-control and confidence or least expertise and five as the highest self-control and confidence level.

The last part will measure the respondent's degree of risk aversion. Frijns, Koellen, & Lehnert (2008) presented scenarios with realistic payoffs in order to assess degree of risk aversion. An individuals' risk aversion is obtained from ten simple lotteries that offer a choice between a less risky and the more risky lottery. The payoff for each lottery is selected such that the crossover point from less risky lottery to the more risky lottery provides an estimate of the individual's relative risk aversion coefficient. The lotteries will be set up in such a way that a crossover point from the less risky lottery to the more risky lottery after the fourth choices implies

risk-neutrality. All individuals who crossover before are relatively risk-seeking, and all individuals that crossover after are relatively risk-averse. The lotteries will be presented to the respondents in a randomized sequence, and the respondents will be asked to indicate their lottery preference. Probability will be presented as percentage chances to win either payoff.

### 3.2 Models

#### Separate Probit Models

According to the above framework, since dependent variables in this are binary choice variable with the value of 0 or 1, Probit models are applied.

$$\begin{aligned} y_1^* &= x_1\beta_1 + \varepsilon_1, & y_1 &= 1 \text{ if } y_1^* > 0, 0 \text{ otherwise} \\ y_2^* &= x_2\beta_2 + \varepsilon_2, & y_2 &= 1 \text{ if } y_2^* > 0, 0 \text{ otherwise} \\ y_3^* &= x_3\beta_3 + \varepsilon_3, & y_3 &= 1 \text{ if } y_3^* > 0, 0 \text{ otherwise} \end{aligned}$$

and

$$\begin{aligned} P(y_1 = 1 | x_1) &= \Phi(y_1^*) \\ P(y_2 = 1 | x_2) &= \Phi(y_2^*) \\ P(y_3 = 1 | x_3) &= \Phi(y_3^*) \end{aligned}$$

Where:  $y_1$ ,  $y_2$ , and  $y_3$ , represent matrices of decision of choosing Kasikorn, SCB, and KTB respectively.  $x_1$ ,  $x_2$ , and  $x_3$ , represent matrices of explanatory variables including (i) behavioral finance factors, self-control bias, overconfidence bias, loss aversion bias, mental accounting bias, and degree of risk aversion, (ii) perception of respondents on mutual fund asset management company (Kasikorn, SCB, and KTB), and (iii) control variables – demographic data.  $\Phi(\cdot)$  is cumulative normal probability distribution function. In these models,  $\varepsilon_1$ ,  $\varepsilon_2$ , and  $\varepsilon_3$  are all assumed to be independently jointly normally distributed with mean equal to zero and variance equal to one.

$$\begin{aligned} E[\varepsilon_1 | x_1] &= E[\varepsilon_2 | x_2] = E[\varepsilon_3 | x_3] = 0 \\ Var[\varepsilon_1 | x_1] &= Var[\varepsilon_2 | x_2] = Var[\varepsilon_3 | x_3] = 1 \\ Cov[\varepsilon_1, \varepsilon_2 | x_1, x_2] &= 0 \\ Cov[\varepsilon_1, \varepsilon_3 | x_1, x_3] &= 0 \\ Cov[\varepsilon_2, \varepsilon_3 | x_2, x_3] &= 0 \end{aligned}$$

Thus, the three models are separately estimated by using maximum likelihood estimation method.

### Multivariate Probit Models

However, the above separate probit models assume that all decisions are independently made which is inappropriate assumption. Multivariate probit models assume that all three decisions are made dependently and simultaneously. The models can be stated follows multivariate probit models as:

$$\begin{aligned} y_1^* &= x_1\beta_1 + \varepsilon_1, & y_1 &= 1 \text{ if } y_1^* > 0, 0 \text{ otherwise} \\ y_2^* &= x_2\beta_2 + \varepsilon_2, & y_2 &= 1 \text{ if } y_2^* > 0, 0 \text{ otherwise} \\ y_3^* &= x_3\beta_3 + \varepsilon_3, & y_3 &= 1 \text{ if } y_3^* > 0, 0 \text{ otherwise} \end{aligned}$$

and

$$\begin{aligned} P(y_1 = 1 | x_1) &= \Phi(y_1^*) \\ P(y_2 = 1 | x_2) &= \Phi(y_2^*) \\ P(y_3 = 1 | x_3) &= \Phi(y_3^*) \end{aligned}$$

In these multivariate probit models,  $\varepsilon_1$ ,  $\varepsilon_2$ , and  $\varepsilon_3$  are all assumed to be dependently multivariate normally distributed with mean equal to zero and variance equal to one.

$$\begin{aligned} E[\varepsilon_1 | x_1, x_2, x_3] &= E[\varepsilon_2 | x_1, x_2, x_3] = E[\varepsilon_3 | x_1, x_2, x_3] = 0 \\ Var[\varepsilon_1 | x_1, x_2, x_3] &= Var[\varepsilon_2 | x_1, x_2, x_3] = Var[\varepsilon_3 | x_1, x_2, x_3] = 1 \\ Cov[\varepsilon_1, \varepsilon_2 | x_1, x_2, x_3] &= \rho_{12} \\ Cov[\varepsilon_1, \varepsilon_3 | x_1, x_2, x_3] &= \rho_{13} \\ Cov[\varepsilon_2, \varepsilon_3 | x_1, x_2, x_3] &= \rho_{23} \end{aligned}$$

Where:  $\rho_{ij}$  represents correlation between error term of choice  $i$  and choice  $j$ .

The models are estimated by using Maximum Simulated Likelihood (MSL) estimation method.

## **4. Research Results**

Empirical data are observed from 600 respondents of Thai investor using experimental survey questionnaire. Both models, separate probit and multivariate probit models are estimated using Maximum Likelihood Estimation (MLE) method and Maximum Simulated Likelihood (MSL) estimation method, respectively. The estimated results of separate probit and multivariate probit models are shown in Table 1 and Table 2, respectively.

Table 1: Estimated Results of Separate Probit Models

	Kasikorn	SCB	KTB
Perception	2.2545***	0.7451***	1.1233***
Overconfidence	0.8395**	0.8180**	0.5388**
Mental Accounting	0.2759**	0.6620**	0.4276**
Self-control	-0.0117*	-0.1405*	-*
Loss Aversion	-0.1092*	-0.7195*	-**
Risk Aversion	-0.0043**	-0.1488**	-**
Income>70m	0.4144***	0.2886***	0.3604***
Marital Status	0.2762*	0.2559*	0.1024*
with Children	0.5304**	0.5321*	0.4943**
Saving	0.2256*	0.0891*	0.1394*
Constant	-2.3235***	-1.6120***	-***
N	600	600	600
Log-likelihood	-326.22	-164.18	-
Chi-square Test	130.91***	28.351***	52.431***

Where:\* is statistical significant at 0.1 \*\* is statistical significant at 0.05 \*\*\* is statistical significant at 0.01

According to the estimated results of multivariate probit models in Table 2, the estimated coefficients of correlations between each choice ( $\hat{\rho}_{12}, \hat{\rho}_{13}, \hat{\rho}_{23}$ ) are all statistical significantly different from zero, indicating that the choices of three bank mutual funds are simultaneously decided. When making investing decision on mutual fund of the three banks, Thai investors make decision whether to invest in either Kasikorn, SCB, or KTB simultaneously at the same time, thus, multivariate probit models are more appropriated in this case.



Table 2: Estimated Results of Multivariate Probit Models

	Kasikorn	SCB	KTB
Perception	2.1397***	0.7403***	1.0575***
Overconfidence	0.8050*	0.7877*	0.6243*
Mental Accounting	0.2781**	0.6023**	0.4490**
Self-control	-0.1172*	-0.0155*	-1.1672**
Loss Aversion	-0.0779*	-0.6255*	-0.4525**
Risk Aversion	-0.0062**	-0.1476**	-0.1210**
Income>70m	0.4292***	0.2835***	0.3447***
Marital Status	0.2720*	0.2532*	0.0950*
with Children	0.5242**	0.5263*	0.5251**
Saving	0.2218*	0.1002*	0.1613*
Constant	-2.1388***	-1.5190***	-2.2977***
$\hat{\rho}_{12}$	-0.0703***		
$\hat{\rho}_{13}$	-0.4079***		
$\hat{\rho}_{23}$	-0.1430***		
N	600		
Log-likelihood	-749.31		
Chi-square Test	169.94***		

Where: \* is statistical significant at 0.1 \*\* is statistical significant at 0.05 \*\*\* is statistical significant at 0.01

$\hat{\rho}_{12}$ ,  $\hat{\rho}_{13}$  and  $\hat{\rho}_{23}$  are the correlation of mutual funds between Kasikorn bank and SCB bank, between Kasikorn bank and KTB bank, and SCB bank and KTB bank respectively.

The estimated results indicate that investors' perception on asset management company with the highest value of the coefficient is the most influenced factor in determine their investment decision on each asset management company. Investors with good perception on any asset management company are more likely to invest in mutual fund of that asset management company.

The results also confirm behavior finance concept that investment decision is also influenced by behavioral and psychological factors of the investor. All behavioral finance factors, including Self Control, Overconfidence, Loss Aversion, Mental Accounting, and Risk Aversion all statistical significantly affect decision to invest in mutual fund of all asset management companies. Investors with high level of overconfidence or high level of mental accounting are more likely to invest more in mutual fund while those with high level of self-control, or loss aversion, or risk aversion are more likely to invest less in mutual fund.

Additionally, personal characteristics of investor are also significant factors in determining decision to invest in mutual fund of all three asset management companies. Investors who are married with children are more likely to invest more in mutual fund than those who are single or

married without children. High income (more than 70,000 baht a month) investors invest more in mutual fund compare to those with lower income.

The estimated results are according to what are expected by theoretical framework of this study confirming that not only traditional financial (risk-return) theory but also behavioral finance concept should both be applied in the choice models in determining decision to invest in mutual fund of the Thai investor.

## **5. Discussion and Conclusions**

According to the above findings, the results indicate that behavior finance factors have significantly impacts on investment decision of investors, which is in line with the findings of Duflo & Saez (2002), Odean (1998), and Pompian (2012). Follow Mitchell & Utkus (2006), with hyperbolic discounters, investors are mostly undervalue the future benefits and overvalue the present benefit, thus, they are more likely to have self-control problems. The findings found negative significant impacts of self-control factors implied that investors with low level of self-control problem are more likely to save in long-term investment choice like mutual fund. Also, investor with high level of mental accounting can control themselves; thus, invest more on long-term investment mutual fund. According to Pompian (2012), overconfidence investors with overly optimistic assessment of their knowledge mostly believe they are better than others, thus, with overconfident bias they are more likely to invest more. The positive significant result confirms this overconfident bias of Thai investors. Based on prospect theory of Kahneman & Tversky (1979), investors' attitude toward risk are not symmetric with the shape like s-shape. The significant different values of estimated coefficients of loss-aversion and risk-aversion also help confirms this concept. As a result, all these evidences suggest that behavior finance factors play an important role in determining investment decision on investing in mutual fund of the Thai investor. Therefore, Thai mutual fund manager should be aware of these behavior finance factors when promoting their new products.

Additionally, perception on asset management companies of the mutual fund plays an important role in determining investment decision of respondents. Therefore, asset management companies should focus on their mutual fund performance and also building up their company image in order to motivation investors to invest in their mutual fund.

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# **Analysis Factors Affecting an Application to Knowledge of SMEs**

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## **Abstract**

The purpose of this article is to analyze factor which affects toward application of small and medium enterprise (SME) knowledge in Pathum Thani province, Thailand. The research question is focusing on what factors affecting using knowledge of SMEs. Seventy SMEs data were collected as a sample of this research. The quota sampling was used as a mean to define sample size for each district in Pathum Thani province. The snowball method was used as a tool to select samples. The result of factor analysis reduces twelve observe variables to three components of using knowledge management. The regression model indicated that factors affecting toward application of SMEs are: usefulness of knowledge, transfer knowledge to an individual, exchange of knowledge within group, and codify knowledge activities.

**Keywords:** Knowledge Usage, SMEs, Path Analysis

## **1. Introduction**

### **1.1 Statement of Problem**

Today the knowledge is one of valuable assets in organization. If the organization has a lot of knowledge, this organization will obtain more advantage than their competitor. Even though knowledge management has been dispersed to several organizations and the big firms have a good facility and methodology to manage knowledge in their firms. However, for Small and Medium Enterprises (SMEs) are unclear in terms of SMEs' knowledge management, either does it exist or not? This paper tries to use quantity analysis to figure out an existing of knowledge management on SME. What kind of knowledge management activity they do? What are factors affecting knowledge management in SME?

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This research employs Theory of reason action, together with technology acceptance model; and by using Path Analysis. The data were collected from SMEs in Pathum Thani, Thailand. The results indicated the factors affecting knowledge management in SMEs.

### **1.2. Research Objectives**

1. To determine knowledge management activities in SMEs in Pathum Thani, Thailand.
2. To identify and examine factors affecting knowledge management in SMEs in Pathum Thani, Thailand.

## **2. Literature Review**

### **2.1 Knowledge**

Knowledge (Brooking, 1999) is defined as information in context with understanding to applying that knowledge. Knowledge is classified to two types as tacit and explicit knowledge (Uriarate, 2008).

- Explicit knowledge (Fiewstone, 2001; Rémy & Caroline, 2011) is an objective that is easily captured, codified and communicated.
- Tacit knowledge (Sunassee, & Sewry, 2002; Rémy & Caroline, 2011) is subjective that is connected to intuition, emotions, beliefs, know-how, experiences and values.

### **2.2 Knowledge Management**

The very simply meaning of knowledge Management (Uriarate, 2008) is the conversion of tacit into explicit knowledge and sharing it within the organization. It contains four elements which are:

- Knowledge creation and capture
- Knowledge sharing and enrichment
- Information storage and retrieval, and
- Knowledge dissemination.

### **2.3 Knowledge Activity**

Uriarate (2008) presents that knowledge can be exchanged during discussion and meeting between colleague. Knowledge can be transfer into individual from external and internal activities including training, seminar, on-the-job training, and workshop. Knowledge can be created from create knowledge workshop.

## 2.4 SMEs in Thailand

SME stands for Small and Medium Enterprise. Characteristics of SME in Thailand (Thai Ministry of Industry, 2002) are defined by ministerial regulations with the number of employed and the value of fixed assets of SME in 2002. The SME definition is defined by two type of business, small and medium enterprise.

The small enterprise is a business which does not have an employee more than 50 people, and does not have an investment more than 50 Million Baht. The medium enterprise is a business which does not have an employee more than 200 people and does not have an investment more than 200 million Baht.

Although there are a lot of SMEs in Pathum Thani website, Researcher found some of them are disappeared by their product themselves or economic crisis or both. Some of them can be survived and be strong now. It is too hard to identify number of SME in Pathum Thani.

## 2.5 Pathum Thani Province

Pathum Thani (Pathum Thani province, n.p) is the one of provinces in Thailand and is a metropolitan city. Its boundary is connected to Bangkok. There a several types of population in Pathum Thani. It consists of urban and rural society and called University City. There are seven districts in Pathum Thani as follow:

1. Mueang Pathum Thani,
2. Khlong Luang,
3. Thanyaburi,
4. Nong Suea,
5. Lat Lum Kaeo,
6. Lam Luk ka, and
7. Sam Khok.

## 2.6 SME Knowledge Application

Normally, SME in Pathum Thani province, Thailand is a small or medium business in Thailand. The business type of SME usually is production business. The core business process is made to stock process model (Valacich & Joseph, 2012). The model of made to stock are presented in figure 1.

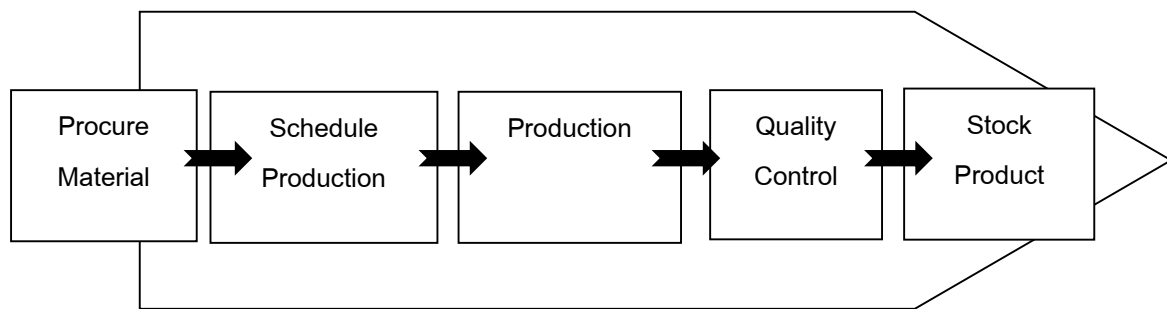


Figure 1: Made to stock Business

According to the figure 1, made to stock model consists of 5 process starting from purchase material for product, plan to produce goods, execute plan, test a quality of goods, and final store goods in stock or inventory. If SMEs apply this model to their business, the required knowledge of SME composes of selecting material, operation or production include planning, and execution; quality control of product and service; and marketing knowledge.

## 2.7 Theory of Reason Action (TRA.)

TRA (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975) stands for Theory of Reasoned Action. TRA is drawn from social psychology and is one of the most fundamental and influential theories of human behavior. The core constructs consist of attitude toward behavior and subjective norm. The theory reason action model show in the next figure

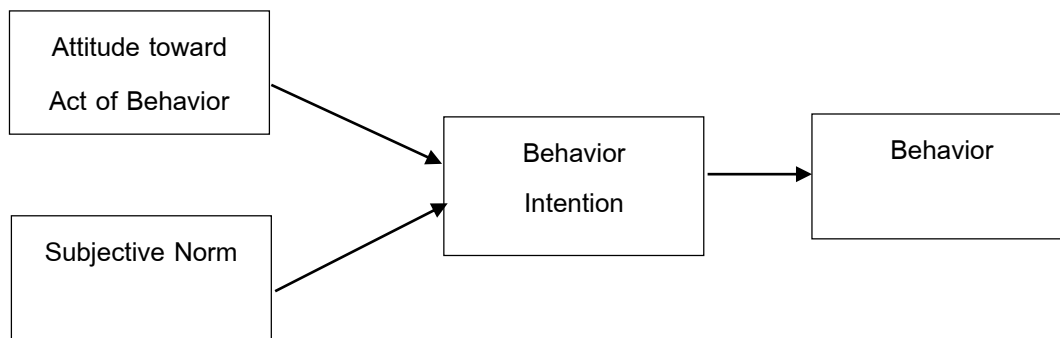


Figure 2 Theory reason action model I

## 2.8 Technology Acceptance Model (TAM.)

TAM (Venkatesh, Davis & Davis, 2003) stands for Technology Acceptance Model. TAM is adapted from TRA in information system context. An independent variables of TAM consist of perceived usefulness, perceived ease of use, and subject norm with are inherited from TRA. The TAM model shows an effect of perceived usefulness and perceived ease of use on behavior intention through behavior in action. The model of TAM shows in figure 3.



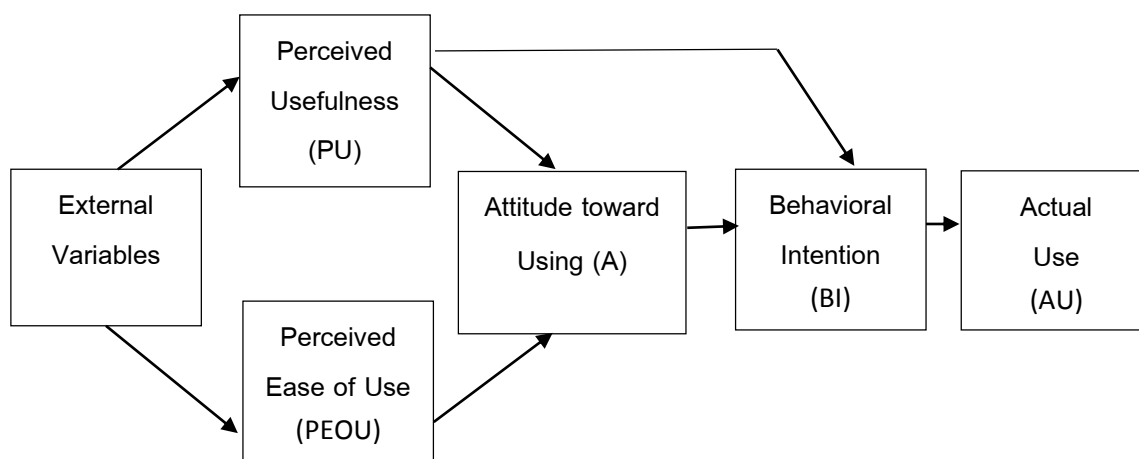


Figure 3 Technology acceptance model

In figure 3, there are six parts of TAM including external variables, perceived usefulness, perceived ease of use, attitude toward using, behavioral intention, and actual use. In this research, there are only two parts is model applied to research model are: perceived usefulness and perceived ease of use.

### 3. Data and Methodology

#### 3.1 Population and Samples

The population of this research is SMEs which are located in seven districts of Pathum Thani province, Thailand. The respondent is representative of SMEs who are willing to give information about their business and their activities.

#### 3.2 Sampling

A quota sampling was employed to this research. There were 7 districts in Pathum Thani province and 10 samples were randomly chosen from each district. The total of sample size was 70 samples. The snowball method was used as a sample selection method.

#### 3.2 Hypothesis

The hypothesized causal ordering for how a level of obtaining knowledge and usefulness of knowledge cause application of knowledge.

#### 3.3 Analysis Method

Firstly, data analysis was described and reported by descriptive statistic of knowledge application in SME, and then a factor analysis was used to grouping and reducing observe variable to component of knowledge application. After factor analysis, correlation test was used to

classify a relation among component of knowledge application and two independent variables as usefulness of knowledge variable, and use of knowledge. Finally, the multiple regression model was used for analyzing causal model with collected data.

## **4. Research Results**

### **4.1 Descriptive**

The mean and standard deviation of obtaining knowledge are presented in Table 1.

Table 1: Mean and Standard deviation of Obtaining Knowledge

<b>No.</b>	<b>Variable</b>	<b>Activities</b>	<b>Mean</b>	<b>Standard Deviation</b>
<b>1</b>	VTK1	Internal Training	3.91	.800
<b>2</b>	VTK2	Internal Workshop	3.99	.807
<b>3</b>	VTK3	External Training	3.60	.875
<b>4</b>	VTK4	Study Document	3.37	.837
<b>5</b>	VTK5	Discussion	3.93	.754
<b>6</b>	VTK6	Study Procedure Manual	3.62	.811
<b>7</b>	VTK7	On-the-job Training	3.93	.709
<b>8</b>	VTK8	Talking During Coffee Break	3.99	.789
<b>9</b>	VTK9	Meeting	3.90	.801
<b>10</b>	VTK10	Knowledge Codified	3.53	.696
<b>11</b>	VTK11	Knowledge Storing	3.51	.756
<b>12</b>	VTK12	Knowledge Developing	3.75	.715

In Table 1, most of knowledge management activities for obtaining knowledge are on much level, internal training, internal workshop, external training, discussion, study procedure manual, on-the-job training, talking during coffee break, meeting, knowledge codified, knowledge storing, and knowledge developing; except study document is on fair level.

### **4.2 Factor Analysis**

A factor analysis was conducted to reduce a number of variables and create a component. Next table presents loading-factor score of activities for obtaining knowledge.

Table 2: Loading Factor of activities for obtaining knowledge

Variable Name	Component		
	1	2	3
VTK1	.731	-.075	.293
VTK2	.661	-.102	.480
VTK3	.730	.122	.070
VTK4	.486	.535	.067
VTK5	.633	.104	.200
VTK6	.712	.551	-.106
VTK7	.694	.197	.266
VTK8	.270	-.024	.798
VTK9	.354	.113	.747
VTK10	-.003	.897	.143
VTK11	.110	.896	.119
VTK12	-.002	.395	.733

In Table 2, the factor loadings enable eleven variables to three components and deletes VTK4 variable by its value. Its loading score is under 0.6. The first component is called TIDV, *Transfer knowledge into an individual*, which consists of VTK1, VTK2, VTK3, VTK5, VTK6, and VTK7. The second component is called TGRP, *transfer knowledge within group*, which consists of VTK8, VTK9, and VTK12. The last component is called STORK, *store knowledge*, which consists of VTK10, and VTK11

### 4.3 Correlation Test

After factor analysis done, all produced variable are tested by correlation testing. The objective of this test is to find relation among three activities for obtaining knowledge components (TIDV, TGRP, and STORK), usefulness of knowledge variable (UFOK), and use of knowledge (UOK). The findings of correlation test are presented as table below:

Table 3: Correlation Test Output

	UOK	UFOK	TIDV	TGRP	STORK
UOK	1	.439*	.444*	.473*	-.036
UFOK		1	.522*	.628*	.036
TIDV			1	.534*	.256*
TGRP				1	.238*
STORK					1

\* Correlation test is significant at the .05 level. (2-tail)

Table 3 indicated:

1. UOK correlates with UFOK, TIDV, and TGRP
2. UFOK correlates with UOK, TIDV and TGRP,
3. TIDV correlates with UOK, UFOK, TGRP, and STORK
4. TGRP correlates with UOK, UFOK, TIDV, and STORK
5. STOR correlates with TIDV, and TGRP

#### 4.4 Full Model

According to correlation test table together with TRA and TAM, the full model is generated and presented in the Figure 4.

According to Figure 4, the full model used a correlation testing as a base of model. The next analysis is to identify an identity model of factor affecting knowledge management application with path analysis.

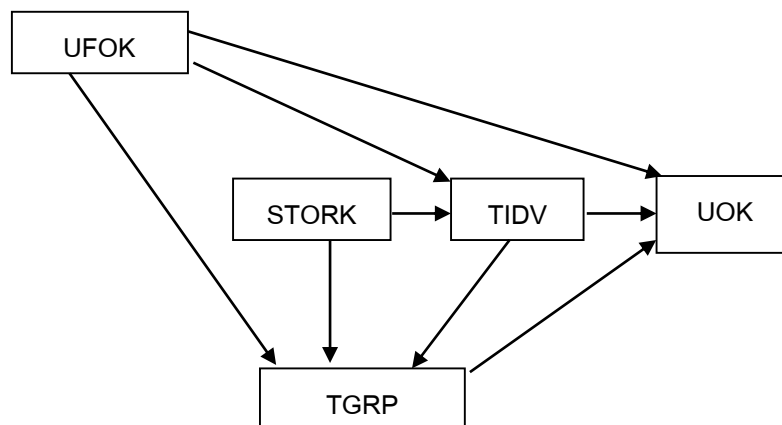


Figure 4: Full model

#### 4.4 Regression

According to the full model, the regression output of UOK with predictor UFOK, TIDV, and TGRP is presented in Table 4

Table 4: Regression output for significant path UOK on TGRP and TIDV

<b>R</b>	<b>R square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the estimate</b>
<b>.524</b>	<b>.275</b>	<b>.253</b>	<b>.597</b>
Standardized Coefficients		T	Sig.
<b>TGRP</b>	<b>.330</b>	<b>2.678</b>	<b>.009*</b>
<b>TIDV</b>	<b>.268</b>	<b>2.177</b>	<b>.033*</b>

\*Coefficient is significant at the .05 level

In Table 4, there are only TGRP and TIDV to UOK. The path coefficient for UOK on UFOK is not significant and has to be removed from the model.

The regression model output of TGRP with predictor UFOK, TGRP, STORK is presented in the Table 5.

Table 5: Regression Output for Significant Path: TGRP on UFOK, and TIDV

<b>R</b>	<b>R square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the estimate</b>
<b>.673</b>	.453	.436	.488
Standardized Coefficients		T	Sig.
<b>UFOK</b>	.480	4.527	.000*
<b>TIDV</b>	.284	2.678	.009*

\*Coefficient is significant at the .05 level

In Table 5, there are only UFOK and TIDV to TGRP. The path coefficient for TGRP on STORK is not significant and has to be removed from the model.

The regression output of TIDV with predictor UFOK, STORK is presented in Table 6.

Table 6: Regression Output for Significant Path: TIDV on UFOK, and STORK

<b>R</b>	<b>R square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the estimate</b>
<b>.574</b>	.329	.309	.493
Standardized Coefficients		T	Sig.
<b>UFOK</b>	.513	5.127	.000*
<b>STORK</b>	.238	2.376	.020*

\*Coefficient is significant at the .05 level

In Table 6, all path of TIDV have significant, no path need to delete.

#### 4.4 Reduced Model

According to all regression models, the reduced model and coefficients are generated and are presented in the figure 5.

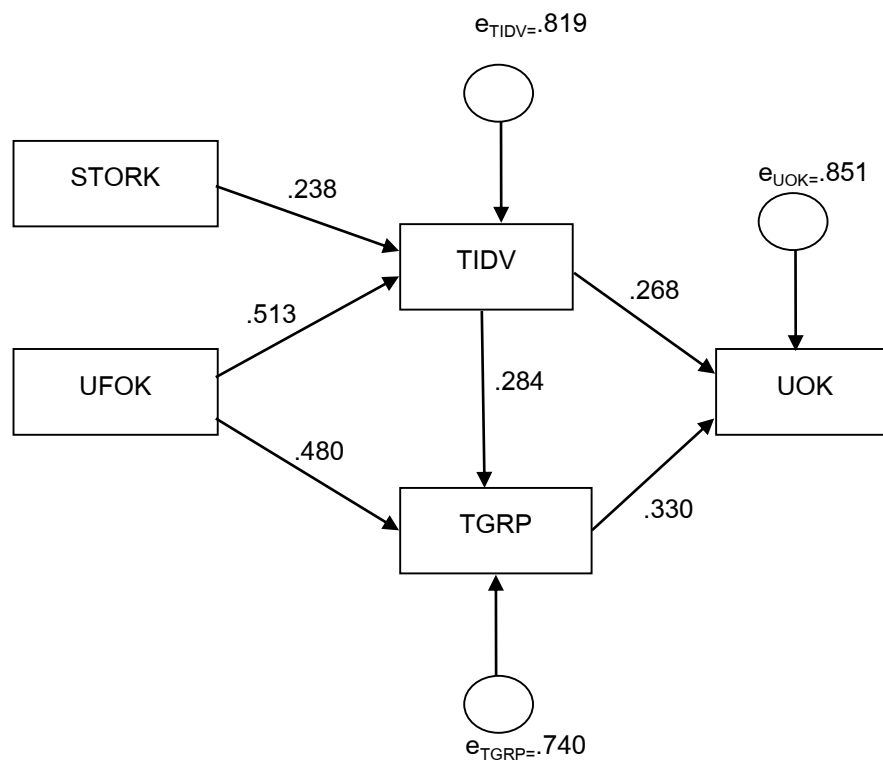


Figure 5: The Reduced Model

With reduced model, the direct, indirect, and total effects of causal model are computed and presented in the next table.

Table 7: Summary of Causal Effects for Reduced Model

Outcome	Determinant	Casual Effects		
		Direct	Indirect	Total
<b>TIDV</b>	STORK	.238*	-	.238
<b>R2 = .329</b>	UFOK	.513*	-	.513
<b>TGRP</b>	UFOK	.480*	.146	.626
<b>R2 = .453</b>	TIDV	.284*	-	.284
	STORK	-	.068	.068
<b>UOK</b>	TIDV	.268*	.094	.362
<b>R2 = .275</b>	TGRP	.330*	-	.330
	UFOK	-	.344	.344

\* Direct effect is significant at the .05 level

#### 4.5 Equation

From a regression table, the equation of model show in this section as:

$$TDIV = .513UFOK + .238STORK$$

(1)

$$TGRP = .480UFOK + .284TIDV$$

(2)

$$UOK = .268TIDV + .330TGRP$$

(3)

The first equation describe transfer knowledge into individual activities depends on useful of knowledge and store knowledge activities. The second equation describe transfer knowledge within group activities depend on useful of knowledge and transfer knowledge into an individual activities, the last equation describe use of knowledge depend on transfer knowledge into individual activities and transfer knowledge within group activity.

#### 5. Conclusions

By using factor analysis methodology, the twelve applications of knowledge management are reduced to three main component as transfer knowledge into individual, transfer knowledge within group, and store knowledge,

A path analysis is conducted to determine the casual effects among the variables of UOK, TIDV, TGRP, STORK, and UFOK. The full model was not consistent with the empirical data. Test of missing paths in the full model indicated that two insignificant path of UOK on UFOK, and TGRP on STORK was removed from the model. Thus, a reduced model is generated. Computation of reproduced correlations for the reduced model indicates consistency with the empirical correlations. All path coefficients are significant at the .05 level.

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# **Factors Affecting Credit Card Payment Behavior of Undergraduate Students in Bangkok Metropolitan Region**

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## **Abstract**

Credit card has been a popular cashless mode of payment worldwide. The number of credit card holders in Bangkok metropolitan region significantly increases along with the amount of spending. One of the possible causes is that credit cards encourage low income consumers to spend extravagantly with the convenience of using a card, leading to a crisis of credit card debts. Interestingly, financial institutions expand target groups of credit card holders to undergraduate student group although the students have a high default risk because of their luxurious lifestyle. This group is easily convinced and most of the time makes quick compulsive decision to purchase.

This research aims to study the demographic factors and marketing mixes, that influencing credit card payment behavior of undergraduate students. The respondents are undergraduate students from state and private universities in Bangkok Metropolitan region. The major findings revealed that majority of senior undergraduate students, who had part time jobs, mostly held only one credit card of Krung Thai bank. Their main reasons on owning a credit card were to use in emergency cases and relaxation. The level of effect from marketing mixes on credit card use was at a high level. The various types of credit cards were also considered as important factors in decision-making. The understanding of Philosophy of Sufficiency Economy was at the moderate level and had an inverse relationship with spending through credit card at a statistically significant 0.05 level.

**Keywords:** Spending Behavior through Credit Cards, Undergraduate Students, Marketing Mixes, Philosophy of Sufficiency Economy

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### **1. Introduction**

A credit card is another means of payment instead of cash. Due to its increasing popularity, the number of credit card users and purchases are significantly rising. The increasing number of credit card users could be attributed to an adjusted regulation imposed by the Bank of Thailand. It has reduced the age limit of the main credit card holder from 22 to not less than 20 years old (The Bank of Thailand, 2545 (2002). The relaxation on age restrictions aimed to increase competitive capacity of commercial banks against nonbank institutions which are less controlled by regulations and law. Concurrently, this policy also aimed to stimulate Thai economy by increasing the purchasing ability of local people. However, the relaxation on credit card approval might cause extra spending of lower income consumers and bring about a massive bad debt in society.

Unfortunately, one of the customer groups who have high default risk is the undergraduate student group. They are the market target group of companies issuing credit cards because of having high purchasing demand and they are easily convinced to own a credit card even though they have no jobs and no personal income (Lada, 2003: 24). Similarly, undergraduate students in the United States are important target customers of credit card companies. They spend money extravagantly. A massive problem of bad debts from credit cards increased from \$1,879 USD in 2002 to \$2,748 USD per person during 2002 – 2004 (Nellie Mae, 2001).

### **2. Background and Significance of the Problem**

To prevent financial damage on the future economy, education institutions such as universities should analyze the spending behavior through credit card of undergraduate students. It could be possible that these students are unaware of the Philosophy of Sufficiency Economy created by His Majesty King Bhumibol Adulyadej (King of Thailand). At present, the capitalist society encourages youth to spend money extravagantly on luxury items such as fashionable dresses and branded bags. This phenomenon brings about a lot of bad debts in Thai economy. As a result, some of them raise money from illegal ways such as gambling or selling drugs without any regard for ethics or laws because of the need to gain a big amount of money easily and quickly. If no action will be taken by concerned agencies and organizations in Thailand, Thai society might be facing a future with weak economy. In this regard, the Philosophy of Sufficiency Economy could be an appropriate economic framework to improve macroeconomics of Thailand

for equivalence, immunity and sustainability with regards to solving these problems and prevent further problems in the future. Academic institutions should integrate teaching on personal financial management to undergraduate students. In addition, the government should revise regulations on credit cards and inspect credit card approval of commercial banks and credit card companies. Companies issuing credit cards might benefit from the results of this study in choosing appropriate marketing plans for undergraduate students group. These are the factors that motivated the researcher to study the spending behavior through credit cards of undergraduate students in Bangkok Metropolitan region.

## 2.1 Research Objective

To study the relationship between the knowledge of Philosophy of Sufficiency Economy and credit card spending in Bangkok Metropolitan region.

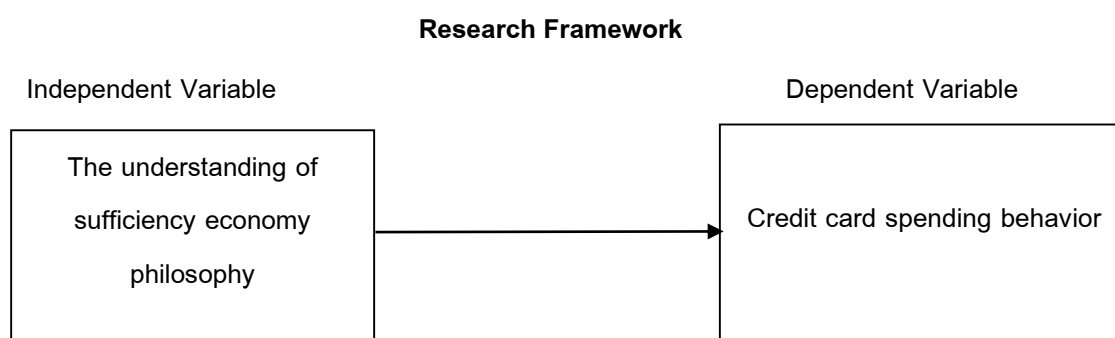


Figure 1: Research Framework

## 3. Literature Review

This section includes related theories such as Consumer Behavior Theory, Service Marketing Mixes as well as a discussion on the Philosophy of Sufficiency Economy and related research papers.

### 3.1 Consumer Behavior Theory

Consumer behavior analysis is a process to find out the purchasing and utilizing of products and service of consumers. The results of the analysis could be useful for companies in knowing the consumers' demand and selecting behavior including purchasing experiences and their perception. This theory focuses on purchasing decision behavior by using 7 questions (6Ws 1H): 1) Who is in the target market? 2) What does the consumer buy? 3) Why does the consumer

buy? 4) Who participates in the buying? 5) When does the consumer buy? 6) Where does the consumer buy? and 7) How does the consumer buy? The answers to these questions reveal purchasing decision process of consumers which may be used to perform appropriate marketing mixes of companies to respond to customers' satisfaction (Kotler, 1997: 129).

According to Chaithipornwong (1990), the factors influencing consumer behaviors can be classified based on the following:

1. Cultural Factors: Norms, belief, tradition, value, interest, lifestyle and social class effect on society members' thought, habit and their ways of life, which also influence consumers' behavior.

2. Social Factors: Family, friends, relatives, and social role including group membership may have an effect on consumers' activities including their needs and purchasing decision.

3. Personal Factors: Normally, each person has different major aspects such as gender, marriage status, career, income and education, which influence his/her idea, feeling, lifestyle and personality including purchasing behavior.

4. Psychological Factors: Stimulation, perception, learning and attitude effect on consumer behavior decision. External and internal factors' stimulation bring about perception and learning. Perception is a process of considering stimulators whereas, learning by perception may lead to a change in behavior and attitude based on information and experience.

These four factors have a strong impact on consumer behavior.

### **3.2 Philosophy of Sufficiency Economy**

Since 1950s, His Majesty King Bhumibol Adulyadej (King of Thailand) has created The Philosophy of Sufficiency Economy. With His Majesty's comprehensive understanding of Thai society, he also took into consideration the way of life and social norms of the modern society; however, His Majesty drew concern on the fact that modern economy emphasizes only on the economic growth which might eventually lead the country to crisis as evidenced in the Asian Financial Crisis in 1997. In this light, he has stressed on the income distribution to build the strength and stability of overall economic foundation of the country before moving to a higher level of development.

The philosophy emphasizes that the people should endeavour to produce or consume within a limitation of existing income or resources. Sufficiency economy focuses on the

fundamental principle of Thai culture in improving the way of life based on moderation, prudence, and social immunity. Through this, Thai people are able to gain real happiness in leading their lives. By adhering to the middle path, all members of the society can apply the Sufficiency Economy whether it is on a personal level, family, community, society, or even at a national level.

### **3.2.1 The Philosophy of Sufficiency Economy and Its Four Pillars**

The scope of sufficiency economy involves 4 dimensions: Economy, Mind, Social and Culture. The following are details of each dimension:

1. Economic dimension: This philosophy focuses on one's assiduity, legal occupation and self-reliance to be free from debts and penury. This eventually leads one to gain real happiness by relying faithfully on their economic status.
2. Mind dimension: Sufficiency is a key word that one should keep in mind to stay strong in following the middle path as a way of life.
3. Social dimension: A peaceful society is the aim of this philosophy. Kindness and generosity make everyone live together through sharing and helping each other.
4. Cultural dimension: This philosophy focuses on simple way of life of people in society. One should refrain from living extravagant luxurious lifestyle to be able to increase savings and live a sustainable happy life, which eventually leads to the financial stability of the country.

### **3.3 Prior Research**

Pataipuk (1996) studied the factors affecting the amount of spending money through credit cards of cardholders in Bangkok Metropolitan in 1996. The results revealed that key factors influencing the amount of spending using credit cards were income per month and the frequency of credit card payments. The other factors mentioned such as credit line, gender and marital status did not have a significant impact on the amount of spending using credit cards.

Walmanee (1996) focused on factors influencing the consumer and saving behavior of credit card holders in private business sectors in Bangkok Metropolitan during 1995 – 1996. The results showed that income and interest payment played key role on utilization of credit cards. In addition, the study found, through its respondents' responses, a positive concept on spending with the use of credit cards.

Auksavalurtluk (2000) employed a focus group research that compared female students in regular Master's program and twilight program. The results revealed that the objectives to use credit cards are different. Students in regular program favored spending money for clothes and accessories, whilst, students in twilight program spent money for costs of living. In addition, the factors that encouraged both groups to apply for credit cards were cash management technique (buying goods or service first and paying later within due date), safety and convenience in international transactions.

Davies and Lea (1995) studied the undergraduate students' attitudes towards their debt. Their sample data were collected from universities in the United Kingdom in 1992. Interestingly, the results revealed that factors that played a role on the amount of incurred debts were age, gender, religion and number of credit cards owned. In addition, all those factors have a direct relationship to the amount of debts. With regards to gender, male students had more debts than female students. Similarly, atheist students had more debts than protestant students.

Jatuwan (2003) examined factors affecting the credit card spending behavior of undergraduate students of private universities in Bangkok Metropolitan Region in 2003. The study involved 400 samples that are divided into 2 groups: 1) spending through credit card with 102 samples and 2) spending through other method with 298 samples. The results showed that credit cards encouraged undergraduate students to spend extravagantly. Most of respondents prefer to pay by cash than credit cards. However, factors such as students' age, number of credit card users in the family, individual and family income and secured and convenient payments made undergraduate students prefer spending through credit card to cash. The study also noted male undergraduate students used their credit cards less than female undergraduate students.

Piromrat (2010) studied the way of life of undergraduate students of Rajabhat University in Metropolitan Bangkok in 2010 in accordance to the Philosophy of Sufficiency Economy. The results revealed that most of undergraduate students have better understanding of the Philosophy of Sufficiency Economy and would associate their way of living to the philosophy at a high level. Results showed that the students apply the Philosophy of Sufficiency Economy in their daily life in terms of their saving behavior, and their efficient use of resources. In addition, universities incorporated Sufficiency Economy topic in each subject. Some universities arranged learning through media, student training and exhibition about the Philosophy of Sufficiency Economy.

Intravorapat, Chedsumon and Trimongkolkul (2013) designed a causal model of the accumulated debts by undergraduate students in Bangkok Metropolitan region in 2013. The study showed that the primary causes of students' debt are: 1) expected income after graduation, 2) cost of living, 3) expenses from studying, 4) consumer behavior, 5) economic attitude, 6) family income, 7) positive thinking about debts, 8) purchasing power, and 9) saving behavior. The Sufficiency Economy was the first solution to reduce undergraduate students' debts followed by acquiring financial knowledge, saving recognition and learning personal financial management.

#### 4. Methodology

##### 4.1 Research Hypotheses

The study performs three research hypotheses which are:

1. Personal factors and marketing mix affect spending behavior of undergraduate students in Metropolitan Bangkok Region.
2. The frequency and amount of spending through credit card of undergraduate students in state university are different from those of undergraduate students in private university.
3. The understanding of the Principle of Sufficiency Economy has an inverse relationship with the frequency and amount of spending using a credit card.

##### 4.2 Research Scope

The population of the research was undergraduate students in state and private universities in Bangkok Metropolitan region in 2012. In case of finite population, sample size was computed using the formula:

$$n = \frac{N}{1 + Ne^2}$$

Where:        n = Sample size  
                   N = Population size  
                   e = Sampling error

This study employed sampling error at 5% or 0.05. Thus, the sample size was 400 samples. Multi-Stage sampling technique was used by starting with simple random sampling for selecting 2 provinces in Bangkok Metropolitan Region. Then convenience sampling was employed for data collection.

**4.3 Data Collection**

This study is a survey research. Questionnaires were utilized to collect data. Questionnaires were developed based on prior studies and related documents. The final questionnaires were evaluated by an academician. The researcher initially tried-out 30 questionnaires and tested their reliability by performing Cronbach's Alpha efficient which yielded an acceptable level result at less than 0.70.

**4.4 Data Analysis**

The study employed two statistical techniques. One, description statistic was used such as frequency, percentage, mathematic mean, median, and standard deviation. Two, inferential statistics was employed to test research hypotheses such as Chi-square test, t-test, ANOVA and Pearson's Correlation.

**5. Research Findings**

Most of respondents were female, approximately 22 – 23 years old and studying at the fourth year level at the Faculty of Engineering. Their primary family income came from their own business, which provided income of more than 35,000 baths per month. Most students have part time jobs with an average income of 100,001 – 15,000 Baht per month. Most of the students hold only 1 credit card and they prefer Krung Thai credit card. In terms of the spending behavior of the respondents, they prefer cash payment over credit card payment. The minimum amount of spending was approximately 2,000 Baht per usage. They have also withdrawn advance cash for emergency situation at approximately 1 – 2 times a month. The other benefit that the respondents mentioned was that holding or bringing a credit card is safer than holding/bringing cash. Obviously, students' debts from credit card were paid by their families. Most students used their credit card for entertainment and shopping at well-known department stores. They would spend approximately 8,903.25 Baht a month for the aforementioned purpose alone. The frequency of spending through credit card was around 1.35 times a week. The strategy of marketing mix on offering a variety of credit cards created a significant effect on spending behavior of the students. The research also found out that the students have a moderate understanding of the Philosophy of Sufficiency Economy.



At 0.05 significance level of hypothesis testing, the results showed that undergraduate students in state universities have more purchasing power than those students in private universities. In addition, the students from different faculties have different credit limit for spending using credit cards. Income yielded a positive relationship with the amount of money to spend using credit cards. In contrast, the understanding of the Philosophy of Sufficiency Economy provided a negative relationship with the amount to spending using credit card.

Table 1: The Credit Card Spending Behavior Classified by Types of University

Spending behavior through credit card	State University		Private University		t	Sig.
	Mean	S.D.	Mean	S.D.		
The amount of spending through credit card per month	9,245.00	2,570.61	8,561.50	2,773.41	2.56	0.011**

Note: \*\* means a 5% significance level

Table 2: The Relationship between Understanding the Philosophy of Sufficiency Economy and Credit Card Spending Behavior of Undergraduate Students in Bangkok Metropolitan Region

Spending behavior through credit card	Understanding of the Philosophy of Sufficiency Economy		
	Correlation coefficient	Sig	Analysis
The amount of spending through credit card per month	-0.278	.000***	Negative relationship

Note: \*\*\* means 1% significance level

## **6. Conclusion and Discussion**

Based on the major findings as shown above, the researcher has noted and summarized interesting aspects as enumerated below.

1. The research found that most of the young respondents who are around the age range of 22 – 23 years old and are in their third and fourth year in the university are more likely to spend on both products and service under limited income. Senior students have higher demands so they used credit card for payment instead of cash in order to increase their purchasing ability. The University of the Thai Chamber of Commerce (2005) pointed out that Thai students had the highest debts from spending using credit cards on top of the education loans. This situation pushed most of them to resort to illegal lending system which provided a high interest rate under a short term period. As a consequence, they needed to raise funds for settling payments illegally such as gambling and selling drugs that eventually lead to societal problems of the country in the long run. In this regard, the Bank of Thailand should tighten and improve regulations on qualifying applicant's especially undergraduate students. Major qualification requirements must greatly consider the monthly income besides the age of the applicant. Moreover, the age of credit card holder should be adjusted because undergraduate students easily qualify the current age requirement in becoming a principal credit card holder. Giving the undergraduate students the freedom to spend without asking permission from their parents creates massive bad debts. To resolve this problem, the Bank of Thailand should revise the regulation especially age requirement of credit card applicants. Banks should highlight on the family income instead of age to ensure the payment ability of credit card holders. This is consistent with the consumer behavior theory which explains that income is a personal factor that has a significant impact on one's need and purchasing behavior. This theory was also proven in the researches of PtaiPruk (1996) and Walmanee (1996).

2. There is no difference between the credit card expenditures of undergraduate students from both private and state universities. Most of the respondents prefer to pay by cash than by credit card; however, if the cost that they needed to pay is higher than 2,000 Baht, they prefer to pay by credit card. It was also observed that the frequency of advance cash withdrawal was somewhat high. This reflected that credit card was not only for personal liquidity management but also for students' personal loans. Unfortunately, these students did not recognize the interest of their acquired debt which amount to a high financial leverage. The same finding was pointed out

by Intravorapat, Chedsumon and Trimongkolkul (2013) where they noted that the students had a positive thought about loans. Conversely, Auksavalurtluk (2000) found that majority of the students' use their credit card for purchasing items or for personal enjoyment. In terms of purchasing behavior, most of students spend on entertainment and luxurious products. All these findings reveal that credit card is a tool that encourages students to spend money extravagantly. They enjoy shopping in big department stores and dining in restaurants because paying by credit cards made these activities convenient and possible without bringing out a single cent from their pockets.

3. Each of the marketing mixes (7Ps) influenced the undergraduate students to own and spend using credit cards. The primary effect of marketing mixes on credit card ownership was promotion, particularly the payment plans where members can pay off in monthly installments at zero percent interest rate. This installment plan was created because of the advent of technology. These days the fast changing technology creates the students' needs for the latest techie items such as cell phones, notebooks, tablets and personal computers. Katz and Lazarsfeld (1955) stated that marketing mixes: product, price, place and promotion have a great impact on the change of consumers' attitude, taste and behavior. In the case of credit card usage, consumers make decisions to own credit cards immediately whenever they are exposed to emotional stimulators (Patavanit, 1982). The Committee on National Economic and Social Development (2009) stated that Thai youth has valued material consumption leading them to personal debts, family debts and finally economic downturn.

4. The moderate level of understanding of the Philosophy of Sufficiency Economy of undergraduate students both in state universities and private universities reflected that universities should endeavor to promote this philosophy to students because they should recognize a better way of life in the future by preparing themselves today. Therefore, the universities should gradually teach this philosophy to the students in each subject within the curriculum instead of offering it in one subject in that gradual teaching creates a repetition of learning which will make the philosophy more embedded in their thoughts and memories. Furthermore, universities must strive to produce quality students to society who will become model citizens of Thailand.

5. The results of testing hypothesis showed that individual factors such as university affiliation had a significant impact on the amount of expenditures per month using credit card. Undergraduate students in state universities use their credit cards more than those in private

universities. The students in the Faculty of Arts and Liberal Arts gained the highest amount of credit card spending. In contrast, the students in the Faculty of Faculty of Fine and Applied Arts had the lowest credit card spending. This might be because of the difference in the understanding of the Philosophy of Sufficiency Economy. It was clear that students with family business and gaining high income had high credit card expenditures. Interestingly, students who had income of their own of more than 10,000 Baht a month also had greater credit card spending. Pataipuk (1996) stated that income was a major factor on the amount of spending through credit cards.

6. In terms of marketing mixes, the results of hypothesis testing showed that the different marketing strategies affected credit card usage in various ways. Suporn (1997) stated that marketing always has an influence on purchasing behavior of consumers.

7. The results of hypothesis testing on the understanding of the Philosophy of Sufficiency Economy have an inverse relationship with the students' spending behavior with regards to credit card purchases. This supports the mentioned suggestion that universities teach the Philosophy of Sufficiency Economy and encourage the students to use the concept of middle path to direct them towards a better way of life and secured future.

## **7. Recommendations**

Currently, undergraduate students in both state universities and private universities seem to have debts from using credit cards. Most of them expect to pay having their future income after graduation in mind. Most respondents were greatly led by material consumerism and possess a positive thought about credit cards usage. They enjoy shopping and living luxurious life without considering the cost of debts and its effect on sustainable happiness in the long run. In this regard, it is a major concern and duty (of the family and the academe) to help encourage the youth in taking the middle path in living their lives as exemplified in the Philosophy of Sufficiency Economy of His Majesty's King Bhumibol Adulyadej. Additionally, the youth should learn personal financial management so they may be able to practice and observe financial self-discipline to gain a better life for themselves. Eventually, their development will lead to the strength of the community and finally to the progress of the nation.

## 8. Future Research

To gain more contribution, future research could be developed to:

1. Comparison of quantitative research and qualitative research including secondary data from related government organizations such as the Bank of Thailand, and Ministry of Finance to gain in-depth information;
2. Further study of the impact of personal financial management on funding personal debt.

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# **Risks and Returns of Listed Companies on the Stock Exchange of Thailand: Manufacturing Sector and Service Sector Evidence**

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## **Abstract**

The purpose of this research is to examine the relationship between risks and returns of service sector and manufacturing sector, which are major drivers to Thai GDP. This research used listed companies on the Stock Exchange of Thailand which have the highest group index as a sample group. The representative of manufacturing and service sector are a packaging group and commerce, respectively. The data of manufacturing sector and service sector were collected from Biznews database during 2014 – 2016. Market-based variables were employed to evaluate returns and Value at Risk. The coefficient of variation was also examined. The results showed that service sector provided higher return and lower risks than industrial sector during 2014 – 2016. Each sample companies had a variation of returns and risk due to two unsatisfactory situations: politic problem and the death of Thailand's King Bhumibol Adulyadej. To make a list of interested company for investment, the Coefficient of variation was performed and the list indicating the best choice for investment was the THIP, followed by Global and Beauty.

**Keywords:** Risk, Return, the Stock Exchange of Thailand

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## 1. Introduction

According to the office of National Economic and Social Development Board (NESDB) of Thailand (2016), the world economic growth rates gradually declined from 3.4 percent in 2014 to 3.2 percent in 2015 and to 3.1 percent in 2016. Interestingly, the United States as a advanced economics country had economic growth rates ranging from 2.4 percent to 1.6 percent during 2014 – 2016, which were lower than those of emerging markets and developing counties, which ranged from 4.6 percent to 4.2 percent. This might be because of the decline of real the US. gross domestic products (GDP) from 2.4 percent in 2014 to 1.6 percent in 2016. This phenomenon have led to the increase of economic growth rates in Asian countries and emerging markets and developing counties in the present day.

In 2011, Thailand was upgraded from a lower-middle income economy to an upper-middle income economy. This evidenced that Thailand had been one of successful countries in sustainability. The other evidence was that Thai poverty has reduced significantly from 67 percent to 11 percent during 1986 – 2014. However, average economic growth had slowed to 3.5 percent over 2005-2015 (World bank, 2017); in addition, it dropped to 3.2 percent in the third quarter of 2016 (KResearch (2016))

Aforetime, agriculture had been the traditional backbone of the Thai economy; however since globalisation era, manufacturing sector had eclipsed agriculture sector, ewflecting from providing more contribution to GDP. Thereafter, Thai government performed economic development policy by intertwining agriculture sector with manufacturing sector. According to Koonnathamdee (2013) pointed out that Thai economy driver started with agriculture, then shifted to manufacuring sector and finally would shift to service sector. Those sector contributed to Thai GDP differently during 2010 – 2015 as shown Table 1 below.

Table 1: Thailand's Three Major Sectors Contributing to GDP during 2010 – 2015

Year	2010	2011	2012	2013	2014	2015
Agriculture (% of GDP)	10.531	11.601	11.515	11.393	10.231	9.142
Manufacturing (% of GDP)	31.088	29.152	28.130	27.686	27.571	26.917
Service (% of GDP)	49.435	50.305	51.032	51.628	52.996	55.140

Source: The World Bank Data (2016)

From Table 1, service setor provided the most contribution to GDP during 2010 – 2015, implying that service has been the most significant driver of Thai economy, followed by manufacturing sector and agriculture sector.

Based on Finance views, author interested in the relationship between risks and returns of service sector and manufacturing sector, which are major drivers to Thai GDP. Additionally,

these issues might reflect from market stock prices of listed companies in both sectors. Thus, a research question of this paper is which industry sector provides the higher risks and returns. Thus, the paper aims to examine returns and risks of listed companies in the Stock Exchange of Thailand (SET) and to employ a comparison study. The author expects that the results of this paper might be helpful information for investors both individual and institution before making decision to invest in capital market.

## **2. Literature Review**

### **2.1 Theory and Empirical Study**

Rely on the aims of the paper, this study focused on two key factors: risk and return. This section starts with firms' risk and then followed by firms' returns as below.

#### **2.1.1 Risk Aspect**

The Modigliani & Miller theory stated that based on a perfect market the debt ratio does not impact on the firms' value (Eugene and Houston, 2009). The financial leverage theory demonstrates that more leverage leads to higher return and higher probability of financial distress. Generally, firms' risks normally have been measured based on accounting-based basis such as debt to equity ratio, time interest earn ratio and debt ratio. Many researchers employed those proxies in their research papers such as Mahfouz and Ahmed (2014) and Gup, Avram, Beal, Lambert, and Kolari (2007). Since financial crises, the viewpoints of firms' risk have been changed because most scholars have aimed to prevent the financial disaster from risks. Thus, risks should be measured from the forward-looking information which they incorporate (Chan-Lau & Sy, 2007) instead of historical information. As a result, market-based risk concept has been currently accepted among scholars and researchers. The market-based assessment tools have been developed in many methods such as Standard Deviation, Variance, Coefficient of Variation, Value at Risk (VaR) and Probability of Default (PD). This paper focused on VaR and to study financial market volatility by employing daily market price of common stocks.

The VaR is a risk instrument based on percentile approach, which is widely used among financial practitioners to measure maximum loss within a given time period for a given confidence level. The VaR method assumes a normal distribution for asset returns. The standard deviation of the relevant assets is used to compute VaR and then the z-score of the normal distribution, which based on the confidence level, is also employed.

#### **2.1.2 Return Aspect**

Similar to risk aspect, the proxies of return variables are employed in accounting-based basis and marketing-based basis. For the accounting-based basis, the popular proxies of return

are return on assets (ROA) and return on equity (ROE). Many researchers used these proxy variables in their studies such as Kleff and Weber (2008), Gropp and Heider (2010) and Thippayana (2014). Thereafter, the proxy of return variable has been modified by using both accounting data and market data such as market to book ratio or Tobin's q as shown in the papers of Octavia and Brown (2010). Similar to risk aspect, return based on market-based basis currently has been more favored among many researchers because this aspect involves in current firm's value. To keep consistency principle, this study employed returns based on market-based basis. Therefore, returns are performed from market price of share based on the context of risk measurement of financial assets due to gaining better statistical properties (Jorion, 2001). Many researchers such as Powell (2007) employed the market-based returns.

## **2.2 Industrial Sector**

As shown in Section 1, manufacturing sector used to be a key factor on driving Thai GDP. However, during 2014 – 2016 the growth rate of manufacturing sector significantly declined from 6.9 percent to -0.2 percent (the Bank of Thailand, 2016). In this paper, author focused on the listed companies on the SET particularly in industry sector on November 2016, which was classified into six groups (with different group indexes): Automotive group (431.71), Industrial Materials and Machinery group (70.26), Paper and Printing Materials group (1,744.14), Petroleum (944.48), Packaging group (4,401.18) and Steel group (42.64) (the Stock Exchange of Thailand, 2016). As a result, this paper concentrated in packaging group due to providing the highest group indexes.

In spite of sluggish economy in Thailand, packaging sector had growth of sale volumes more than all industries. This might be packaging manufacturers eager to initiate new packaging to assist production manufacturers to capture consumers' interests and convenience. Additionally, packaging sector is expected to significantly grow in the future because of supporting from the major production industry competitors in the domestic market and also the more interest in value-added packaging. Generally, the food and beverages sector remains the key growth drivers of the domestic packaging industry.

Presently, the packaging group in the SET consisted of 17 listed companies; however, 5 companies were dropped from this study because of unavailable data. As a result, 12 listed companies were included as shown in Table 2 below.

## **2.3 Service Sector**

Table 1 pointed out that currently service sector was a sector contributing to Thai GDP in line with Koonnathamdee (2013), who stated that Thai economy shifted from manufacturing sector to servicing sector. Likewise, labor force increased to 18 million people during 2003 – 2010,

especially in hotels and restaurants group, and construction group. The growth rate of total private service sector of Thailand ranged between 1.69 percent to -0.03 percent during 2003 – 2009, which were quite close to those of the total service sector, implying that most of the service units in Thailand were private service units. Similar to industrial sector, author focused on the listed companies on the SET particularly in service sector on November 2016, which consisted of six groups (with different group indexes): Commerce group (36,242.16), Health Care Service group (5,620.45), Media and Publishing group (56.81), Professional service group (340.96), Tourism and Leisure (592.32) and Transportation and Logistics (280.15) (the Stock Exchange of Thailand, 2016). Definitely, this paper focused on commerce because providing the highest of group indexes.

Currently, the commerce group consisted of 22 listed companies; however, 5 companies were excluded from this study because of unavailable data. As a result, 17 listed companies were included as shown in Table 2 below.

### 3. Data and Methodology

#### 3.1 Data

The sample group of this paper was listed companies, particularly in packaging group and commerce group on the SET. The fiscal years from 2014 to 2016 were used. Data was collected from BizNews Database in terms of daily market price of common stock for computing market-based risk variable in terms of VaR and CV and return variable.

Based on available data, 12 out of 17 listed companies in packaging group and 17 out of 22 companies in commerce group were included in the paper as shown in Table 2 below.

Table 2: Listed Company Names Included in This Paper

No.	Packaging Group	Mnemonic
1	A.J. Plastic Public Company Limited	AJ
2	Crown Seal Public Company Limited	CSC
3	NEP Reality Industry Public Company Limited	NEP
4	Nippon Pack (Thailand) Public Company Limited	NPP
5	Poly Plex (Thailand) Public Company Limited	PTL
6	Srithai Superware Public Company Limited	SITHAI
7	Sahamitr Pressure Container Public Company Limited	SMPC
8	S. Pack and Print Public Company Limited	SPACK
9	Thai Film Industries Public Company Limited	TFI
10	Thantawan Industry Public Company Limited	THIP
11	Thai Metal Drum Manufacturing Public Company Limited	TMD
12	Thai Packaging and Printing Public Company Limited	TPP

No.	Commerce Group	Mnemonic
1	Beauty Community Public Company Limited	Beauty
2	Big C Supercenter Public Company Limited	BIG C
3	Berli Jucker Public Company Limited	BJC
4	COL Public Company Limited	COL
5	CP All Public Company Limited	CPALL
6	Communication and System Solution Public Company Limited	CSS
7	Siam Global House Public Company Limited	Global
8	Home Product Center Public Company Limited	Hmpro
9	IT City Public Company Limited	IT
10	Karmarts Public Company Limited	Kamart
11	Loxley Public Company Limited	Loxly
12	Siam Makro Public Company Limited	Makro
13	MC Group Public Company Limited	MC
14	Mega Lifesciences Public Company Limited	Mega
15	Mida Assets Public Company Limited	MIDA
16	Robinson Department Store Public Company Limited	Ro
17	Singer Thailand Public Company Limited	SIN

Source: The Stock Exchange of Thailand (2016)

### 3.2 Variable Measurement

As shown in research question, this paper aims to compare risk and return of securities of listed firms on the SET, particularly in packaging group from manufacturing sector and commerce group in service sector. Keeping concern in current situation, market-based basis were employed for risk and return calculation, leading to current situation. However, to gain more useful information, the CV was used to provide making decision information for investors. The details of market-based risk in regards to VaR and return ( $R_t$ ) and CV were explained as following.

#### 3.2.1 VaR Calculation

As described in Section 2.1.1, VaR is the fluctuation of daily market price of common stocks by using standard deviation ( $\sigma_x$ ) under a given period and develop to maximum loss under a specific the confidence level. Thus, if the 95% confidence level is used, the distribution the z-score is 1.96. Then, VaR for a single asset can be calculated as below:

$$\text{VaR} = \text{z-score} \times (\sigma_x) \dots \dots \dots (1)$$

To gain helpful information for investors, coefficient of variation (CV) was computed. The core concept of CV is to comparison risk in terms of standard deviation against mean of return. Thus, the lower CV reflects lower risk based on the same mean return. The formula of CV is shown below.

$$CV_i = \frac{\sigma_x}{X} \dots\dots\dots(2)$$

### 3.2.3 Return Calculation

Normally, returns should be computed from daily market price to gain better statistical properties. Daily returns are calculated by using the logarithm of the ratio between current market price ( $P_t$ ) of share and the previous market price ( $P_{t-1}$ ) of share. The formula to calculate market-based return is shown below.

$$r_t = \ln \left( \frac{P_t}{P_{t-1}} \right) \dots\dots\dots(3)$$

Additionally, to reflect the current moving of market stock price this paper employed moving average technique to perform quarterly VaR and return during 2014 – 2016.

## 4. Research Results

### 4.1 Findings from Packaging group

After performing quarterly moving average of return, Table 3 shows the average returns of listed companies in packaging group as below.

As shown in Table 3, the moving average return of packaging group (PKG) during 2014 – 2016 was 0.000501 or 0.501 percent. To gain insights, six companies provided their performances above the average return. The SMPC provided the highest return at 0.002853, followed by THIP at 0.002076, and TPP at 0.001095. At the same period, NEP was the only company gaining loss at 0.001375.

**Table 3: Quarterly Moving Average of Return of Packaging Group during 2014 – 2016**

Year	1Q2014	2Q2014	3Q2014	4Q2014	1Q2015	2Q2015	3Q2015	4Q2015	1Q2016	2Q2016	3Q2016	4Q2016	Average
PKG	0.001775	0.002012	0.000892	-0.001146	-0.000500	-0.000298	-0.001780	-0.000624	0.001000	0.001892	0.001300	0.001494	0.000501
AJ	0.001554	0.000485	0.001078	-0.003714	-0.001862	-0.000415	-0.002904	-0.000136	0.001485	0.001352	0.000693	0.005704	0.000277
CSC	0.001276	-0.001276	0.000000	-0.000548	0.000548	0.000153	-0.000955	0.000485	-0.000238	0.000397	0.002061	-0.000279	0.000135
NEP	0.000000	0.001931	-0.001413	-0.003218	-0.003268	0.001521	-0.002527	-0.006279	0.000410	0.002052	-0.002797	-0.002913	-0.001375
NPP	0.004235	0.000000	0.004784	0.016130	-0.012887	-0.000898	0.001319	-0.004155	0.000026	-0.002029	-0.000648	0.000136	0.000501
PTL	0.001538	0.001704	0.002328	-0.004682	0.000000	0.000083	-0.003826	-0.003152	0.001046	0.005726	0.003102	0.002777	0.000554
SITHAI	0.004317	0.003526	0.002106	-0.002875	0.000929	0.000401	-0.001402	-0.000150	-0.000945	-0.000900	-0.000599	-0.000632	0.000315
SMPC	0.010885	0.005044	0.002762	0.001054	0.001899	-0.004674	-0.003594	0.004878	0.006792	0.002411	0.005361	0.001417	0.002853
SPACK	0.000148	0.000293	0.001121	-0.001562	0.001964	0.000129	-0.001498	-0.001039	0.000792	-0.000318	-0.000162	0.004836	0.000392
TFI	0.001413	0.004942	0.001086	-0.002615	0.000841	0.000236	-0.001740	-0.003260	0.001464	0.001250	-0.000770	0.001633	0.000373
THIP	0.003493	0.002745	0.003200	-0.001632	0.000623	0.005480	0.003063	-0.000588	0.001141	0.000068	0.003091	0.004227	0.002076
TMD	0.000000	0.001087	-0.000886	-0.001312	0.000386	0.000360	0.000615	-0.000257	0.000422	0.000405	0.000000	0.001032	0.000154
TPP	0.001572	0.001807	0.001464	0.004376	0.004833	0.000405	-0.002229	-0.001923	0.002476	-0.000538	0.001312	-0.000415	0.001095

The quarterly VaR at the 95% confidence level was performed in terms of moving average basis during 2014 – 2016. Table 4 presents the quarterly average VaRs of listed companies in packaging group as below.

Table 4 revealed that the moving average VaRs was 0.02255 or 2.255 percent during 2014 – 2016. Obviously, all companies in packaging group provided VaRs above its mean VaR of group, reflecting that each company had higher market risk than its group. This implied that the market risk of commerce group was diversified in line with Portfolio theory (Stephen, Randolph and Bradford, 2014). The highest VaRs of packaging group started with THIP (0.18135) followed by NEP (0.17338) and PTL (0.09826) respectively.

**Table 4: Quarterly Moving Average of VaRs of Packaging Group during 2014 – 2016**

Year	1Q2014	2Q2014	3Q2014	4Q2014	1Q2015	2Q2015	3Q2015	4Q2015	1Q2016	2Q2016	3Q2016	4Q2016	Average
PKG	0.02102	0.02362	0.01904	0.02155	0.02139	0.02071	0.02723	0.01785	0.01710	0.02267	0.02586	0.03257	0.02255
AJ	0.04468	0.03734	0.03424	0.02439	0.02407	0.03122	0.06588	0.04714	0.02555	0.05738	0.04159	0.08757	0.04342
CSC	0.04037	0.02841	0.01672	0.01759	0.03129	0.01200	0.01696	0.03021	0.01910	0.02601	0.02645	0.03158	0.02472
NEP	0.02459	0.03325	0.03037	0.05574	0.03456	0.06020	1.54912	0.05380	0.04456	0.06719	0.06488	0.06230	0.17338
NPP	0.05126	0.02858	0.07874	0.18365	0.10855	0.08312	0.35080	0.03940	0.04929	0.03397	0.05412	0.07107	0.09438
PTL	0.04989	0.05212	0.05099	0.03299	0.03982	0.03471	0.59947	0.03899	0.03446	0.08674	0.07796	0.08102	0.09826
SITHAI	0.02825	0.06448	0.04975	0.03602	0.04308	0.02695	0.48884	0.02772	0.02251	0.02066	0.01635	0.02112	0.07048
SMPC	0.06367	0.05673	0.03871	0.03718	0.02495	0.07134	0.30574	0.06515	0.09662	0.06537	0.04826	0.05063	0.07703
SPACK	0.03263	0.01754	0.04797	0.03446	0.14065	0.06270	0.30390	0.03564	0.02824	0.02369	0.01717	0.07922	0.06865
TFI	0.06678	0.05897	0.06324	0.08335	0.06510	0.03854	0.23435	0.03626	0.03811	0.05107	0.03132	0.06614	0.06944
THIP	0.04818	0.05221	0.04799	0.02544	0.02514	0.05332	1.75871	0.03386	0.03367	0.02006	0.04011	0.03750	0.18135
TMD	0.04442	0.03258	0.02201	0.01943	0.03280	0.02348	0.02412	0.02003	0.05016	0.01339	0.02396	0.01990	0.02719
TPP	0.03731	0.04167	0.05830	0.07429	0.37514	0.06035	0.06793	0.05518	0.05950	0.04361	0.05305	0.06285	0.08243



## 4.2 Findings from Commerce Group

Similar to packaging group, the quarterly average returns and VaRs of listed companies in commerce group were developed as shown in Table 5 and Table 6 below.

Table 5: Quarterly Moving Average of Return of Commerce Group during 2014 – 2016

Year	1Q2014	2Q2014	3Q2014	4Q2014	1Q2015	2Q2015	3Q2015	4Q2015	1Q2016	2Q2016	3Q2016	4Q2016	Average
Comm	0.00157	0.00219	0.00011	-0.00106	-0.00033	0.00068	0.00031	-0.00143	0.00189	0.00159	0.00129	0.00097	0.00065
Beauty	0.00051	0.00256	0.00464	0.00196	0.00387	-0.00064	0.00191	0.00359	0.00046	0.00680	0.00251	0.00316	0.00261
BIGC	0.00116	0.00201	0.00196	0.00071	-0.00049	-0.00259	0.00105	0.00016	0.00374	-0.00254	-0.00031	0.00024	0.00042
BJC	0.00086	-0.00069	0.00009	-0.00170	-0.00189	0.00078	-0.00106	0.00109	0.00187	0.00256	0.00221	0.00154	0.00047
COL	0.00401	0.00765	-0.00145	-0.00082	0.00321	-0.00242	-0.00615	0.00184	-0.00118	0.00223	-0.00356	-0.00063	0.00023
Cpall	0.00138	0.00219	-0.00063	-0.00085	-0.00059	0.00322	0.00061	-0.00364	0.00163	0.00199	0.00283	0.00040	0.00071
Css	0.00434	0.00329	0.00960	0.00131	0.00155	-0.00070	-0.00198	-0.00034	-0.00150	-0.00146	-0.00489	-0.00012	0.00076
Global	0.00230	-0.00097	0.00122	-0.00351	-0.00040	-0.00151	0.00494	-0.00350	0.00320	0.00686	0.00093	0.00375	0.00111
Hmpro	0.00217	0.00236	0.00132	-0.00188	-0.00019	-0.00203	0.00111	0.00024	0.00423	0.00329	0.00058	0.00000	0.00093
IT	0.00097	0.00168	0.00072	-0.00299	0.00094	0.00000	-0.00334	0.00000	0.00279	0.00064	-0.00090	0.00403	0.00038
Kamart	0.00101	0.00226	0.00246	-0.00119	0.00310	-0.00436	0.00363	0.00000	0.00063	0.00483	0.00403	0.00000	0.00137
Loxly	0.00223	0.00279	0.00125	-0.00295	-0.00047	-0.00245	-0.00515	-0.00199	0.00123	0.00102	0.00315	-0.00052	-0.00016
Makro	0.00176	0.00426	-0.00071	-0.00151	-0.00023	0.00173	-0.00021	-0.00122	-0.00107	-0.00012	-0.00037	0.00109	0.00028
MC	0.00624	0.00266	0.00027	-0.00587	0.00190	-0.00117	-0.00107	-0.00169	0.00173	0.00025	-0.00024	0.00172	0.00039
Mega	0.00187	0.00046	-0.00181	-0.00305	0.00114	0.00018	-0.00027	-0.00170	-0.00025	-0.00039	0.00212	0.00458	0.00024
MIDA	0.00318	0.00249	0.00075	0.00463	0.00339	-0.00404	-0.00015	-0.00275	0.00289	-0.00050	-0.00296	0.00020	0.00060
Ro	0.00260	0.00166	-0.00098	-0.00245	0.00089	-0.00080	-0.00277	0.00232	0.00373	0.00506	-0.00148	0.00100	0.00073
Sin	-0.00058	0.00336	-0.00215	-0.00581	-0.00039	0.00149	-0.00123	-0.00592	0.00019	0.00239	0.00000	0.00181	-0.00057

As shown in Table 5, the quarterly moving average return of commerce during 2014 – 2016 was 0.00065 or 0.65 percentage. To gain insights, seven companies provided their performances above the average return. The Beauty had the highest returns at 0.00261, followed by Kamart at 0.00137, and Global and Hmpro at 0.00111 and 0.00093 respectively. The Loxly and Sin were the only two companies, which gain Losses at 0.00016 and 0.00057 respectively.

Table 6 below revealed that the moving average VaRs was 0.01764 or 1.764 percent during 2014 – 2016. Similar to Packaging group, the mean VaR of commerce group was the lowest VaR due to a risk diversification, implying that each company provided VaRs above the average VaR as shown in Table 6. The top three of VaR were provided by Css (0.05876), Kamart (0.05191) and MIDA (0.05107).

**Table 6: Quarterly Moving Average of VaRs of Commerce Group during 2014 – 2016**

Year	1Q2014	2Q2014	3Q2014	4Q2014	1Q2015	2Q2015	3Q2015	4Q2015	1Q2016	2Q2016	3Q2016	4Q2016	Average
Comm	0.01730	0.01640	0.01200	0.01859	0.01533	0.01975	0.01939	0.01618	0.01942	0.01418	0.02240	0.02072	0.01764
Beauty	0.02677	0.03383	0.04477	0.05464	0.05450	0.03827	0.03798	0.04587	0.04381	0.04975	0.05487	0.05747	0.04521
BIGC	0.02627	0.02809	0.02769	0.04357	0.03092	0.03207	0.02272	0.02761	0.04678	0.02427	0.02004	0.01845	0.02904
BJC	0.03539	0.02630	0.04251	0.02817	0.03463	0.03901	0.02889	0.04091	0.05142	0.04685	0.05034	0.04067	0.03876
COL	0.04115	0.05160	0.03062	0.02546	0.03430	0.03631	0.03460	0.04129	0.02635	0.04041	0.02813	0.04028	0.03588
Cpall	0.02885	0.02496	0.01779	0.02887	0.02638	0.03448	0.02920	0.02797	0.04097	0.02559	0.03341	0.02575	0.02869
Css	0.04485	0.04636	0.09785	0.09321	0.06876	0.03694	0.05983	0.07165	0.04146	0.03806	0.04442	0.06174	0.05876
Global	0.04462	0.03363	0.04183	0.03001	0.04151	0.03681	0.04870	0.04248	0.05521	0.04746	0.04624	0.04285	0.04261
Hmpro	0.03558	0.02903	0.03118	0.02322	0.02946	0.02928	0.03471	0.03802	0.03525	0.02956	0.04736	0.03636	0.03325
IT	0.02608	0.03032	0.05038	0.03851	0.04136	0.02533	0.03750	0.03559	0.03719	0.03813	0.02325	0.08102	0.03872
Kamart	0.04594	0.04155	0.04183	0.03446	0.05351	0.03797	0.06832	0.05322	0.06476	0.04413	0.07475	0.06247	0.05191
Loxly	0.04978	0.04008	0.04480	0.04606	0.02874	0.02374	0.04423	0.03776	0.05042	0.02670	0.06222	0.05121	0.04214
Makro	0.02218	0.03157	0.01716	0.02096	0.01457	0.02939	0.02218	0.01925	0.02406	0.02045	0.02389	0.02541	0.02259
MC	0.03889	0.03133	0.03128	0.04670	0.03708	0.04023	0.04039	0.03213	0.03009	0.03191	0.03421	0.03564	0.03582
Mega	0.02921	0.03580	0.03119	0.02701	0.04876	0.02862	0.03573	0.01967	0.03309	0.02218	0.04874	0.05278	0.03440
MIDA	0.04116	0.04579	0.05452	0.10765	0.06435	0.04540	0.07003	0.04004	0.03220	0.03414	0.03020	0.04734	0.05107
Ro	0.03864	0.03077	0.02597	0.03743	0.03662	0.03358	0.03993	0.03027	0.04208	0.03301	0.04092	0.05194	0.03676
Sin	0.03444	0.03864	0.03984	0.04105	0.05533	0.04325	0.04926	0.04366	0.03358	0.05929	0.07146	0.05546	0.04711

### 4.3 Comparison aspects

To gain more insights, this paper included the comparison study between risk and return of top three companies, which provided the highest quarterly returns and VaRs of both groups. The results are shown in Table 7 below.

From Table 7 below, it is interesting that the commerce group provided the higher return (0.000649) and lower VaR (0.01764) than the return (0.000501) and VaR (0.022551) of packaging group during 2014 – 2016. This might be because commercial sector dealing with consumers' daily life leading to lesser impact from market risk.

**Table7: Comparison between Returns and Risks of Listed Companies in Packaging and Commerce Group**

Year		1Q2014	2Q2014	3Q2014	4Q2014	1Q2015	2Q2015	3Q2015	4Q2015	1Q2016	2Q2016	3Q2016	4Q2016	Average
PKG	Return	0.00177543	0.002012	0.0008924	-0.001146	-0.0005003	-0.000298	-0.0017804	-0.000624	0.0010001	0.0018917	0.0013004	0.001494	0.000501
	VaR	0.0210155	0.023619	0.0190406	0.021549	0.02139269	0.02071	0.0272258	0.0178549	0.0170989	0.0226717	0.0258595	0.032572	0.022551
SMPC	Return	0.01088509	0.005044	0.0027617	0.001054	0.00189933	-0.004674	-0.0035937	0.0048776	0.0067921	0.0024115	0.0053605	0.001417	0.002853
	VaR	0.06367061	0.05673	0.0387117	0.03718	0.02495466	0.071345	0.3057386	0.0651517	0.0966183	0.0653722	0.0482617	0.05063	0.07703
THIP	Return	0.00349333	0.002745	0.0031995	-0.001632	0.0006234	0.00548	0.0030626	-0.000588	0.0011409	6.816E-05	0.0030906	0.004227	0.002076
	VaR	0.04817513	0.052214	0.0479857	0.025437	0.02513803	0.053322	1.7587106	0.0338575	0.033671	0.0200595	0.0401144	0.037503	0.181349
TPP	Return	0.00157246	0.001807	0.0014639	0.004376	0.00483278	0.000405	-0.0022288	-0.001923	0.0024761	-0.0005375	0.0013122	-0.00042	0.001095
	VaR	0.03731326	0.041674	0.0583049	0.074288	0.37514336	0.060351	0.0679316	0.0551797	0.0595012	0.0436112	0.0530458	0.062846	0.082433
Comm	Return	0.00156524	0.00219	0.0001136	-0.001062	-0.0003295	0.000684	0.0003052	-0.001427	0.0018922	0.0015901	0.0012932	0.000974	0.000649
	VaR	0.01730304	0.016397	0.0119975	0.018592	0.01533269	0.019748	0.0193902	0.0161848	0.0194232	0.014185	0.0224021	0.02072	0.01764
Beauty	Return	0.00050705	0.002563	0.0046434	0.001955	0.00387012	-0.000637	0.0019128	0.003587	0.0004589	0.0067967	0.0025127	0.003158	0.002611
	VaR	0.02676851	0.033833	0.044767	0.054639	0.05449536	0.038273	0.0379785	0.0458655	0.0438094	0.0497508	0.0548738	0.057468	0.04521
KAMART	Return	0.00101435	0.002256	0.0024636	-0.001186	0.00310233	-0.004356	0.003628	9.029E-18	0.0006345	0.0048303	0.0040257	5.52E-18	0.001368
	VaR	0.04594328	0.041547	0.0418255	0.034458	0.05350713	0.037975	0.0683223	0.053225	0.0647632	0.0441269	0.0747484	0.062467	0.051909
Global	Return	0.00229869	-0.000969	0.0012246	-0.003513	-0.0004021	-0.001513	0.0049433	-0.003497	0.0032006	0.0068593	0.0009304	0.003749	0.001109
	VaR	0.04461774	0.033632	0.0418264	0.030007	0.04151265	0.036808	0.0486964	0.0424793	0.0552064	0.0474619	0.0462402	0.042852	0.042612

To gain insights, the even quarterly returns of each top three companies in both industry groups appeared in Table 4 are presented in bar chart as shown in Figure 1 below.

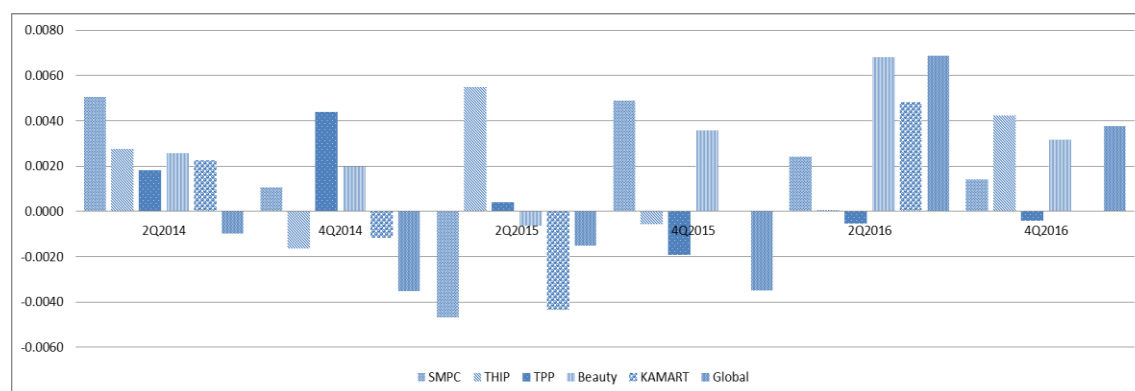


Figure 1: Comparison Semiannually Return of Top Three Companies in Packaging and Commerce group

Figure 1 showed that even quarterly returns of six companies of both groups fluctuated and provided in positive and negative returns during 2014 – 2016. Particularly, at the second quarter in 2014 most companies had positive returns, except the Global Company had a negative return. From the fourth quarter of 2014 until the end of 2015, it is obvious that the THIP (a packaging company) provided the highest positive return, whereas many companies gained losses during that period. This might be due to coup d'etat in Thailand. Interestingly, at the second quarter in 2016, the returns of companies in both groups were likely that they recovered to be positive returns, visibly the companies in commerce group as the Beauty, KAMART and Global. These evidences supported that services sector gradually a major factor impacting on Thai economy consistent with the Bank of Thailand (2016). Unsurprisingly, the unsatisfactory news, Thailand's King Bhumibol Adulyadej has passed away on October 13, 2016, brought about the decline in returns of all companies.

Similarly, the semiannually VaRs at 95 percent confidence level were compared between top three companies in both industry groups presented in bar chart as shown in Figure 2 below.

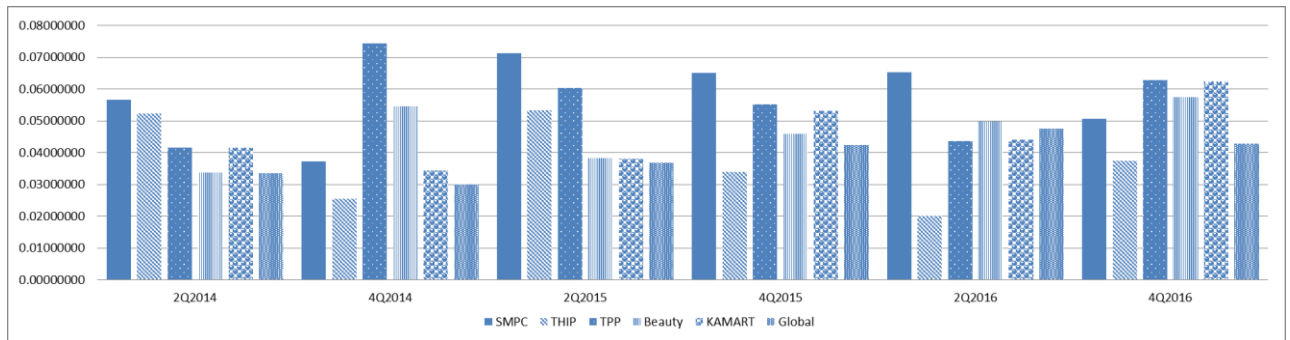


Figure 2: Comparison Semiannually VaRs of Top Three Companies in Packaging and Commerce Group

Figure 2 showed that the VaRs of six companies varied during 2014 – 2016. The TPP provided the highest VaR (0.0743) at the fourth quarter in 2014; whereas, THIP had the lowest VaRs (0.0201) at the second quarter in 2016. Obviously, the VaRs of packaging group were higher than those of commerce group due to more sensitive from market risk. Similar to returns, Thailand's King Bhumibol Adulyadej has passed away led to the increases in VaRs of all companies.

In regards to helpful investment information, the comparison between risks and returns of each company in the end of year 2016 was conducted in terms of line graph as shown in Figure 3 below.

Figures 3 demonstrated that the THIP had the lowest VaR; whereas, the TPP provided the highest return among the listed companies in packaging group. For commerce group, the Global and Beauty were more likely to provide similar returns; however, the Beauty had riskier than the other one. The TPP (a packing company) and the KAMART (a commerce company) which provided the lowest return and the highest risk among the listed companies in its group were dropped from the list of interested companies for investment.

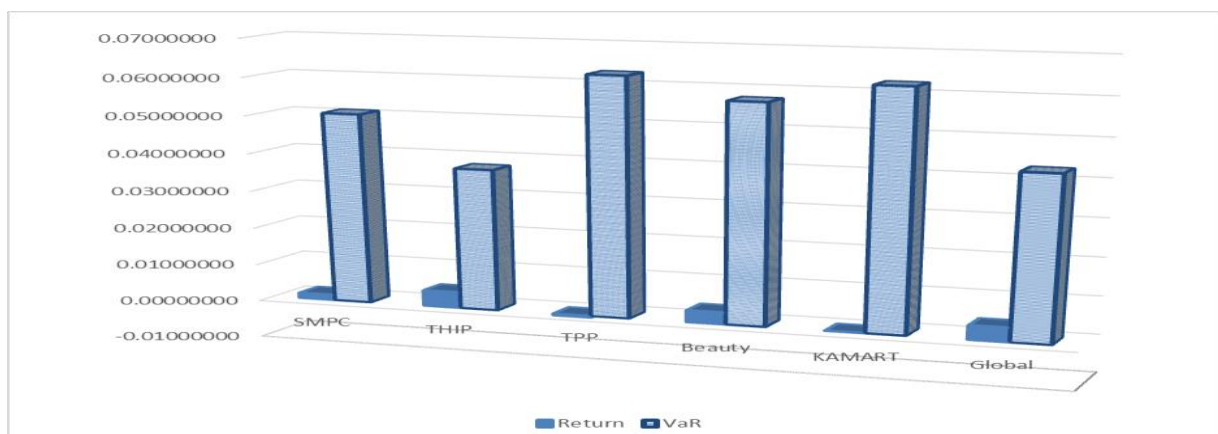


Figure 3: Comparison VaRs and Return of Six Companies at the End of Year 2016

As a result, the SMPC, THIP, Beauty and Global were included for investment and then they moved to next stage of coefficient of variation analysis to make a list interested companies for investment as shown in Table 8 below.

Table 8: Coefficient of Variation of Listed Companies

Year	2014	2015	2016
SMPC	17.9939	6.8150	18.2306
THIP	-7.9540	-29.3695	4.5270
Beauty	14.2584	6.5238	9.2849
Global	-4.3580	-6.1976	5.8319

Table 8 revealed that during 2014 – 2016 annually CV quite varied among those companies over time, reflecting from the significant changes of CVs both in magnitude and sign. In 2014, all companies faced an unimpressive situation, reflecting from negative CV or high CV. The SMPC and Beauty had quite high positive CVs at 17.9939 and 14.2584 respectively, implying that they had positive returns and also high risks in terms of standard deviation. While, the THIP and Global had negative CVs at -7.9540 and -4.3580 respectively due to negative returns and low risks. For 2015, the SMPC and Beauty were likely to gain better performance, resulting from the reduction of their positive CVs declined; in contrast, the THIP and Global seemed to be in worse situation, revealing from the increase of negative CVs. Fortunately, all companies gained positive CVs in 2016. To gain more useful information, the list of interested company for investment was performed by CV order, started with the THIP (4.5270), followed by Global (5.8319), then Beauty (9.2849) and SMPC (18.2306).

## 5. Discussion and Conclusions

The purpose of this study was to find out relationship between risks and returns of service sector and manufacturing sector, which are major drivers to Thai GDP. The results show that servicing sector (representing by commerce group) provided higher return and lower risks than industrial sector (Representing by packaging group) during 2014 – 2016. Obviously, listed companies in both sectors provided higher VaRs because of politic problems at that period. Although, Thailand's King Bhumibol Adulyadej has passed away on October 13, 2016, the VaRs of all companies insignificantly changed. To depth insights, the top three high return of listed companies in packaging group were, the SMPC, THIP and TPP; whereas, those of commerce group were Beauty, KAMART and Global. To make a list of interested company for investment, the CV was performed and the list stated that the best choice for investment was the THIP, followed by Global and Beauty.

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# **Naming an Appropriate Account Title for Propitiousness**

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## **1. Introduction**

Once things emerged in the world (such as humans, animals, places, or objects), humans always give them particular names. In the same way, accountants or bookkeepers define account titles or account names for each business transaction before journalizing them into the accounting system. The title should present or reflect data recorded under the specific account title. This is beneficial for the collection of data and preparing the summary for the presentation of financial reports or statements.

Therefore, accountants should provide propitious account title because clear, understandable and relevant data put into its relative account title contribute to the prosperity of business. It also prevents misunderstanding regarding different business financial information. Account titles are listed and presented in the financial report, while details concerning the account titles are presented through the notes to financial report. Titles of accounts in this article are emphasized only on financial accounting (excluding managerial accounting and cost accounting).

## **2. Definition of Account**

An account is a book or a paper or other media (such as electronic) that is used to record business transactions as accounting evidence. In addition, an account is a record or source that is used to gather financial information that presents the increase or decrease in business transactions in figures.

An account is a systematic data management that presents the effect of business transactions and economic events in the statement of financial position and comprehensive income statement. The accounts present the amount of business transactions which will be classified according to the elements of financial statement; asset, liability, owner's equity, revenue, and expense. The account is a method of presenting the different effects on basic business elements. The account also presents the general ledger which contains fundamental accounts such as Cash, Accounts Receivable, and Accounts Payable.

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An account is the relationship between a business and its transaction such as an acquisition between Company A and B. This transaction creates relevant accounts for Company A such as Sales, Cash, and Accounts Receivable. On the other hand, accounts including Purchase, Cash, and Accounts Payable are created for Company B.

Double entry bookkeeping system or double entry accounting is a system of accounting which divides the accounts in two, Debit and Credit. Debit side is the first quantity column located on the left hand side of the accounting paper. Credit side is the second quantity column located on the right hand side of the accounting paper. The abbreviation of account used in Thailand varies such as AC, ac, acc., acct., and บัญชี (in Thai language).

### **3. Types of Account**

Accountants classify types of account based on the presentation of business transactions in financial reporting; asset, liability, owner's equity, revenue and expense. The first three groups of account are the elements of the statement of financial position and the last two groups of account are the elements of the comprehensive income statement.

The author would like to suggest the sixth element which is the other comprehensive income (OCI). It is part of both the statement of financial position and comprehensive income statement. However, some accountants classify the OCI as a subordinate account of the third group of account (Owner's Equity) or Profit and Loss Account (P/L) or Income Summary Account (I/S).

The types of account can also be classified into two types based on the duration of its existence. There are real accounts and nominal accounts. The real accounts or permanent accounts are those accounts that continue to maintain ongoing balance over time until the business liquidation. All accounts those are aggregated into the statement of financial position are considered as real accounts; assets, liabilities, and owner's equity. At the end of the year, accountants will compute for the balance which is carried over to next year (Ending Balance/Beginning Balance).

The nominal accounts or temporary accounts are those accounts that accumulate information for only one fiscal year. All accounts that are aggregated into the income statement are considered as nominal accounts; revenue and expense accounts. At the end of the year, accountants will close balances of revenue and expense accounts into Profit and Loss Account which is done through preparation of closing entries. The results of the closing entries present business performance for the fiscal year it may be income or loss.

In addition, accountants may define auxiliary accounts which are accounts that are related to other accounts such as contra accounts or offset accounts, adjunct accounts, and valuation accounts.

Table 1: Example of Auxiliary Accounts

Auxiliary Accounts	Example
Contra Accounts	- Sales Returns and Allowances, Sales Discounts are contra accounts of Sales - Purchase Returns and Allowances, Purchase Discounts are contra accounts of Purchases
Adjunct Accounts	- Transportation-in Account increases Purchases
Valuation Accounts	- Allowance for Doubtful Accounts reduces the value of Accounts Receivable
	- Bonds Premium or Bonds Discounts

Significant questions for accountants when doing bookkeeping are accounts that should be defined and how should accountants give appropriate names to those accounts. Accountants are required to determine accounts based on professional skepticism. Overall criteria to be determined regarding account titles are as follows:

1. Type of Account or Group of Account, account is divided into 5 groups; 1) Asset Accounts, 2) Liability Accounts, 3) Owner's Equity Accounts, 4) Income Accounts, and 5) Expense Accounts.

1.1 A group of asset accounts presents a resource controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity. (The Federation of Accounting Professions, 2014)

Generally, most businesses (excluding financial institutions and some businesses) will classify asset accounts into current and non-current items (The Federation of Accounting Professions, 2015).

1.1.1 Current Asset Accounts will be recognized once they meet the following conditions;

1.1.1.1 An entity expects to use or re-sale those accounts within 12 months from the reporting date.

1.1.1.2 An entity has the primary objective for trading these assets.

1.1.1.3 An entity expects to receive economic benefit within 12 months from the reporting date.

1.1.1.4 Cash or cash equivalent that is unimpeded for exchange or paying debt within 12 months from the reporting date.

1.1.2 Non-current Asset Accounts are those whose benefits are expected to last more than 12 months from the reporting date. Examples of non-current assets are tangible assets (Property, Plant, and Equipment), intangible assets (Right, Patents, and Goodwill), and financial assets (Loans and Investment)

1.2 A group of liability accounts shows a present obligation of the entity arising from past events, the settlement of which is expected to result in an outflow from the entity of resources embodying economic benefits.

Generally, the business will classify liability accounts into current and non-current items; Current Liability and Non-Current Liability Accounts.

1.2.1 Current Liability Accounts will be recognized once they meet the following conditions;

1.2.1.1 An entity expects to pay off within one year from the reporting date.

1.2.1.2 An entity has the primary objective for trading.

1.2.1.3 Those liability accounts due within one year from the reporting date.

1.2.1.4 An entity has unconditional right to defer settlement for at least one year from the reporting date. If the parties have the option to pay the debt through the issuance of equity securities, the duration of payment should not affect the classification.

1.2.2 Non-current Liability Accounts are those accounts that could not be recognized as current liability, such as Long-term Loan and Bonds.

1.3 A group of owner's equity account presents the residual interest in the assets of the entity after deducting all the liabilities.

Generally, an entity classifies accounting for owner's equity based on business forms such as proprietorship, partnership, and corporation. The classification of owner's equity accounts should be determined based on the following criteria;

- Legal conditions
- Other restrictions on the ability of the entity to pay the owner
- Different claims of the owner such as profit sharing and dividend

1.3.1 Proprietorship has relevant owner's equity accounts as the following;

- Capital – (Owner)
- Profit or Loss Account
- Drawing

1.3.2 Partnership has relevant owner's equity accounts as the following;

- Capital – (Each Partner)
- Current Account (Each Partner)
- Profit or Loss Account
- Retained Earnings (Unappropriated Retained Earnings)

1.3.3 Corporation has relevant owner's equity accounts as the following;

- Preferred Stock, Common Stock
- Paid-in Capital in Excess of Par – Preferred Stock

- Paid-in Capital in Excess of Par – Common Stock
- Profit or Loss Account
- Dividend Expense
- Retained Earnings

1.4 A group of revenue accounts presents the increase in economic benefits during the accounting period in the form of inflows or enhancements of assets or decreases of liabilities that result in increases in equity, other than those relating to contributions from equity participants.

An entity should classify revenue account based on the operation of business; normal operation and other operations. Common sources of income from normal operation are Revenue from Sale, Revenue from Service, Fees Earned, Interest Revenue, Dividend Revenue, Rent Revenue, and Patents Revenue. Other sources of income are Gain on Sale of Property, Plant, and Equipment, Gain from Foreign Currency Exchange, Gain from Revaluation of Marketable Securities, Income from Compensation Warehouse Fire, and Gain on Litigation to Compensate for Losses from the Cancellation of the Contract.

1.5 A group of expense accounts presents the decrease in economic benefits during the accounting period in the form of outflows or depletions of assets or incurrences of liabilities that result in decreases in equity, other than those relating to distributions to equity participants.

An entity should classify expense account based on the operation of business; normal operation and other operations. Common sources of expense from normal operation are Cost of Goods Sold, Cost of Service, Wages Expense, and Depreciation Expense. Other sources of expense accounts from unusual operation are Loss on Sale of Property, Plant, and Equipment, Loss from Foreign Currency Exchange, Loss from Revaluation of Marketable Securities, Loss from Compensation Warehouse Fire, and Loss on Litigation to Compensate for Losses from the Cancellation of the Contract.

An entity is able to present expense accounts in the comprehensive income statement under two approaches; by nature and by function.

1.5.1 The classification of expense accounts by nature of the business

- The transformation of finished goods and work in process
- Raw Material and Factory Supply Expense
- Employee Benefit Expense
- Depreciation and Amortization Expense

1.5.2 The classification of expense accounts by function of expense;

- Cost of Goods Sold
- Selling Expense
- Administrative Expense

The author suggests the sixth group, Other Comprehensive Income

1.6 A group of OCI is revenue and expense accounts (including reclassification entry) that are unrecognized in the profit or loss. The elements of other comprehensive income include:

1.6.1 The changes in surplus from revaluation of assets (such as Property, Plant, and Equipment)

1.6.2 Defined Benefit Plan

1.6.3 Gain and loss from consolidation (Loss from Foreign Currency Exchange)

1.6.4 Gain and loss from revaluation of securities (available for sale)

1.6.5 Gain and loss from hedging transactions

The increase or decrease of OCI during the reporting period will be presented in two statements; comprehensive income statement and changes in owner's equity statement.

2. Appropriate account titles should be related to the emergence of business transactions and the groups of accounts prescribed above. In addition, an entity should define the nature of each account to be used as a guide.

3. Chart of Accounts or Code of Accounts or Classification of Accounts presents a list of account names and account codes that are applied in the accounting system of the entity. The chart of accounts is organized by systematic sorting based on the presentation of financial reports. An example of a chart of accounts is presented below.

Ruamjaipuk Company  
Chart of Accounts (partial)  
December 31, 20X1

<b>Account Number</b>	<b>Group of Account</b>	<b>Account Name</b>	<b>Explanation</b>
100-199	Assets		
100-149	Current Assets		
101		Petty Cash	Relatively small amount of cash kept at the petty cash cashier for making immediate payments for miscellaneous and small expenses.
105		Cash in Bank	The sum of all coins, currency and other unrestricted liquid funds that have been placed on deposit with a financial institution.
110		Marketable Security	Equity or debt instrument that is listed on an exchange and can be readily bought or sold.

<b>Account Number</b>	<b>Group of Account</b>	<b>Account Name</b>	<b>Explanation</b>
115		Trade Accounts Receivable	Claims from sale on account
116		Other Accounts Receivable	Claims apart from sale on account
120		Trade Note Receivable	Promissory Note and Bill of Exchange from trading activity
121		Other Note Receivable	Promissory Note apart from trading activity
130		Inventory	Available goods for sale
135		Office Supply	Stored supply for using in the office
140		Accrued Revenue	Revenue earned in the current accounting period, but which will be collected in a subsequent period.
145		Prepaid Expense	Cost that are paid in advance
150-199	Non-current Asset		
151		Long-term investment	Long-term debt and equity securities
155		Long-term Loan	The act of giving money to another party in exchange for future repayment of the principal amount along with interest.
160		Land	Property or real estate, not including building or equipment
165		Building	Factory and office building
166		Accumulated Depreciation-Building	The accumulative depreciation of building
170		Machine	Machine in the Factory
171		Accumulated Depreciation-Machine	The accumulative depreciation of machine
175		Office Equipment	Equipment, furniture and fixture
176		Accumulated Depreciation – Office Equipment	The accumulative depreciation of office equipment
180		Vehicles	Car, Truck, Motorcycle, Bicycle
181		Accumulated Depreciation - Vehicles	The accumulative depreciation of vehicles

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<b>Account Number</b>	<b>Group of Account</b>	<b>Account Name</b>	<b>Explanation</b>
190		Patents	A government license that give exclusive rights to a process, design or new invention for a designated period of time
191		Accumulated Amortization - Patents	The accumulative amortization of patents
200-299	Liabilities		
200-249	Current Liabilities		
201		Bank Overdrafts	An extension of credit from a lending institution when an account reaches zero.
210		Short-term Borrowings	Any debt incurred by a company that is due within one year
220		Trade Accounts Payable	Obligation from purchase on account
225		Other Accounts Payable	Obligation apart from purchase on account
230		Trade Note Payable	Promissory Note and Bill of Exchange from trading activity
235		Other Note Payable	Promissory Note and Bill of Exchange from trading activity
240		Unearned Revenue	Money received for a service or product that has yet to be fulfilled
245		Accrued Expense	A company obligation to pay in the future for delivered goods or services
246		Dividend Payable	Unpaid dividend
250-299	Non-Current Liabilities		
251		Long-term Loan	Any debt incurred by a company that is due over one year
270		Bond	Long-term debt
300-399	Owner's Equity		
305		Common Stock	A security that presents ownership in a corporation.
306		Paid-in Capital Excess of Par – Common Stock	Surplus on common stock
310		Retained Earnings – Legal Reserve	Legal Reserve



<b>Account Number</b>	<b>Group of Account</b>	<b>Account Name</b>	<b>Explanation</b>
311		Retained Earnings - Reserve for Redemption	Reserve for redemption bonds
320		Unappropriated Retained Earnings	Unrestricted Returned Earnings
340		Dividend Expense	Profit sharing to shareholders
350		Profit or Loss Accounts	Temporary account for summarizing profit or loss for the period
400-499	Revenue		
401		Revenue from Sales or Sales	Revenue from selling merchandise
402		Sales Return and Allowance	The amounts of merchandise that were returned by customer and the amounts granted to a customer because the seller shipped improper or defective merchandise.
403		Sale Discounts	A reduction in the price of a product or service that is offered by the seller, in exchange for early payment by the buyer.
410		Revenue from Service	Revenue from Service
420		Rent Revenue	Revenue incurred by allowing someone to use the business assets
430		Interest Revenue	The earnings that an entity receives from any investments it makes, or on debt it owns.
450		Gain from Selling Assets	Differences between cash received and book value of sold asset
500-599	Expense		
501		Cost of Goods Sold	The direct costs attributable to the production of the goods sold by an entity.
503		Purchase	The amount of goods or service buying from vender/seller
504		Transportation-In Expense	Cost of Transportation for purchasing products or services
505		Purchase Return and Allowance	The amounts of merchandise that were returned to suppliers and the amounts allowed as deductions by suppliers for goods not returned.

<b>Account Number</b>	<b>Group of Account</b>	<b>Account Name</b>	<b>Explanation</b>
506		Purchase Discounts	A reduction in the price of a product or service giving to a buyer if the buyer pays an invoice within a prescribed time
510		Cost of Service	Cost of Service
520		Wages and Salary Expense	Wages and Salary
521		Commission Expense	Sales compensation
530		Transportation-out Expense	Cost of Transportation for selling products
531		Advertising Expense	Expenses associated with promoting an entity, product or service to stimulate a desire to buy the products or services.
540		Electricity Expense	Electricity charge
541		Water Expense	Water charge
542		Telephone Expense	Telephone charge
550		Insurance Expense	Insurance Premium
560		Depreciation Expense-Building	The allocated portion of the cost of a company's building that is appropriate for the accounting period.
562		Depreciation Expense-Machine	The allocated portion of the cost of a company's machine that is appropriate for the accounting period.
563		Depreciation Expense-Vehicles	The allocated portion of the cost of a vehicle that is appropriate for the accounting period.
575		Miscellaneous Expense	Other Expenses
580		Interest Expense	The cost of incurred by an entity for borrowed funds.
590		Income Tax	Corporate income tax

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<b>Account Number</b>	<b>Group of Account</b>	<b>Account Name</b>	<b>Explanation</b>
600-699	Other Comprehensive Income		
601		Surplus from Revaluation of Assets	Surplus from revaluation of assets
610		Gain or Loss from Revaluation of Security – Available for Sale	The increases or decreases of investments revaluation

Account number or account code is a letter or number designated for each account name and used as reference. Generally, the use of blocked numbers is used in many businesses. Given numbers have different meanings and the first digit will represent 1) assets, 2) liability, 3) owner's equity, 4) revenue, and 5) expense.

#### 4. Elements of Account

Generally, an account is consisted of 5 elements; 1) title, 2) debit and credit column, 3) account number, 4) date, and 5) reference.

#### 5. Format of Account

There are two types of books of account; journals and ledgers. A journal is a basic accounting book that a business designs to support their bookkeeping. Generally, there are specialized journals and general journals. Specialized journals are designed for a specific purpose of the business. Examples of specialized journals include Purchases Journal, Purchase Returns and Allowances Journal, Sales Journal, Sales Returns and Allowances Journal, Cash Receipts Journal and Cash Disbursements journal. For a general journal, it is a basic book that every business uses to record their primary transactions. The format of this journal is simple with two columns of debit and credit as shown below:

General Journal				Page	
Date	Items	Account Number	Debit	Credit	
	(Debit Account Name)				
	(Credit Account Name)				
	(Explanation)				

A ledger is a secondary book or database that is used to store or summarize all similar transactions. There are two types of ledgers; general ledger and subsidiary ledger. General

Ledger is the main account for collecting data that serves as a control account. Format of the ledger is presented as a T-account form:

Account Title					Account Number			
Date	Items	Page	Debit		Date	Items	Page	Credit

A subsidiary ledger is a ledger designed for the storage of specific types of accounting transactions. Examples of subsidiary ledgers are Accounts Payable Ledger, Accounts Receivable Ledger and Fixed Assets Ledger. Format of the ledger is presented as a balance account form:

Account Title					Account Number			
Date	Items	Page	Debit		Credit		Balance	

## 6. Definition of Account Title

Account Title is a text used by accountants and managers to refer to business transactions or economic events of an entity during the accounting period. In this light, account title refers to a general ledger, not the subsidiary ledger.

## 7. Criteria for Defining Account Title

The criteria for defining account title are as follows:

1. Account title presents a group of account clearly, for example:

1.1.1 An entity should define clear, simple and easy account title which will be beneficial for the classification process.

Unclear Account Title	Suggested Account Title	Accounting Group
Interest Account	Accrued Interest or Prepaid Interest	Asset
	Interest Payable or Unearned Interest	Liability
	Interest Revenue	Revenue
	Interest Expense	Expense

Unclear Account Title	Suggested Account Title	Accounting Group
Credit Account	Accounts Receivable	Asset
	Accounts Payable	Liability
	Recovery of Bad Debt	Revenue
	Bad Debt Expense	Expense

1.1.2 An entity should apply account title that is defined in the International Accounting Standard or International Financial Reporting Standard to avoid misunderstanding.

1.1.3 In Thai language, some account titles are not concise.

Account Title	In Thai Language	
	In appropriate	Suggestion
Rent Revenue	Rai dai ka chao rup (รายได้ค่าเช่ารับ)	Rai dai ka chao (รายได้ค่าเช่า) Ka chao rup (ค่าเช่ารับ)
Transportation-in Expense	Ka khon song mua sue (ค่าขนส่งเมื่อซื้อ)	Ka khon song kao (ค่าขนส่งเข้า)

1.1.4 Some Thai account titles made are confusing such as Goodwill and Sales Discounts. Goodwill Account in Thai language is Ka Kwam Ni Yom (ค่าความนิยม). The word “Ka” means expense in Thai language. However, in this content, Ka Kwam Ni Yom is an asset account. For Purchase Discounts, Thai language called it Suan Lod Jai (ส่วนลดจ่าย). The word “Jai” means paid. Some Thai accountants classify this account as an expense instead of revenue because of the word “Jai”. However, this account is a subsequent event from a sales transaction. It is a reduction in the price of a product or service given to a buyer for paying within the prescribed period of time. Therefore, this account belongs to group number 4, revenue account.

1.1.5 An account title should not be too broad, such as Utility Expense. Instead of Utility Expense, the author suggests to separate accounts properly such as Electricity Expense, Water Expense, and Telephone Expense. On the other hand, an account title should not be too narrow, such as Blue Car Account, Black Truck, and Red Motor bicycle. When the account concerns cars, trucks, boats, motor bicycle, and bicycle, an entity can use Vehicle account.

1.1.6 An account title must describe the main transaction such as Accounts Receivable which is derived from sales on account. Then, subsequent transactions of Accounts Receivable could be Purchase Returns and Allowances or Notes Receivable.

1.1.7 An account title should be related to each other. For example, Depreciation Expense and Accumulated Depreciation. Vehicle Account may relate to many accounts such as

Depreciation Expense-Vehicle, Accumulated Depreciation-Vehicle, Repair and Maintenance Expense-Vehicle, Insurance Expense-Vehicle, and Gain or Loss from Selling Vehicle.

1.1.8 An entity should avoid ambiguous account titles such as Reserve (In Thai Language, Banchee Samrong (บัญชีสำรอง). Banchee Samrong has several meanings; reserve for asset and liability valuation, reserve for estimated liability and reserve for retained earnings. This can cause confusion to users.

1.1.9 An account title should be clear to be presented in the financial report. For example, transportation expenses should be divided into Transportation-in and Transportation-out. Transportation-in Expense must be presented as a part of Cost of Goods Sold, while Transportation-out Expense must be presented as a part of Selling Expense in the comprehensive income statement. Another example is supply. Factory Supply must be presented as Inventory of an entity and Office Supply must be presented as current asset in the statement of financial position.

## **8. Conclusion**

Accountants or bookkeepers should define clear and understandable account titles because it is beneficial for them to classify those accounts properly whether they are asset, liability, owner's equity, revenue or expense. In addition, appropriate classification using well prepared account numbers assists accountants to avoid misunderstanding and prepare the financial report effectively. This also contributes to the efficiency and effectiveness of auditing practice. Effective financial reporting reduces misunderstanding and presents the right financial position and performance of the entity. Therefore, auditors can concentrate on the right issues and provide a timely and appropriate opinion.

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- The Federation of Accounting Professions under the Royal Patronage of His Majesty the King. (2015). *Conceptual Framework for Financial Reporting (Revise 2015)*, Retrieved 15 April, 2016 from <http://www.fap.or.th>.

## **Book Review: “*Be a Better Man – Business Part*”**

**Author: Vikrom Kromadit**

**Reviewed by: Asst. Prof. Nartraphee Chaimongkol, Ph.D.**

Vikrom Krommadit, born 17<sup>th</sup> March 1953, is originally from Kanchanaburi province. He is the eldest son in his family. Since his early childhood, Vikrom has long been interested in commerce. He received a bachelor's degree after attending National Taiwan University with a scholarship granted by the Taiwanese government. Later in 1975 when Vikrom returned to his home country, he established V & K Enterprise, Ltd. whose core business was import and export agricultural products and minerals. He had continued his trading business until he developed industrial estate business. Vikrom currently serves as the Chief Executive Officer (CEO) of AMATA Corporation, PLC. and as the Chairman of AMATA Foundation. He is one of Thailand's richest citizens.

The book titled “*Be a Better Man – Business Part*” is another widely read book and advantageous to readers as a “handbook” of business operation which has helped lead the readers to their goals.

The book was edited by Khun Prabhassorn Sevikul and published by Print City, Carbon Neutral Company.

“*Be a Better Man – Business Part*” is a book that conveys thoughts, knowledge, and beneficial experience. The book is like business compass that can be applied to business management in order to steer business in ways that lead to the goals.

The book consists of 33 chapters: One Dollar Millionaire; The Forever Dreamcatcher; Going Against Destiny; Fate, At Daybreak; At the Time of the Bangkok Bank Building's Opening; Buying the First Car; Experience from Paul Krampe; The Sky after the Rain; To the Brave Dreamer; Monsoon Season; Walk of Life; A Changing Wind; Leaps and Bounds; New Partners; Top Seller Going International; Economic Crisis; Steady Growth; Behind the Fame; Dreams Coming True; Human Passions; Road to Long-run AMATA; AMATA Bloodline; Millionaire Lifestyle; Sending Golden Message; Composition of Communication; The Toughest Work; Significant Investment; Freedom AMATA; AMATA Nakorn; I'm Not Millionaire No More; Discipline; and Sufficiency.

The book tells the ways to achieve success in life and that your performance plays a big part in your success. Some people may start from “zero” and being thrifty would definitely help bring stability to their life, along with being responsible. People should have a sincere gratitude, as it is a requirement for human development for peace and prosperity. Also, a smile costs nothing but gives much. Moreover, people should have a dream because dream is like fertilizer nurturing their life and bringing advances to all humankind. Today’s world has been shaped by such advances. People need to trust and believe in their dream as the western proverb “Where is a will, there is a way”.

The stairway leading you to the whole wide world is education. Education is intellectual capital that can be acquired through lifelong learning. Knowledge, skills and abilities can change people’s lives and their way of life. “As long as you are still alive and breathing, there is hope”. There are some great opportunities waiting if you are just open to them. Importantly, you have to be patient and not easily giving up the determination. Otherwise, you have to start over again. The opportunity to succeed will then be slowed down. People also need to have integrity, virtue and morality, and never cheat or take advantage of others. Your positive thinking, good deeds and good intentions will always be rewarded someday, sooner or later.

To lead a good life of their own, people should be flexible and gradually adapt themselves to a variety of situations, the changing social environment and the proper world. This is an inevitable and unavoidable part of life. Nonetheless, everyone has the right to choose their way of life by understanding their problems and knowing how to solve such problems in a logical and incredulous way. Also, people should find the way to participate in activities and the opportunity to meet others. This is to make business connections. In addition, you should be self-confident and not be shy to start a conversation with anyone and make friends. And that is a way to achieve success in life. Furthermore, good leaders always wear a smile no matter what they are going through. They need to hide their weaknesses and maintain their professional by doing one thing at a time. They also need to learn to trust others.

When deeply and thoroughly considering the aforementioned 33 chapters, you will find that the book suggests you to be aware of thoughts, knowledge and experience. The book also points out that there are lots of things in life that cost nothing such as smiles, dreams, responsibility, gratitude, patience, and morality and virtue. People should have their minds opened to the whole wide world; that is, to study, to be flexible to the changing social contexts, and to find



the opportunity to meet others. And these invaluable lessons can be applied as a “map” for businesspersons at a startup and as a “compass” that helps lead them to their goals. Besides, the book has also inspired those who want to be successful in life.