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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 third journal which published five research papers, 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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Investment Strategy: Evidence from Thailand's SET50 Index

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Abstract

The research aimed to suggest an appropriate portfolio from Thailand's SET50 Index for investment. The study focused on the return and risk analysis of each common stock, in addition to the relationship of the return and risk among each common stock and the stock market in SET50 Index. Moreover, the Capital Asset Pricing Model (CAPM) was employed to calculate an appropriate required return on each common stock and then compared with its actual return to classify it as undervalued or overvalued. The risk of each common stock was assessed by using standard deviation and beta coefficient (β). The suggested investment strategy is to classify common stocks into two groups: 1) high return and high risk and 2) high return and low risk. Then, the optimal weight of investment was conducted to find out a well-diversified portfolio. The daily market prices of common stocks listed in SET50 Index were collected for three years during September 10, 2012 – 2015.

This research revealed that the groups of common stocks providing high return and high risk were True Corporation Public Company Limited (TRUE), Pruksa Real Estate Public Company Limited (PS), Central Pattana Public Company Limited (CPN), TPI Polene Public Company Limited (TPIPL), and Airports of Thailand Public Company Limited (AOT). Meanwhile, the groups of common

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stocks providing high return and low risk consisted of Delta Electronics (Thailand) Public Company Limited (DELTA), Bumrungrad Hospital Public Company Limited (BH), Siam Makro Public Company Limited (MAKRO), BTS Group Holdings Public Company Limited (BTS), and Hemaraj Land and Development Public Company Limited (HEMRAJ). The optimal portfolio included TRUE, PS, CPN, TPIPL, AOT, DELTA, BH, MAKRO, BTS, and HEMRAJ with its weight of 0.001, 0.001, 0.0394, 0.0218, 0.0348, 0.1249, 0.1239, 0.1965, 0.3156, and 0.1429, respectively. Besides, the optimal portfolio provided the return of 0.1242%, standard deviation of 0.9966%, and beta coefficient (β) of 0.656, which was lower than the SET50 market.

Keywords: SET50 Index, Capital Asset Pricing Model (CAPM), Beta Coefficient

1. Introduction

A question in researchers' minds is what the good criteria to select common stock are and how to perform a good diversified portfolio in the Stock Exchange of Thailand (SET), especially in SET50 Index. This problem pushed researchers to use financial models and financial quantitative analysis for selecting an appropriate portfolio for investors. According to Nilapornkul, Yuttasri, and Suaysom (2016), they included two key factors: risk and return, which have commonly been used as criteria for decision making in stock investment. Thus, both factors were focused in this research. More importantly, this research aimed to provide useful information to suggest investors before making decision to invest in the stock market.

This research aimed to respond to five key objectives as follows:

1. To analyze the return and risk of each common stock listed in SET50 Index (the Index of first fifty of large market capitalization on the SET)
2. To analyze required return comparing by using the Capital Asset Pricing Model (CAPM)
3. To classify each common stock into two groups: undervalued and overvalued groups
4. To analyze an appropriate investment proportion of each common stock to perform an optimal portfolio

Research Scope

This research concentrated on common stocks listed in SET50 Index. The index is calculated from the stock prices of the top 50 listed companies on the SET in terms of large market capitalization, high liquidity, and compliance with requirements regarding the distribution of shares to minor shareholders. The data were daily closed price for three years during September 10, 2012 – 2015, and these data were retrieved from SETSMART.

2. Literature Review

2.1 Theory and Empirical Study

Researchers reviewed prior literature related to four major aspects: SET50 Index, the Capital Asset Pricing Model (CAPM), portfolio theory, and risk preference theory. The details of each aspect were explained in the following.

1. SET50 Index

SET50 Index is similar to SET index. However, this Index includes 50 securities, which have large market capitalization and high trading liquidity regularly. The formula and calculation method are the same as the SET Index calculation, but the base date is August 16, 1995 (SET, 2016). In addition, the SET50 Index calculation always reselects 50 common stocks for every six months. The formula is shown below:

$$\text{SET50 Index} = \frac{\text{Total market price of selected 50 common stocks for Today}}{\text{Market price of selected 50 common stocks on August 16, 1995}} \times 100$$

The change of SET50 Index reflects the changes of the total market values of the selected 50 common stocks in the same direction. For example, if SET50 Index increases, this implies that the market prices of most common stocks also increase. The 50 common stocks currently listed in SET50 Index were shown in table 1.

Table 1: Companies' Names Listed in SET50 Index (As of September 2015)

No.	Corporation Name	Symbol
1	Advance Info Service Public Company Limited	ADVANC
2	Airport of Thailand Public Company Limited	AOT
3	Banpu Public Company Limited	BANPU
4	Bank of Ayudhya Public Company Limited	BAY
5	Bangkok Bnak Public Company Limited	BBL
6	The Bangchak Petroleum Public Company Limited	BCP
7	BEC World Public Company Limited	BEC
8	Bangkok Dusit Medical Services Public Company Limited	BGH
9	Bunrungrad Hospital Public Company Limited	BH
10	Big C Supercenter Public Company Limited	BIGC
11	Berli Jucker Public Company Limited	BJC
12	Bangkok Life Assurance Public Company Limited	BLA
13	BTS Group Holdings Public Company Limited	BTS
14	CP All Public Company Limited	CPALL
15	Charoen Pokphand Foods Public Company Limited	CPF
16	Central Pattana Public Company Limited	CPN
17	Dynasty Ceramic Public Company Limited	DCC
18	Delta Electronics (Thailand) Public Company Limited	DELTA
19	Total Access Communication Public Company Limited	DTAC
20	Electricity Generating Public Company Limited	EGCO
21	ESSO (Thailand) Public Company Limited	ESSO
22	GLOW Energy Public Company Limited	GLOW
23	Hemaraj Land and Development Public Company Limited	HEMRAJ

Table 1: Companies' Names Listed in SET50 Index (As of September 2015) (Cont.)

No.	Corporation Name	Symbol
24	Home Product Center Public Company Limited	HMPRO
25	Shin Corporation Public Company Limited	INTUCH
26	IRPC Public Company Limited	IRPC
27	Indorama Ventures Public Company Limited	IVL
28	Kasikorn Bank Public Company Limited	KBANK
29	Krung Thai Bank Public Company Limited	KTB
30	Land and Houses Public Company Limited	LH
31	Siam Makro Public Company Limited	MAKRO
32	Minor International Public Company Limited	MINT
33	Pruksa Real estate Public Company Limited	PS
34	PTT Public Company Limited	PTT
35	PTT Exploration and production Public Company Limited	PTTEP
36	PTT Global Chemical Public Company Limited	PTTGC
37	Ratchaburi Electricity Generating Holding Public Company Limited	RATCH
38	Robinson Department Store Public Company Limited	ROBINS
39	The Siam Commercial Bank Public Company Limited	SCB
40	The Siam Cement Public Company Limited	SCC
41	Siam City Cement Public Company Limited	SCCC
42	Supalai Public Company Limited	SPALI
43	Thanachart Capital Public Company Limited	TCAP
44	Thai Airways International Public Company Limited	THAI
45	Tisco Financial Group Public Company Limited	TISCO
46	TMB Bank Public Company Limited	TMB
47	Thai Oil Public Company Limited	TOP
48	TPI Polene Public Company Limited	TPIPL
49	True Corporation Public Company Limited	TRUE
50	Thai Union Frozen Products Public Company Limited	TUF

Source: The Stock Exchange of Thailand (SET)

2. The Capital Asset Pricing Model: CAPM

Sharpe (1964) and Lintner (1965) created the capital asset pricing model (CAPM), resulting in receiving a Nobel Prize for Sharpe in 1990. This model has been widely practically

used to estimate required return for investors' decision and to perform the security portfolios. A major aspect of CAPM is beta coefficient (β), which measures systematic risk impacting on stocks' required returns. The securities market risk has beta coefficient of 1.0 and individual companies or securities are calculated relative to the market's beta (Nilapornkul & Suwankhajit, 2017). Thus, a beta above 1.0 implies a higher risk than the market average; in contrast, a beta below 1.0 reflects less risk than the market average. The CAPM formula was shown and explained in section 3 on research methodology.

3. Portfolio theory

Harry Markowitz (1959) created the portfolio model under the assumption that investors are risk averse, who concern the mean returns and the variance of those returns for a specific period. As a result, investors always choose "mean-variance-efficient" portfolios, leading to call the Markowitz approach as a "mean-variance model." The key concept of this theory indicates that an appropriate portfolio should provide the minimum variance, given expected portfolio return; or it should provide the maximize return, given expected variance. One more major issue of this theory is that an appropriate portfolio should be well diversified, reflecting risk minimization. The portfolio theory was analyzed in section 3 on research methodology.

4. Risk preference theory

According to Daniel and Amos (1979), risk preference theory classifies the attitude of investors toward risk related to investment into three types:

1) Risk-seeking preference: A person who is willing to take higher risks to achieve above-average returns. This allows investors to make decision to invest when the higher risk is worth above means.

2) Risk-averse preference: A person who is reluctant to take on a risk is called a risk aversion. This kind of personality almost always chooses the safer investment instead of taking a chance on the probability of failure.

3) Risk-neutral preference: An individual with risk-neutral preference does not care about the risks involved in the decision making. A risk-neutral individual will choose the assets with the highest possible gains or returns.

3. Data and Methodology

This research was a quantitative research, which employed secondary data collected from SETSMART. The collected data were daily market price of common stocks in SET50 Index during September 10, 2012 – 2015. Therefore, there were 50 listed companies which were included in this research.

Researchers analyzed the data to perform an optimal portfolio based on 7 steps as follows.

1. Calculated daily natural log return of each security listed in SET50 Index (R_i) by using a formula below:

$$R_i = \ln \left(\frac{P_t + D_t}{P_{t-1}} \right) \times 100$$

Where: P_t = Closed price of security i at day t

P_{t-1} = Closed price of security i at prior day t

D_t = Dividend per share of security i at day t

2. Calculated daily natural log return of the SET50 market by using a formula below:

$$R_m = \ln \left(\frac{\text{SET Index}_t}{\text{SET Index}_{t-1}} \right) \times 100$$

Where: SET Index_t = SET 50 Index at day t

SET Index_{t-1} = SET 50 Index at prior day t

3. Calculated beta coefficient (β) of each common stock in SET50 Index by calculating covariance first and then calculating beta coefficient. Both formulas for calculating covariance and beta coefficient were shown below.

(Covariance: COV)

$$\text{COV}_{i,m} = \frac{\sum_{i=1}^n (R_m - \bar{R}_m)(R_i - \bar{R}_i)}{n}$$

(Beta coefficient: β)

$$\beta_i = \frac{\text{COV}_{i,m}}{\sigma_m^2}$$

Where: $\text{COV}_{i,m}$ = The variance between each security's daily return and the return of the stock market

R_m = Daily stock market return

\bar{R}_m = Average daily stock market return

R_i = Each daily security return

\bar{R}_i = Average daily security return

σ_m^2 = Standard deviation of market return

4. Calculated expected return of each common stock by using the CAPM as shown in a formula below:

$$E(R_i) = R_f + [E(R_m) - R_f]\beta_i$$

Where: $E(R_i)$ = Expected rate of return

R_f = Risk free rate (this study employed government bond 3 years)

$E(R_m)$ = Expected return of stock market

β_i = Beta coefficient of each security

5. Compared between actual return and required return (from step 4 above) and then classified common stock into two groups: undervalued and overvalued common stock groups.

6. Selected the undervalued group to further process and then classified it again into two groups: 1) high return and low risk group and 2) high return and high risk group. However, researchers selected only top five common stocks of each group.

7. Calculated an optimal weight of investment of each common stock to perform an appropriate portfolio, which provided minimum risk or maximum diversification by using Markowitz's portfolio theory and then calculated portfolios' return, standard deviation, and beta coefficient as shown below:

(Portfolios' return)

$$R_p = \sum_{i=1}^n W_i R_i$$

Where: W_i = Proportion of investment in security i

R_i = Rate of return of security i

(Portfolios' standard deviation: σ_p)

$$\sigma_p = \sum_{i=1}^n \sum_{j=1}^n W_i W_j COV_{ij}$$

Where $W_i W_j$ = Proportion of investment in security i and j respectively

COV_{ij} = Covariance between rates of return of security i and j

(Portfolios' beta coefficient)

$$\beta_p = \sum_{i=1}^n W_i \beta_i$$

Where: W_i = Proportion of investment in security i

β_i = Beta coefficient of security i

4. Research Results

This section presented four major findings consisting of value of common stock assessed by employing the CAPM, correlation selection, classifying portfolio groups, and performing investment strategy. The details of each issue were discussed in the following paragraphs.

1. Value of common stock assessed by the CAPM

After assessing intrinsic value and actual price of each common stock, researchers compared and classified them into two types: undervalued and overvalued common stock groups. The former group occurred when intrinsic value was lower than market actual price whereas the latter one existed when intrinsic value was higher than market actual price. Due to SET50 Index, each common stock was classified into two common stock groups as shown in table 2 below.

Table 2: Results of Actual Return and Expected Return of Each Stock and its Position

Symbol	Actual return	Expected return	Position	Symbol	Actual return	Expected return	Position
IVL	0.03%	0.00%	Overvaluation	TRUE	0.04%	0.15%	Undervaluation
BJC	0.03%	-0.03%	Overvaluation	PS	0.03%	0.09%	Undervaluation
LH	0.03%	0.02%	Overvaluation	CPN	0.03%	0.09%	Undervaluation
IRPC	0.03%	0.02%	Overvaluation	TPIPL	0.03%	0.15%	Undervaluation
SCB	0.03%	0.00%	Overvaluation	KTB	0.03%	0.03%	Undervaluation
ESSO	0.02%	-0.07%	Overvaluation	AOT	0.03%	0.22%	Undervaluation
THAI	0.02%	-0.06%	Overvaluation	MINT	0.03%	0.12%	Undervaluation
KBANK	0.02%	0.02%	Overvaluation	HMPRO	0.02%	0.06%	Undervaluation
SPALI	0.02%	0.02%	Overvaluation	DVANC	0.02%	0.03%	Undervaluation
OBINS	0.02%	-0.04%	Overvaluation	BCP	0.02%	0.08%	Undervaluation
PTTEP	0.02%	-0.07%	Overvaluation	TMB	0.02%	0.08%	Undervaluation
PTTGC	0.02%	0.01%	Overvaluation	INTUCH	0.02%	0.03%	Undervaluation
BANPU	0.02%	-0.09%	Overvaluation	GLOW	0.02%	0.06%	Undervaluation
BEC	0.02%	-0.03%	Overvaluation	SCC	0.02%	0.07%	Undervaluation
CPF	0.02%	-0.05%	Overvaluation	BH	0.02%	0.17%	Undervaluation

Table 2: Results of Actual Return and Expected Return of Each Stock and its Position (Cont.)

Symbol	Actual return	Expected return	Position	Symbol	Actual return	Expected return	Position
PTT	0.02%	-0.02%	Overvaluation	BIGC	0.02%	0.03%	Undervaluation
DTAC	0.02%	-0.01%	Overvaluation	CPALL	0.02%	0.07%	Undervaluation
TOP	0.02%	-0.02%	Overvaluation	BLA	0.02%	0.08%	Undervaluation
BBL	0.02%	-0.01%	Overvaluation	BTS	0.02%	0.10%	Undervaluation
TCAP	0.02%	-0.01%	Overvaluation	BAY	0.01%	0.03%	Undervaluation
TISCO	0.02%	0.01%	Overvaluation	DELTA	0.01%	0.19%	Undervaluation
				TUF	0.01%	0.02%	Undervaluation
				RATCH	0.01%	0.02%	Undervaluation
				EGCO	0.01%	0.04%	Undervaluation
				DCC	0.01%	0.03%	Undervaluation
				MAKRO	0.01%	0.12%	Undervaluation
				EMRAJ	0.00%	0.08%	Undervaluation
				BGH	0.00%	0.13%	Undervaluation

Table 2 showed that there were 28 undervalued common stocks and 22 overvalued stocks. Based on the CAPM, undervalued stocks implied that actual return was lower than expected return; on the contrary, overvalued stocks existed when actual return was higher than expected return. Therefore, the common stocks in undervalued stock group were selected to move on for the following steps because the market prices of such common stocks are more likely to increase in future. Nevertheless, these are not for overvalued common stocks. As a result, overvalued common stocks were dropped from this research.

Then, the systematic risk in terms of beta coefficient (β) of undervalued stocks was considered. Practically, the criterion of beta coefficient is 1, reflecting that a stock provides risk in the same level of the stock market. When beta coefficient is lower than 1, this means that a stock provides risk in the lower level than the market risk. In contrast, when beta coefficient is higher than 1, it means a stock provides risk in the higher level than the market risk. Thereafter, the undervalued common stocks were reclassified into 2 groups: Group 1 for high return and high risk and Group 2 for high return and low risk. Finally, the research selected top 5 of each group which were presented in table 3 below.

Table 3: Classification of Securities Into 2 Groups:

Group 1: High Return and High Risk			Group 2: High Return and Low Risk		
Stock	Return	Beta	Stock	Return	Beta
TRUE	0.148%	1.85	DELTA	0.192%	0.62
PS	0.092%	1.55	BH	0.169%	0.92
CPN	0.086%	1.37	MAKRO	0.120%	0.34
TPIPL	0.147%	1.33	BTS	0.095%	0.76
AOT	0.218%	1.31	HEMRAJ	0.080%	0.18

From table 3, the results showed that the top 5 common stocks of group 1 comprised TRUE, PS, CPN, TPIPL, and AOT. It should be noted that all stocks provided beta higher than 1. Besides, TRUE provided the highest systematic risk of 1.85. Regarding group 2, the top 5 common stocks of this group were DELTA, BH, MAKRO, BTS, and HEMRAJ, and HEMRAJ had the lowest risk of 0.18.

The portfolio then consisted of the 10 common stocks from both groups, which provided high returns. However, due to risk, the portfolio was composed of both high risk and low risk. After that the optimal weight of each stock was computed to perform an appropriate portfolio, which minimized risk or well diversified. The summation of the optimal weight of each stock must be 1. Researchers used Microsoft Excel to repeatedly calculate to find out the optimal weight of each stock, which had a good diversification. The results were shown in table 4 below.

Table 4: The Optimal Weight of Each Stock

TRUE	PS	CPN	TPIPL	AOT	DELTA	BH	MAKRO	BTS	HEMRAJ
0.0001	0.0001	0.0394	0.0218	0.0348	0.1249	0.1239	0.1965	0.3156	0.1429

Finally, researchers calculated the portfolio in terms of the return, standard deviation, and beta coefficient, which revealed the return of 0.1242%, standard deviation of 0.9966%, and beta coefficient of 0.656. In summary, an appropriate portfolio provided quite high return and low risk, reflecting from beta coefficient which was lower than 1.

5. Conclusion and Discussion

This research aimed to perform an appropriate portfolio, which well diversified or minimized risk and also provided expected return. The research focused on stocks listed in SET50 Index during September 10, 2012 – 2015. The research methodology used was applied from a few

financial theories such as CAPM model and portfolio theory. The major findings were presented as follows.

1. This research revealed that there were 28 undervalued common stocks and 22 overvalued common stock. This implied that the common stocks listed in SET50 Index were undervalued more than overvalued. Thus, investors were able to perform an appropriate portfolio from those undervalued common stocks.

2. Interestingly, AOT provided the highest return of 0.218%, and its risk was quite high at 1.31, which was above 1, or the risk level was higher than the stock market. Meanwhile, Delta also provided high return of 0.192%, but its risk level was quite low at 0.62, which was beneath 1, or the risk level was lower than the stock market.

3. Importantly, an optimal portfolio should consist of common stocks with high returns and a combination of high risk and low risk common stocks.

4. For this research, an appropriate portfolio consisted of 10 common stocks, namely TRUE, PS, CPN, TPIPL, AOT, DELTA, BH, MAKRO, BTS, and HEMRAJ. All of them provided high return. However, the first five common stocks provided high risk, and the rest of them provided low risk.

5. The optimal weight of investment of TRUE, PS, CPN, TPIPL, AOT, DELTA, BH, MAKRO, BTS, and HEMRAJ was 0.0001, 0.0001, 0.0394, 0.0218, 0.0348, 0.1249, 0.1239, 0.1965, 0.3156, and 0.1429, respectively. Certainly, the summation of weighted investment must be 1. The portfolio provided quite high return of 0.1242% and low systematic risk of 0.656.

6. This research was conducted by using a few financial theories and also provided new evidences supporting the theories. This insisted that the CAPM model and portfolio theory are practically employed in SET50 Index.

6. Recommendations and Further Research

The results of this research solved the problem in researchers' minds and suggested investors to recognize the useful information, which are:

1. The good criteria to select common stock are risk and return. In case of return, the comparison between actual return and required return can be a criterion for selecting the undervalued common stocks and overvalued common stocks. In addition, the undervalued common stocks should be selected to invest or perform an appropriate portfolio because its market price is able to increase in the future.

2. Performing a good diversification portfolio in the Stock Exchange of Thailand (SET) should recognize about systematic risk in terms of beta and the optimal weight of investment of each common stock.

These are useful information to suggest investors to select or perform a portfolio themselves given reasonable returns and well diversification. Moreover, the benefits of this research are:

1. Security companies can use this analysis method to prepare useful information or perform the optimal portfolios by themselves to support or suggest their customers.
2. The Stock Exchange of Thailand (SET) should recognize the undervalued common stocks. Besides, the SET should research more to find out what factors affect the undervalued common stocks. This might help assist those listed companies having the undervalued common stocks in SET50 Index and also expand in SET Index.
3. Future researchers should further do research by applying some aspects below:
 - Add more variables and perform new models for comparison study
 - Extend the research period or expand to more stock market for comparison study
 - Employ securities listed on foreign stock markets to gain more useful information for global investment

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Review Literature of Knowledge Management Systems

Adopting Models: Individual Level Evidence

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Abstract

For the modern business, Knowledge Management Systems (KMS) in organization is described as a comprehensive Information and Communication Technology (ICT) platform for collaboration and knowledge sharing with advanced services built on top. The KMS should be contextualized, integrated on the shared ontology basis and personalized for participants networked in communities. In addition, IT-based systems should be developed to support and enhance the organizational process of knowledge creation, storage/retrieval, transfer and application. This paper aimed to present a literature reviews of adoption models at the individual level of information systems both theories and prior papers. Researchers were interested in each different set of impacted factors of three prominent models: A Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB) and Unified Theory of Acceptance and Use of Technology (UTAUT) for adopting KMS in organization. Researchers also reviewed current three major findings: First, model of IT adoption at the individual level; Second, empirical literature of the UTAUT and finally, definitions of knowledge management systems.

Keywords: Knowledge Management Systems, Technology Acceptance Model, Technology Acceptance Model

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1. Introduction

The information technology (IT) is universally regarded as an essential tool in enhancing the competitiveness of the economy of a country. It is currently accepted that IT has significant effects on the productivity of firms (Oliveira & Martins, 2010). These effects only are fully realized if, and when, IT is spread and widely used. It is crucial, therefore, to understand the determinants of IT adoption and the theoretical models that have arisen addressing IT adoption. However, there are a few reviews of literature about the comparison of IT adoption models at the individual level. This stimulates researchers to examine in depth in the comparison of IT adoption models; in addition, this study is able to fulfill this gap.

In this study, researchers review theories related to adoption models at the individual level used in information systems (IS); in addition to discuss three prominent models, presented in Section 2, which are: Technology Acceptance Model (TAM) (Davis, 1985), Theory of Planned Behavior (TPB) (Ajzen, 1991); and Unified Theory of Acceptance and Use of Technology (UTAUT). Section 3 presents an extensive analysis of the UTAUT framework and also paper related to this theory, and finally the studies that combine the UTAUT framework with other theories. In the last section, the conclusions are provided.

2. Review of Literature

2.1 Model of IT Adoption at the Individual Level

There are many theories used in IS research (Hart & Dowell, 2010). Most researchers are interests only in theory about technology adoption. The most popular theories are the Technology Acceptance Model (TAM) (Davis et al. 1989), Theory of Planned Behavior (TPB) (Ajzen, 1991), Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et.al, 2003). Therefore, researchers focused only on the TAM, TPB and UTAUT, because they specify only the individual level.

2.2 A Technology Acceptance Model

A Technology Acceptance Model (TAM) is a theory that has a reputation for being a measure of the success of the technology proposed by Davis, 1985 which is customizable. In addition to the Theory of Reasoned Action (TRA) presented by Fishbein and Ajzen described about social psychology (Fishbein & Ajzen, 1977). TRA explains how to develop a theoretical model TAM and studied in the context of the adoption of information systems. The theme of the party is unlikely to surrounding behavior but it is used as a factor in predicting the actual behavior as shown in Figure 1.

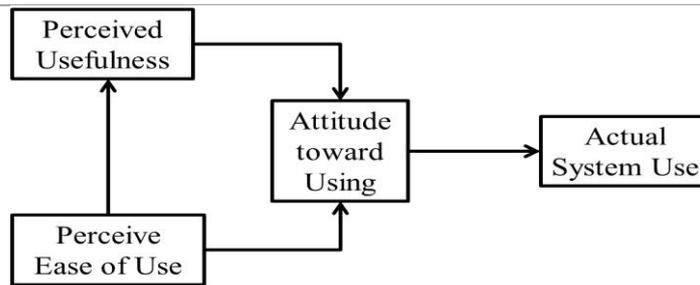


Figure 1: The Original Model of TAM (Fred D. Davis, 1985)

However, the model (Devis et.al, 1989) adapted TAM by excluding attitude toward the behavior. Intention might explain behavior more thoroughly (Venkatesh, Morris, Davis, & Davis, 2003) and can be used to forecast the adoption of information technology of individual. For example, the research of Davis et al., 1989 described the relationship between intention and behavior recognition technologies, shown in the Fred D Davis, Bagozzi, & Warshaw model (1989) below (Figure 2).

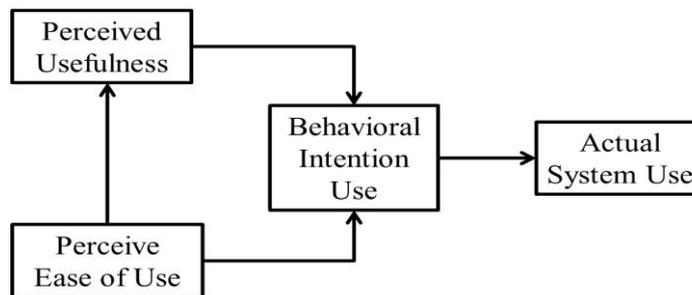


Figure 2: The Modified TAM

Although TAM can be used to forecast the adoption of information technology effectively, but TAM has some limitations as the complete lack of demand for new recurring addition (Taylor & Todd, 1995). Furthermore, some models intended to show the behavior, leading to further development the TAM model by adding different factors to examine the context of the adoption of information technology for a wider coverage(Chan & Lu, 2004; Kim & Malhotra, 2005)

The principle of TAM is to study factors influencing the behavioral intention to use information technology, which is composed of four aspects: external variables, recognition of the benefits of information technology (Perceived usefulness or U), recognition of the system is easy to use (Perceived ease of Use or E) and attitudes toward the use (Attitude toward using or A). The adopted model from TAM (Davis et al., 1989) is shown in Figure 3.

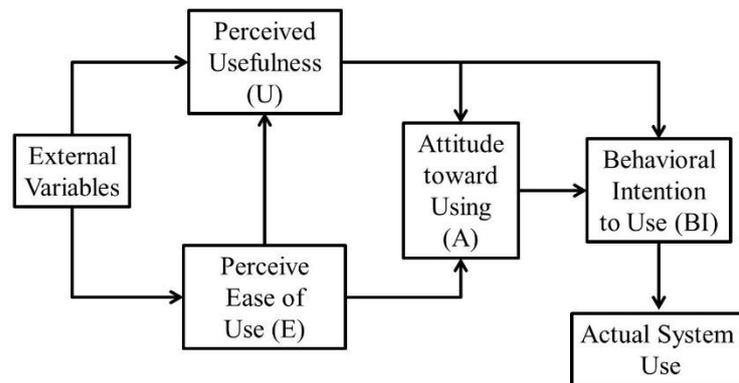


Figure 3: The adopted model from the TAM

Since the early applications of TAM to IS research, the theory has been applied and adapted in various aspects. Some examples of IT adoption are presented in Table 1.

Table 1: Some Studies Related to TAM Adoption (Davis, 1985)

IT Adoption	Author (s)
E-commerce/E-Business	Chooprayoon & Fung, 2010
A new software system	Venkatesh & Morris, 2000

2.3 Theory of Planned Behavior

Theory of Planned Behavior (TPB) proposed by Ajzen (1991) is a theory in social psychology developed from Theory of Reasoned Action (TRA). This theory pointed out the more awareness to control their own behavior, including perceived behavioral control. The varieties of behavior is a major context for the theory to help an understanding of the adoption of individual technologies (Taylor & Todd, 1995; Harrison, Mykytyn Jr, & Riemenschneider, 1997).

TPB examines the principles of individual behavior has been driven by the intended behavior. The factors that influence the behavioral intention consists of three main factors; namely the attitude toward the behavior, norms of the surrounding behavior and perceived behavioral control in any way. The relationship between TPB above theoretical model (Ajzen, 1991) is shown in the Figure 4.

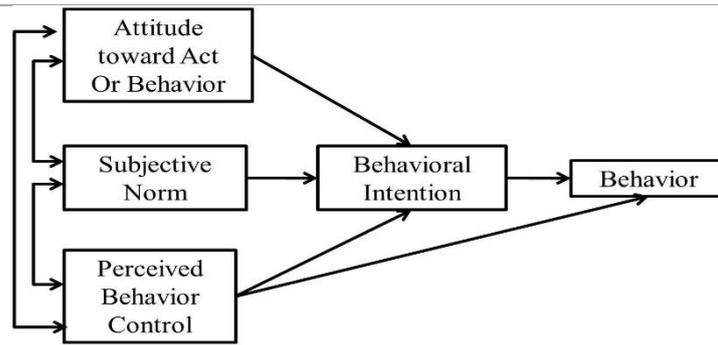


Figure 4: The Relationship Among Factors in TPB

Figure 4 shows the relationship between intention/behavior influenced by three main factors: attitude behavior, norms of the surrounding behavior and perceived behavioral control their behavior in any way. A direct influence on behavior recognition to control their own behavior is an acknowledgment of the difficulty or ease of behavior. If people perceive that they are able to behave in such circumstances and can achieve their desire, they are more likely to display behavior.

Also Ajzen (2002) believes that the person is trying to control various factors, internal factors and external factors. What conditions facilitate the use of factors such as perceived behavioral control of their own to show any behavior is determined by individual beliefs towards factors (such as the use of continuous operation) that may promote or inhibit behavior (Control beliefs) and the recognition of the power of such factors affecting the confidence (Efficacy) that the persons can behave. However, TPB has some limitations, potential errors, such as restrictions caused by inconsistencies between the willingness of individual behavior and actual behavior over time (Davis, 1985) and thus led to the development of the TAM.

Table 2: Some Studies Based on TPB (Ajzen, 1985)

IT Adoption	Author (s)
KM	Karim, Razi, Mohamed, & Abdullah, 2012
KMS in e-business	Lai, Ong, Yang, & Tang, 2005

2.4 Unified Theory of Acceptance and Use of Technology

Unified Theory of Acceptance and Use of Technology or UTAUT proposed by Venkatesh (2003). To gain more useful theory, there is a need to develop a model to explain the adoption of technologies of each party under the Unified theory, which based on the relationships depictions of various factors, from eight theories or field uses. The adoption of technology in individual sectors

(such as Entertainment, Telecommunication, Banking and Public administration) uses behavioral intentions /behavior as a primary variables (Ajzen, 1991).

The UTAUT theories is used to study the factor drivers for the intention behavior. The factors influencing behavioral intentions composed of three aspects: 1) expectations in performance (Performance expectancy), 2) expectations on effort (Effort expectancy) and 3) the influence of social (Social influence). Whereas, the facilitating condition are directly related to the usage habits. For the parameter / variable, there is four variables: (1) Sex (2) Age (3) experience and (4) the voluntary use. This is an important link in the act (Conjunction) model theory provides an eight theories. The relationship between the factors and parameters/variable theory UTAUT (Venkatesh et al., 2003) is shown in Figure 5.

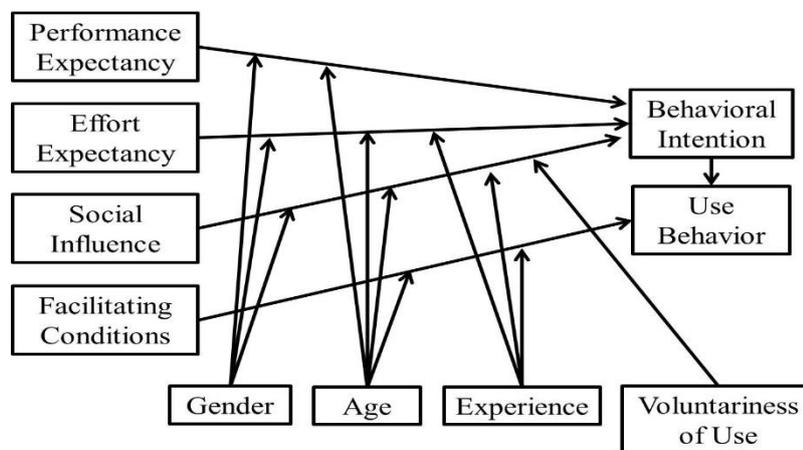


Figure 5: The Modified Model of UTAUT

Figure 5 presents the relationship between behavioral intention and behavior influenced by three main factors except facilitating conditions which has a direct influence on spending habits. The applied model is an extension and expansion of the main factors responsible for the four sides of the intention influencing behavior / usage behavior across four key areas.

However, the UTAUT model can forecast recognition technology efficiently. The extension model by adding more variables is able to forecast behavior more accuracy. However, recent research includes a small factor; therefore, there is a need to develop and expand the scope of theories to find more key factors to cover the context of technology users by focusing on consumers' use (Consumer technology use). The study concerns in these individuals whether it is a new technology application and the target group of the service. A different emphasis between the conditions of use of technology within business organizations of employees (UTAUT) and the condition of the consumer technology (UTAUT2) leads to more modify UTAUT or UTAUT 2.

2.5 Empirical Literature of the UTAUT

Researchers thoroughly analyse the UTAUT framework and presents an exhaustive description of studies that draw on the theory.

2.5.1 Prior papers related only to the UTAUT

Several researchers used only the UTAUT framework to study the different IT adoptions such as: Program packet, Electronic recordkeeping system (Lewellen, 2013). The variables analysis, method used, data, and context of empirical studies are presented in Table 3.

Table 3: Some Studies Based Only on the UTAUT

IT Adoption	Analysis Variables	Methods	Data and context	Author(s)
Program packet	Main constructs: Performance expectancy → Intention to use Effort expectancy → Intention to use Social influence → Intention to use Facilitating conditions → IT use Intention to use → IT use Latent variables: Voluntariness → Intention to use IT Knowledge → Facilitating conditions Experience → IT use IT use → Use Frequency IT use → Care & Report use IT use → Administration use IT use → Communication use	Partial least squares (PLS) path modeling	Observation research to 1,607 employee of CHCs	(Kijsanayotin, Pannarunoth ai, & Speedie, 2009)

Table 3: Some Studies Based Only on the UTAUT (Cont.)

IT Adoption	Analysis Variables	Methods	Data and context	Author(s)
KMS	Prior KMS use by superiors → Current KMS Use Prior KMS use by peers → Current KMS Use Prior KMS use by subordinates → Current KMS Use Prior KMS use by extended professional population → Current KMS Use Hierarchical Level → Prior KMS use by superiors , peers, subordinates and extended Professional Population Prior KMS Use → Current KMS Use	OLS regression	80,000 employees firm of industry	(Wang, Meister, & Gray, 2013)
KMS	Employees' technology acceptances towards KMSs influence the perceived dimensions of a learning organization.	regression	DLOQ questionnaires, 327 data from 3 South Korean companies	(Yoo & Huang, 2014)
KMS	Intention of contribute → Contribution Performance expectancy → Intention of contribute Effort expectancy → Intention of contribute	SEM	Questionnaires online by sent e-mail	(Isabelle & Sandrine, 2009)
Electronic Recordkeeping system	Technology Acceptance: Performance expectancy Effort expectancy Organizational Context: Social influence Perceived power security Knowledge Interpretation: Perceived value of records	Transcribed interviews use thematic analysis	12 interview from the New Zealand public sector	(Lewellen, 2013)

2.5.2 Studies that employed the UTAUT and other theories

Some papers developed more theories to find out appropriated modified model by using both the UTAUT framework and other theories to understand IT adoption. In Table 4 shows the model used the combination basis between the UTAUT framework and other theories to gain better understanding in IT adoption decisions. Additional theories are also included in Table 4 below.

Table 4: Some Studies that Combine the UTAUT Framework and Other Theories

Theoretical Model	IT Adoption	Analysis Variables	Methods	Data, and context	Author(s)
UTAUT and TAM models	E-business adoption: Electronic Document and Records Management Systems (EDRMS)	Technology acceptance: Effort expectancy → Intention to use Effort expectancy → Performance expectancy Performance expectancy → Intention to use Organizational Context: Perceived power security → Effort expectancy → Intention to use Social influence → Performance expectancy → Intention to use Knowledge Interpretation: Perceived value of records → Performance expectancy → Intention to use → Actual use behavior	SEM and PLS-PM	Online survey to public sector employees from New Zealand	(Lewellen, Hooper, & Oliver, 2014)
Ground Theory (GT)	KMS	Process: Management intervention KM processes		case study oil and gas industry in Malaysia	(Matayong & Mahmood, 2011)

Table 4: Some Studies that Combine the UTAUT Framework and Other Theories (Cont.)

Theoretical Model	IT Adoption	Analysis Variables	Methods	Data, and context	Author(s)
UTAUT2 and social influence theory	KMS	Facilitating conditions → Current KMS use Habit → Current KMS use Prior KMS use → Current KMS use Prior KMS use by Superiors → Current KMS use Prior KMS use by Peers → Current KMS use Prior KMS use by Subordinates → Current KMS use KMS use Hierarchical level: → Prior KMS use by Superiors → Prior KMS use by Peers → Prior KMS use by Subordinates		survey to employee s from 192 industry	(Fretwell, Lewis, & Ryan, 2014)
UTAUT and social factors	KMS	Social Factors: Voluntariness → Adoption and Usage Visibility → Adoption and Usage Image → Adoption and Usage Reciprocity Expectation → Adoption and Usage Technological Factors: Ease of use → Adoption and Usage Trial ability → Adoption and Usage Relative advantage → Adoption and Usage Result demonstrability → Adoption and Usage	PLS	survey to employee s of business organizations	(Hester, 2010)

Table 4: Some Studies that Combine the UTAUT Framework and Other Theories (Cont.)

Theoretical Model	IT Adoption	Analysis Variables	Methods	Data, and context	Author(s)
UTAUT and social factors	KMS	Organizational Culture: Process vs. Results → Perceived Usefulness Process vs. Results → Perceived Ease of Use Process vs. Results → Perceived Behavioral Control Employee vs. Job → Perceived Behavioral Control Open vs. Closed → Subjective Norms Perceived Usefulness → Behavioral Intention Towards KMS use Perceived Ease of Use → Behavioral Intention Towards KMS use Perceived Behavioral Control → Behavioral Intention Towards KMS use Subjective Norms → Behavioral Intention Towards KMS use	SEM	Questionnaire employee s	(Ciganek, Mao, & Srite, 2010)

2.5.3 Knowledge Management Systems (KMS)

In common, the KMS are IT that enables organizations to manage effective and efficient knowledge. However, some the definitions of KMS have been proposed by researchers as shown in Table 5 below.

Table 5: Definitions of Knowledge Management Systems

Authors	Definition of KMS
(Gray, 2000)	“The considerable interest subject amount the academics and practioners from the past decade that less of cumulative empirical researches are formed to place the causal mechanisms of the influence of KMS on the organization performance.”
(Hahn & Subramani, 2000)	“emerging as powerful sources of competitive advantage”

Table 5: Definitions of Knowledge Management Systems (Cont.)

Authors	Definition of KMS
(Alavi & Leidner, 2001)	“The development of IT-based systems will support and enhance the knowledge creation, application, transfer and storage/retrieval processes in the organization.”
(Gallupe, 2001)	“The tools and technique that support knowledge management practices in organizations”
(Hasan & Gould, 2003)	“An “activity” using architecture in the unit of analysis with be able to implement together in the current approaches and technologies.”
(Kankanhalli & Tan, 2004)	“a class of information systems applied to managing organizational knowledge”
(Money & Turner, 2004)	“A web-based management tool and document repository with the primarily intent to support the goals of the organization.”
(Jennex & Olfman, 2005)	“IT/ICT components included system with the users, repositories, using processes and/or knowledge generating, knowledge use culture, and the initiative for KM.”
(Poston & Speier, 2005)	“Facilitation of the company's intellectual resources sharing in efficient and effective ways.”
(Sambamurthy & Subramani, 2005)	“also encompass other technology-based initiatives such as the creation of databases of experts, the development of decision aids and expert systems, and the hardwiring of social net-works to aid access to resources of non-collocated individuals”
(Xu & Quaddus, 2005)	“It involves IT systems application with other resources in the organization for the strategically knowledge management in more systematic and effective way with quite a recent.”
(Abdullah, Selamat, Jaafar, Abdullah, & Sura, 2008)	“as a concept that can be used for creating knowledge repositories, improving knowledge access and sharing as well as communicating though collaboration and managing knowledge as an asset in learning organization”
(Khalifa, Yan Yu, & Ning Shen, 2008)	“The specific organizational knowledge processes and resources focusing information system.”

Table 5: Definitions of Knowledge Management Systems (Cont.)

Authors	Definition of KMS
(Orth, Smolnik, & Jennex, 2011)	“Offering the organization with the benefits but with strong of failure either from technical or IT-related factors, plus, the KM-related cultural, behavioral and strategic factors-similar to several of information systems (IS) types.”
(Qwaider, 2011)	“Special type of information systems that supports activities related to the acquisition, generation, codification, storage, transfer, retrieval, and use of knowledge within organization.”
(Yeh, 2011)	“the framework of an integration of organizational elements in organizational culture, organizational information technology infrastructure and the organization's store of individual and collective experiences, learning, insights, values”

Finally, this study used the KMS definition by Alavi & Leidner (2001), which defines that knowledge management is an organizational systemic and specified process to acquire, communicate and organize for the explicit knowledge and tactics for employees to use and gain more effectiveness and productive towards their works. In general, KMS would not have differences from other information systems, instead of content and activities by users. KMS would consist of hardware, software, people, and organization environment surrounding it.

The KMS review from the organizational IT usage might be consequently discussed, followed by the UTAUT reviews. Researchers provided both academic and practitioner approaches on the effort expectancy, performance expectancy, facilitating conditions and social influence, and then the behavioral of users and behavioral intention of the organization application of KMS.

The characteristics component of Knowledge Management Systems are derived from prior research shown in Table 6 below.

Table 6: Characteristics Component of Knowledge Management Systems

KMS	Authors	Explanation of Component
Characteristics Component		
Goals	(Lewin & Minton, 1986); (Stein & Zwass, 1995)	➤ Bring knowledge from the past to bear on present activities, thus resulting in increased levels of organizational effectiveness

Table 6: Characteristics Component of Knowledge Management Systems (Cont.)

KMS Characteristics Component	Authors	➤ Explanation of Component
Processes	(Maier & Sametinger, 2004) (Detlor, 2002); (Jennex & Olfman, 2005) (Davenport, Jarvenpaa, & Beers, 1996)	➤ As the technological part of KM initiative that also comprises person-oriented and organizational instruments targeted at improving the productivity of knowledge work ➤ Developed to support and enhance knowledge intensive task, processes, or projects ➤ Supported knowledge processes such as, knowledge creation, organization, storage, retrieval, transfer, refinement and packaging, (re) use, revision, and feedback, also called the knowledge life cycle, ultimately to support knowledge work
Comprehensive Platform	(Maier & Hädrich, 2006) (Jennex & Olfman, 2005)	➤ KMS is not an application system targeted at single KM initiative, but a platform that can be used either as IT to support knowledge processes or integrating base system and repository in which KM application systems are built ➤ There are two platform categories, the first user centric approach with focus on processes, and IT centric approach which focuses on base system to capture and distribute knowledge
Advanced Knowledge Services	(Bair & O'Connor, 1998);(Holtshouse, Borghoff, & Pareschi, 2013);	➤ KMS are ICT platform consist of a number of integrated services ➤ Basic services such as, collaboration, workflow management, document and content management, visualization, search and retrieval ➤ Advanced services such as, personalization, text analysis, clustering and categorization to increase the relevance of retrieved and push information, advanced graphical techniques for navigation, awareness services, shared workspace, and learning services as well as the integration of reasoning about various sauces on the basis of shared ontology

Table 6: Characteristics Component of Knowledge Management Systems (Cont.)

KMS	Authors	➤ Explanation of Component
Characteristics		
Component		
Knowledge Instruments	(Tsui, 2003)	➤ KMS are applied in a large number application area
	(Alavi & Leidner, 2001); (McDermott, 1999); (Tsui, 2003)	➤ KMS specially support KM instruments
	(Maier & Hädrich, 2006)	➤ KMS offers targeted combination and integration of knowledge services that together foster one or more KM instruments
Specifics of Knowledge	(Alavi & Leidner, 2001)	➤ KMS help to assimilate access to sources of knowledge, and with the help of shared context, increase the breadth of knowledge sharing between persons rather than storing knowledge itself
Participants	(Maier & Hädrich, 2006)	➤ Users play roles of active, involved participants in the knowledge network forested by KMS

2.6 Key Success Factor for Knowledge Management Systems

The knowledge management system development agenda in most organizations is the key driver of creating and sustaining competitive advantage in the 21st century economy. Chang, Hsieh, & Chen (2015) describe the factors influencing the success of a KMS for clinic including organizational culture and structure, top manager support, user perceived usefulness and perceived ease of use, user satisfaction, beneficial system quality, and accurate knowledge. Lee & Lan (2011) proposes the examination of the relative performance of KM in SMEs in Taiwan and Hong Kong for two keys success factors of KM, including Infrastructure capability (Technology, Structure, Culture) Process capability (Acquisition, Conversion, Application, Protection). Finally, The Knowledge management systems divided into two categories 1) Knowledge management practices (KM-Practices) and 2) Knowledge management tools (KM-Tools) (Cerchione & Esposito, 2017)

3. Conclusions

This paper made a review of literature of IT adoption models at the individual level. Most empirical studies are derived from the technology acceptance model (TAM), theory of planned behavior (TPB), unified theory of acceptance and use of technology (UTAUT), knowledge management systems (KMS). As the UTAUT model included the environment context (not included in the TAM theory and TPB theory), it becomes better ability to explain intra-firm innovation adoption;

therefore, researchers consider this model to be more complete. The UTAUT model has a solid theoretical basis, consistent empirical support, and the potential of application to IS adoption. For this reason, an extensive analysis of the UTAUT model was undertaken, analysis Electronic Journal Information Systems empirical studies that use only the UTAUT model and knowledge management systems (KMS). In the empirical studies, it combines this model with the TAM theory, Ground theory, and the social factor models, and concluding the same context in a specific theoretical model can have different factors.

In term of further research, researchers think that for more complex new technology adoption, it is important to combine more theoretical models to achieve a better understanding of the IT adoption phenomenon.

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Factors Affecting Customers' Decision to Use Coworking Coffee Shops: A Case Study in Bangkok and Chon Buri Province

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Abstract

The objective of this research was to study 4Ps marketing mix and physical environment factors which affected customers' decision towards their selecting of coworking coffee shops. The samples were made up of randomly selected providers and customers for a total of 42 interviewees who participated at 14 coworking coffee shops in Bangkok and Chon Buri Province. The data were analyzed using descriptive statistics on factors affecting customer decisions. The participants were mostly female, aged between 19-40, with an average age of 29 years old.

From the analysis of 4Ps marketing mix and physical environment factors, it was found that the in-depth interview participants referred to all 7 factors at the highest to lowest level in the following order: 1) Product or service & Place, 2) Ambience, 3) Design, 4) Price, and 5) Promotions & Social factors. The top sub-factors that participants mentioned in each of the main 7 factors were as follows: 1) Cover of facilities food and drink, Wi-Fi, electrical plug, locker (Product or Service), 2) Acceptable price (Price), 3) Good location and convenient transportation (Place), 4) Buy 1 get 1 (Promotion), 5) Dividing the venue's proportions and zones (Design), 6) Good atmosphere, quiet and cleanliness (Ambience), and 7) Staff service attitude and customer engagement (Social).

Keywords: Coworking, Coffee Shop, Marketing Mix, Physical Environment, Decision to use the Service

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1. Introduction

The Thailand National Food Institute published the value of the coffee business market in the years 2010 to 2014; the value has grown from 14,083 million baht to 17,400 million baht, an annual average growth of 5.4% (Institute of Thailand National Food, 2015). The growth of the coffee shop business is reflected in Thai consumers changed behavior as they originally drank instant coffee. Western culture has also played a more influential role in Thai culture and lifestyle by continuously expanding and increasing the habit of drinking fresh coffee until coffee shops have become the “third place” for drinking coffee - home being the first and work being the second (Dollinger, 2006). The reasons include some decorations and environment in the coffee shop which create a pleasant feeling. Generally, the average price of a cup of coffee is 40-50 baht; moreover, customers expect to get functional services and great atmosphere in the shop (Bangkok Bank SME, 2015). A new generation of people, especially those working in businesses such as designers, architects, IT engineers, auditors, and so on, changed their style of work according to innovations in communications technology. They leave their offices and desks to find a relaxed, creative environment. They are also looking for human interaction and interrelation. Furthermore, they are seeking alternative coffee shops offering not only a cup of coffee or tea but also various facilities as internet Wi-Fi and convenient seating. Coffee shops are one of the easiest places for them to find in anywhere.

Technology has revolutionized the work life of people so that they can work more independently. People are able to work everywhere in the world, so long as they have access to the internet and a laptop. As a new generation of people who prefer to work outside and escape a boring life want to come out and start up their own business. Due to the impact of the economy, many companies have laid off employees to reduce costs. This resulted in an enormous increase in “freelance” workers. These people need a comfortable workplace such as near the metro station in the city. It would not be best to invest in an office building, so they seek for a cheap place to work and have a community of people to share ideas with. To build relationships and reduce the difficulty of starting a new business, a coworking space is the work space that they choose (Bangkokbiznews, 2013). Coworking is a style of work where small businesses and business startups work independently together in the same place. Foertsch (2011) stated that the number of coworking spaces have almost doubled in the past year from around 350 to over 650. The conclusion is that the total number of coworkers worldwide have also doubled, and it shows that customer growth has increased recently and remains nonstop (Foertsch, 2011). There are various forms of coworking spaces where people have designed informal arrangements of the working environment. The key point of coworking is to help freelance or startup workers get new ideas and feedback and to get a team that depends on connection and individual capability. Three

characteristics of coworking space are: 1) the price is cheaper than renting a regular office; 2) it's suitable for the work lifestyle of the new generation, and 3) it has complete facilities. According to the latest numbers from Deskmag by Foertsch (2011), King and Ockels (2011) summarized that there are about 820 global coworking facilities: about 350 spaces are located in the U.S., and about 470 coworking facilities are located outside the U.S.

The official first "coworking space" has opened in San Francisco in 2005 (Foertsch and Cagnol, 2013), and it is continuing to increase in the U.S., Europe, and throughout Asia, including Thailand. THE NATION Thailand postal (2017) reported a survey summary from Hubba Co. Ltd. and Colliers International Thailand Research showing the number of coworking spaces in Thailand from 2012 to 2016. The director of Colliers International Thailand Research stated that results revealed that the coworking spaces continued to grow with 120 coworking spaces, compared with none in 2011 (THE NATION Thailand postal, 2017; Colliers International Thailand Research, 2016). At the same time, the number of freelancers and people who can work from home are also increasing every year, and coworking space has proven to be particularly attractive to this group (Kongcheep, 2016). The popularity of coworking spaces has spread from Bangkok to several other provinces in Thailand. "HUBBA," the first coworking space in Bangkok, was established in 2012. Aummarueg and Charn who are the owners of HUBBA have designed a working environment which emphasizes a community space for freelance, startup or business people who can share ideas and gather in the same place independently.

In 2015, The entrepreneur of Launchpad and Draft identifies coworking as a growth business in the future, along with growth of the trend to "Digital Economy," referring to the new generation of people who want to create startups and work freelance. Coworking coffee shops are one of businesses that can provide an advantage to both the provider and the customer. It is integrated between community space and coffee shop mixed together, which provides not only a coffee machine and a couch but also offers rented private rooms or conference rooms with various facilities combining good atmosphere and good functioning. Office workers and other people have selected coworking coffee shops as a working and appointment place to discuss and even catch someone's eye. They can work or do activities at the coffee shop all day if they need, and they can set up a budget that they pay for time because the coworking coffee shop has become a flexible and perfect solution for them.

2. Objectives of the Research

1. To study the reasons why customers choose coworking coffee shops.
2. To know the participants' perspectives and the characteristics of coworking coffee shops.

3. Scope of the Research

A qualitative method was used to collect data to gain in-depth knowledge and understanding of perspectives, attitudes, and expectancies by interviewing participants (providers and customers), who are attached to coworking coffee shops in Bangkok and Chon Buri Province. The time period was from March to May 2017. The names of the 14 coworking coffee shops were shown below:

1. A-Loft Cafe' & Meeting Complex, Bangsaen, Chon Buri
2. The Portal Coworking, Bang Saen, Chon Buri
3. Box space, Sriracha, Chon Buri
4. Anchor, Pattaya, Chon Buri
5. Ease Café & Coworking space, Bangkok
6. Growth Café & Co., Bangkok
7. Think Tank (third place), Bangkok
8. Coworking Space Gather, Bangkok
9. Blue Space Restaurant and Coffee Shop, Bangkok
10. True Shop Siam Soi 2, Bangkok
11. Think society, Bangkok Coworking Space Gather, Bangkok
12. Sit in Inspired Work Space, Bangkok
13. Space @siam, Bangkok
14. Joint Cafe & Workspace, Bangkok

4. Conceptual Framework

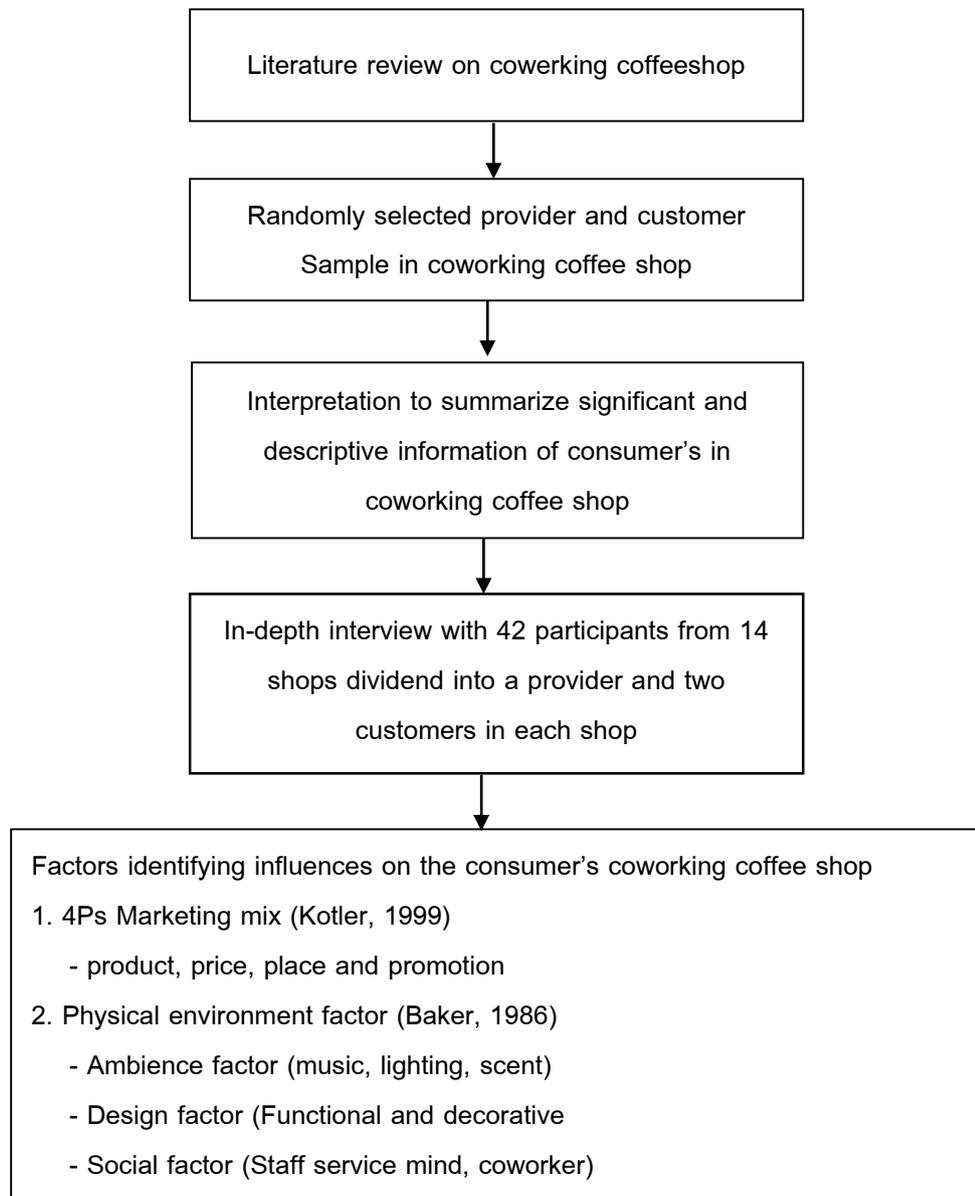


Figure 1. Conceptual Framework

5. Contribute to knowledge of the research

This study guided the traditional and new entrepreneur of a coffee shop or coworking coffee shop to understand customers' decisions and realize how to improve their business.

6. Theory and Concept

Marketing Mix

Kotler (2000) defined the marketing mix 4Ps as the set of controllable marketing tools - product, price, place (distribution), and promotion - that the firm blends to produce the response it wants to accomplish in the target market. The basic elements of marketing can be placed in 4 Ps Marketing Mix categories. It is the combinations of these elements that meet customer's needs and satisfaction.

Physical environment concept

Baker (1986) has developed and classified the environment into three components: ambience factors, design factor elements, and social factors. Design elements or visual factors were classified into functional (store layout, display, comfort, and privacy) and decorative (architecture, style, material, and color).

7. Research Design

The research design adopted for this research was the qualitative data obtained from descriptive research survey study by using in-depth interviews. The sample size was 42 interviewees as a total which were randomly selected from a provider and two customers per shop. The data collection used in this study consisted of:

Primary data - the qualitative data were gathered from interview questions. The researchers designed interview questions to examine: 1) customer perspectives of coworking spaces, 2) characteristics of each coworking space, 3) factors which impact customer decisions, and 4) respondents' expectations of the shop.

Secondary data - the data were gathered internally from the university's website. Apart from the research there were secondary sources from books, previous studies, academic journals, websites, libraries, and the internet.

8. Research Instrumentation

For this research, the researchers designed in-depth interviews using 4 open-ended questions as the instrument to gather the data and also studied other theories, research, concepts, theses, and documents. The questionnaire included four questions:

1. What is coworking in your perspective?
2. What are the characteristics of this coworking coffee shop?
3. Why do customers choose this coworking coffee shop?
4. What are the facilities that you think this coworking coffee shop should improve?

9. Method of Analysis

The research data analysis was divided into two parts. The first part analyzed secondary data from in-depth interview with a provider and two customers each shop. The second part used content analysis to finalize the relevant knowledge from the combination pulled of primary and secondary research findings by using data interpretation to summarize significant and reveal descriptive information.

10. Findings and Conclusion

This research aimed to represent the participant's perspectives of coworking and characteristics of traditional coworking coffee shop in each shop to guide new entrepreneur to create the idea and overview of coworking coffee shop on how it can increase the value. The objective of this research was to study 4Ps marketing mix and physical environment factors which affected customers' decision towards their selecting of coworking coffee shops as well as the relationship between factors influencing use of the service and the number of participant's mention in each factor. There were 42 participants and 7 factors consisting of 4 Ps Marketing Mix and 3Ps Physical environment. All of them have an impact on customers' decision making. The highest factors affecting customers' decision were the product or service & place factors, and the lowest factors were the promotion & social factors. Providers emphasized on 4Ps Marketing Mix while users focused on design and ambience factors.

The sub-factor that had the greatest effect on customers' decision based on the Product and Service factor was providing facilities as Wi-Fi, electrical outlet, and lockers.

The sub-factor that had the most effect on customers' decision based on the price factor was acceptable price.

The sub-factor that had the greatest effect on customers' decision regarding the place factor was a good location close landmarks and with convenient transportation. For example, co-working spaces located near BTS are convenient for Bangkok customers.

The sub-factor that most affected customers' decision based on the promotion factor was buy 1 get 1, or any special price or discount.

The sub-factor that had the greatest effect on customers' decision regarding the design factor was division into proportional zones. The customer chooses a coworking area because they would like to work in a private area; if the shop has a separate zone, they will decide to buy that service.

The sub-factor that most affected customers' decision based on the ambience factor was good atmosphere. Customers would like to work in a quiet and clean atmosphere suitable for working. The atmosphere creates a comfortable and pleasant feeling.

The sub-factor that had the most effect on customers' decision based on the social factor was service mind and customer engagement. Customers choose the shop because of staff service and the interaction between workers.

The analysis of 4Ps marketing mix and physical environment factors from the in-depth interview participants showed that all 7 factors had the impact at the high level in the following order:

1. Product or service and place
2. Ambience
3. Design
4. Price
5. Promotion and social

The top sub-factors that participants mentioned in each of main 7 factors were as follows: 1) Cover of facilities food and drink, Wi-Fi, electronic plug, locker (Product or Service), 2) Acceptable price (Price), 3) Good location and convenient transportation (Place), 4) Buy 1 get 1 (Promotion), 5) Dividing the proportion zone (Design), 6) Good atmosphere quiet and cleanness (Ambience), and 7) Staff service mind and customer engagement (Social).

11. Discussion

This research explored the components of 4Ps marketing mix, the physical environment of coworking coffee shops in Bangkok and Chon Buri Province, and demographic factors that have the effects on consumer's purchasing decision. The analyses were conducted based on 42 respondents's interviews. The respondents of this research included 14 providers and 28 customers who participated in coworking coffee shops.

"Coworking space" is a working environment where people can share ideas and experience. Coworking is also an appointment place for some people while some can relax in the great atmosphere like a "third place." This result is in accordance with previous research by Anne Leforestier who studied the coworking space clients looking for socialization and interaction, sharing experience, networks, developing strong connections, and acting like a community.

The results referred to providers and customers mentioning why customer chooses to use the coworking space in each shop. All 7 factors -- Product, Price, Place, Promotion, Design, Ambience, and Social -- had the impacts on the customers' decision. There were 30, 20, 30, 16, 27, 29, and 16 persons who mentioned each factor, respectively. Most mentioned factors were the Product & Service and Place factors. This result is in accordance with previous research by Taksataweesiri and Benjawattananon (2015) who studied on investing in coworking spaces in Amphoe Muang, Khon Kaen Province. They found that Thai people choose the coffee shop as a

work place when amenity services such as internet Wi-Fi and good interior decoration were presented. The impact result of design and ambience factors is in accordance with previous experiments (Parinyawitid, 2012)

12. Recommendation and Future Research

In the present, there are many entrepreneurs of coffee shop who have faced fierce competition and need to increase the value of their business. Coworking is one interesting alternative to be combined in the coffee shop business which beside from drink and food people are still able to sit a long time and use provided function to make them more relax and convenient. To increase the value of coffee shop attracts customer's attention and repurchase.

A future qualitative research might be conducted with a larger sample size (more than 50 respondents) for which the analysis can be done. The suggestion for future research is that the researcher should improve the number and details of questions for interviews and should observe customers from their actual behaviors. This can be benefit for entrepreneurs to increase value along with the marketing mix and physical environment.

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The Impact of Job Satisfaction on Employee Loyalty: The Case of 3MB Company, Ltd.

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Abstract

This qualitative research aimed to explain 3MB staff's organizational behaviors in terms of their satisfaction and loyalty to the company. The research tools included in-depth interviews and focus group. Data were obtained from the interviews of 20 out of 100 3MB staff and administrators. It was found that most staff were not satisfied with their work but had no other choices of better work. There were no clear results from the eight factors, consisting of working environment, compensation, work itself, responsibility, achievement, growth, recognition, and advancement. Moreover, there was no clear difference in satisfaction between Office and Production staff. Most staff are most likely to resign if they receive a better job opportunity. The research result would be useful for the strategy, policy, and personnel development of 3MB to make it a standard workplace.

Keywords: Job Satisfaction, Staff Loyalty, 3MB Co., Ltd.

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1. Introduction

1.1 Background and Statement of Problems

Nowadays, it is undeniable that businesses pay more attention to their employees since they see that human resources are indispensable for the company. Whenever there is an absence of human resources, the process of work cannot run continuously or may be delayed, causing damage to the company. If the company wants to support and encourage a staff to have good skills, it needs to invest with high costs. The process involves recruitment, selection, compensation, welfare, and benefits, including skill training for the staff. With the training process that assists staffs to work effectively and efficiently, employees would be happy at work, and it may lead to job satisfaction. The higher satisfaction the employees have, the more loyalty they would have toward the company. Therefore, building the staff loyalty is what the company should focus on. If the employees are loyal to the company, they are reluctant to resign; in other words, loyal staff members do not resign from the organization easily. They are responsible for their work. Besides, they work with great effort, and with the development process of practice. Last, but not least, they work for the company's success. On the other hand, if the employees have no loyalty to the company, they will look for opportunities to leave the organization, especially when it comes to the issue of salary. They lack a real intention or effort to work. They avoid any extra work apart from their regular work responsibilities. As a result, this makes the organizational efficiency decrease.

If an employee resigns, the company has to spend a lot of both time and money on recruiting a new replacement and training him or her. Unlike long-trained employees, new employees, who have not become accustomed to the work, are likely to cause damages and cannot meet the company's standards. In contrast, the employees who have been working for a long time have more work skills. Trained practically by the company, these employees have good work skills and are able to troubleshoot problems. Seeing that employees are real valuable resources in which the organizations have to invest, the organizations have to do their best to keep skilled ones with them since these quality employees can reduce costs for the organization. Having employee satisfaction is considered a critical concept along with the ability to retain the best employees to stay in the organization or employee retention in other words. In fact, there are several strategies provided by the human resource management on how to make the employees satisfied with their organization. Any of the methods guided by the strategies of human resource management is intended to prevent or reduce the employee turnover rate (Lipiec, 2001).

According to table 1 below, the approximate number of employee resignations at 3MB in 2016 is shown.

Table 1 The Approximate Number of Employee Resignations at 3MB in 2016.

Department	2016	Percentage
Molding	1	1
Laminating	4	4
Sanding	3	3
Painting	1	1
Packaging	1	1
CEO	0	0
General Manager	1	1
Manufacturing Manager	1	1
Human resource / Admin	1	1
Accounting / Financing	0	0
Logistics / Purchasing	1	1
Engineering	2	2
Project managers	2	2
Former employees	3	3
Subtotal	21	21%

The number was indicated that the turnover rate varies each year (3MB ERP, 2016). It shows that 21 percent of employees from several departments has been resigned which is high percentage. Therefore, 3MB should pay attention to employees' job satisfaction and loyalty so that the resignation problem can be solved in the future.

2. Literature Reviews

Locke (1976) defined job satisfaction as individual's subjective valuation from various aspects toward their job (Tansel and Gazioglu, 2014). Spector (1997) stated that employee satisfaction was considered as either overall feeling toward the job or various attributes toward the job (Turkyilmaz, Akman, Ozkan and Pastuszak, 2011; Spector, 1997). Turkyilmaz et al. (2011) proposed that employee satisfaction is an essential factor that is reflected from employees' opinion, attitude and expectation toward their job and organization. The findings from previous studies indicated that job satisfaction is a good predictor in job resign and high turnover, and those findings also revealed that individuals leave low satisfaction jobs for high satisfaction jobs (Tansel and Gazioglu, 2014; Freeman, 1978; Akerlof et al., 1988; Clark et al., 1998; Kristensen and Westergard-Nielsen, 2004; Lévy-Garboua et al. (2007). According to Drummond and Stoddard (1991), employee satisfaction contains an evaluation of various characteristics of the job as working conditions, pay,

relationships with co-workers and supervisor, organizational policies and the nature of the job itself (Tansel and Gazioglu, 2014). According to Becker et al. (1995), loyalty could be defined as a desire to maintain commitment as employee of the organization, a willingness to put efforts for the organization, a strong belief in values and goals of the organization (Tansel and Gazioglu, 2014). Chen (2006) stated that job satisfaction determined organizational loyalty of employees and such loyalty mediates the effects of satisfaction on turnover variables (Chen, 2006; Tansel and Gazioglu, 2014) while Fletcher and Williams (1996) stated that employee job satisfaction has a positive impact on organizational loyalty (Tansel and Gazioglu, 2014).

3. Research objectives

1. To study the degree of employees' job satisfaction on the eight factors consisting of working environment, compensation, work itself, responsibility, achievement, growth, recognition, and advancement

2. To identify the key factors among the eight factors (working environment, compensation, work itself, responsibility, achievement, growth, recognition, and advancement), mostly affecting the employees' job satisfaction

3. To assess the overall job satisfaction of the employees in 3MB Company Ltd.

Research questions

The following questions were the main interview questions used for data collection of this research. Each question was followed by additional explanation from the interviewees no matter whether the answer was yes or no.

In addition, the issues for focus group discussion were those main points collected from the interviews. The focus group members intensively discussed those issues and sought preliminary solutions to those problems. Objectives of the focus group was implemented to serve the following purposes:

- To determine why loyalty is declining and what can be done about it,
- To reconsider the basic qualifications of employees working in different departments,
- To suggest ways for 3MB staff to work together happily and effectively, and
- To propose a model for an effective work environment which will lead to employee loyalty.

Scope of the Research

The research investigated whether job satisfaction at 3MB Company Ltd. has influenced employee loyalty. Methods of data collection for this qualitative research were interviews and focus group. The relationship between job satisfaction and employee loyalty was then analyzed by using linear regression. The following eight factors were discussed below in research framework:

4. Conceptual Framework and Research Framework

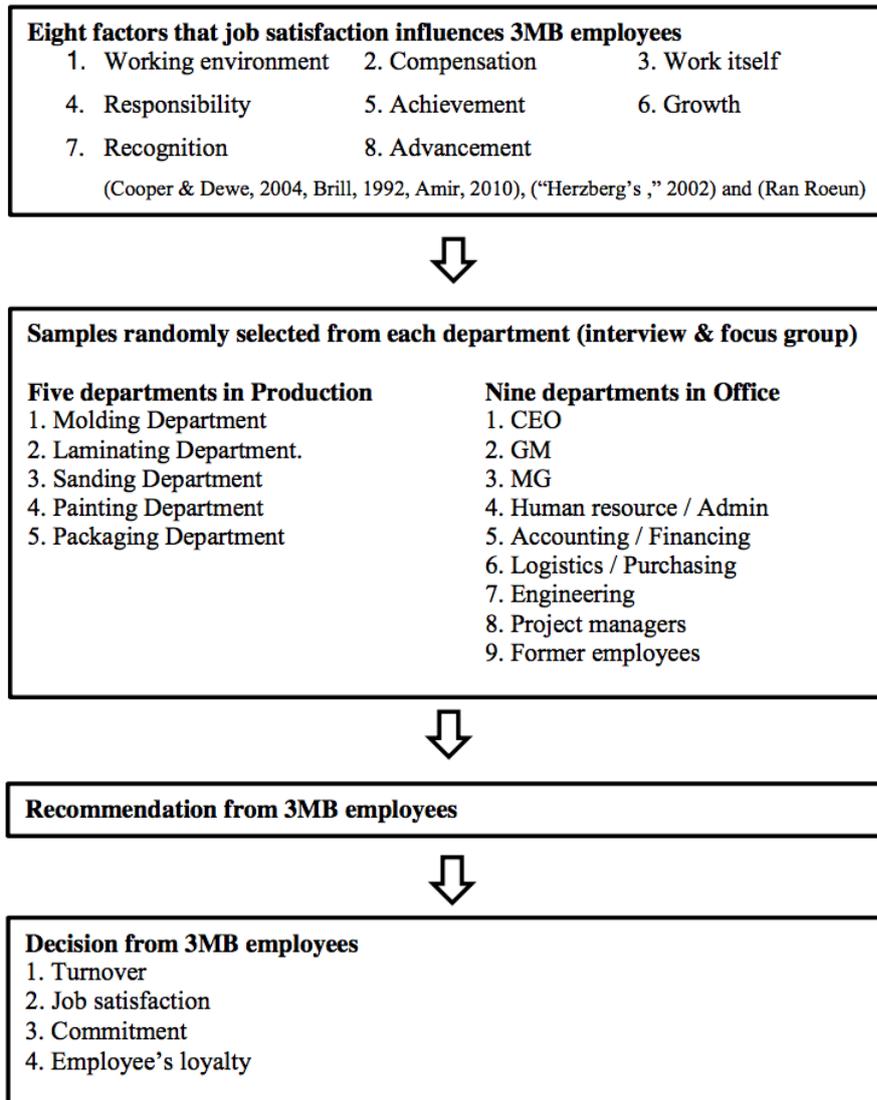


Figure 1 Conceptual Framework

Significance of the Research

1. The results of this research is useful for developing job satisfaction to increase employee loyalty at 3MB Company Ltd.
2. This research would be useful as research evidence for further studies concerning how job satisfaction affects employee loyalty.

Research Samples

The respondent for this research consisted of people from 3MB Company Ltd. In the qualitative research, the target population was approximately 100 people from operation positions in the company. The researchers used the focus group technique to obtain data from 20 employees from 14 departments.

5. Research Methodology

This research was a qualitative research study about the factors related to job satisfaction influencing employee loyalty. This research design allowed the researchers to discover and understand phenomena concerned with events, situations, opinions, experiences, feelings, and attitudes of individuals, thus producing subjective data. In this research, the researchers used both focus group and in-depth interview techniques to gather data directly from the employees in each department. The data used in this research were composed of both primary and secondary data.

Primary data - Qualitative data were gathered from a focus group and interviews. The first step, the researchers organized formal interviews with 20 people – 10 people selected from 9 positions in the office including former employees of 3MB and the other 10 people selected from 5 positions in the production line. The second step of focus group interview took place after the completion of the interviews. In the focus group, 3 administrators were invited to discuss issues.

Secondary data - This information and data were derived from related concepts, theories, and researches. In addition, there were articles in the press, journals, textbooks, and related research on the Internet.

Method of analysis

For qualitative research, the researchers collected and analyzed the data as follows:

1. Analyzed the data from the recordings and review,
2. Chose the important information,
3. Grouped the same or similar information together to create a summary of the topic,
4. Clearly explained about the situation and cut unnecessary topics, and
5. Verified the information by reviewing the person who gave the information for reliability.

6. Research Findings and Conclusion

According to the eight studied factors, comprising working environment, compensation, work itself, responsibility, achievement, growth, recognition, and advancement, the results could be concluded as follows:

Working environment - It was found that most employees were not satisfied with the working environment. The airflow was reported to be poor because there were not enough ventilators causing

the working area to be very dusty, thus harmful to health. The air conditioner problem also got worse due to its limited working area, which caused further noise problems. Most staff reported that the running machines were very noisy. Another big problem was the insufficient amount of light in the office and working areas. This caused mistakes when making products, which often dissatisfies the customers. In terms of facilities, it was reported that there were not enough toilets, insufficient drinking water, no cafeteria, and no rest areas for staff. No sufficient working equipment was provided either. Finally, the company appeared to have problems with safety systems. The staff had to work with various chemicals all the time, but only basic safety tools were provided.

Compensation - The compensation was found to be acceptable by most staff because most of them considered themselves not knowledgeable or experienced enough when they initially started working for the company. The company offered them opportunities to work in their positions. Those who were not very satisfied with the compensation were Office staff. They felt that they were assigned to do too many things. Besides, they occasionally had to work overtime but without being paid. Some did not get a yearly salary raise because the company told them that it was only a small company which did not make enough profit. Several production mistakes which satisfied customers were claimed to affect the amount the company earns. The company came up with a lot of excuses for not paying its staff fairly. The staff have never gotten a yearly bonus. This caused many Office staff to resign. Those who could bear it were older workers who were afraid of not successfully getting new jobs.

Work itself and Responsibility - Most Production staff accepted the conditions and responsibilities they were assigned to do. Only a small number of them had difficulty with their job scope due to unclear job assignments. More problems were found with the Office staff who reported that their work was overloaded. The various and excessive work caused mistakes, confusion, and unclear job assignments, sometimes leading to unnecessary inter-office arguments.

Achievement – Generally, those well-disciplined staff who have no absence or leave record for two successive months are eligible to receive a 5,000-baht Lucky Draw award. The amount has been increased to 10,000 baht in 2016. Since only one award is offered, the successful candidate would not only be qualified for the award but also has to be lucky. Unfortunately, there is no certain date to announce the winner since the availability of the award depends on the company's current financial situation. The repeated delay makes many staff think that the award should no longer be granted. Another motivation is called KaiZen. It is a 5,000-baht award conferred to any employee who is capable of innovating a system which reduces costs. This rarely happens because typical staff think that the company is not their own.

Growth - The Production and Office staff's professional development is rarely available.

Few Production staff are sent to attend a training, workshop, or seminar with other companies. Some department heads have taken a study tour at some neighboring companies which belong to the company owner's friends. However, what they have learned cannot be well applied to their work. Besides, the training is not done continuously because some are short course trainings which do not yield anything sustainable. In short, professional development is not the management's interest.

Recognition - All staff from Production and Office departments who provided information concerning the company's growth such as sales thought it was not their responsibility and they were not knowledgeable about it. Therefore, they did not pay attention to it. The staff thought that the on and off orders may mainly be a result of mistakes made by management and by low quality production because the company sometimes did not have experts to inspect the finished work before delivering it to customers. Work redo or editing was a common situation. 3MB did not have a clear working plan before a production run started. The work schedule arbitrarily depended on administrators resulting in various problems and work corrections. The related staff were always reproached for the mistakes.

Advancement - All staff wanted the best thing for themselves, e.g. salary and a secure position. Many staff had to resign from 3MB because they were looking for a place with more secure compensation, new experiences, a better environment, physical safety, and happy working conditions. Few staff said they would continue working for the company no matter what happens since they felt that 3MB gave them a chance to make a living and to own a car and a house. Thus, they were happy enough to stay.

Rank of Problems in Eight Factors at 3MB Company

1. Working environment - The first problem was that the interviewees realize the importance of the environment of the company. If something is still missing or not improved, working problems will still occur.

2. Compensation - Salary was the second problem. Since all staff are making a living, they are serious about this issue.

3. Advancement - The third problem was that everyone is surely building for his/her better future.

4. Growth - The fourth problem was about their work and responsibility. All staff want to develop themselves to their fullest capacity in order to get a promotion.

5. Achievement - Since all staff want to be successful and have a better future, they pay serious attention to their success.

6. Work itself - Most staff know their jobs very well, but they have to always realize their

importance.

7. Responsibility - As mentioned above, all staff know the importance of their responsibility.

8. Recognition - This was the last and least serious problem found. All interviewees realize the importance of respecting one another. Little problem is caused by this problem, for everyone work together like a family.

Key Factors and Degree of Employees' Job Satisfaction on the Eight Factors

3 key factors most affecting 3MB employees' job satisfaction were 1) working environment, 2) compensation and 3) advancement.

There was difference in degree of job satisfaction, namely working environment, compensation, work itself, responsibility, achievement, growth, recognition, and advancement. On average, 3 people of the interviewees were satisfied with the eight factors. Moreover, 3 people of the interviewees were only slightly satisfied. However, comparing to the rest of the factors, it was noted that almost 10 of the interviewees said degree of only unsatisfied also stood; they were particularly not satisfied up higher than that in other factors. Compensation was the highest.

7. Discussion

It was found that salary and environment motivation was moderately corresponding to company loyalty in the aspects of feeling behaviors and perception. In general, loyalty to the company is achieved because the company staff feel positive towards what they get and what they do. The more their needs are responded to by the company, the more loyal they will be to the company. This was corresponding to Supap (1993: 125-126) who stated that the benefits of motivation caused company loyalty, leading to the employees' faith and trust in the company. This was also supported in a research study by Prasongsilpakul (2004) who investigated work behaviors and company loyalty.

It was found that work itself, responsibility, achievement, recognition, and advancement (Ramlall, 2004) motivated the staff, who felt personally responsible for the products made by the company. This would encourage them to work harder to achieve their own personal goals, as well as the goals of the organization. Herzberg et al. (1959) stated that the employees also need to feel like the working that they are doing makes their life more meaningful and enriching (Ramlall, 2004).

8. Recommendations

1. 3MB should improve its working environment, professional development policy, overtime working, and compensation. The working environment, which is directly conducive to staff health, safety, and risk, needs urgent and constant care. Individual professional development should not

be overlooked either. The company should make its staff feel that they have equal access to such opportunity. Finally, salary and compensation promotion should be done according to staff's work experience and real ability.

2. 3MB should pay more attention to staff achievement, recognition, and success in order to uplift their satisfaction and loyalty to another level. This will result in a good and effective team work. For instance, the inexperienced ones should be trained and cared for by the experienced ones.

3. 3MB should pay more attention to proper training to develop its staff's cross-culture communication skills. In doing so, the staff will have a better understanding of work processes, which will increase their faith in the company.

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Conflict Management between Academic Staff in the Universities

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Abstract

The objectives of this research were (1) to study the causes of conflicts arising from academic staff in the universities and (2) to find an approach to handle conflicts arising from academic staff in the universities. The methodology used in this research was a mixed-method where both quantitative and qualitative analyses have been employed.

The research found the main causes of disputes which were: 1) Communication problem – the most common cause of conflicts happened due to misunderstanding the meaning of information as well as incorrectly sending and receiving information and inaccurately receiving the same set of information; 2) Organizational structure problem – this problem arose because of unclear division of authority, unjust distribution of workload, and repetition of work; and 3) Interpersonal relationship problem – the conflicts occurred because of different ideology, work ethics, and expertise.

The results from the structural equation model showed that the structure of organization ($\lambda_x = 0.71$) played a key role in causing conflicts among academic staff. The model also revealed that working together ($\lambda_x = 0.72$) was the most effective way to prevent conflicts, and compromising ($\lambda_x = 0.61$) was the best mean to resolve disputes. Furthermore, the results from the qualitative analysis revealed similar findings both in public and private universities that the instructors usually

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abide by their superiors' order. If conflicts arise, both instructors and superiors tend to negotiate in order to find a common ground and fine tune their opinions. In addition, if conflicts arise among instructors, they try to resolve such disputes by talking with each other in a friendly manner to clarify any misunderstanding.

Keywords: Conflict Management, Academic Staff, Courses of Disputes

1. Introduction

The prosperity of people in the country occurs from the development of people to obtain knowledge and understanding towards development and globalization. Thus, it can be seen that the level of education has had a significant effect on the development of the country. It is evident that developed countries emphasize the importance of people in the country to have quality education. It is undeniable that educational institution is an important starting point to make a mission of the development of people in country become successful.

The expansion of education into the higher education of people in Thailand is a good sign which could guarantee that people is interested in education since it would give an opportunity for them to pursue a career. So, academic staff in the university are important as drivers to make the mission of people's development in the country having knowledge succeed. In graduate studies, both master and Ph.D. programs, which have the high return of teaching hours may cause conflicts between academic staff who are instructors in their teaching loads. The main reason for the conflicts of power and benefits between instructors is that every instructor has equal rights and status. Differences in administrative positions are temporary phenomena. Nonetheless, the key difference is academic positions which will accompany instructors for their lives. Besides, the status difference between government officers and academic staff still has a gap causing more conflicts between instructors and instructors as well as instructors and university executives. Lately, there are claims of academic staff network from over 40 higher education institutions nationwide to claim for the benefits and a revision of regulations for academic staff in order to receive benefits and care not less than or equal to government officers such as welfare, benefits, and insignia. This causes a conflict between instructors and university executives usually appears in the judicial process of the Administrative Court. This even happens in a conflict among instructors. According to a survey from the lawsuits in the Administrative Court, it showed that a number of instructors file lawsuits in both Central Administrative Court and Supreme Court (Manager Online, 2012).

One of the conflicts among instructors which became a hot news recently was a conflict among instructors in Ph.D. program of one university. Finally, a tragedy occurred as a party was shot, and he shot himself after that (Kom Chad Luek, 2016). In fact, this event is unlikely to happen with instructors who have such higher education and are models that bestow knowledge to people in the society. However, this happened due to a conflict and stress from coexistence.

Conflict is nature, and difference is normal in society, but violence is unwanted. Besides, conflicts may be common in everyday life, but conflicts which are not normal are protracted conflicts usually associated with basic human needs. These consist of sense of security, identity, participation, and equality (Azar, 1990). When people come together to perform any task, conflict could always happen. Protracted conflicts often cause stress and unwanted outcome.

Management of university which is not achieving or ineffective arises from management of personnel causing from conflicts between supervisors and subordinates, problems among instructors as well as problems between instructors and students. It usually appears that instructors from the same faculty quarrel, discriminate, jealous, and defame as well as have difference opinions, lack of unity, unharmonized work, and conflicts due to conflicts of interest, especially remuneration from the university. These conflicts tend to increase in terms of frequency and violence. To study conflict management between academic staff in higher education aimed to be beneficial for interested people in relieving protracted conflicts leading to destroying the development of people in the country as a result as well as to be useful for those who are interested in applying the research results in the development of the organization, which would benefit the university executives and the quality of education.

2. Research Objectives

1. To study the causes of conflicts arising from academic staff in the universities
2. To find an approach to handle conflicts arising from academic staff in the universities

3. Literature Review

The researchers conducted the conceptual framework of the research from integrating the concepts of Thai and foreign scholars which is a theoretical framework. The relevant theories and concept related to conceptual framework were in the following:

Saengnimnuan (2001: 100-105) classified types of conflicts into 3 characteristics comprising interpersonal conflict, intragroup conflict, and intergroup conflict.

Nopparak (2010) proposed that types of conflict are categorized into 2 groups as follows:

1. Intrapersonal Conflict – Causes might be from the conflicts of different opinions, perceptions, value or attitude, prejudice, and benefits. The causes of conflict must be found and resolved on the right spot, right couple for the right persons.

2. Group Conflict – This could be classified into 2 types:

- 2.1 Within Group Conflict – This conflict could occur from role conflict, authority conflict, and issue conflict, which are differences of opinions.

- 2.2 Between Group Conflict – This conflict may occur from functional conflict, hierarchy conflict, and line-staff conflict.

Duke (1976) proposed that a person who faces with a conflict would show conflict resolutions based on 5 types of behavior:

1. Competition - This is a self-serving behavior, regardless of the loss of others, by virtue of position or economic situation to benefit themselves.

2. Collaboration – This behavior has a characteristic of overcoming but fully cooperating to solve problem in order to achieve a win-win situation.

3. Compromising – This is to compromise to meet halfway and negotiate to satisfy both parties.

4. Avoiding - People who have this behavior are unassertive and uncooperative in solving problems and show a sign of sloth.

5. Accommodation – This is to please others and to sacrifice which is similar to a proverb that “Loser is an angel while winner is a devil.”

Rahim (1985; 1986; Rahim & Bonoma, 1979) proposed that five conflict styles used in organizations included avoiding, compromising, dominating, integrating and obliging, and these styles mostly associated with organizational factors, such as position, organizational climate, job burnout, job satisfaction, etc. (Gross & Guerrero, 2000; Rahim, 1985; Rahim, 1986; Rahim & Bonoma, 1979)

Pneuman and Bruehl (1982: 35) stated that the causes of conflict can be classified into 3 main sources which are:

1. Individual Factors – Differences of personal or individual background in terms of culture, education, experience, value, belief, emotion, feeling, attitude, and personal habits. These also include leadership of each individual and a difference of perceptions causing different understanding and opinion which builds relationship in different expressions.

2. Interactional Factors - Interaction and poor communication quality, lack of clarity, distort information, and communication delay. The interaction which is a source of conflict is poor communication or lack of quality. Generally, poor communication will lead to misunderstandings in terms of essence and intent of messages, which increase conflict level.

3. Organizational Factors – These factors consist of limited resources, unclear roles, responsibilities, and chain of command, strict rules, competition to gain benefits and power, and there are exceptions for certain groups of people who do not have to follow the set standards.

Daniel (2001: 67-85) explained conflict resolutions in 3 general approaches:

1. Fighting with power - The parties will use the resources available (the strong body, threatening, noise) to force the opponent to surrender. The result will have a winner and a loser.

2. Fighting with the right – The parties will raise the authorities (leader, boss, manuals, procedures, and law) for consideration to find out who has the right. The result will have a winner and a loser.

3. Interest Reconciliation – This is an approach to share the benefits or have some wins and losses. The advantage is that there is no antagonism. Traditional conflict resolution uses the first two approaches, but the current best practice is the third one.

The result of literature reviews could be concluded into the conceptual framework in the following figure.

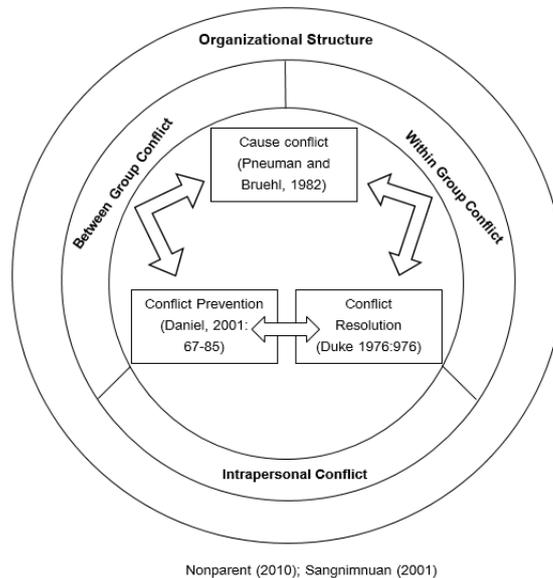


Figure 1. Conceptual Framework of the Research

4. Research Methodology

The methodology used in this research entitled “Conflict Management between Academic Staff in the Universities” was a mixed-method where both quantitative and qualitative analyses have been employed. Data collection of this research was done based on two steps as shown in the following research methodology.

4.1 Target Samples in Qualitative Research

Target samples in this qualitative research were 30 academic staff in the universities using purposive selection method. Data collection was divided into two groups: public universities and private universities where 2 universities were selected for each group. The target public universities were Mahidol University and Suan Sunandha Rajabhat University. Meanwhile, the target private universities were Huachiew Chalermprakiet University and Assumption University. These target samples were selected based on the principle of cooperation in responding to the questionnaire. Moreover, the researchers directly contacted academic staff in the universities using the in-depth interview, and 5 academic staff from each university were interviewed.

4.2 The Population and Sample size of Quantitative Research

The population of this quantitative part was 18,519 academic staff in the universities (Office of the Higher Education Commission, 2016), and the sample size was calculated according to Taro

Yamane's formula (Yamane, 1967). This resulted in a sample size of 400 samples, and the researchers increased the sample size for another 10 samples. Using convenience sampling, a total of 410 samples were therefore collected from public and private universities as shown in table 1 below.

Table 1 Samples Collected

Samples	Name of University
8 private universities (26 samples from each university) Total = 208 samples - actual collected samples = 203 samples	<ol style="list-style-type: none"> 1. Bangkok University 2. Thonburi University 3. Sripatum University 4. Rangsit University 5. Siam Durakit University 6. Huachiew Chalermprakiet University 7. Assumption University 8. Dhurakij Pundit University
16 public universities (13 samples from each university) Total = 208 samples - actual collected samples = 207 samples	<ol style="list-style-type: none"> 1. Rajamangala University of Technology Rattanakosin 2. Kasetsart University 3. Chulalongkorn University 4. Burapha University 5. Khon Kaen University. 6. National Institute of Development Administration 7. Mae Fah Luang University 8. Mahidol University 9. Kanchanaburi Rajabhat University 10. Phranakhon Rajabhat University 11. Valaya Alongkorn Rajabhat University under the Royal Patronage 12. Nakhon Pathom Rajabhat University 13. Suan Sunandha Rajabhat University 14. Silpakorn University 15. Lampang Rajabhat University 16. Thaksin University

4.3 Research Instrument for Qualitative Research

The researchers used conceptual framework, research objectives, and the previous research results as guidelines for content analysis of this research which was conducted under the theory of conflict management. This was done through the analyses and concepts of many previous researchers and academicians in order to develop the conceptual framework and create an unstructured-interview questionnaire which was used for the in-depth interview of 20 academic staff in the universities.

The qualitative research used the research concept of Chantavanich (2010: 128-130) for data triangulation, which is a technique used to facilitate validation of data collected by comparing the differences in three aspects: time, space, and person. In addition, investigator triangulation was also used to examine that each field data collection involved with two investigators. Finally, methodological triangulation was applied to use various data collection methods to gather the same information (i.e. using observation along with interrogation), and other sources of information were also studied.

After obtaining the in-depth interview data, the researchers exported and then analyzed the data by grouping, collating, and sorting data by the content studied. Next, content analysis was conducted together with literature review in order to search for indicators consistent with the real context. The last step was data synthesis. The data gained from the analysis were synthesized again in order to obtain data which is ultimately close to reality.

4.4 Research Instrument for Quantitative Research

Instrument was the questionnaire which was reviewed through literature reviews and based on the theory of conflict management. The questionnaire was divided into 5 sections as follows:

Section 1: Personal information of respondents – This section contained 7 multiple-choice questions comprising gender, age, education, marital status, academic position, field of teaching, and experience in academic work.

Section 2: Cause of conflict – The questions in this section were 5-point rating scales. The questions covered the issues related to causes of conflict which were composed of 7 questions about communication, 7 questions about organizational structure, and 7 questions about interpersonal relationship. Thus, there were 21 questions as a total.

Section 3: Conflict prevention - The questions in this section were 5-point rating scales. The questions covered the issues related to clear goals for 5 questions and work conformity for 5 questions. Thus, there were 10 questions in this section.

Section 4: Conflict resolution - The questions in this section were 5-point rating scales. The questions covered the 5 related issues including avoiding, competition, accommodation,

collaboration, and compromising of which 4 questions were asked for each issue. Thus, there were 20 questions in this section.

Section 5: Open-ended questions on conflict management approach – This section consisted of 3 questions which were:

How do you deal with conflicts between people?

How do you deal with conflicts within group?

How do you deal with conflicts between groups?

4.5 Assessment of Research Instrument

Content validity was conducted by using the discretion of 3 experts. The experts reviewed for generality of the components set and assessed the consistency of each question with the terminology. This research used the questionnaire as the instrument, the researchers therefore tested the reliability of the questionnaire by try-out testing with the non-target samples which were instructors in Ramkhamhaeng University for totaling 40 samples. The results from this step were then calculated for alpha coefficient (α) using Cronbach's alpha. The α must higher than or equal to 0.70 so that the instrument could be used for data collection (Taweerat, 2000: 132). The coefficients of Cronbach's alpha were as follows: 0.84-0.96 for causes of conflict, 0.92-0.93 for conflict prevention, and 0.84-0.94 for conflict resolution. In conclusion, the questionnaire was approved for its reliability.

5. Statistics for Data Analysis

5.1 Quantitative Data Analysis

SPSS (Statistical Package for the Social Sciences) was used for data analysis, and descriptive statistics used were percentage (measuring personal characteristics), mean, and standard deviation. The structural equation model (SEM) was then applied to examine consistency between the hypothetical model and the empirical data by using LISREL Version 8.52 program to analyze goodness of fit, chi-square/df, and standardized root mean square residual (SRMR). However, this research did not use chi-square to analyze the consistency between the hypothetical model and the empirical data since chi-square has a limitation in terms of sample size. As sample size increases, the expected value of chi-square could be very high until the conclusion might be incorrect. Due to inferential statistics, correlation analysis was conducted by using Linear Structural Relationship Model (LISREL).

5.2 Qualitative Data Analysis

The researchers used the results obtained from open-ended questions in the questionnaire and the in-depth interview to conclude and separate issues in order to find conflict management approach between academic staff in the universities by describing data based on content analysis.

6. Research Results

Part 1: Personal characteristics of the respondents

The result showed that the majority of respondents were instructors in the public universities (50.49%) which were close to the private universities (49.51%). Besides, most of these respondents were female (67.6%), aged between 36-45 years old (46.59%) with single status (55.12%), and the education was mostly master's degree (58.05%). Furthermore, they were mostly instructors (77.07%) teaching in the faculty of humanities (41.5%) and having less than 10 years of experience (60.73%).

Part 2: Conflict management approach for academic staff in the universities

Due to the overall results of the analysis, the researchers analyzed data by applying the maximum likelihood method using LISREL 8.52 program to compare consistency between the hypothetical model and the empirical data. Model modification was later done by adjusting parameters using relax assumptions to have related tolerance until the goodness-of-fit index was consistent with the empirical data as shown in figure 2.

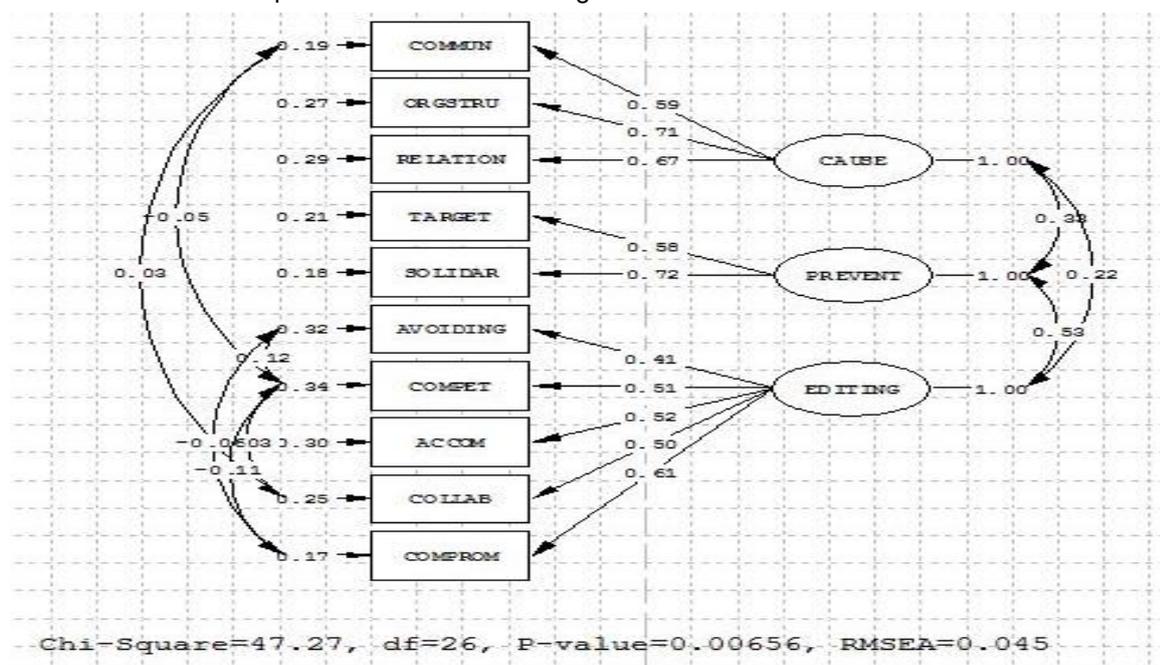


Figure 2 Conflict Management between Academic Staff in the Universities (Adjusted Model)

The results of the research showed the cause of conflicts between academic staff in the universities arising from the structure of organization ($\lambda_x = 0.71$), prevention of conflicts by working together ($\lambda_x = 0.72$), and conflict resolution by a mean of compromising ($\lambda_x = 0.61$). In addition, the cause of conflicts was related to conflict prevention ($\Phi = 0.33$) and conflict resolution ($\Phi = 0.22$) while conflict prevention was also related to conflict resolution ($\Phi = 0.53$).

Part 3: Conclusion from the content analysis of both quantitative and qualitative data analyses

1. The causes of conflict between academic staff in the universities were as follows:

1.1 Communication problem – The most common causes of conflicts arising from communication problem included misunderstanding the meaning of information, incorrectly sending and receiving information, and inaccurately receiving the same set of information, respectively. Comparing the results of conflicts arising from communication problem between academic staff from public universities and private universities, the results revealed that public universities had a problem of inaccurately receiving the same set of information more than private universities at a statistical significance.

1.2 Organizational structure problem – The key causes of this problem were from unclear division of authority, unjust distribution of workload, and repetition of work. Comparing the conflict arising from organizational structure problem between public and private universities, the results were not different.

1.3 Interpersonal relationship problem - The conflicts from this problem occurred because of different ideology, work ethics, and expertise. Comparing the results of conflicts arising from interpersonal relationship problem between academic staff from public universities and private universities, the results showed that public universities had all three interpersonal relationship problems more than private universities at a statistical significance.

2. Conflict management approaches for academic staff in the universities was as follows:

2.1 Conflicts are common in society. Having the appropriate level of conflict is necessary organizational development. However, if conflicts increase, there are many approaches of conflict management between academic staff in the universities which help keep conflicts become better or decrease. These could be done through directly talking in front of each other, which will properly avoid any misunderstanding. Moreover, what should also be avoided included sending messages through electronics media, phone, or mail as well as talking to the third person, which may cause misunderstanding even more. Talking without seeing each other's face expressions could result in worse situation, and negotiation in private place without unrelated people shall be considered in order to avoid comments from those people. Besides, this would allow the party to

fully express his or her emotion and feeling by freeing each other's grudge and trying to understand each other's true feeling.

2.2 In a case that conflict arises, and there is a mediator, this mediator must not adhere to his or her thoughts. Instead, the mediator shall have flexibility to listen so that conflict resolution is peacefully reached. Furthermore, having the parties work together to achieve the same goal is also another approach reducing conflicts. Specifically, in the universities instructors often have high ego resulting in silo work due to their own thoughts and goal. As a result, conflicts arise, and the common goal is not together achieved. The appropriate conflict management in this case is brainstorming, choosing the most agreeable way, and then putting it into practice together so that the conflicts could decrease.

2.3 When conflict arises, and the mediator agrees with the dispute of the party, that person shall accept it and do not have to be shy or disgraceful since acceptance of the other's opinions without prejudice would reduce the unfriendly feeling. Nevertheless, the conflict is too much to talk to each other with any reason, both parties should get out of the stressful situation so that everyone has time to reconsider the conflict. Renegotiation could be done after calming down and do not hesitate to ask for help from others such as supervisor or police. If the mediator of such negotiation is in danger. In the case that neither of the parties makes a concession, negotiation for such a neutral settlement shall be done without anyone wins. Besides, the dispute shall be temporarily settled since time can often treat the conflict properly and work well with all parties. Although conflicts in the curriculum management in the universities are caused by many reasons as researched and studied, these conflicts can in general be resolved well by using this approach. Nonetheless, it depends on the situation and the state of the conflicts. Those who will take the conflict management approaches will have to choose the right one or alternatively use a mixed approach by using skills of the mediator of those conflicts.

7. Discussion and Recommendations

7.1 Discussion

7.1.1 The results of the quantitative data analysis revealed that the structure of organization played a key role in causing conflicts among academic staff. When considering together with the results of qualitative data analysis and answers to the open-ended questions, it was found that public universities often have problems in the management structure of the university which is independent and lacks systemic view. This also includes values that it will lose the university's reputation if these issues are out resulting in a chance to hide and ignore problems with no conflict resolution. Discussion of these problems will take place in the form of treatment only, and private universities normally have better formal and informal meetings comparing to public ones. Another

organizational structure problem is that sometimes the chain of command is loosely organized, and it usually brings the conflict in terms of uneven benefits. Furthermore, the problems also include unclear division of authority, unjust distribution of workload, and repetition of work. In addition to instructional model, the work of academic staff in the universities also includes research, community service, maintenance of arts and cultures excluding the administrative work for those instructors who are the university's executives, student supervision, and other work assignments. Different aptitudes cause some instructors to choose to avoid some certain tasks. Some universities have managed to divide instructors' work according to their aptitudes., but it often has no clarification and clear assignments. Overlapping work causes dissatisfaction, and many times when the conflicts in terms of organizational structure arise, there are no mediators until these conflicts occurred and then resolved. For example, due to the answers of open-ended questions from one private university, there would be clarification of conflict cause and find conflict resolution together in a case that a problem at work becomes the conflict only. The result of this research was consistent with the concept that conflict means the relationship between persons related to a purpose or method or both, but it is a negative dependency. Each of the parties is not able to meet the needs whether they are real needs or potential to occur is often caused by the organizational structure problems (Kerdnawee, 2006). Pneuman and Bruehl (1982 cited in Wisalaporn, 1997) proposed that ambiguity of the organization which is a major cause of the conflict is ambiguity in structure and roles. Ambiguous organizational structure makes it difficult to understand what the chain of command is and what responsibilities each person have whereas ambiguity in roles makes it impossible to understand who is responsible, resulting in some certain jobs have multiple people responsible, but some jobs have no one responsible. Moreover, Tiyao (2001: 306) stated that there are 4 causes of conflict in terms of organizational structure, consisting of (1) chain of command conflict, (2) responsibility conflict between organizational units causing from different responsibilities, and (3) power conflict (what often occurs is power of command and counselling), and (4) formal and informal conflicts.

7.1.2 Conflict prevention occurs by working together, which the universities usually focus on supporting for having coordinators of each organizational unit. When the conflict arises, there would always be a compromise so that the dispute parties understand each other. The results of the in-depth interview showed there is a proposal that when a certain person is found to be the source of conflict, the cause of conflict should be investigated by immediately talking with each other to resolve and prevent the conflict to ensure that it will not happen again or let it become a chronic problem. This is because the nature of the real conflict prevention of the university is often unclear, so it is necessary to use the approach of resolving the conflict when it arises, which is not likely to be the right approach. As proposed by Pukapan (1999: 156-157), conflicts are harmful to

both individuals and organizations and cause negative effects in terms of emotion as well as physical and mental health of related people. Besides, the conflict result in wasting of time, expenses, and labors. People lack mutual recognition, trust, cooperation, and initiative as well as do not respect each other. Interpersonal communication is distorted, resulting in reducing people's performance efficiency and destroying reconciliation and unity in the teamwork. These become barriers to decision making, and decisions are made with risk causing people dissatisfied to work, inertia, and loss of manpower. When people are unable to endure, they will escape from the organization. If there is no good resolution, then one conflict could lead to other conflicts since conflicts are not either good or bad things, depending on the types and levels of conflicts.

7.1.3 Due to conflict resolution, instructors will concentrate on compromising. The results from the questionnaires showed that the respondents placed their importance on compromising with the dispute party although they are not satisfied or see that they are not wrong in order to stop the problem. As for the results from open-ended questions, instructors from public universities propose to compromise, explain, and comment positively in order to best avoid problems. Compromising gives a point where to accept each other. Sometimes it may be a compromise talk. It should also avoid confrontation and use psychology in communication. Meanwhile, instructors from private universities propose that when there is a conflict, every party would talk to each other with reasons in order to find conflict resolution together by emphasizing on compromising as the key importance. Finally, if compromising is not successful, it should have a mediator who can talk and compromise with both dispute parties. As proposed by Sangmanee (2001), compromise refers to the use of negotiation which is a process of mutual agreement by meeting halfway and negotiating to satisfy both parties. The important thing is that each party would both win and lose some benefits. Another approach of compromising is to separate the dispute parties until the conflict resolution is reached, avoid confrontation between each other, or give a reward to one party to settle the conflict. Therefore, Wisalaporn (1997) proposed that this is such a behavior that the executives of the universities aim to satisfy both parties in a way that there would be some wins and losses or meet halfway. Tiyao (2001: 303) provided more interesting comments that compromising is a lose-lose strategy in conflict resolution, which is an approach that both parties lose, and there are 4 methods of conflict resolution. The first conflict resolution method is to compromise or meet halfway. The second method is to have one party agree with another party. The third method is to use a third party to mediate or judge the conflict. The last method is to apply the rules or regulations of the government to solve the conflict. Due to these 4 conflict resolution methods, both parties will be losers which could be used in some cases only since they cannot really solve the conflicts, and people who are related to the conflicts dislike these methods. This shows that the methods of conflict resolution used by instructors may not be sustainable solutions.

7.2 Recommendations for Implementation of the Research Results

7.2.1 Academic staff of the universities are not different from other organizations in terms of normally having conflicts. However, because the universities are sources of intellectuals to serve the country, the issue of conflict is often a problem caused by the structure and unclear communication among, executives, instructors, and students. Compromising is then a main approach for conflict resolution. Most of conflicts are forgotten rather than resolved in the right direction. There are many times that dissatisfaction of instructors and ignoring the source of conflict will bring violence or end up requesting to leave or resigning without understanding as they should be. Thus, creating a clear organizational structure and allocating people to suit the jobs are the first priorities on which the universities should place their importance.

7.2.2 Every university should place its importance on the missions of the university including instructional model, research, community service, and maintenance of arts and cultures. Separation as a specialized university and focuses on some areas may be a necessary policy to be reviewed the executives of the university must allocate and assign tasks for instructors more clearly. For instance, if it wants to develop to a research university, it is necessary to assign researches to every instructor in the university to do and achieve. Most importantly, the main mission of the university, which is production of quality graduates to society, should not be forgotten. Therefore, in order to develop instructors to be able to transfer knowledge, it is important to continually have the meetings for allocating teaching hours.

7.2.3 Special projects are another thing that many universities are organizing to make money, and these projects provide returns to both the university and instructors. Nevertheless, these projects are also problems if there is no direction, good check and control, and does not have the executives who have good governance. Besides, these projects are often the twilight zone which provides benefits to specific groups of instructors, creates fellow system, and easily causes disharmony among instructors. By looking at the principles of management, it is possible that instructors who are closely may be willing to join the same project. However, due to the aspect of the quality of instructional model, if it adheres to the advantages of the students, the projects and curriculums might be a combination of instructors who are specialized in those courses. The instructors must be properly assigned to teach to match the right courses, and it is not just to please the management of curriculum. Moreover, there must be a transparency in assigning instructors to avoid disharmony among faculties and between instructors who teach and do not teach.

7.2.4 Conflict prevention by working together and conflict resolution by focusing on compromising is another issue which the universities should review. Since the organizational structure of the university is a center of intellects and skilled instructors, it often has problems in terms of academic conflicts and benefits. When the conflicts arise, these instructors often avoid

them by compromising rather than finding solutions or making serious rules and regulations. In theory conflict management requires direct confrontation and disclosure. Some situations have to try not to involve or use power to force others. If the problem is minor, negotiation should be used. The last is to try to find a compromise by being both the provider and the receiver. However, compromising should not be used in all matters because the weight of the problem and the conflict in each context is different. Many times the problem using the wrong method of conflict prevention and resolution turns out to be like a disease which resists to drug and often has severe outcome later.

7.2.5 Conflicts are often encountered by academic staff of the universities as seen from news of various publications. Many academic staff believe that conflict is bad, and it is an inhibitor of growth and destruction of the organization. Nonetheless, conflicts are not actually the cause of organizational chaos, but they are caused by ineffective methods to resolve conflicts. Even though conflict is unavoidable, but having good conflict management approach or conflict resolution would provide the benefits. This is the basis causing personal and social changes in the university. The causes of conflicts are mainly from the management of benefits, the management structure of the university which is independent and lacks systemic view. This also includes values that it is afraid of losing the university's reputation if these problems are out resulting in cumulative problems. Conflict management approach is to use peaceful negotiation instead of avoiding the conflicts, and the key factor in resolving conflicts is the role of the mediator. If the mediator is the top executive of the university, the conflict resolution is often reached quickly. Executives have to really learn their jobs and responsibilities, give policies to subordinates or related people, and assign work to suit people. In addition, there must be regular communication for all parties to know, and communication must be accurate by having all related party to be involved in achieving righteousness as well as to have reliability, transparency, and fairness.

7.2.6 Conflicts are normally happen in human society, which have different opinions. If the dispute parties cannot resolve the conflict by themselves, the mediator or a person who is responsible for resolving the conflict must choose the method which will best suit the context in order for the conflict to be resolved in a good way and not become the problem anymore.

7.3 Recommendations for Further Research

7.3.1 This research was conducted in a cross-sectional research. With time constraints, this research may have incomplete data and information. Those who are interested in this research may take the issues of the problems and the conceptual framework to further study by using time series analysis method in order to obtain the more dimensional and in-depth data.

7.3.2. Due to the quantitative research conducted, the researchers tried to divide the similar proportions of the respondents between public and private universities. However, when collecting data, there was a problem in terms of the cooperation of private universities., resulting in data collected were lower than expected. Thus, the proportion of the public universities was twice that of private universities (16: 8). When considering the proportion of the respondents, there might be no differences. When considering the levels of the organization, however, the differences were found. Therefore, those interested in this research may further develop the new method of data collection so that the proportions between public and private universities are equal more than they were in this research.

7.3.3. Factors of causes, prevention, resolution of the conflicts in the conceptual framework were studied in a form of correlation. If interested people develop these variables to predictive variables and then find other dependent variables such as work stress, loyalty, and being a good member of the organization, it will make the future research completely have more dimension and benefits of the management in other dimensions.

7.3.4. With time constraints in qualitative research by using the in-depth interview, it might not be as appropriate as group discussions. Thus, interested people may adjust the technique of qualitative research for this issue in order to obtain the more depths of the results.

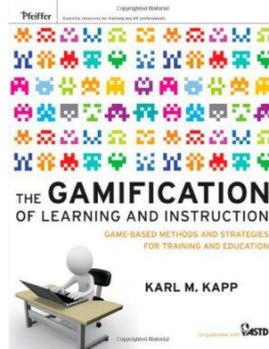
7.3.5. Due to data collection from private universities this research could collected data from the universities located in Bangkok only. Therefore, if interested people want to have a complete research, data collection from private universities in other provinces should be considered to analyze the new conceptual model and gain the different views.

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Book Review



The Gamification of Learning and Instruction: Game-based Methods and Strategies for Training and Education

Author: Karl M. Kapp

Reviewed by

Pimporn Chewanant¹

For those novices on the hunt for the extensive knowledge and insights of gamification, *The Gamification of Learning and Instruction: Game-Based Methods and Strategies for Training and Education* by Karl Kapp collectively brings together concept of gamification, what motivates people to play games, the researches in gamification, key game elements, the application of game mechanics to problems in different domains, and packed with practical research examples on the topic and in the real world. For those interested in creating effective learning through gamification or changing how people and organizations ponder the concept of gamification, this book is also highly recommended.

From the total of 336 pages, Kapp structures the contents into 14 chapters which expand and explicate innumerable information around gamification into themes which are: What Is Gamification?; It's in the Game: Understanding Game Elements; Theories Behind Gamification of Learning and Instruction; Research Says... Games Are Effective for Learning; Leveling Up: What Gamification Can Do; Achiever or Killer? Player Types and Game Patterns; Applying Gamification to Problem Solving; Applying Gamification to Learning Domains; Managing the Gamification Design Process; Congratulations! Selecting the Right In-Game Achievements, by Lucas Blair; Perspective of a Gamer, by Nathan Kapp; Casual Game Site: DAU Case Study, by Alicia Sanchez; Alternate Reality Games for Corporate Learning, by Koreen Olbrish; If You Want to Learn More, Play Games. In each chapter, Kapp systematically starts off with chapter questions to draw reader's curiosity,

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followed by chapter introduction, thoroughly explain relevant contexts which responses to the given questions initially and ends the chapter with key takeaways. This systematic review and clear outline allows readers to formulate and articulate ideas around gamification in a very proficiently way.

The first few chapters provide an underlying basis for learning professionals to deploy gamification strategies. Kapp begins chapter one and two with developing the underlying basis of gamification by explaining its definition and outlining the key game elements. He has brought good insights of the elements that constitute games, such as goals, rules, reward structures, feedback, player levels, time and storytelling. The discussion of how game strategies can be used to improve learning as well as its importance for the future of learning is also presented in this section to stimulate the reader's interest after they have built the solid basis on the gamification concept.

In chapter three, Kapp outlines various theories and concepts that help making gamification works. The theories presented in this section include: ARCS Model; Malone's Theory of Intrinsically Motivating Instruction; Lepper's Instructional Design Principles for Intrinsic Motivation; The Taxonomy of Intrinsic Motivation; Operant Conditioning; Self-Determination Theory (STD). These theories then followed by relevant concepts such as: Distributed Practice; Scaffolding; Episodic Memory; Cognitive Apprenticeship; Social Learning Theory; Flow. One of the most influential sections of the book is the chapter four on researches. Six different meta-analysis researches on gamification were examined deliberately here. Each individual key points were outlined, followed by the review of each meta-analysis and Kapp then provides a summary of those around the effectiveness of games and specific game elements used in learning such as reward structures, player motivation, avatars and player perspective. This book also covers substantial explanations of how motivation underlies our magnetism to games both extrinsically and intrinsically.

Moving on to chapter five to eight, and perhaps most beneficial section to the learning practitioners, Kapp presents a framework for effective game design and deliberates how it is important to consider learning domains and choose the best design for the given content. Several examples of how gamification was being used to solve problems, engage learners, or even make better doctors are given to nurture reader's understanding. This section examines player types, game patterns and how to apply gamification to various learning areas. As an example, learners often find exercises and practices to be dull and boring, especially when it involves categorizing, organizing and repetition. However, such method is needed to retain certain information and knowledge for learners. One of the idea to turn these boring practices to enjoyment is to translate this into gamification. Having learners to match an image with an idea in a game-like experience is more engaging rather than boring reiteration. There are quite a few examples of how games can be used in various context such as higher order thinking, improving motor skills and complex problem solving. One decent example is when using a game designed by university researchers.

The game is used for non-scientist players to figure out how proteins are constructed into small 3D structures, and players are competing against each other to make the proteins as small as possible. From such game like idea, several unique ways of folding proteins that non-scientist players discover can perhaps help researchers construct new proteins for vaccines.

Up to this point, some learning professionals may be curious of how can I design a game. Is there a process of game design and are there any guidelines for this? These questions are answered in chapters nine and ten, covering management of the instructional game design process and selecting the right in-game achievements. Three different design strategies used to incorporate game elements into learning were being discussed, which are ADDIE, Scrum, and a hybrid approach that combining elements of the two. Since both the ADDIE and Scrum models leave something to be anticipated for game development, Kapp provides a hybrid model that is more suitable to the task and is the most effective for learning games. He recommends readers to also researching these approaches from other sources to gain fully understanding on the implementation strategies and lists out those useful items for a design document. Additionally, Kapp suggests learning professionals to develop a paper prototype to determine whether the game is worth pursuing before launching it into full-scale production. This involves paper mockups, prototyping and concept art, which are vital to design strategies and often missing in standard instructional design paradigms. Since the core game design team typically consists of a project manager, instructional game designer, artist, at least one subject-matter expert, and a programmer or two. Therefore, Kapp emphasizes that the team members are crucial factor for a successful full-scale game development effort. These advices can apply even to those planning for a digital game. Readers will be most likely appreciated the step-by-step design approach and project management tools that included in chapter nine while learning the explicitly explanation on different in-game achievements items and its best practices to help learning professionals select the right ones that best suits their gamified context in chapter ten.

In the last few chapters of this book, Kapp interestingly expresses gaming from a gamer's viewpoint through several perspectives and case studies from guest contributors. First, the perspective of a gamer by a seventeen years old male who has grown up playing video games sheds some insights into video games he has played and the learning outcomes that have been achieved. Second, a case study of how the Defense Acquisition University (DAU) uses casual games which was an effective tool to produce organizational learning and can be used to promote learning information. Last, the augmented reality games (ARG) and how it can be used for corporate learning. He ends the book by describing research in gamification, motivation, game elements, and player types with two examples of gamification for learning.

From the aforementioned review of *The Gamification of Learning and Instruction: Game-Based Methods and Strategies for Training and Education*, this book is certainly a good introduction to the concepts of games in learning. It conveys all aspects about games, learning, and instruction in a one-stop shop. Although this book alone is not sufficient as a guide book of how to but one that provides evidence that gamification is effective in most types of learning. Throughout the book, Kapp reasonably describes gamification deployed to diverse types of learning, design, and application in a variety of situations, and case studies. The real value of *The Gamification of Learning and Instruction* comes from plentiful of examples, practical advices, tips, and descriptions of how to intersect learning and games effectively. The book reiterates that careful planning and thoughtful gamification design are critical to successful learning outcomes. Learning professionals will be inspired to reconsider the standard and stale learning approaches to be a more effective one.