FACEBOOK AS A DIGITAL MARKETING TOOL: FACEBOOK'S ENGAGEMENT STRATEGY FOR MATERNAL AND CHILD HEALTH PAGE

Apirapee Sretarugsa Tancharoenwong

College of Social Communication Innovation, Srinakharinwirot University
114 Soi Sukhumvit 23, Wattana, Bangkok 10110, Thailand
apirapee@hotmail.com

Abstract

Facebook has been utilized as a digital marketing tool as it is a highly popular medium. It provides extensive reach at a low cost. Health communication practitioners and marketers for healthcare or lifestyle business can enjoy the benefit of using Facebook as a media vehicle to reach both mass and niche market. This article examines the engagement strategies employed by the Facebook Pages in the field of maternal and child health information. Content analysis is applied on ten Facebook Pages, all posts were coded for the period of one hundred days. Findings reveal that frequency of message posting is not relevant to the popularity of the Page and strong visual content resulted in higher number of likes and shares. Therefore, it is recommended that using photos, being helpful, and being emotional are the strategies to boost up users engagement on this social media platform.

> **Keywords**: health communication, maternal and child health communication, social media, Facebook, digital marketing

Introduction

Facebook is undeniably the most popular medium on social media as it recently announced the total number of 1 billion worldwide subscribers. In 2016, the numbers of users from Thailand accounted for 19 million and it is estimated that the number of subscribers will be increased to 24.1 million by 2020 (Statistica.com, 2017). Facebook allows users to create their own profiles and interact directly with each other on the profile wall, participate in a group discussion, follow and surf information of public figures or organizations on Facebook Page. Owing to such versatility, Facebook is unquestionably the most popular social media platform and is highly preferred by Thai people. The Digital Advertising Association Thailand (DAAT) revealed that the number of social media users in Thailand is 41 million and the number of users accounts for 92.1 per cent of Thai population while the second most popular social media sites in Thailand, Line, accounts for 81.1 per cent.

According to the DAAT's survey in 2016, it can be summarized that the amount of time Thai people spend on social media is surprisingly high. DAAT classified the amount of time spent on social media in terms of generation z, generation y, generation x, and baby boomer and found that the average numbers of hours per week was 41.4, 52.4, 47.1, and 41.4 respectively. When examine the amount of time per day, it showed that the average numbers of hours spent online was 5.9, 7.5, 6.7, and 5.9 hours respectively. This survey rebuts the traditional belief that social media is for younger generations, but as

a matter of fact, the adults do spend more time using social media than the children do.

Subsequently, it is evident that Facebook has become the primary channel of information as the users across generation spend on average of at least 6 hours a day. The shifts in media platform preference resulted in both private and public sectors' migration from traditional media to the digital platform and utilization of it as a communication channel to reach both mass and narrowcasting audiences. Currently, there are many Facebook Pages created with the focus to disseminate health information in particular. Some Facebook Pages have played vital role as influencers in the health communication arena. With more than one million "likes", the page can influence, intercept, and change online users' attitude and shape opinions in orchestrated ways. One of the most popular Facebook Pages in the health domain is known as "Mhor Lab Panda". The Page has attracted 1,483, 963 likes (as of August 11, 2017). Additionally, there are other health category that garner a high level of interest by people such as food and nutritional content; for example, a Page like "Jones Salad" with 838,269 "likes" (as of August 11, 2017) indicates there are a large number of people interested in health information and they are seeking information.

Therefore, this research aims to explain the engagement strategies employed by Facebook Pages that provide maternal and child health information. The paper breaks down and compares the engagement strategies utilized by both organizational and individual Pages and

discusses the efficiency of each strategies. Additionally, the paper will assess digital marketing implications for both social marketing organizations seeking to utilize Facebook as a digital marketing tool and the private sector who wish to expand the results into healthcare products and services.

Literature review

Social media is a website or application that users can create and share content and are connected within the online network or online community. Tech Target (2015) defines social media as an online communication channel that users are intertwiningly connected on online community via interaction on cyberspace such as information sharing. Examples of popular social network sites in Thailand are Facebook, Twitter, and Instagram.

Social media is a new wave in communication technology. Bughin, Chui, and Miller (2009) studied the utilization of website 2.0 on the efficiency of business performance, their studies discovered that 1,700 executives from large firms around the globe confirmed that their organizations benefited from website as they were able to increase profit on the average of 69 per cent. In addition, the website 2.0 also increased marketing efficiency. One of the most powerful marketing communication strategies is word-of-mouth marketing which was built upon the basis of audience involvement. It can effectively influence and persuade the communication audiences.

Nowadays, social media has changed the communication ecology. In the classic two-steps flow theory, mass communication depends on opinion leader to disseminate information and persuade the mass audiences' opinion toward particular political issues. The opinion leaders usually possess these qualities; credibility, attractiveness, power (Belch and Belch, 2001). However, the online and social media communication has brought a new dimension to opinion leaders. The social media influencers nowadays possess different qualities. For example, one of the most popular Pages was created by an anonymous individual and plays great roles in influencing the society, "E Jiab Lieb Duan", is one of the most popular Pages from Thailand with 2,198,202 likes (as of 30 March, 2017). This page is fully commercialized with content marketing strategies. This example shows how audiences in this era are persuaded and influenced by a public personality that they 'like' regardless of other sources qualities.

Subsequently, both traditional opinion leaders and social media influencers are important mechanism for the dissemination of messages. Constantinides and Fountain (2008) demonstrated that the two-steps flow has migrated from traditional media to social media platform and it has been employed by firms as a public relations communication tools to communicate effectively with the customers and the public in order to create awareness to the public by getting support from online influencers. The results of their studies are consistent with Bughin, Chui and Miller (2009) with the website 2.0. Therefore, both websites and social media can help the firm to reduce marketing communication cost and to build a positive relationship with the

customers and public.

Moreover, social media has the benefit of reaching greater numbers of audience during a small period of time. Keelan (2010) reported via Ontario's Ministry of Public Health showing the total years it take to reach 50 million people. The report showed that while television takes 13 years to reach 50 million people, the Internet and Facebook takes 4 and 0.25 years to reach the same amount of people respectively. Apart from speed of communication, social media also allow organizations to communicate with narrowcasting audiences. With the increasing popularity of Facebook, augmented with more functions available to the user to interact with it. The research focused on Engagement has been overly drawn an attention from health communication research on Facebook and social media based message delivery strategy in the past few years (Salzer, 2015; Platt et al 2016; Owen et al, 2014; Kite et al, 2016; and Rus and Cameron, 2016).

Facebook messages can reach and engage mass or specific population at relatively low cost (Platt et al, 2013). It has an advantage in reaching the vulnerable and hard to reach group (Plat et al, 2016). It is very common for Internet users to obtain a wide variety of information to make their life better from a hotel deal to health information from the web- based sources as it is convenient and usually low cost. Facebook has been used to promote and successfully helped both profit and non-profit organizations to raise fund, raise awareness, and provides a public platform. For example, the campaign to raise an awareness toward the learning space by OKMD went viral

and reached more than 2 million viewers within a week. It is also suggested that with large and complex content, it is easier to share information than to summarize and to re-phase it. Hence, engagement like 'share' is quite common in the field of health communication.

Zhang (2013) revealed that users of social network sites seek social-emotional needs rather than information needs, hence users are brought together by common interests. Health care providers can use social network sites to circulate health information as users usually share health information to their loved ones. Zhang's studies discovered during his interview with college students about the usage of health information and it showed that youth are not keen on health information online. However, this assumption does not hold true for the mother groups. As the survey from The Asian Digital Mum Report 2015 conducted by TheAsianParent.com shows that 82 per cent of Thai mothers with toddlers seek information from social media and the most popular social media vehicle is Facebook.

Culture-centered approach is a communication approach that include and involved the community members. Ems and Gonzales (2016), in their research on a social media strategy for young men who have sex with young men and affected with HIV and defined subculture-centered approach as inclusion of members of the subculture interact and carried messages across. The research showed that social media allowed members to participate freely without the pressure from the mass and the norms. Resulted in higher persuasive power. In addition, the communication

was more effective because users can easily understand the complex health information using informal languages among the group of users.

Interestingly, the preliminary survey revealed that the number of likes by Individual Pages is significantly higher than that of the organization's. One of the most popular Page in Thailand is created by a laboratory technician Mr. Pakpoom Dechhassadin who created online identity as a panda lab doctor wearing white medical coat. His page has attracted 1,257,026 likes (as of March 27, 2017). While the Page created by Thai health foundation, which is a governmental body that is active in health promotion received a few hundred millions likes. Even Ministry of Public Health admitted that they are still behind in terms of using Social media as part of their health communication strategy. It is interesting to find an answer to this discrepancy of interest and these organizations are vital unit in promoting and communicating health information to the public.

Research methodology

Samples and data collection

Ten most popular Facebook Pages providing content in maternal and child health were observed. Purposive sampling is used in order to selected Pages that fit with the selection criteria; *firstly*, The content must be written by Thai language; *secondly*, the Pages must contain health content specifically maternal and child health; *thirdly*, the Pages must have at least 100,000 number of likes. We started to tally the popularity

of the Pages on May 29, 2017. There was a total of ten Pages that matched our selection criteria, seven Pages were created by individuals and three Pages were created by organizations. The posts were followed for 100 days backward beginning from June 1, 2017. Subsequently, the total of 2003 posts from the 10 Pages were coded from the period of 21 February 2017 until June 1, 2017.

Determination of types of post

This research defines five different types of post features that were available on Facebook; namely, text, photo, video, external link, and live and also combine those features to introduce thirteen different types of post. The communication strategies are categorized based on types of post and communication techniques. Types of post are divided into thirteen different sub-categories while communication techniques are classified in terms of the message appeals used in each post, which are rational, emotional, humor, and others.

Determination of types of engagement

Facebook has three primary types of engagement which are *likes*, *shares*, and *comments*. Users can click the '*like*' button as an easy way to voice out how they feel toward the post. In this function, users have six options to express their emotion by clicking on the emoticons that represent six different types of

feeling toward to the post which are, like, love, laughing, wow, sad, and angry. The second type of engagement is *'share'* in which users can share the post to their friends, on their own wall, or to a group. The last type is *'comment'*, users can post a text, photo, or video comments as a reaction toward to the post. These three forms of engagement are the important elements that this research. The coding of the post reveals the overall results of engagement by both types of page.

Determination of types of message appeal

Message appeals are the types of the approach each post employs to influence the audience's perception, attitude, and behavior. Since some posts are not relevant to health communication, this study focuses and analyses only messages that contain health communication feature (a total of 1,433 Posts). Message appeals are sorted into rational appeal, emotional appeal (fear, grief, sadness, and negative emotion), humor appeal (positive emotion), and other (non-specific).

Statistical analysis

Descriptive Statistic is used to explain the frequency and the nature of the types of post, types of engagement, and types of message appeal. Chi-square analysis is used to analyze the relationship between two qualitative variables (organizations and individuals) and quantitative variables (frequency of the types of post). The probability value less than 0.05 ($p < 0.05$) indicates a significant difference.

Results

Pages created by individuals

From the preliminary screening, seven Pages created by individuals were chosen and were ranked in terms of popularity. Total numbers of 1,135 posts post were recorded and analyzed based on percentage of total post and average posts per day. The chosen pages created by individuals in terms of popularity are summarized in table 1 (as of May 29, 2017).

Table 1 Seven most popular selected pages created by individuals.

No.	Page Name	Popularity		Total No. of Post	Perentage of Total Post	Average No. of Posts/Day
		Likes	Followers			
1	Lieng Look Nok Ban	415,007	416,939	85	7.49	0.85
2	Dr. Saowapa Positive Parenting	311,457	314,731	65	5.73	0.65
3	Ken Dek Kuen Pookao	271,394	271,957	204	17.97	2.04
4	Sutheera Euapairojkit	267,278	266,207	256	22.56	2.56
5	Dr. Prasert Palidponkarnpim	154,482	158,083	320	28.19	3.20
6	Fun Nam Nom	115,779	116,135	48	4.23	0.48
7	Dad mom and kids	103,979	105,336	157	13.83	1.57
	Total			**1135**	**100**	

Lieng Look Nok Ban is the most popular Pages in maternal and child health category. The contents of the Page mostly focus on establishing important pathways to children development via traveling, exploring the world, and positive parenting. The Page is created by a child and adolescent psychiatrist who is also a mother of a young daughter. Interestingly, it was observed that the Page name, Dr. Prasert Palidponkarnpim, whose contents focus primarily on children mental health, created by another child and adolescent psychiatrist, showed the highest percentage of total post with an average of 3.20 posts/day. Hence, for the Pages created by individual, popularity of the Page is not associated with the frequency of post. The results show that the Page with the highest and the second popularity has the average of 0.85 and 0.65 per day respectively which is less than the frequency of other Pages.

Pages created by organizations

Three Pages created by organizations were selected and ranked in terms of popularity. The total numbers of 868 posts were recorded and analyzed based on and percentage of total post and average posts per day.

Table 2 summarizes the chosen pages created by organizations in terms of popularity (as of May 29, 2017), total numbers of posts, the percentage of total post, and average posts per day.

Table 2 Three most popular selected pages created by organizations.

No.	Page Name	Popularity		Total No. of Posts	Percentage of Total Posts	Average No. of Posts/Day
		Likes	Followers			
1	Thai Health	468,385	464,095	446	51.38	4.46
2	Basic Skill for kids	311,457	314,731	324	37.33	3.24
3	Thai Breastfeeding	59,260	59,067	98	11.29	0.98
	Total			**868**	**100**	

The Thai Health Page, reveals the highest percentage of posts with an average of 4.46 posts per day or the total of 446 posts, which accounts for 51.38 of the total post. It is also the most popular Page in the health category. Interestingly, for the Pages created by organizations, frequency of post is associated with the popularity of the Pages. It was shown that the second and third most popular (Basic Skills for Kids and Thai Breastfeeding) have average of 3.24 and 0.98 posts per day respectively.

Frequency of types of engagement

When a tally is assessed for the frequency of total engagement of all post, descriptive statistics is applied to give a comprehensive picture of the total engagement frequency.

Table 3 Frequency of types of engagement

Types of Engagement	Mean	S.D.	Min	Max	Ratio
Likes	901.27	1612.85	0	23000	Like: share 4.33: 1
Shares	208.93	611.21	0	11792	Share: comment 5.47:1
Comments	38.14	96.56	0	2102	Like: Comment 23.63:1

Table 3 provides the general perspective that people prefer to engage in terms of *like*, as this is the most convenient form and takes less effort. The statistics show the mean value of likes is 901.27. The second most popular is *share*, as shown on the table that each post on an average received an average of 208.93 shares, and the least popular types of engagement is *comment* which received an average of 38.14 comments. Interestingly, the minimum engagement was zero, which was the post by Basic Skill (the Page is created byan organization). When investigated the content of the particular post in detail, it showed that the post was about book selling. Additionally, it was observed that post which received zero *like* were also from Fun Nam Nom which was the post that shared the celebration of receiving 1 million *likes* of other pages.

Types of posts

We have classified the types of post based on the feature available from Facebook and combine individual feature to create thirteen different categories (vide table 4). However, due to lower than expected count in some categories, four categories were eliminated, which were Facebook live streaming, External Video, External Link, and other. The observed number of categories were drawn to nine. Table 4 summarizes the relationship between types of post and page creators.

Table 4 Frequency by types of post

Types of Post	Organization Count	%	Individual Count	%
1. Text-only	2	0.20	81	7.60
2. Single photo	8	1.00	2	0.20
3. Photo stories	10	1.20	0	0.00
4. Text + Single Photo	494	59.90	725	67.90
5. Text + Photo stories	48	5.80	26	2.40
6. Text + FB native video	32	3.90	14	1.30
7. Text + external video	15	1.80	20	1.90
8. Text + external link	72	8.70	130	12.20
9. Text + external link + Photo	144	17.50	69	6.50

Findings show that text and single photos are highly preferred choices for both Pages created by organizations and individuals while the percentage for organization was 59.90 and individual was 67.90, respectively. Interestingly, the second preferred choice for organizations was text+external link+photo which accounts for 17.50 per cent of the total posts by organisation pages. However, the second preferred choice by individual Pages was text and external links which accounts for 12.20 per cent of the total post. The least preferred types of post by organizations is text only, where the observed number was only 2 posts or equivalent to 0.20 per cent of the total post. In addition, the least preferred types of post by individual is photo stories where the observed number was zero.

Chi-Square analyses is conducted to test whether there are differences in the types of post preference by the organizations and individuals and it was shown that Pearson Chi-square equals to 161.618 and Asymptotic Significance (2 sided) was about 0.000; The probability value less than 0.05 ($p < 0.05$) indicates a significant difference. Subsequently, it can be concluded that there is a relationship between types of post and creators of the Page.

Relationships between types of post and the engagement

To understand the relationship among types of post and the types of engagement, descriptive statistic is applied to find the average engagement each types of post have brought up.

Table 5 summarizes findings and breaks them down into three categories based on three types of engagement *(comment, like, share).*

Table 5 Types of post and the average engagement (*comments, likes, shares*)

Types of post	$\bar{x}$ Comments			$\bar{x}$ Likes			$\bar{x}$ Shares		
	Org	Ind	Total	Org	Ind	total	Org	Idv	Total
1. Text-only	3.00	80.09	78.23	31.50	604.00	590.20	1.00	98.72	96.36
2. Single photo	0.38	51.50	10.60	40.88	1061.50	245.00	3.00	63.50	15.10
3. Photo stories	0.70	-	0.70	47.80	-	47.80	22.70	-	22.70
4. Fb live streaming	7.00	45.00	19.67	46.25	1044.00	378.83	8.25	211.00	75.83
5. External video	-	**231.00**	**231.00**	-	328.00	328.00	-	0.00	0.00
6. External link	**32.50**	47.50	36.25	259.83	1119.00	474.63	31.83	0.00	23.88
7. Text + Single Photo	13.40	61.03	41.77	**470.19**	1288.93	957.93	**165.54**	300.91	246.19
8. Text + Photo stories	1.67	98.31	35.62	60.50	1147.85	442.54	17.19	495.23	185.15
9. Text + FB native video	5.53	47.14	18.20	193.16	1230.57	508.89	4.19	319.93	100.28
10. Text + external video	4.20	42.95	26.34	158.13	1028.15	655.29	18.93	97.00	63.54
11. Text + external link	3.62	17.60	12.75	95.43	594.58	421.51	16.43	12.37	13.78
12. Text + external link + Photo	1.45	110.78	36.87	113.90	**4848.78**	**1647.74**	21.72	**958.91**	**325.31**
13. Other	**-**	3.00	3.00	**-**	163.33	163.33	-	1.33	1.33

The highest average comment for organization is for external link ($\bar{x}$ = 32.50) while the highest average comment for individual is external video ($\bar{x}$=231.00). Interestingly, the highest average like for organization is text and single photo ($\bar{x}$ = 470.19) while the highest average like for individual is text + external link + photo which received an average of 4848.78 ($\bar{x}$ = 4848.78). In terms of shares, the highest average of share by organization is text and single photo ($\bar{x}$ = 165.54) and the highest number of shares by individual is text + external link + photo ($\bar{x}$ = 958.91)

Relationships between types of message appeal and the engagement

When examine the frequency of the types of message appeal employed by the Page, findings allow us to rank the message appeal in terms of popularity which are rational, emotional, other, and humor with the frequency of 991, 435, 5, and 3, respectively

Table 6 presents the relationships between the types of message appeal and the engagement.

Table 6 Types of message appeal and the average engagement

Message Appeals	$\bar{x}$ Comment			$\bar{x}$ Like			$\bar{x}$ Shares		
	Org	Ind	Total	Org	Ind	total	Org	Idv	Total
1. Rational	10.34	61.37	37.92	383.65	1214.99	832.91	136.91	279.92	214.19
2. Emotional	8.60	**80.09**	44.35	316.32	**2324.51**	**1401.58**	101.33	**532.00**	**334.07**
3. Humor	**20.00**	13.00	16.50	349.00	251.00	300.00	0.00	0.00	0.00
4. Other	14.50	73.67	**50.00**	**458.00**	1152.67	874.80	**228.50**	118.00	162.20

Interestingly, when scrutinizing the average engagement in respect to the types of message appeals, it shows that humor appeal is effective in bringing up the number of comments, as it shows that the average comment that the Page created by organization received is at 20.00. In contrast, Pages created by individual receive more comments when the post utilizes emotional appeal, the results show that Pages created by individual receive on an average of 80.09 comments when adopted emotional appeal.

For *like*, findings illustrate that the average number of like is flourish when Pages created by individual adopt emotional appeal as evident by an average of 2,324.51 likes. Additionally, emotional appeal also holds true for message sharing, the results show that Pages created by individuals received on average of 532.00 comments.

Discussion

It is important for health communication practitioners and digital marketers who wish to utilize Facebook as a digital marketing strategy to understand the reciprocal of relationship between users' engagement and how to induce it.
Findings suggest that; firstly, frequency of post is not relevant to the popularity of the page, since the demographic of users who seek maternal and child health information are female in their 30s who have young children. They are busy when daily chores, housekeeping, or working. They are mostly not in prompt demand for frequently updated information. It is recommended that insightful and helpful contents are more important than timing and frequency. When posts are kept as archived, it is more than convenient for the users to discover them and if they are construed as beneficial then the ultimate engagement like sharing will occur. Therefore, the first recommended engagement strategy is to tailor the content to the meet to needs of the mothers.

Secondly, text + single photos are the most popular types of post as they are easy to create. Just adding one photo accompanied by health content, the creator can create a good and eye-catching post. When scrutinizing each post that adopts this type of post, it seems that the majority of posts did not create the original photos but post the photos that already exist online cited with photo credits, the role of photos are used to amplify the content. Interestingly, we did not come across any live function as it was only introduced for a year. Even though, live is highly successful in other page category but it was not used at all for the category of maternal and child

health. It will be interesting to investigate why or wait and see if it will be adopted in the later year. In addition, text + single photo works well for Pages created by organizations as it brings about the highest average numbers of *likes* and *shares.* This is supported by the study of Rus and Cameron (2016), they also found that a message with an image is a strong predictor for liking and sharing. However, this type of post does not seem to work well for pages created by individuals as it seem that when adding external link to text + photo, the Pages created by individuals received more *likes* and *shares*. Therefore, in contrast to the recommended engagement strategies by digital marketers (Casteler, 2016; Jackson, 2016; and Socialmediatoday, 2017), the second recommended engagement strategy is to use a strong visual content in combination with external links when posting maternal and child health content.

In terms of comment, external video is more successful in bringing up the higher average numbers of comment, but external video is absent from Pages created by organizations. Pages created by organizations receive the highest numbers of comment when utilizing external links. The use of video post to create engagement is different from the results by Kite et al. (2016) in which that they found out that Video post is the most powerful types of post to engage users in particular, *sharing.* In Thailand, this could be because of the Internet speed and the preference as well as time limitation of the female users.

In maternal and child health, the primary information are females (the mother) raising their children, working, they need a lot of emotional support to confirm that they are doing the right thing. In addition they have the love that they have for their children with fear that if they are not doing the right thing, they will miss the critical period for their children's development. It is important to understand the sentiment of users as well as the message appeal which results in engagement. An example observed from the study shows that a children book recommended by a doctor is sold out over a week after recommendation.

Thirdly, *sharing* is the best types of engagement for the Page creators because it is one of the mechanism to spread virility. However, a prerequisite to sharing is the perceived usefulness of information, since people perceived that the information is beneficial to themselves and to their love ones, they decided to share; therefore, text + external link+ photo seems to be a good way of providing information to the public via social media and can be used as a sharing predictor. However, there is a limited number of study with respect to sharing. Hence, this provides a grounded theory for future verification of Facebook strategy in order to engage users in terms of 'share' for other types of contents.

Lastly, the message appeal strategies that are appropriate for Pages under this category is Emotional appeals. The negative feelings stir up the feminist in female users; hence, resulted in highest number of all types of engagements. Emotional appeals have been highly recognized as a powerful message strategy in the field of health communication and social marketing (Brennan and Binney, 2010).

For example, an anti-smoking advertisement with the highest number of

views on YouTube utilizes emotional appeal (Pakdeeronachit et al., 2018). Therefore, the business implication for digital marketers who also target the customers that fit in this same demographic profile of this study can benefit from this insight and can apply emotional appeal in digital marketing communication activity.

Conclusion

When it comes to health related issues, emotional appeals tend to work best in terms of creating engagement; therefore, healthcare providers can use emotional appeal as a message strategy to attract attention from the patient. At the same time, pharmaceutical, insurance, lifestyle and healthcare business can also employ this emotional message strategy in advertising and marketing communication messages and activities. As health related topics seem to touch people's emotion rather than humour or rational appeal. Therefore, this research provides insightful information for digital marketers who wish to utilize Facebook as a digital marketing tools, as emotional message strategy appears to work best to create engagement among the selected audience.

In terms of engagement strategy, this research identified that mothers seek contents that are beneficial to them. Therefore, the recommended strategy is to tailor an insightful and helpful content rather than to focus on time of the day or frequency of post. Lastly, adding photos to text alone is not effective in bringing up the engagement in the field of maternal health communication. Therefore, the recommended strategy to boost up engagement is to use strong

visual in combination with external link.

Implication for business

For individuals who wish to increase engagement on Facebook page

It is recommended that the Page creators do not have to worry about the timing or frequency of post. Therefore, this could save time and effort for individual who may be busy from the full-time job. However, one should focus on creating resourceful contents that are helpful to the mothers and use strong visual content as a strategy to engage active users.

For organizations or businesses related to maternal and child health

It is recommended that Page creators adopt the similar strategy to that of the individuals'. However, the admin of the Page should consider using less formality and engaging in a more colloquial dialogue to appear to be in a human-like conversation. In addition, emotional message appeal should be utilized to communicate informative messages in an emotional ways in order to increase engagement.

Limitations and future research

The scope of study of this research is only limited to Facebook as a single

platform. Although, Facebook is currently the most popular platform of the social media site. However, Twitter and Instagram are both increasingly popular and increasing in the number of users. Therefore, it would be beneficial for the future study to explore the engagement strategies on the aforementioned platforms as it can provide insightful information for digital marketers to elaborate on the engagement strategies on those platforms as well.

References

Belch, G.E. and Belch, M.A. (2001). Advertising and Promotion: An Integrated Marketing Communications Perspective 5th Edition. McGraw-Hill: New York.

Bughin, J., Chui, M. and Miller, A. (2009). 'How companies are benefiting from Web 2.0 McKinsey global survey results'. *McKinsey on Business technology*, 17, 10- 17.

Brennan, L. and Binney, W. (2010). 'Fear, guilt, and shame appeals in social marketing'. *Journal of Business Research.* 63(2): 140-146.

Cenek, J., Smolike, J. Svatosova, V. (2016). 'Marketing on Social Networks: Content Analysis of Facebook Profiles of Selected Czech E-shops.' *Trends Economics and Management.* DOI: http://dx.doi.org/10/13164/trends. 2016.26.9

Centola, D. (2013). 'Social Media and the Science of Health Behaviour'. *American Heart Association, Inc.* DOI: 10.1161/CIRCULATIONAHA.112.101816.

Constantinides, E., & Fountain, S. J. (2008). Web 2.0: Conceptual foundations and marketing issues. Journal of Direct, Data and Digital Marketing Practice, 9(3), 14.

Crutzen R. (2009). A conceptual framework for understanding and improving adolescent's exposure to Internet-delivered interventions.

Digital Advertising Association Thailand. (2016). Thailand Internet Users First Quarter 2016. Information Retrieved from URL: http://www.daat.in.th/ index.php/data-internet/ downloaded on January 30, 2017.

Ems, L. and Gozales, A.L. (2016). 'Subculture-centered public health communication: A social media strategy'. *New Media and Society.* 18(8):1750-1767.

Jackson, D. (2016). '10 ways marketers can increase Facebook engagement'. Information Retrieved from URL: https://sproutsocial.com/insights/ facebook- engagement/ on November 13, 2017.

Jha, A., Lin, L., and Savoia, E. (2016). 'The Use of Social Media by State Health Department in the US: Analyzing Health Communication Through Facebook.' *Journal of Community Health.* 41:174-179.

Kasteler, J. (2016). '10 ways to increase your social media engagement like never before' Information Retrieved from URL: https://marketingland.com/10-ways- increase-social-media-engagement-like-never-180901 on November 13, 2017.

Keelan, J. (2010). Social Media for Public Health Communication. Information Retrieved from URL: https://www.publichealthontario.ca/en/LearningAnd Development/Events/Documents/Social_Media_for_Public_Health_Communicat

ions.pdf on March 20, 2017.

Kite J., Foley B.C., Grunseit, A.C., and Freeman, B. (2016). 'Please Like Me: Facebook and Public Health Communication'. PLoS ONE 11(9): e0162765. DOI: 10.1371/journal.pone.0162765

Nubeam, D. (2000). 'Health literacy as a public health goal: A challenge for contemporary health education and communication strategies into the 21st century'. *Health Promotion International.* Vol.15, No. 3.

Owen, J.E., Bantum, E.O., Gorlick, A. and Stanton, A.L. (2014). 'Engagement with a Social Networking Intervention for Cancer-Related Distress. *The Society of Behavioural Medicine.* 49:154-164.

Pakdeeronachit, S., Svetthitikun, Y., and Tancharoenwong, A.S. (2017). 'Content Analysis of Anti-smoking Campaign Advertising Media on Thai TV'. *The Journal of Social Communication Innovation.* 5(2): 103-114.

Platt, J.E., Platt T., Thiel, D., Kardia S.L.R. (2013). 'Born in Michigan? You're in the biobank: Engaging population biobank participants through Facebook advertisements'. *Public Health Genomics* 16(4): 145-158.

Platt, T., Platt, J., Thiel, D.B. and Kardia,S.L.R. (2016). 'Facebook Advertising Across an Engagement Spectrum: A Case Example for Public Health Communication'. *JMIR Public Health Surveillance.* 2(1):e27.

Pronschinske, M., Groza, M.D., and Walker, M. (2012). 'Attracting Facebook 'Fans': The Important of Authencity and Engagement as a Social Networking Strategy for Professional Sport Teams'. *Sport Marketing Quarterly.21:221- 234.*

Rus, H.M. and Cameron, L.D. (2016). 'Health Communication in Social Media: Message Features Predicting User Engagement on Diabetese-Related Facebook Pages'. *The Society of Behavioural Medicine.* 50:678-689.

Salzer, M.S. (2015). 'Advancing Research on Engagement in Internet Interventions: a Comment on Owen et al.' *The Society of Behavioural Medicine.* 49:147- 148.

Schulz, P. Auvinen, A, and Crotty, B. (2013). 'A new dimension of health care: Systematic Review of the uses, benefits, and limitation of social media for Health Commmunication'. *Journal of Medical Internet Research. 15(4): e85.*

SocialMediaToday.com (2017). '5 Tips to help you boost engagement on Facebook'. Information Retrieved from URL:https://www.socialmediatoday.com/news/ 5-tips-to-help-you-boost-engagement-on-facebook/517442/onNovember 13, 2017.

Suvachart, N. (2016). 'An Exploratory Study of Behaviour-Based Segmentation Typology of Facebook users in Thailand. *Asian Social Science;* Vol. 12 No.3.

Techtarget (2015). Social Media Marketing. Information Retrieved from URL: http://whatis.techtarget.com/definition/social-media-marketing-SMM on August 20, 2015.

TheAsianParent.com (2015). 'Asian Digital Mum Survey 2015'. Information Retrieved from URL: https://www.digitalnewsasia.com/sites/default/files/files_upload/ Asian%20 Digital%20Mum%20Survey%202015%20%2019%20Mar%202015. pdf downloaded on November 13, 2017.

Zhang, Y., He, D. and Sang, Y. (2013). 'Facebook as a Platform for Health Information and Communication: A Case Study of a Diabetes Group'. *J Med Syst.*37:9942. DOI: 10.1007/s10916-013-9942-7.

EQUITY MUTUAL FUND PERFORMANCE: THE CASE OF INDONESIA

Wahyu Widodo[1] and Robiyanto Robiyanto[2]

[1,2]Faculty of Economics and Business, Satya Wacana Christian University,
Jl. Diponegoro No. 52-60, Salatiga 50711, Central Java, Indonesia.
[2]robiyanto@staff.uksw.edu

Abstract

The research was conducted by involving 59 equity mutual funds circulating in Indonesia with Rupiah denomination from 2012 until 2016. Performance measurement is done by Treynor Ratio, Sharpe Index, Jensen Alpha, Adjusted Sharpe Index, Adjusted Jensen Index, and Information Ratio. The population of this research is Equity Mutual Funds registered in the Financial Services Authority (FSA or OJK in Bahasa). Equity Mutual Fund is chosen as the object of research because in Indonesia equity mutual fund is the most popular mutual fund. The data used in this study are, (1) monthly net asset value of equity funds from December 2011 to December 2013. NAV data of mutual funds are obtained from Bloomberg through www.portalreksadana.com. (2) Monthly data of Composite Stock Price Index (CSPI) obtained from website www.idx.co.id from December 2011 to December 2013. (3) Data of Reference Rate of Bank Indonesia and Bank Indonesia 7 Days Repo Rate from January 2012 until December 2016. Overall RHB Alpha Sector Rotation, SAM Indonesian Equity Fund, Simas Dana Saham, Schroder Dana Prestasi, Lautandhana Equity Progressive - Equity Progressive, Pratama Equity, and Pratama Saham are equity mutual funds that always consistently give positive results when measured by several models used.

Introduction

The capital market in Indonesia is growing very rapidly in recent years. The growth is reflected in Indonesia's Composite Stock Price Index (CSPI) from 2003 to 2017 that grew by more than 1,332 percent. A very rapid development when compared to the index of stocks of major countries such as the UK (FTSE) which only grow about 101 percent and Hongkong (HSI) which grew about 211 percent. When compared to neighboring countries such as Singapore (STRAITS) and Malaysia (KLCI) though, the Indonesian capital market remains superior.

Seeing the development of capital markets in Indonesia, especially stocks that are so fast, certainly raises the desire to participate in investing in it (Robiyanto, 2017a). However, to invest in securities in the capital market such as stock requires knowledge and access to good information. The presence of mutual funds seems to be the answer to the problem. Through mutual funds, people with limited investment capabilities can participate in investing in the capital market. People who have the capital deposit their assets to the investment manager to be invested in securities in the capital market.

The popularity of mutual funds continues to increase significantly, seen in total managed funds recorded at 185 trillion in 2013 to over 428 trillion in 2017 (OJK, 2017). The increase in popularity is due to the increasingly aware of the importance of Indonesian investment and the benefits offered by mutual funds such as, access to investment instruments not easily accessible, professional management, high liquidity levels, and

can start with relatively small funds. In addition to these matters, mutual fund investment is not a tax object, because it is included in the redemption of investment units received by investors. And most importantly, the diversification of the portfolio manager. Portfolio diversification is very important, but not everyone has enough capability, so handing it to professionals through mutual funds is a wise move (Gusni & Hamdani, 2018).

Research on mutual funds has been done a lot before. In the decade of 1960, Jensen (1967); Sharpe (1966); Treynor (1965) developed a performance measurement ratio concerning portfolio risk and return. Sharpe (1966) studied 34 mutual funds from 1954-1963 in America using Treynor and Sharpe models with the Dow Jones index as a benchmark. The study concludes that 11 mutual funds have better performance while 23 of them have lower performance compared to their benchmark performance. Jensen (1967) studied 115 active mutual funds in 1954 to 1964, using the alpha indicators he developed. This study concludes that no mutual fund performance can exceed the market performance.

Several studies were conducted in 2010s by Hada (2013), which examines the top mutual funds and are considered to represent mutual funds in India from 2007 to 2012. The study involved six samples and used Treynor Ratio, Sharpe Index, and Jensen models. From the research, it is concluded that mutual funds, in the long run, have better performance than the market. Long-term mutual fund returns are better than returns on similar investment instruments. Mutual funds can provide a

satisfactory level of return and risk-adjusted return except during a recession. Tan (2015) conducted a study involving 14 mutual funds in South Africa by using model Treynor Ratio, Sharpe Index, and Jensen's Alpha. Research samples were taken from 2009 to 2014. Tan (2015) concluded only 1 of the 14 mutual funds studied had significant alpha values, which shows that South African investment managers are not able to demonstrate good ability in choosing and the ability to choose market time.

Kannan and Fathima (2016) conducted a study involving eight mutual funds in 2013 to 2015 in India. Kannan and Fathima (2016) found the mutual fund industry in India perform well in 2014. While in 2013 and 2015 mutual funds face negative returns. All mutual funds under study using Treynor Ratio and Sharpe Index have positive values. However, the value of Treynor Ratio and Sharpe Index ranks first twice as high as the bottom. In Indonesia, several research on mutual funds also conducted by Wahdah and Hartanto (2012), Pangestuti, Wahyudi, and Robiyanto (2017); Qomariah, Sari, and Budiarti (2016); Rofiq and Santoso (2015); Santoso and Robiyanto (2018).

Wahdah and Hartanto (2012) used a three-year study period from 2008 to 2010 and used LQ45 and CSPI as their benchmarks. Wahdah and Hartanto (2012) found that, by using Treynor Ratio, Sharpe Index and Jensen's Alpha, concluded there is only one equity fund that can outperform the second performance of both benchmarks. Rofiq and Santoso (2015) examine rupiah-denominated mutual funds and have been active from 2009 to 2013. The methods used for research are Treynor Ratio,

Sharpe Index, and Jensen's Alpha. The sample used is conventional (non-sharia) equity fund. From the research, it is concluded that there are not many mutual fund shares that have performance above (outperform) CSPI which become benchmark. Pangestuti et al. (2017) studied some equity mutual funds in Indonesia by using 2012-2014 period and using Treynor Ratio, Sharpe Index, and Jensen's Alpha as measurement method. While Santoso and Robiyanto (2018), using Treynor, Sharpe, Jensen's Alpha and Information Ratio to measure the Sharia mutual fund performance in Indonesia.

Based on the above description, it can be seen that most research on performance measurement of mutual funds in Indonesia still tends to use measurements such as Treynor Ratio, Sharpe Index, and Jensen's Alpha. Those measurement tools are popular measurement tools (Robiyanto, 2017b; Robiyanto, Wahyudi, & Pangestuti, 2017), but have weaknesses that need adjustment (Robiyanto, 2018). Meanwhile, research that uses measurements such as Information Ratio is still limited (such as conducted by Santoso and Robiyanto (2018) who examines the Sharia mutual funds). So this study scrutinize the performance of equity mutual fund in Indonesia by using popular measurement such as Treynor Ratio, Sharpe Index, Jensen's Alpha and will also included it adjustment such as Adjusted Sharpe Index and Adjusted Jensen Alpha. This study also using the Information Ratio, because this ratio could provide an information about the performance of portfolio compared with its benchmark. The objective of this study are to measure the equity mutual funds' performance in Indonesia. This study expected to

provide a guidance for investors in making mutual fund investments, especially on stock mutual funds in Indonesia.

Literature review

Investment

Investment is a delay in consumption to be included in productive assets over a certain period (Hartono, 2009). Investment in productive assets can be real assets such as houses, land, and gold. Or it can also be a financial asset such as stocks, bonds, and sukuk. Type of financial investment can be divided into two, namely direct and indirect investment. (1) Direct investment is an investment made by purchasing a direct financial asset that can be traded through the money market, capital market, or derivative market. Or it can also be done by investing in non-tradable asset usually obtained from commercial banks such as savings and certificates of deposit (Ernayani, Sari, & Robiyanto, 2017; Triyono & Robiyanto, 2017). (2) While indirect investment can be done by buying securities through investment companies that provide financial services (Robiyanto, 2000; Robiyanto & Puryandani, 2015). For example, an investor can indirectly invest by buying an investment unit of a mutual fund.

Mutual fund

Mutual funds is one alternative for people to invest, especially people who have the capital, willing to invest but have limited knowledge (Gusni & Hamdani, 2018). According to 1996), mutual fund is a pool of fund of the

investor community, and subsequently, the capital is invested in securities portfolio by the Investment Manager. Securities portfolio is a collection of several securities such as stocks, bonds, Sovereign Debt Instruments, or other investment instruments. Based on the components of the portfolio of mutual funds can be divided into four, namely money market funds, fixed income mutual funds, equity funds, and mutual funds. The money market mutual fund policy allocates all of its investment funds to money market instruments, with maturities of less than one year such as savings, time deposits, and current accounts. Fixed income mutual funds have a policy to invest at least 80 percent of their funds into debt securities. The main objective of a fixed income mutual fund is to generate a stable return on a certain period. The stock funds policy allocates to invest at least 80 percent of its funds into equity securities. While mutual fund mutual funds make mixed investments between debt and equity securities.

If the stock has a unit per share or lot consisting of 100 shares, the units used in mutual funds are referred to as the Unit Trust. Investors who purchase the Unit Trust are referred to as Holder of the Unit Trust. The more Unit Trust owned by an investor, the greater the investment value of the investor. Also known as Net Asset Value (NAV) or Asset Under Management (AUM), is the total investment fund for mutual fund products managed by the investment manager. NAB is calculated daily after trading hours are completed by Custodian Bank. Net Asset Value per Unit Trust is a reflection of the price of a mutual fund calculated from the total net

asset divided by the total number of units in circulation.

As one of the investment vehicles, there are several risk opportunities contained in the mutual fund that is, (1) the reduced value of investment units affected by the declining prices of securities forming the portfolio. (2) The difficulties experienced by the investment manager in providing redemption of cash when most of the unitholders resell the units it holds or is called liquidity risk. (3) Default risk, which is the worst risk, occurs when the insurer that ensures the wealth of the mutual fund does not immediately pay compensation or pay less than the sum insured when things go wrong

The modern portfolio theory

Markowitz (1952) introduces an approach in formulating a portfolio whereby investors should evaluate the portfolio by desired returns and risks calculated using standard deviations. The concept is often called an efficient portfolio, which can be defined as a portfolio with the smallest risk on a given rate of return or the greatest rate of return at a given level of risk. An efficient portfolio is a good portfolio, but not the best because the efficient portfolio only has one good factor, i.e. the return or expected return factor or risk factor. From efficient portfolios, an optimum portfolio can be established that is a portfolio with a combination of return and best risk expectations. The assumptions used in Markowitz's model are:

1. Time spent only one period.

2. No transaction fees.

3. Investor preferences are based solely on the return and risk expectations of the portfolio.

4. No loans and risk-free savings.

Treynor ratio

Portfolio measurements using the Treynor Ratio can be performed using the average past return as expected return and using beta (β) as the risk benchmark. Beta is used as a benchmark of investment risk because fluctuations in stock prices are influenced by market fluctuations. The average return as the best measure for predictive return guidelines applies as long as market assumptions are efficient. By comparing the average return with the risk can be seen that the higher the risk, the higher the expected return (Pangestuti et al., 2017; Robiyanto, 2017b). Treynor Ratio formula is:

$$Treynor\ Ratio = \frac{Average\ Return\ of\ Portfolio - Risk\ Free\ \ Average\ Return}{Beta\ of\ Portfolio}$$

Sharpe index

Sharpe (1966) uses two measures to predict future portfolio performance by using the expected rate of return (E) and predicted variability of risk expressed by the standard deviation portfolio (σ). Expected rate of return represents the average portfolio return in a period.

While predicted variability of risk is the standard deviation of portfolio return in a period. Standard deviation indicates the change of portfolio return to the average return of the portfolio. This model assumes the past average return is the predictor of future return, and the standard deviation of the past is predicted future risk. Sharpe Index formula is:

$$Sharpe\ Index = \frac{Average\ Return\ of\ Portofolio - Risk\ Free\ Average\ Return}{Standar\ Deviation\ of\ Portofolio}$$

Adjusted sharpe index (ASI)

Adjusted Sharpe Index is the development of the previous model of the Sharpe Index to calculate asset performance using adjusted risk, by including abnormal slope/data rates. Adjusted Sharpe Index can be calculated using the formula (Zulkafli, Ahmad, & M., 2017):

$$ASI = Sharpe\ Index \times \frac{Observed\ Period}{Observed\ Period + 0,75}$$

Jensen alpha

The performance of a portfolio can also be evaluated through the Jensen Alpha. The Jensen Alpha will only accept a portfolio that can generate returns exceeding the expected return or minimum rate of return. Minimum rate of return is expected return calculated by capital asset pricing model (CAPM) method. The difference between the average return minus the minimum rate of return is called alpha (α). To calculate the minimum rate of return in question can be done by the formula:

$$Expected\ Return\ Portofolio$$
$$= Risk\ Free\ Average + Beta\ Portofolio\ (Average\ Market\ Return - Average\ Risk\ Free)$$

So Jensen Alpha can be known by:

$$Jensen\ Alpha = Average\ Return\ of\ Portofolio \\ - expected\ return\ (CAPM)$$

Adjusted Jensen index (AJI)

Adjusted Jensen Index is a form of adjustment from the Jensen Index where adjustments are made to systematic risk factors. AJI positive values indicate superior relative portfolio performance to market and vice versa (Robiyanto, 2018; Zulkafli et al., 2017). Adjusted Sharpe Index can be calculated using the formula (Zulkafli et al., 2017):

$$AJI = \frac{Jensen\ Alpha}{Beta\ of\ Portfolio}$$

Information ratio

Information ratio (IR) and Sharpe are both used to measure the risk-adjusted (Kidd, 2011). What distinguishes is that IR measures the rate of return on adjusted risk associated with the benchmark. IR can be calculated using the formula:

$$Information\ Ratio = \frac{Return\ of\ Portfolio - Return\ of\ Benchmark\ Index}{Tracking\ Error}$$

Method

Population and sampling

The population of this research is Equity Mutual Funds registered in the Financial Services Authority (FSA or OJK in Bahasa). Equity Mutual Fund is chosen as the object of research because in Indonesia equity mutual fund is the most popular mutual fund. At the end of 2016 in Indonesia, the percentage of stock mutual fund credits is 46.5 percent of the total mutual funds in Indonesia. Period used as performance measurement 2012 to 2016 because generally instrument of investment in form of equity or stock is instrument of long-term investment.

Furthermore, mutual funds are selected to be sampled based on certain criteria to be used as research samples. Sampling technique using purposive sampling technique that is as sample selection with technique of nonprobability sampling with certain criterion. These criteria are (1) mutual fund shares registered in OJK and has been active in 2012 or earlier until 2016. (2) mutual funds owns NAV in December 2011 to December 2013.

Based on the criteria, 59 selected equity funds are become samples.

Data

The type of data used in this study is secondary data. The data used are among others, (1) monthly net asset value of equity funds from December 2011 to December 2013. NAV data of mutual funds are obtained from Bloomberg through www.portalreksadana.com. (2) Monthly data of Composite Stock Price Index (CSPI) obtained from website www.idx.co.id from December 2011 to December 2013. (3) Data of Reference Rate of Bank Indonesia and Bank Indonesia 7 Days Repo Rate from January 2012 until December 2016. Starting from August 2016 to December 2016, the benchmark rate will continue with the BI Rate 7-days Repo as a substitute for the benchmark interest rate due to policy changes. The data obtained from the official website of Bank Indonesia is www.bi.go.id.

Result

Portfolio performance measurement by using Treynor ratio

The Treynor Ratio measures the performance of a portfolio by comparing the excess return to systematic risk present in the effects of its portfolio expression in beta. The higher Treynor Ratio (RVOL) value indicates the better the performance of a portfolio. Table 1 presents top ten equity mutual fund performance measured by using Treynor Ratio.

Table 1 Top ten equity mutual fund by using Treynor ratio

No.	Equity Mutual Fund	Treynor Ratio
1	RHB Alpha Sector Rotation	0.120456471
2	SAM Indonesian Equity Fund	0.094987581
3	TRAM Consumption Plus Fund	0.049846677
4	Simas Dana Saham	0.031560737
5	Schroder Dana Prestasi	0.030195318
6	Millenium Equity	0.025274327
7	Danareksa Mawar Konsumer 10	0.022409233
8	Lautandhana Equity Progresif - Equity Progresif	0.022233208
9	Pratama Equity	0.021661151
10	Pratama Saham	0.016764798

27 equity mutual funds produce positive Treynor Ratio, while 32 equity mutual funds produce negative Treynor Ratio. The equity mutual fund with smallest positive Treynor Ratio is BNP Paribas Maxi Shares (0.00011) which is still higher than CSPI' s Treynor Ratio (0.000048). From these results can be said that 27 equity mutual funds that have a positive value has a performance above the benchmark (outperform). RHB Alpha Sector Rotation has the highest Treynor Ratio of 0.1204. Other top-rated equity mutual funds are SAM Indonesia Equity Fund (0.0949); TRAM Consumption Plus Fund (0.0498); Simas Dana Saham (0.0315); and Schroder Dana Performance (0,0301). While Emco Mantap has the lowest Treynor Ratio of -0.0568 which shows the poorest performance among 59 equity mutual funds studied.

Portfolio performance measurement by using sharpe index and adjusted sharpe index

Portfolio measurement with the Sharpe Index are the measurements made by comparing the excess return to the total portfolio risk expressed by the standard deviation. The Sharpe Index shows the magnitude of the additional investment returns earned on each unit of risk taken. The greater the value of Sharpe Index of a portfolio, the better the portfolio's performance. Table 2 presents top ten equity mutual fund performance measured by using Sharpe Index.

Table 2 Top ten equity mutual fund by using sharpe index

No.	Equity Mutual Fund	Sharpe Index
1	SAM Indonesian Equity Fund	0.184710872
2	RHB Alpha Sector Rotation	0.121831103
3	Simas Dana Saham	0.119134109
4	Pratama Equity	0.097203446
5	Pratama Saham	0.076114425
6	HPAM Ultima Ekuitas 1	0.074837053
7	MNC Dana Ekuitas	0.074061285
8	Schroder Dana Prestasi	0.063367737
9	Lautandhana Equity Progresif - Equity Progresif	0.059914629
10	Schroder Indo Equity Fund	0.043253593

The CSPI as benchmark has a Sharpe Index value of 0.0013. Measurements with the Sharpe Index performed show only 23 equity mutual funds that can outperform from its benchmark. The highest Sharpe Index found in is the SAM Indonesia Equity Fund (0.1847), and the lowest Sharpe Index found in Emco Growth (-0.1275). Panin Dana Prima (0.00053); BNP Paribas Pesona (0.00037); and BNP Paribas Maxi Share (0.00023) has a positive Sharpe Index, but the value is still below the Sharpe Index of the CSPI.

Table 3 Top ten equity mutual fund by using adjusted sharpe index

No.	Equity Mutual Fund	*Adjusted Sharpe Index*
1	SAM Indonesian Equity Fund	0.182430491
2	RHB Alpha Sector Rotation	0.120327016
3	Simas Dana Saham	0.117663317
4	Pratama Equity	0.096003403
5	Pratama Saham	0.075174741
6	HPAM Ultima Ekuitas 1	0.073913138
7	MNC Dana Ekuitas	0.073146948
8	Schroder Dana Prestasi	0.062585419
9	Lautandhana Equity Progresif - Equity Progresif	0.059174943
10	Schroder Indo Equity Fund	0.042719598

Adjusted Sharpe Index (ASI) measurements showed similar results with Sharpe Index. 26 of 59 equity mutual funds have a positive index, and 23 of them are capable of exceeding market performance. Table 3 presents top ten equity mutual fund performance measured by using Adjusted Sharpe Index.

Portfolio performance measurement by using Jensen alpha and adjusted Jensen index

The Jensen Alpha uses the Capital Asset Pricing Model (CAPM) as the basis for measuring portfolio performance. Jensen (1967) measures performance by calculating the difference between returns earned with expected returns at systematic risk levels. A positive Jensen (alpha) index indicates that portfolio performs better than market performance (superior). While the negative alpha value shows portfolio performance worse than market performance (inferior). Table 4 presents top ten equity mutual fund performance measured by using Jensen Alpha.

Table 4 Top ten equity mutual fund by using Jensen alpha

No.	Equity Mutual Fund	Jensen's Alpha
1	Simas Dana Saham	0.237418016
2	SAM Indonesian Equity Fund	0.009487659
3	Pratama Equity	0.005720041
4	RHB Alpha Sector Rotation	0.005289705
5	Pratama Saham	0.004462047
6	HPAM Ultima Ekuitas 1	0.003504489
7	MNC Dana Ekuitas	0.002948662
8	Lautandhana Equity Progresif - Equity Progresif	0.002671381
9	Schroder Dana Prestasi	0.002523138
10	Schroder Indo Equity Fund	0.001824104

33 equity mutual funds have performed below market when measured using Jensen's Alpha Model. Emco Growth (-0.0070); Danareksa Mawar Komoditas 10 (-0.0059); Mandiri Investa Ekuitas Dinamis (-0.0059); Millenium Equity (-0.0057); and Prospera Bijak (-0.0053) are the five most inferior equity mutual funds. 26 other equity mutual funds have a positive alpha value with the largest value in Simas Dana Saham (0.2374).

Table 5 Top ten equity mutual fund by using adjusted Jensen index

No.	Equity Mutual Fund	Adjusted Jensen Index
1	RHB Alpha Sector Rotation	0.120407543
2	SAM Indonesian Equity Fund	0.094938653
3	TRAM Consumption Plus Fund	0.049797749
4	Simas Dana Saham	0.031511809
5	Schroder Dana Prestasi	0.030146389
6	Millenium Equity	0.025225399
7	Danareksa Mawar Konsumer 10	0.022360305
8	Lautandhana Equity Progresif - Equity Progresif	0.02218428
9	Pratama Equity	0.021612223
10	Pratama Saham	0.01671587

The Jensen Alpha adapted to systematic risk (β) or Adjusted Jensen's Index (AJI) shows different results. After adjusting for systematic risk, RHB Alpha Sector Rotation has the most superior value (0.12040). Simas Dana Saham (0.23741) which has the most superior value before compared with β becomes the fourth order after RHB Alpha Sector Rotation (0.12040); SAM Indonesian Equity Fund (0.09493); and TRAM Consumption Plus Fund (0.04979). The value of AJI showing the most inferior performance at adjusted risk is Emco Mantap (-0.05687). Table 5 presents top ten equity mutual fund performance measured by using Adjusted Jensen Index.

Portfolio performance measurement by using information ratio

Information Ratio (IR) measures the consistency of an investment in returns compared to benchmarks (Kidd, 2011). IR does not compare portfolio performance with levels of risk-free returns but directly with benchmarks that are the main parameters. The higher the IR value indicates, the higher the consistency of an investment in outperforming the market performance.

From the measurement results using IR, 23 of the 59 equity mutual funds studied have positive values that indicate the consistency of the portfolio in outperforming the market. Several equity mutual funds with positive value are MNC Dana Ekuitas (0.96287); Schroder Dana Prestasi (0.85228); and RHB Alpha Sector Rotation (0.81137). BNP Paribas STAR has the smallest IR value with IR value -2,63552. Table 6 presents top ten equity mutual fund performance measured by using Information Ratio.

Table 6 Top ten equity mutual fund by using information ratio

No.	Equity Mutual Fund	Information Ratio
1	MNC Dana Ekuitas	0.962878853
2	Schroder Dana Prestasi	0.852287113
3	RHB Alpha Sector Rotation	0.811372939
4	SAM Indonesian Equity Fund	0.655024504
5	HPAM Ultima Ekuitas 1	0.346031816
6	Lautandhana Equity Progresif - Equity Progresif	0.340874109
7	Schroder Indo Equity Fund	0.33432732
8	Danareksa Mawar Konsumer 10	0.305533226
9	Pratama Equity	0.021612223
10	Pratama Saham	0.01671587

The segmentation of equity mutual funds

Segmentation of equity mutual funds is conducted so investors can choose which funds to invest according to their risk-return preferences. This segmentation are combined Jensen Alpha and Beta. According to Jensen (1967), $\alpha < 0$, means that the investment has earned too little for its risk (or, was too risky for the return); $\alpha = 0$, means that the investment has earned a return adequate for the risk taken; $\alpha > 0$, means that the investment has a return in excess of the reward for the assumed risk. While, $\beta < 0$, means that the equity mutual fund is aggressive;

$\beta = 0$, means that the equity mutual fund is neutral; $\beta > 0$, means that the equity mutual fund is defensive. There are six equity mutual funds in the underperform-defensive category; two equity mutual funds in the outperform-defensive category; 27 equity mutual fund in the underperform-aggressive category; 24 equity mutual fund in the outperform-aggressive category; while none in the neutral-neutral category. Overall, 33 equity mutual funds are categorized as underperform and 26 equity mutual funds are categorized as outperform.

The results of mutual funds' segmentation are shown in Table 7.

Table 7 The segmentation of equity mutual funds

	$\beta < 1$ (Defensive)	$\beta = 1$ (Neutral)	$\beta > 1$ (Aggressive)
$\alpha < 0$ (Underperform)	- BNP Paribas STAR - Aberdeen Indonesia Equity Fund - PNM Ekuitas Syariah - Millenium Equity - Danareksa Mawar Komoditas 10 - Grow 2 Prosper		- First State IndoEquity Dividend Yield Fund - Rencana Cerdas - Mandiri Saham Atraktif - First State IndoEquity PEKA Fund - BNP Paribas Ekuitas - Syailendra Equity Opportunity Fund - Danareksa Mawar - Bahana TCW Dana Prima - Manulife Saham Andalan - Maybank Dana Ekuitas - Manulife Dana Saham - BNP Paribas Solaris - TRIM Kapital - Mandiri Dynamic Money Fund - First State IndoEquity Sectoral Fund - Mandiri Investa Atraktif - BNI Berkembang - Danareksa Mawar Fokus 10 - Mandiri Investa Cerdas Bangsa - TRIM Kapital Plus

		- Emco Mantap
		- First State IndoEquity Value Select Fund
		- Mandiri Investa Atraktif Syariah
		- PNM Saham Agresif
		- Prospera Bijak
		- Mandiri Investa Ekuitas Dinamis
		- Emco Growth
$\alpha = 0$ (Neutral)	-	-	-
$\alpha > 0$ (Outperform)	- MNC Dana Ekuitas - Lautandhana Equity Progresif	- Simas Dana Saham - SAM Indonesian Equity Fund - Pratama Equity - RHB Alpha Sector Rotation - Pratama Saham - HPAM Ultima Ekuitas 1 - Schroder Dana Prestasi - Schroder Indo Equity Fund - Danareksa Mawar Konsumer 10 - TRAM Consumption Plus Fund - Schroder 90 Plus Equity Fund - Dana Ekuitas Prima - Schroder Dana Prestasi Plus - Trimegah Syariah Saham - Schroder Dana Istimewa - Dana Ekuitas Andalan - AXA Citradinamis - Manulife Syariah Sektoral Amanah - Manulife Institutional Equity Fund MIEF - Batavia Dana Saham Syariah - BNP Paribas Infrastruktur Plus - Panin Dana Prima - BNP Paribas Pesona - BNP Paribas Maxi Saham

Conclusion

The research was conducted by involving 59 equity mutual funds circulating in Indonesia with Rupiah denomination from 2012 until 2016. Performance measurement is done by Treynor Ratio, Sharpe Index, Jensen Alpha, Adjusted Sharpe Index, Adjusted Jensen Index, and Information Ratio. In general, the finding shows the risk of equity mutual funds is greater than the market risk. Simas Dana Saham has the highest standard deviation (1.9959) while BNP Paribas Star has the lowest standard deviation (0.0375). Some equity funds

have lower beta value than the market. There is only one mutual fund that has a beta larger than the market namely Simas Dana Saham (7.5342). This shows that most equity funds have lower risk and volatility than the market.

Based on measurements made with the Treynor Ratio, 27 equity funds have a positive Treynor Ratio. Five of them are RHP Alpha Sector Rotation, SAM Indonesian Equity Fund, TRAM Consumption Plus, Simas Dana Saham, and Schroder Dana Prestasi. Measurements using Sharpe Index and ASI obtained 26 equity mutual funds have a positive value, 23 of them outperform, and 3 of them underperform. Some of them are SAM Indonesia Equity Fund, RHB Alpha Sector Rotation, Simas Dana Saham, Pratama Equity, and Pratama Saham.

Portfolio measurements using Jensen Alpha show 26 equity mutual funds have a performance above the benchmark. The first to fifth rank is occupied by Simas Dana Saham, SAM Indonesian Equity Fund, Pratama Equity, RHB Alpha Sector Rotation, and Pratama Saham. While measurements using AJI show RHB Alpha Sector Rotation, SAM Indonesian Equity Fund, TRAM Consumption Plus Fund, Shares Fund Simas, and Schroder Performance Funds have the largest value to the fifth largest in sequence. With the measurement of Information Ratio, obtained 23 equity mutual funds that have performed above the benchmark. Some of them are MNC Dana Ekuitas, Schroder Dana Prestasi, RHB Alpha Sector Rotation, SAM Indonesian Equity Fund, and HPAM Ultima Ekuitas 1.

Overall RHB Alpha Sector Rotation, SAM Indonesian Equity Fund, Simas

Dana Saham, Schroder Dana Prestasi, Lautandhana Equity Progressive - Equity Progressive, Pratama Equity, and Pratama Saham are equity mutual funds that always consistently give positive results when measured by several models used.

Based on mutual funds segmentation by using Jensen's Alpha and Beta, there are six equity mutual funds in the underperform-defensive category; two equity mutual funds in the outperform-defensive category; 27 equity mutual fund in the underperform-aggressive category; 24 equity mutual fund in the outperform-aggressive category; while none in the neutral-neutral category. This finding can provide the guidance to investors in order to invests in Indonesian equity mutual funds.

Managerial implication

Although there are stock mutual funds that always consistently provide a positive value, but the magnitude of the risks that exist in each mutual fund needs to be considered. For example, Simas Dana Saham, which always has a positive index value and entered in the top ten performance, but has a standard deviation and beta far greater than the standard deviation and beta market. For prospective investors interested in investing in equity funds, RHB Alpha Sector Rotation, and SAM Indonesian Equity Fund can be an investment choice. Since both equity funds during the study period have proven to be consistent, they can generate positive performance values and have lower risk and volatility than the market.

Investors could choose the equity mutual fund based on their risk preference. For investors who prefer to equity mutual funds with low volatility, they can choose equity mutual funds which falls in outperform-defensive category. On the other hand, investors who prefer to equity mutual funds with high volatility, they can choose equity mutual funds which falls in outperform-aggressive category.

Future research agenda

For further research, it is expected that the research period should be considered carefully. Given each type of investment, instrument has its characteristics. Also, the use of other measuring instruments such as M^2 is also expected to be used in subsequent studies.

References

Act of the Republic of Indonesia 1996 Number 8 of 1995 Concerning The Capital Market. Indonesia.

Ernayani, R., Sari, O., & Robiyanto, R. 2017. The Effect of Return on Investment, Cash Ratio, and Debt to Total Assets Towards Dividend Payout Ratio (A Study Towards Manufacturing Companies Listed in Indonesia Stock Exchange). *Advanced Science Letters*, 23(8): 7169-7199.

Gusni, S., & Hamdani, F. 2018. Factors affecting equity mutual fund performance: evicen from Indonesia. *Investment Management and Financial Innovations*, 15(1): 1-9.

Hada, B. S. 2013. Critical Studies of Risk and Return on Mutual Funds. *International Journal of Research in Commerce & Management*, 4(06).

Hartono, J. 2009. *Teori Portofolio dan Analisis Investasi*. Yogyakarta: BPFE-YOGYAKARTA.

Jensen, M. 1967. The Performance of Mutual Funds in the Period 1945-1964. *Journal of Finance*, 23: 389-416.

Kannan, V., & Fathima, I. S. 2016. Performance Evaluation of Selected Equity Mutual Fund Schemes. *International Journal of Research in Commerce & Management*, 7(07).

Kidd, D. 2011. The Sharpe Ratio and the Information Ratio. *Investment Performance Measurement Feature Articles*, 1: 1-4.

Markowitz, H. M. 1952. Portfolio Selection. *Journal of Finance*, 7(1): 77-91.

OJK. 2017. Statistik Pasar Modal 2017.

Pangestuti, I. R. D., Wahyudi, S., & Robiyanto, R. 2017. Performance Evaluation of Equity Mutual Funds in Indonesia Period of 2012-2014. *Jurnal Keuangan dan Perbankan* 21(4).

Qomariah, N., Sari, M. I., & Budiarti, D. A. 2016. Perbandingan Kinerja Reksadana Syariah dan Reksadana Konvensional (Pada Reksadana Saham dan Reksadana Pendapatan Tetap Yang Terdaftar di BEI Periode 2010-2014). *Jurnal Keuangan dan Perbankan* 20(3): 417-427.

Robiyanto, R. 2000. Pengaruh Hari Perdagangan Saham Terhadap Return Harian Saham di Bursa Efek Jakarta (Sebuah Studi Terhadap IHSG, Indeks Saham Sektoral dan Indeks Saham Unggulan (LQ 45)). *Jurnal Bisnis Strategi*, 5: 46-94.

Robiyanto, R. 2017a. The Analysis of Capital Market Integration in ASEAN Region by Using the OGARCH Approach. *Jurnal Keuangan dan Perbankan* 21(2): 169-175.

Robiyanto, R. 2017b. Performance Evaluation and Risk Aversion Rate for Several Stock Indices in Indonesia Stock Exchange. *Jurnal Manajemen dan Kewirausahaan*, 19(1): 60-64.

Robiyanto, R. 2018. Performance Evaluation of Stock Price Indexes in the Indonesia Stock Exchange. *International Research Journal of Business Studies*, 10(3): 173-182.

Robiyanto, R., & Puryandani, S. 2015. The Javanese lunar calendar's effect on Indonesian stock returns. *Gadjah Mada International Journal of Business*, 17(2): 125-137.

Robiyanto, R., Wahyudi, S., & Pangestuti, I. R. D. 2017. The volatility–variability hypotheses testing and hedging effectiveness of precious metals for the Indonesian and Malaysian capital markets. *Gadjah Mada International Journal of Business*, 19(2): 167-192.

Rofiq, A., & Santoso, B. H. 2015. Analisis Kinerja Reksa Dana Dengan Menggunakan Model Sharpe, Treynor dan Jensen. *Jurnal Ilmu dan Riset Manajemen*, 4.

Santoso, M. A., & Robiyanto, R. 2018. Sharia Mutual Funds Performance in Indonesia.

Sharpe, W. F. 1966. Mutual Fund Performance. *Journal of Business*, 39(1): 119-138.

Tan, O. F. 2015. Mutual Fund Performance : Evidence from South Africa. *Emerging Markets Journal*, 5.

Treynor, J. L. 1965. How to Rate Management of Investment Funds. *Harvard Business Review*, 43(1): 63-75.

Triyono, D., & Robiyanto, R. 2017. The Effect of Foreign Stock Indexes and Indonesia's Macroeconomics Variables Toward Jakarta Composite Stock Price Index (JCI) *Advanced Science Letters*, 23(8): 7211-7214.

Wahdah, R., & Hartanto, J. 2012. Analisis Pengukuran Kinerja Reksa Dana Saham di Indonesia. *Jurnal Manajemen dan Akuntansi*, 13.

Zulkafli, A. H., Ahmad, Z., & M., E. E. 2017. The Performance of Socially Responsible Investments in Indonesia: A Study of the Sri Kehati Index (SKI). *Gadjah Mada International Journal of Business*, 19(1): 59-76.

MEASURING SATISFACTION AND KNOWLEDGE OF VISITORS' CULTURAL TOURISM SITES

Ka Tat Nixon Chen[1], Roberto B. Gozzoli[2] and Suwadee Talawanich[3]

[1,2,3]Mahidol University International College, Salaya, Nakhon Pathom
999 Phutthamonthon Rd 4,Salaya, Nakhon Pathom 73170, Thailand
[1]nixon.che@mahidol.ac.th, [2]roberto.goz@mahidol.ac.th,
[3]suwadee.tal@mahidol.ac.th

Abstract

The purpose of this research is to explore the visitor's knowledge and satisfaction in the area of cultural tourism in Thailand. The main area of the study is one of the most important heritage sites of Thailand, Phra Pathom Chedi in Nakhon Pathom province. The quantitative research with questionnaires was applied to collect the data and provide the research findings. The analyses included descriptive statistics and multiple regression. The research identified the wide gap among the visitors. Landscape, atmosphere and information about the sites had positive influence on the overall satisfaction of cultural tourism. Discussions and directions for further research were also provided.

> **Keywords:** Phra Pathom Chedi, Thailand; interpretation,
> knowledge; satisfaction

Introduction

For cultural tourism, it is important for tourists to find a balance between knowledge and satisfaction. In this part, the authors introduced the importance of cultural and heritage knowledge of the tourism sites.

Knowledge of heritage in Thailand – specifically heritage knowledge in Thai context relatively to the cultural heritage they visit – is one of the two main topics of the paper. It aims to fill the gap in the academic literature relative to Thai heritage management and tourism, as scholars have mostly focused on its historical or anthropological aspect.[1]

The question and the relative discussion are a continuation of a discourse started a decade ago in the pages of this journal: a thesis dealing with the problem of knowledge by Western visitors at the UNESCO World Heritage site of Ayutthaya Historical Park (Saipradist, 2005), appeared a couple of years later (Saipradist and Staiff, 2007). [2] The problem of cross-cultural translation of Thai architecture was raised in that paper, but such a statement in that paper had to be obviously generic, as there were no studies to verify the level of knowledge of Thai visitors.

As a sort of continuation of such earlier research, the level of knowledge of Thai visitors relatively their own history, traditions and culture, using the temple of Phra Pathom Chedi in Nakhon Pathom – a city roughly 50 km from Bangkok – as study site is the focus of this paper. The choice of the site was dictated by the fact that the temple is famous, it is the biggest *chedi* (temple tower) in Thailand, but most of its history or artistic features are not part of the national educational curriculum. Following Timothy and Boyd (2003, p. 14), Phra Pathom Chedi can be considered as a national site, without reaching the level of importance of Wat Phra Kaeo/Grand Palace, nor being a UNESCO World Heritage site, such as Sukhothai and Ayutthaya. [3] Moreover, Phra Pathom Chedi is not a temple exclusively employed by the royal family as it is the case for Wat Phra Kaeo, nor it is part of a national – and nationalistic – discourse as it happens for Sukhothai and Ayutthaya. Thus, Phra Pathom Chedi represents a good case study to measure the level of knowledge of Thai visitors relative to the cultural heritage they visit.

---

[1] Just summarizing by topics: Thai heritage its origins and actual status (Peleggi, 1996, 2002a, 2002b, 2004, 2011, 2013, 2015), stakeholders' participation (Herzfeld, 2013, 2014, 2016; Prakitnonthakan, 2013) or general issues about cultural tourism in Southeast Asia context (Hitchcock et al., 1993, 2010).

[2] In Thailand, most of these studies were originated as PhD theses at the International Programme of Heritage Management at Silpakorn University in Thailand, as the thesis cited above. Cross cultural interpretation problems, this time referred to Sukhothai, have been more recently discussed in Staiff (2014, pp. 144-147).

[3] While escaping the magniloquence of Sukhothai and Ayutthaya, in favour of a more accentuated religious importance, Phra Pathom chedi was ventured to be another UNESCO World Heritage site in Thailand, if the local community would not have challenged such registration (Gozzoli, forthcoming).

However, apart from comparing the knowledge and attitudes of Thai visitors toward the academic disciplines of history of Buddhist art and history, the present paper also aims to measure the satisfaction level of visitors to the site. Heritages have to attract visitors to cover the economic costs of their resource creation and maintenance incurred and to reap economic benefits visitors bring to the heritages, the local community, and the society at large (Ashworth, 2014). Hence, the findings of the present study can give guidance to cultural tourism sites of similar nature in Thailand ways to satisfy visitor experiences.

Literature review

Arts, history, heritage and Thai visitors

Saipradist and Staiff (2007) started over a quite significant assumption: that interest toward the past by Thai visitors at their own temples was at similar levels to those found in Europe. Differences however exist: within Western cultural horizon, ancient Rome and Greece created the cultural background through which the European Renaissance rose in the fifteenth century CE. Then during the Enlightenment Period, archaeological ruins and cultural heritage were rediscovered once more: Goethe, Nietzsche, Wagner in German culture, Byron and Shelley in England, the French *Encyclopedie* cannot be understood without getting into the Classical background they still lived in (Schnapp, 1996, pp. 258-266).

In Thailand, the episodes of Buddha's life are limited into learning some of the episodes, and the Thai educational curriculum does not really work over the concept of religious art for instance, but simply over a relationship between styles and history (Appendix 1). [4] Outside compulsory education, history of art is a discipline strictly confined to very specific universities like Silpakorn University, by definition – *sillapa* means Arts in Thai language – the University of Arts in Thailand.[5]

Phra Pathom Chedi and national heritage

Phra Pathom Chedi temple in the Nakhon Pathom Province is famous for having the highest stupa/*chedi* of Thailand. [6]

---

[4] The Thai curriculum does not have any Religious History of Art element in its curriculum, but simply Fine Arts in general (Ministry of Education Thailand, 2008, pp. 236-237). A classification of Buddha's gestures exists, from the pen of Prince Damrong Rajanubhab, cf. Rajanubnab (1973). See also Peleggi (2015) for the classification of Thai arts and its national implications.

[5] As noted by (Peleggi, 2015, p. 81): "'Art History" as a scholarly concept was imported from Europe and localized in the Thai intellectual landscape in the early twentieth century, but it did not achieve the status of academic discipline until 1960s'. This delay in being embraced art history as academic discipline may explain its virtual absence from Thai compulsory education curriculum.

[6] Stupa or *chedi* are names for the central tower of a Thai temple, usually containing Buddha's or king's relics. For the importance of the stupa as cultural emblem, see Byrne (1995, pp. 268-274).

Nakhon Pathom is situated near the west bank of the Ta Chin River in the central part of Thailand. Archaeological remains found at Nakhon Pathom define the site as one of the major centres of the Dvaravati civilisation (Indrawooth, 2004). One of the most important discoveries were two silver coins engraved with the Sanskrit words *Sridvaravati Svarapunya* that mean "meritorious deeds of the King of Dvaravati" (Indrawooth, 2004, p. 129; Indrawooth, 2008, p. 36). Within Thai academic scholarship, it is identified with the semi-mythical Suvaṇṇabhūmi kingdom (Assavarirulakarn, 2010, p. 63; Revire, 2011).

After becoming king, Rama IV started to build the actual temple at Phra Pathom Chedi in 1853 following the Ayutthaya style of the period.[7] More interventions and restorations were later done by his successors King Rama IV, Rama V and Rama VI (Fine Arts Department, 2005, pp. 68-73), each of them contributing to set statues, paintings or votive objects within the temple compound.

Heritage as a place for consumption

Heritage unfolds the spiritual, material, intellectual, and emotional uniqueness of a place that helps distinguish people of various races and societies at large (Danesi, 2017). However, heritage is a contemporary commodity that is created to satisfy contemporary consumption (Ashworth, 1994). On these bases, visits to heritages are a process, an outcome, and a consumable experience (Ashworth 1997) and are a demand-driven collection of contemporary users (Ashworth, 2014).

The sustainable development of heritages has, for long, been the main concern of their managers and administrators. The Type Museum in London closed in May 2006 because of an unsustainable deficit (Heywood, 2006). Facing a decrease in subsidies, these managers and administrators realize the necessity to compete with other tourist activities to attract several visitors to generate income (Kolb, 2013). Hitherto, heritages could impact the economic development of societies. John Kenneth Galbraith, one of the most celebrated economists of the 20th century, claimed that the main reason for the rapid recovery of post-war Italy is that Italy has incorporated into its products an essential component of cultures and that cities, such as Milan, Parma, Florence, Siena, Venice, Rome, Naples, and Palermo, display in their standard of living a huge amount of beauty (in Danesi, 2017, p. 50). These cities with relative cultural heritage, to support the constant flow of tourists, have to set up relevant commercial activities and facilities, infrastructures such as hotels and restaurants, and public events (Danesi, 2017). The visiting rate of a heritage is a tool to measure its success. The 2017 annual report of the Metropolitan Museum of Art illustrated the record-high attendance of seven million visitors in the fiscal year of 2017, a testament to the "strength, relevance, and endurance of MET's mission: to

---

[7] King Rama IV's deeds in relation with Phra Pathom Chedi are narrated in Flood (1965, pp. 496-518). See Byrne (2014, pp. 83-84)

for a cultural history of the Phra Pathom Chedi reconstruction, as enhancing the magical value of the *chedi* itself.

connect people to creativity, knowledge, and ideas through the collection and presentation of five thousand years of visual expression (MET, 2017, p.6.)."

Previously, heritages tended to attract cultural tourists who had a high per diem expenditure relatively (du Cros & McKercher, 2015). However, currently, visits to heritages are a mainstream tourist activity (du Cros & McKercher, 2015).

Thailand attracts more than 32 million foreign tourists who spent more than USD49,000 million in 2016 (UNWTO, 2017). Furthermore, 95% of its population comprises Buddhists (Central Intelligence Agency, n.d.). Ayutthaya attracted approximately 5.3 million local visitors and 1.9 million foreign tourists in 2016. The Phra Pathom Chedi, as far as its history, significance, and geographical location are concerned, has a good potential to attract local and foreign visitors by providing them with a consumable experience (moved from the last paragraph of this section).

Satisfaction of tourists

Several scholars and researchers corroborate that the success of tourism businesses depends on providing tourists with and engaging tourists in rich and rewarding experiences (Wall and Mathieson, 2006).

Tourist experience as suggested by Pearce (2011) is an integrated conceptualization that resembles "an ensemble of orchestrated sensory inputs; affective reactions; cognitive mechanisms used to think about and understand the setting; actions undertaken and the relevant relationships which define the participants' world (p. vii)." These components, from the tourist perspective, as stated by Pearce and Wu (2016) are interacting and fused influenced. Hence, they posited that we should approach tourist satisfaction and experiences from the perspectives of expressive and instrumental attributes. The former refers to the intangible and holistic features, such as the atmosphere and scenic beauty of a heritage, whereas the latter refers to tangible dimensions, such as clear orientations and good paths.

Bryman (2004) affirmed that strong themes are an essential element to give visitors a sense of place. This sense of place, using the words of UNESCO to elaborate, is, in a broad sense, "a unique combination of spiritual, material, intellectual, and emotional aspects that distinguish a society or a social group. This sense of should also embrace not only art and literature but also human lifestyle, fundamental human rights, systems of values, traditions, and beliefs (in Danesi, 2017)." However, Bryman (2004) validated that merchandising provides a good link to the themes developed for attraction.

Also, Jensen, Li and Uysal (2017) illustrated two types of antecedents of visitor experiences: subject-oriented and object-oriented. The former is the psychological feeling of visitors and the latter focuses on on-site attraction properties such as displays, interpretations, and artifacts. They stated that those who consider the attraction site an essential part of their travel itinerary tend to pay more attention to the presentation platforms of the site than whose who go to the site as an additional activity of their itinerary.

The Survey

A questionnaire survey was distributed at the temple in 2016. [8] The original questionnaire was written in Thai language by one of the authors and distributed to the temple visitors. Visitor's motivations to visit the temple, as well as satisfaction of temple services were mixed with questions about knowledge of the temple and its historical or artistic features. Some questions were relative to general knowledge about the temple and its assets, as well as the temple most famous artistic elements. Other questions instead were more specific about history or religion, and they required knowledge of Buddhist art or historical events related to the temple, and some questions were supplemented by a photo or image. The answers to the knowledge questions were double checked with academic books and references to the temple itself.

On-site knowledge was not expected: the temple has only one small booklet on sale (20 Thai Baht) about the temple in general, and a more expensive one (500 Thai Baht) relative to the temple paintings in the southern *vihara*, but no other information material is present on site. While some digital format interpretation tool was planned at the temple site, none of them was present at the time of the survey.

The questionnaires were distributed within the temple compound through convenience sampling, in proximity of the major standing Buddha, as well at the southern *vihara*, which is close to the

Dvaravati seated statue, one of the most visited places within the temple complex. While 589 Thai visitors filled the questionnaire, but only 438 could be employed for the research, as quite a few were incomplete.

The following aspects were analysed, through statistical means and frequencies:

1. Educational level, motivation and satisfaction of visitors to visit the temple;
2. How much it was known about the temple, also looking whether different levels of education were an influential element for the given answers and
3. The differences in the satisfaction level of various elements that contributed to visitor experiences to the temple.

Findings and discussion

Education, motivation and satisfaction

Among the people interviewed, 64% of the respondents had a BA degree or higher, divided in BA degree (53.7%) and Master or Higher (11.0%), while the second group as educational level was made of Secondary/Technical School degree holders, with 29.2% of the respondents. Many of them had already visited the temple in previous occasions – only 19.4% of the visitors were first time visitors, while 41.4% of the visitors

---

[8] The questionnaire ran between May and July 2016, and later in October-November 2016.

had visited the temple in the last 5 years, and another 13.5 between 5 to 10 years, and 25.8% more than 10 years.

As for the frequency on visiting temple and historical site, 30.1% of the respondents visited temples and historical sites with a certain frequency (2-5 times the year), while 39.8% of the respondents declared they were going to temples at least one time a month. Such rarity on visiting temple might be looking odd from the perspective of the other major world religions, as Muslim, Christian and Jewish believers have a sacred day of the week. From the Buddhist point of view however, such a weekly prescription is absent, and Buddhist followers crowd the temple in occasion of the various festivals spread during the year.

As for the reasons to come to Phra Pathom Chedi, making merit was the most important factor (4.39 in 1-5 scale), immediately followed by visiting the temple (4.32); while in the way to my destination was the least important (3.16).

Visitors' knowledge

As noted above, the most relevant part of survey was about measuring the knowledge of the visitors through both general and specific questions. In this case, the analysis through frequencies works over the division in questions between general and specific. Within each sets of questions, the right answer is written in *italics*.

a) General questions: The two questions that required knowing the name of the king who discovered the temple and the king erecting the major cultic statue. Nearly 50% respondents gave the right answer to the former. The connection between Phra Pathom Chedi and Rama IV is known since the primary school, as well as King Rama IV has various portraits in the western *vihara* in proximity of the reclining Buddha, which act as reminder of the king's importance.

As for the question about the standing Buddha, Rama VI was known – with a smaller percentage of around 32, it is fair to say – as the king setting it.[9] As for the wrong answers, a pattern is also visible for both questions: 25.8% of respondents responded Rama V (the second most chosen king), who is certainly is the most respected royal figure among the Thai society, especially for the middle class (Stengs, 2009). Thus, in the case the Thai visitors did not really know the answer, Rama V (King Chulalongkorn) was their guess. As the two answers were considered among the general questions, as they referred to two major architectural and cultic elements of the temple, the number of respondents giving 'I do not know' (7% for the former and nearly 11% for the latter) as answer certainly demonstrates that more information should be provided to the visitor.

In relation to the educational level, the first question has the BA and higher degree having the highest percentage among those giving the right answers, with 53.2% respectively. The same kind

---

[9] At the time part of the questionnaire was run (2016), the centenary of the statue erection was just celebrated (November 2015). Thus,

the royal connection was even more remarked.

of results was also present for the second question, as BA and Master degree holders had 37.0% and 32.6% respectively.

As for the question of fame, the fact that the temple is the highest *chedi* in Thailand was well known. Yet, the second most chosen answer with a response rate of 20.5% (it contains the ashes of previous kings) remains questionable whether it was simply given out of respect, or based in some knowledge that King Rama VI's ashes are really contained in the standing Buddha's base. As for education, BA and Master degree holders had the highest percentage with 70.2% and 83.6% respectively.

As discussed above, the statue itself is one of the most visited parts of the temple, especially for merit making. The statue does not have any sort of information around the statue; thus, the style of the statue itself is recognized, without any difference about the level of education. 58% of respondents responded Dvaravati and 18.9% responded Srivijaya. The responses to Ayuttahya, Sukhothai and Rattanakosin received a response rate of 8.4%, 9.6% and 3.7% respectively.

b) Specific questions: As noted above, the second sets of questions were dealing more with specific knowledge of the temple itself. The first question was the reasons the temple was famous for. As a multiple choice question, Nakhon Pathom was considered as the capital of the legendary reign of Suvarnabhumi, as well as it was the place where the

missionaries sent by King Asoka came to the modern Thai territory (Subhadradis, n.d., pp. 7-9). However, 67.4% and 75.1% of respondents chose the answer wrongly. In this case, most people simply ignored the importance of the city in antiquity, both from the historical or religious point of view. For the education level, there was no significant difference among the various educational levels.

Among the various answers relative to the styles of the temple as visible in the painting, Dvaravati was the most chosen. The reasons for the choice might be wondered, but the fact that one of the statues was in such a style might have influenced the choice as well. Lopburi and Ayutthaya however, there were not chosen. Nearly 93% and 72% of respondents responded to "no" to the two styles despite the fact they were the other two major architectural styles visible. The level of knowledge of the same for all the levels of education, on the question about Ayutthaya demonstrated that Secondary school and BA degree holders were those who knew most.

The last question had a redoubling of a similar question, with only the change of the title of the enemy from Burma, once as Prince and once as king. The redoubling of the entry was done as Naresuan, the King of Ayutthaya fighting against the Prince of Burma is the most famous and celebrated battle in Thai history, when Ayutthaya freed itself from the Burmese yoke.[10] The painting instead narrated the battle between Phya Phan and Phya Kong, an event that is known from an early 19th century collection:

---

[10] The importance of the King of Ayutthaya and the epic battle from the Burmese yoke has been celebrated in very recent movies, as

well as it is part of a classroom historical readings.

Phraya Kong, ruler of Kanchanaburi, a locality west of Nakhon Pathom, is predicted by astrologers that his son would kill him. Therefore, he sent his son away to live in a different province. As the son named Phya Phan grew up, he joined the army of the king of Ratchaburi, another locality around Nakhon Pathom, to fight against Phraya Khong, completely ignoring that Phraya Kong is his father. After having killed his own father in the mentioned battle, and having discovered his fault, Phraya Phan built the temple of Phra Pathom Chedi to purify his karma (Woodward, 2014, pp. 24-25). On a bigger picture, the trend implies that royal based history is still the most known and referred to set of events. Again, for the education level, Technical, BA and Master degrees have the highest level of knowledge.[11]

Knowledge level: some conclusions

As a discussion of the answers above, the groups of general and specific questions have similar patterns: for the general questions, those relative to styles of the statue, the highest *chedi* are on one side, and the historical questions relative to the discoverer is on the other. The former are known, for the statue, the question of fame is the most possible answer. As for the highest *chedi*, it is common knowledge, surely derivative from compulsory schooling.

For the latter, the historical questions, fame or not fame, only the question about King Mongkut as the discoverer was quite generally known. The simplest statement is that history of the temple is not as known as much as some of the cultural assets. Even if we exclude the question about the highest *chedi*, cultic aspects are far more recognised than their historical counterparts. Cultic questions have the highest percentage of correct answers, as well as they also have a smaller percentage of "I do not know" answers.

For the specific questions, the questions relative to the history of the temple (King Asoke's missionaries, Suvarnabhumi, the Phya Kong battle) were not known, despite the paintings and the references to the temple itself. As for the cultic or history of art questions, relatively to the styles of the temple or the Buddha style, again, the lack of general education about it is evident. Whatever is known about the temple comes from the compulsory education system, not any higher-level degree: there are substantially no differences about the level of education.

Satisfaction level

Table 1 and 2 illustrate the overall satisfaction results of visitors on the atmosphere, landscape, food, information and souvenir, and the model summary.

---

[11] Some readers out of curiosity might want to know whether any of the visitors was able to know the correct answers to the knowledge questions. The answers to it is negative: no one of the interviewees gave the correct answers.

Table 1 Overall satisfaction of visitors on the atmosphere, landscape, food, information and souvenirs

Factors	Mean	Std. Deviation
Satisfaction of Cultural Attractions	4.36	.826
Satisfaction of Atmosphere	4.31	.891
Satisfaction of Landscape	4.31	.843
Satisfaction Food	3.35	1.079
Satisfaction of information tools (e.g. books and leaflets)	3.58	1.131
Satisfaction of souvenirs	3.39	1.182

According to the mean scores of the satisfaction factors, cultural attraction had the highest level of satisfaction (mean = 4.36), followed by satisfactions of atmosphere and landscape with the same mean score of 4.31. The tourists were not quite satisfied with food at the cultural tourism sites by indicating the lower mean score of 3.35.

Conclusion

Thai visitors at Phra Pathom Chedi have an insufficient level of historical or artistic knowledge. As the paper initially assumed that visitors needed to be informed, as they would understand better the place they visit, an empirical demonstration can be offered. At the time of the questionnaire survey, as each questionnaire was distributed inside the western *vihara* with the paintings relative to the history of the *chedi* itself, a few

visitors went back to see the scene of Phya Phan and Phya Kong once the questionnaire was filled. Other visitors questioned themselves about the level of knowledge, despite having visited the temple a few times.

Having ascertained that these visitors are willingly to be educated, it remains to see what should be supplied to them. In this respect, the major shortcoming of heritage management and interpretation in Thailand is the absence of any discussion about the message. In the last decade, most of the contributions about interpretation in Thailand target new technologies applied to interpretation: different universities and institutions cooperate with historical parks and Fine Arts Department to supply smartphone applications or audio visuals for Thai historical parks and museums, such as the National Museum in Bangkok and Ayutthaya Historical Park. [12] Those applications are only a tool, as new as it

---

[12] Up to now, computer applications targeting Ayutthaya are known; as well QR codes are

employed at the National Museum in Bangkok.

might be, to give information about a temple or historical building.[13]

But the issue about quality and quantity of information remains.[14] Moreover, as the Fine Arts Department deals with the information and the external providers supply the tools, the information is essentially conservative.

Thus, a new approach to history as discipline is certainly needed: as experienced by the authors of this paper at different levels, history remains substantially static, and transferred as such generation after generation. It results on an unappealing list of names and deeds, both undoubtedly important, but inherently making the subject static and quite dull to any reader. It also goes together with the need of alternative/complementary information, as event based information can be supplemented with reconstructions of social/religious and alternative aspects of history.

However, although the present paper shows that visitors in general do not have a good prior knowledge of Phra Pathom Chedi, this lack of knowledge do not influence their general satisfaction level

of their visit to the site. The findings illustrate the interest in experiencing 'real' experience and verifying prior knowledge of a cultural site of visitors are not the only factor to satisfy the visiting experience of visitors. The findings show that the appealing to the psychological feeling of visitors is already sufficient to fulfil their visiting satisfaction. Tourist satisfaction, up to a point, is not necessarily an interaction of the sensory inputs, affective reactions and the cognitive mechanisms as suggested by Pearce (2011). Without the cognitive mechanisms, visitors of the present study tell us that they are still satisfactory with their visiting experience. This finding might stem from the fact as suggested by Jensen, Li and Uysal (2017) that those who visit a site as an additional activity as part of their itinerary do not emphasise on the presentation platforms. All in all, a consumable experience is a mixture of several elements. However, the content of the information tools of a heritage site, in the context of the present study, if strengthened, could help supplement this lack of knowledge but they are not an essential tool to fulfil the visiting experience of visitors.

---

[13] Computer in a museum exhibition was the first experience by one of the authors in late 1980s, at the time of an exhibition about the Phoenicians at Palazzo Grassi, Venice, Italy. As still remembered, the attraction was the tool itself, more than the contents. Thirty years later, the tool is not a novelty any

longer, but it should provide different levels of information.

[14] Reasons of space preclude a full discussion of the problem of the message in Thai Heritagescape, but the relevant research is now forthcoming by the authors.

Appendix 1

Strand 1: Visual Arts

Standard AR1.2: Understanding of the relationship between the visual arts, the history and the culture; appreciating visual art works that represent the cultural heritage, the local wisdom, and Thai and universal wisdom

Grade 7

1. Specify and describe the characteristics and the forms of the national and the local visual art works from the past to the present time.

2. Specify and compare the visual art works in various regions of Thailand.

3. Compare the differences of the objectives in creating visual art works of Thai and universal cultures.

Grade 8

1. Specify and describe various cultures reflecting the visual art works at present time.

2. Describe the changes in Thai visual art works in each period with the concepts and the contents of the works.

3. Compare the concepts in designing works of art of Thai and universal cultures.

Note: (Ministry of Education Thailand, 2008, p. 237)

References

Assavarirulakarn, P. (2010). *The ascendancy of Theravada Buddhism in Southeast Asia* (1st ed. ed.). Chiang Mai, Thailand: Silkworm Books.

Ashworth, G. J. (1994). From History to Heritage: From Heritage to Identity: In search of concepts and models. In G.J. Ashworth & P.J. Larkam (Eds.), *Building a New Heritage: Tourism, Culture and identity in the New Europe* (pp. 13-30). London: Routledge.

Ashworth, G. J. (1997). Heritage, Tourism and Europe: A European future for a European past. In D. Herbert (Ed.), *Heritage, Tourism and Society* (pp.68-84). New York, NY: Mansell Publishing

Ashworth, G. J. (2014). Heritage and Economic Development: Heritage and Economic Development Selling the Unsellable, *Heritage and Society*, 7(1), 3-17

Bryman, A. (2004). *The Disneyization of Society*. London: Sage

Byrne, D. (1995). Buddhist Stupa and Thai social practice. *World Archaeology*, *27*(2), 266-281.

Byrne, D. (2014). *Counterheritage. Critical perspectives on heritage conservation in Asia* (5). New York and London: Routldge.

Central Intelligence Agency (n.d.). Thailand. *The World Fact Book*. Retrieved from https://www.cia.gov/library/publications/the-world-factbook/geos/print_th.html

Danesi, S. (2017). The Role of culture in Tourist Attractions and the Commercial Development, Symphonya. *Emerging Issues in Management*. D, 48-58

du Cros, H., & McKercher, B. (2015). Cultural Tourism. London: Routledge.

Fine Arts Department. (2005). *Phrapathom Chedi National Museum*. Bangkok: Fine Arts Department.

Gozzoli, R. (forthcoming). UNESCO World Heritage Sites in Thailand: Master Plans and Local Stakeholders.

Heywood, F. (2006). Lack of Funds Lead to Closure of London Type Museum. *Museum Association*. Retrieved from http://www.museumsassociation.org/museums-journal/news/14864

Herzfeld, M. (2013). The Crypto-Colonial Dilemmas of Rattanakosin Island. In C. J. Baker (Ed.), *Protecting Siam's Heritage* (pp. 209-223). Chiang Mai: Silkworm Books.

Herzfeld, M. (2014). Heritage and corruption: the two faces of the nation-state. *International Journal of Heritage Studies*, 1-14.

Herzfeld, M. (2016). *Siege of the Spirits. Community and Polity in Bangkok*. Chicago: University of Chicago Press.

Hitchcock, M., King, V. T., & Parnwell, M. J. G. (1993). Tourism in South-East Asia: introduction Tourism in South-East Asia. In M. Hitchcock, V. T. King, & M. J. G. Parnwell (pp. 1-31). London; New York: Routledge.

Hitchcock, M., King, V. T.(2010). *Heritage Tourism in Southeast Asia*. Copenhagen: NIAS Press.

Indrawooth, P. (2004). The Archaeology of the early Buddhist kingdoms in Thailand. In I. Glover (Ed.), *Southeast Asia. From prehistory to history* (pp. 120-148). RoutledgeCurzon.

Indrawooth, P. (2008). Un antique royaume urbanisé de Thaïlande. In P. Baptiste & T. Zéphir (Eds.), *Dvāravatī: aux sources du bouddisme en Thaïlande* (pp. 31-45). Paris: Réunion des musées nationaux.

Jensen, O., Li, Y. and Uysal, M. (2017). Visitors' satisfaction at managed tourist attractions in Northern Norway: Do on-site factors matter? *Tourism Management*, 63 (2017), 277-286.

Kolb, B.M. (2013). Marketing Cultural Organisations: New Strategies for Attracting Audiences to Classical Music, Dance, Museums, Theatre and Opera. Dublin: Oak Tree

MET (2017). *The Metropolitan Museum of Art: Annual Report for the Year 2016-2017*. Retrieved from https://www.metmuseum.org//media/Files/About%20The%20Met/Annual%20Reports/2016-2017/Annual%20Report%202016-17.pdf

Ministry of Education Thailand. (2008). Basic Education Core Curriculum B.E. 2551 (A.D. 2008). Retrieved 11 February 2017, from http://academic.obec.go.th/web/doc/d/147

Pearce, P.L. (2011). *Tourism Behaviour and the Contemporary World*. Bristol: Channel View.

Pearce, P.L. and Wu, M.Y. (2016). Tourists' Evaluation of a Romantic Themed Attraction: Expressive and Instrumental Issues. *Journal of Travel Research,* 55(2), 220-232

Peleggi, M. (1996). National Heritage and Global Tourism in Thailand. *Annals of Tourism Research*, *23*(2), 432-448.

Peleggi, M. (2002a). *Lords of Things*. Honolulu: University of Hawaii Press.

Peleggi, M. (2002b). *The Politics of Ruins and the Business of Nostalgia* ((9747534959)). Bangkok: White Lotus Press.

Peleggi, M. (2004). Royal Antiquarianism, European Orientalism and the Production of Archaeological Knowledge in Modern Siam. In S. Ravi (Ed.), *Asia in Europe, Europe in Asia* (pp. 133-161). Leiden and Singapore: International Institute for Asian Studies Institute of Southeast Asian Studies.

Peleggi, M. (2011). The unbearable impermanence of things. In P. Daly & T. Winter (Eds.), *Routledge Handbook of Heritage in Asia* (pp. 55-68). London, New York: Routledge.

Peleggi, M. (2013). From Buddhist Icons to National Antiquities: Cultural Nationalism and Colonial Knowledge in the Making of Thailand's History of Art Modern Asian Studies. *Modern Asian Studies*, *47*(05), 1520-1548. doi:10.1017/S0026749 X12000224

Peleggi, M. (2015). The Plot of Thai Art History. In M. Peleggi (Ed.), *A Sarong for Clio. Essays on the Intellectual and Cultural History of Thailand Inspired by Craig J. Reynolds* (1 ed., pp. 79-93). New York: Southeast Asia Program Publications.

Prakitnonthakan, C. (2013). Rattanakosin Charter: The Thai Cultural Charter for Conservation. In C. J. Baker (Ed.), *Protecting Siam's Heritage* (pp. 123-148). Chiang Mai: Silkworm Books.

Rajanubnab, D. (1973). *Monuments of the Buddha in Siam*. Bangkok: The Siam Society under Royal Patronage.

Revire, N. (2011). Facts and fiction: the myth of Suvaṇṇabhūmi through the Thai and Burmese looking glass. *Mahachulalongkorn Journal of Buddhist Studies*, *4*, 79-114.

Saipradist, A. (2005). *A Critical Analysis of Heritage Interpretation and the Development of a Guidebook for Non-Thai Cultural Tourists at Ayutthaya Heritage Site.* PhD. 6-7-2011, Silpakorn University, Bangkok.

Saipradist, A., & Staiff, R. (2007). Crossing the Cultural Divide: Western Visitors and Interpretation at Ayutthaya World Heritage Site, Thailand Journal of Heritage Tourism. *2*, 211-224.

Schnapp, A. (1996). *The Discovery of the Past* (30-4-2011; 26-4-2011 ed.). London: British Museum Press.

Staiff, R. (2014). *Re-imagining heritage interpretation*. Farnham and Burlington VT: Ashgate.

Stengs, I. (2009). *Worshipping the great moderniser*. Seattle; Singapore: University of Washington Press NUS Press.

Subhadradis, D. (n.d.). Phra Pathom Chedi. In *Phra Pathom Chedi* (pp. 5-15). Nakhon Pathom: Wat Phra Pathom Chedi.

Timothy, D. J., & Boyd, S. W. (2003). *Heritage Tourism*. Harlow: Prentice Hall.

UNWTO (2017). *UNWTO: Tourism Highlights, 2017 Edition*. Retrieved from https://www.e-unwto.org/doi/pdf/10.18111/9789284419029

Wall, G. and Mathiesen, A. (2006). *Tourism: Change Impact and Opportunities*. Harlow: Person Education.

Woodward, H. W. (2014). What There Was before Siam: Traditional Views. In N. Revire (Ed.), *Before Siam.Essays in Art and Archaeology* (pp. 17-29). Bangkok: River Books Siam Society.

ECONOMIC FACTORS AFFECTING STOCK RETURNS: A STUDY OF LISTED CONSTRUCTION MATERIALS FIRMS IN THAILAND

Wanrapee Banchuenvijit

School of Business, University of the Thai Chamber of Commerce
126/1 Vibhavadee-Rangsit Rd., Dindang, Bangkok 10400, Thailand
wanrapee_ban@utcc.ac.th

Abstract

The purpose of this study is to examine economic factors, including percentage change in exchange rate (EX), percentage change in consumer price index (CPI), percentage change in construction materials price index (CMPI), and percentage change in oil price (OIL), affecting stock returns of listed construction materials firms in Thailand. The samples are listed firms in the construction materials sector in SET50 Index in 2017, namely the Siam Cement Public Company Limited (SCC), Siam City Cement Public Company Limited (SCCC), and TPI Polene Public Company Limited (TPIPL). The monthly data of all variables during the period from January 2013 to December 2017 are employed. The results from the multiple regression with ordinary least square show that, for all firms, only the percentage change in exchange rate (EX) significantly affects stock returns in the opposite direction.

> **Keywords**: Economic factors, Stock returns,
> Construction materials sector, Cement firms

Introduction

According to Kasikorn Research Center (2017), the construction materials business in Thailand was growing. It was expected to increase around 10-12% in 2017 because of both government and private sector projects. Examples of government projects are electric train construction, airport renovation, water resources development, and other infrastructure development. Private sector projects include the construction of houses, shopping malls, office buildings, and factories. One of the major construction materials required in every project is cement.

In 2016, the aggregate capacity of cement production of 10 Southeast Asia countries was 273 million tons per year, approximately 7% of the world capacity. The first three countries in Southeast Asia that have the highest capacity of cement production were Vietnam, Indonesia, and Thailand. In Thailand, there are 7 companies and 12 factories manufacturing cement. The combining capacity of Siam Cement Public Company Limited (SCC), Siam City Cement Public Company Limited (SCCC), and TPI Polene Public Company Limited (TPIPL) provides more than 85% of cement production in Thailand. Additionally, demand in cement in Thailand increased from 30.8 million tons in 2015 to 32.6 million tons in 2016 or a growth of 5.84%. Referring to the Thai government mega projects in infrastructure expansion and development, demand in cement in Thailand remains in the rising trend. (Thai Cement Manufacturers Association, 2016)

Therefore, this study aims to investigate whether economic factors, including percentage change in exchange rate (EX), percentage change in consumer price index (CPI), percentage change in construction materials price index (CMPI), and percentage change in oil price (OIL), affect stock returns of cement firms (SCC, SCCC, and TPIPL) in the construction materials sector in the Stock Exchange of Thailand. The findings will benefit three parties. First, the government can make appropriate decisions on monetary and fiscal policy involving the related economic factors. Next, cement firms can manage exposure from the related economic factors, hence stabilizing their earnings. Lastly, investors can comprehend more about the impact of economic factors on stock returns and suitably make investment decision.

Literature review

There are various studies on the determinants of stock returns across industries around the world. For developed countries, in USA, Flannery and Protopapadakis (2002) study whether macroeconomic factors influence stock returns over the 1980-1996 period by using a GARCH model. They find that CPI and PPI affect the market portfolio's returns. However, they find no effect of Industrial Production and GNP on returns. In addition, Guru-Gharan, Rahman, and Parayitam (2009) examine the impact of macroeconomic factors on U.S. stock returns by employing monthly data from

January 1970 to December 2004 and find the significant effect of industrial production growth rate and inflation rate. On the other hand, the change in board money supply and the change in federal funds insignificantly affect stock returns. Next, in Europe, Peiro (2016) studies the relationship between stock prices and macroeconomic factors in European countries including France, Germany and UK, and finds the influences of production and interest rates on stock returns in all three countries. In UK, Shiu (2009) examines the association between economic factors, firm characteristics and performance by using a panel data analysis for United Kingdom life offices and finds the significant relation between interest rate and investment yield. Moreover, in Norway, Gjerde and Sxttem (1999) investigate relations among stock returns and macroeconomic variables by executing the multivariate vector autoregressive (VAR) on Norwegian data. The results show the effects of real interest rate changes and oil price changes on stock returns. Furthermore, Chen, Agrusa, Krumwiede, and Lu (2012) examine the influences of macroeconomic factors on hotel stock returns in Japan utilizing data for 30 years. They find that changes in discount rate, changes in unemployment rate and the percentage change in oil price significantly determine Japanese hotel stock returns. Lastly, Al-Tamimi, Alwan, and Rahman (2011) study the determinants of stock prices in the United Arab Emirates (UAE) stock markets

during 1990-2005 by employing the data of 17 firms. The findings show the negatively significant effect of consumer price index as well as the insignificant effect of interest rate, money supply and GDP.

The investigation of stock return determinants is also essential for BRICS stock markets. For example, Tripathi and Kumar (2016) study the relationship between aggregate stock returns and macroeconomic factors (GDP, inflation, interest rate, exchange rate, money supply, and oil prices) in BRICS economies by utilizing the quarterly data during 1995-2014. The results display the positive association of BRICS stock returns with GDP, money supply and oil prices as well as the negative association of BRICS stock returns with inflation rate, interest rate and exchange rate. In India, Bhattacharya and Dasa (2014) study the relationship between macroeconomic factors and stock market returns in the Indian capital market from July 2000 to June 2010. They find the inverse relationship between interest rates, foreign involvement and oil prices with stock returns. Kotha and Sahu (2016) also explore the long and short run relations between macroeconomic indicators and stock market returns in India during July 2001-July 2015. The results show the long run relation between the BSE Sensex and the economic factors including exchange rate, wholesale price index, T-bill rates and M3. However, Chakraborty and Gupta (2017) find no significant effects

of the five macroeconomic factors (money supply, gold prices, exchange rate, GDP, and inflation) on the stock market return by employing the Arbitrage Pricing Theory (APT) in the Bombay Stock Exchange (BSE) from 2001 to 2015. In addition, Gupta and Reid (2013) investigate the sensitivity of industry-specific returns to monetary policy and macroeconomic news in South African stock market. They discover significant effects of monetary policy as well as CPI and PPI surprises on aggregate stock returns.

Additionally, there are many papers studying the relation between economic factors and stock returns by utilizing the data from developing countries. For example, in Jordan, Momani and Alsharari (2012) find the negative effect of interest rate and production index on the stock prices in Amman financial market during 1992-2010. Muflih AL-Qudah (2012) also examines listed companies in Amman Stock Exchange in Jordan from 2005 to 2010 and finds the significant effect of balance of payments, number of employees and the size of companies on the stock return as well as the insignificant effect of interest rate, budget deficits, gross domestic and inflation rate. Next, in Turkey, Rjoub et.al. (2009) study the Istanbul Stock Exchange (ISE) during January 2001 to September 2005 and discover the significant effect of unanticipated inflation, term structure of interest, risk premium, unemployment rate and money supply on stock market returns. However

they find no significant effect of exchange rate. Er and Vuran (2012) employ the dynamic panel data analysis approach on 64 manufacturing firms in ISE and find that oil prices, economic growth, exchange rate, interest rate, and money supply can be used to explain the stock returns. Furthermore, Butt et.al. (2010) study the influence of economic factors on stock returns in the Karachi Stock Exchange in Pakistan over the period of 10 years. They find the negative effect of inflation, interest rate and exchange rate on stock returns. Recently, Mugambi and Okech (2016) investigate whether macroeconomic factors affect stock returns of listed commercial banks in Kenya during 2000-2015. They find the significant impact of interest rate, exchange rate and inflation on bank stock return as well as the insignificant impact of GDP. For emerging markets in Asia, Lim and Sek (2014) explore the inter-relationship between the volatility of exchange rate and stock return. The results exhibit significant bi-directional relationship between them in Indonesia, Korea and Thailand. Defrizal et.al. (2015) and Djamaluddin et.al. (2017) examine the data from Indonesian Stock Exchange and find that interest rate and exchange rate do not affect stock returns. In Thailand, Tangjitprom (2012) finds that 2-month lag of unemployment rate, interest rate, 2-month lag of inflation rate, and exchange rate can explain the variance in stock return.

Therefore, in order to fulfill the literature involving the impact of economic factors

on stock returns in Southeast Asia, this paper aims to examine whether the economic factors affect stock returns of listed construction materials firms in Thailand. Referring to the above literature review, the economic factors employed in this study include exchange rate (Tripathi and Kumar, 2016; Kotha and Sahu, 2016; Chakraborty and Gupta, 2017; Rjoub et.al., 2009; Er and Vuran, 2012; Butt et.al., 2010; Mugambi and Okech, 2016; Lim and Sek, 2014; Defrizal et.al., 2015; Djamaluddin et.al., 2017; Tangjitprom, 2012), consumer price index (Flannery and Protopapadakis,2002; Al-Tamimi, Alwan, and Rahman, 2011; Kotha and Sahu, 2016; Gupta and Reid, 2013), construction materials price index (Flannery and Protopapadakis, 2002; Guru-Gharan, Rahman, and Parayitam, 2009; Peiro, 2016; Gupta and Reid, 2013; Momani and Alsharari, 2012), and oil price (Gjerde and Sxttem, 1999; Chen, Agrusa, Krumwiede, and Lu, 2012; Tripathi and Kumar, 2016; Bhattacharya and Dasa, 2014; Er and Vuran, 2012).

Methodology

Data

This study uses the monthly data during the period from January 2013 to December 2017. The sample firms are listed firms in the construction materials sector in SET50 Index in 2017, comprising of the Siam Cement Public Company Limited (SCC), Siam City Cement Public Company Limited (SCCC), and TPI Polene Public Company Limited (TPIPL). The dependent variable is the stock returns of SCC, SCCC, and TPIPL. The independent variables are economic factors comprising of percentage change in exchange rate between Thai Baht and USD (EX), percentage change in consumer price index (CPI), percentage change in construction materials price index (CMPI), and percentage change in oil price (OIL).

Models

For each firm, the multiple regression with ordinary least square is utilized to examine the effect of economic factors on stock returns. The three models are as follows.

Model 1:

$$SCC_t = a + b_1EX_t + b_2CPI_t + b_3CMPI_t + b_4OIL_t + e_t$$

Model 2:

$$SCCC_t = a + b_1EX_t + b_2CPI_t + b_3CMPI_t + b_4OIL_t + e_t$$

Model 3:

$$TPIPL_t = a + b_1EX_t + b_2CPI_t + b_3CMPI_t + b_4OIL_t + e_t$$

Where:

SCC = Stock return of SCC (%)

SCCC = Stock return of SCCC (%)

TPIPL = Stock return of TPIPL (%)

EX = Percentage change in exchange rate : THB/USD (%)

CPI = Percentage change in consumer price index (%)

CMPI = Percentage change in construction materials price index (%)

OIL = Percentage change in oil price (%)

t = Time period 1, 2, 3, … , 60
(1 = January 2013; 2 = February 2013; … ; 60 = December 2017)

The hypotheses of this study are as follows.

H_0: None of the economic factors (EX, CPI, CMPI, and OIL) affects stock returns of listed construction materials firms in Thailand.

H_1: At least one of the economic factors (EX, CPI, CMPI, and OIL) affects stock returns of listed construction materials firms in Thailand.

Results

Table 1 Descriptive statistics

	SCC	SCCC	TPIPL	EX	CPI	CMPI	OIL
Mean	0.249517	-0.494682	-0.300544	0.148395	0.053296	-0.058626	-0.445909
Max	10.71429	23.78517	41.52047	3.517055	0.576312	1.732435	25.71549
Min	-14.19214	-15.63877	-90.52356	-1.561643	-0.588059	-1.919386	-20.72881
Std Dev.	4.560332	7.368640	16.54351	1.261024	0.245405	0.669284	8.601008

Table 1 shows the descriptive statistics of both dependent and independent variables. For dependent variable, SCC has the average return of 0.25%, the maximum return of 10.71%, the minimum return of -14.19%, and the standard deviation of 4.56%. SCCC has the average return of -0.49%, the maximum return of 23.79%, the minimum return of -15.64%, and the standard deviation of 7.37%. TPIPL has the average return of -0.30%, the maximum return of 41.52%, the minimum return of -90.52%, and the standard deviation of 16.54%.

For independent variables, the percentage change in exchange rate between Thai Baht and USD (EX) has the mean of 0.15%, the maximum of 3.52%, the minimum of -1.56%, and the standard deviation of 1.26%. The percentage change in consumer price index (CPI) has the mean of 0.05%, the maximum of 0.58%, the minimum of -0.59%, and the standard deviation of 0.25%. The percentage change in construction materials price index (CMPI) has the mean of -0.06%, the maximum of 1.73%, the minimum of -1.92%, and the standard deviation of 0.67%. The percentage change in oil price (OIL) has the mean of -0.45%, the maximum of 25.72%, the minimum of -20.73%, and the standard deviation of 8.60%.

Table 2 Unit root test

Variable	Augmented Dickey-Fuller Test Statistic		
	t-Statistic	Test Critical Value %5	Prob.*
SCC	-9.139803	-2.912631	0.0000
SCCC	-9.364226	-2.912631	0.0000
TPIPL	-6.352159	-2.915522	0.0000
EX	-4.990872	-2.912631	0.0001
CPI	-5.019206	-2.913549	0.0001
CMPI	-5.474653	-2.913549	0.0000
OIL	-5.695050	-2.912631	0.0000

From table 2, unit root tests exhibit Prob(t-Statistic) of less than 0.05 for all variables, meaning that the data has no problem of non-stationarity.

Table 3 Correlation matrix

	EX	CPI	CMPI	OIL
EX	1.000000			
CPI	0.007921	1.000000		
CMPI	-0.189555	0.529762	1.000000	
OIL	-0.034829	0.506813	0.480780	1.000000

Correlation among independent variables is shown in table 3. Since all of the correlations are between -0.8 and 0.8, there is no multicollinearity problem.

Table 4 Heteroskedasticity and autocorrelation tests

Model	Prob.	
	White Heteroskedasticity Test	Breusch-Godfrey Serial Correlation LM Test
SCC	0.561104	0.119887
SCCC	0.986711	0.326344
TPIPL	0.994488	0.507875

Before running the final equation, the problems of heteroskedasticity and autocorrelation are examined. For each model, as displayed in table 4, Prob. values from White heteroskedasticity test as well as Breusch-Godfrey serial correlation LM test are greater than 0.05, resulting in no heteroskedasticity and autocorrelation problems. Therefore, the final equations are as follows.

SCC $= 0.475398 - 1.292817$**EX** $- 1.421653$**CPI** $- 0.361326$**CMPI** $+ 0.064821$**OIL**

$\quad\quad$ (1.000057) (-3.172769)** (-0.520680) (-0.378276) (0.823940)

$\quad\quad$ F-Statistic $\quad\quad = 2.662193$

$\quad\quad$ Prob(F-Statistic) $= 0.032361$

$\quad\quad$ R-Squared $\quad\quad = 0.203809$

$\quad\quad$ t-Statistic $\quad\quad =$ in parentheses

$\quad\quad$ ** $\quad\quad\quad\quad =$ Statistical significance at 0.01 level

From SCC equation, F-Statistic is 2.662193 and Prob (F-Statistic) is 0.032361, meaning that at least one independent variable significantly affects SCC stock return. R-Squared of 20.38% exhibits that all the independent variables in the model help explain the dependent variable 20.38%, the rest 79.62% can be explained by other factors. Referring to t-Statistics, which are numbers in parentheses, only EX significantly affects SCC stock return at the 99 percent confidence level. In addition to the statistically significant variable, the coefficient of EX is -1.292817, meaning that, when other variables are constant, one percentage change in exchange rate makes SCC stock return changes 1.292817% in the opposite direction.

SCCC $= -0.490728 - 2.000032$**EX** $+ 5.712360$**CPI** $- 1.779159$**CMPI** $- 0.043105$**OIL**

$\quad\quad$ (-0.677305) (-3.168270)** (1.343081) (-1.195254) (-0.344732)

$\quad\quad$ F-Statistic $\quad\quad = 2.661324$

$\quad\quad$ Prob(F-Statistic) $= 0.032406$

$\quad\quad$ R-Squared $\quad\quad = 0.203756$

$\quad\quad$ t-Statistic $\quad\quad =$ in parentheses

$\quad\quad$ ** $\quad\quad\quad\quad =$ Statistical significance at 0.01 level

From SCCC equation, F-Statistic is 2.661324 and Prob(F-Statistic) is 0.032406, meaning that at least one independent variable significantly affects SCCC stock return. R-Squared of 20.38% exhibits that all the independent variables in the model help explain the dependent variable 20.38%, the rest 79.62% can be explained by other factors. Referring to t-Statistics, which are numbers in parentheses, only EX significantly affects SCCC stock return at the 99 percent confidence level. In addition to the statistically significant variable, the coefficient of EX is -2.000032, meaning that, when other variables are constant, one percentage change in exchange rate makes SCCC stock return changes 2.000032% in the opposite direction.

TPIPL = 0.823260 - 3.689223**EX** - 9.571713**CPI** - 3.029961**CMPI** + 0.546840**OIL**

     (0.373112) (-2.159046)* (-0.887800)   (-0.764632)   (1.849595)

F-Statistic   = 2.496058

Prob(F-Statistic) = 0.043064

R-Squared   = 0.172240

t-Statistic   = in parentheses

*   = Statistical significance at 0.05 level

From TPIPL equation, F-Statistic is 2.496058 and Prob(F-Statistic) is 0.043064, meaning that at least one independent variable significantly affects TPIPL stock return. R-Squared of 17.22% exhibits that all the independent variables in the model help explain the dependent variable 17.22%, the rest 82.78% can be explained by other factors. Referring to t-Statistics, which are numbers in parentheses, only EX significantly affects TPIPL stock return at the 95 percent confidence level. In addition to the statistically significant variable, the coefficient of EX is -3.689223, meaning that, when other variables are constant, one percentage change in exchange rate makes TPIPL stock return changes 3.689223% in the opposite direction.

Conclusions and discussions

This study examines the effect of economic factors on stock returns of listed construction materials firms in Thailand by using the multiple regression with ordinary least square. The monthly data of stock returns (SCC, SCCC, and TPIPL) as well as economic factors (EX, CPI, CMPI, and OIL) during 2013-2017 are used. Table 5 summarizes the results.

Table 5 Summary of results

	SCC	SCCC	TPIPL
Constant	0.475398	-0.490728	0.823260
EX	-1.292817**	-2.000032**	-3.689223*
CPI	-1.421653	5.712360	-9.571713
CMPI	-0.361326	-1.779159	- 3.029961
OIL	0.064821	-0.043105	0.546840
F-Statistic	2.662193	2.661324	2.496058
R-Squared	0.203809	0.203756	0.172240

*   = *Statistical significance at 0.05 level*

**   = *Statistical significance at 0.01 level*

According to table 5, only percentage change in exchange rate (EX) significantly affects stock returns of SCC, SCCC, and TPIPL in the opposite direction. Thus, if there is an increase in percentage change in exchange rate, stock returns of SCC, SCCC, and TPIPL will decrease. On the other hand, if there is a decrease in percentage change in exchange rate, stock returns of SCC, SCCC, and TPIPL will increase. When Thai baht depreciates (an increase in percentage change in exchange rate, THB/USD), investors imply that Thai economy is not in a good condition so they reallocate their investment from stock market to other safer assets such as precious metal. As shown during the study period from 2013 to 2017, precious metal futures trading has been rising from 2,208,505 contracts in 2013 to 3,691,785 contracts in 2017, or an increase of 67.16%. (Thailand Futures Exchange, 2018) As a result from the reallocation, share prices went down, so as the stock returns. Therefore, an inverse relationship between percentage change in exchange rate and stock returns is found in this study, which is consistent with Tripathi and Kumar (2016), Kotha and Sahu (2016), Er and Vuran (2012), Butt et.al. (2010), Mugambi and Okech (2016), Lim and Sek (2014), and Tangjitprom (2012).

For implication, the government has to be very careful when making decisions on policies regarding exchange rate. For example, if policy-makers initiate less expensive home currency compared to foreign currencies in order to enhance the export sector, this will hurt the stock market performance. Moreover, in order for cement firms to steady their earnings, they have to hedge against foreign exchange exposure. Finally, investors, who are interested in stocks in the construction materials sector, may consider exchange rate movement as an investment indicator.

Future research should examine other economic variables besides the ones used in this study. Also, the firms' internal performance variables such as financial ratios should be tested whether they impact stock returns of firms in the construction materials sector. Furthermore, future research may apply the same economic factors investigated in this study with firms in other business sectors in the Stock Exchange of Thailand, or with listed firms in other countries.

References

Al-Tamimi, Hussein A. Hassan, et.al. (2011), "Factors Affecting Stock Prices in the UAE Financial Markets", *Journal of Transnational Management*, 16: 3-19.

Bhattacharya, Sharad Nath & Dasa, J.K. (2014), "Macroeconomic Factors and Stock Market Returns: A Study in India Context", *Journal of Accounting - Business & Management*, 21 (2): 71-84.

Butt, Babar Zaheer, et.al. (2010), "Do Economic Factors Influence Stock Returns? A Firm and Industry Level Analysis", *African Journal of Business Management*, 4 (5): 583-593.

Chakraborty, Anindita & Gupta, Adwitiya (2017), "Macroeconomic Factors and Indian Stock Market: A Critical Reexamination of APT Model", *IPE Journal of Management*, 7 (1): 35-41.

Chen, Ming-Hsiang, et.al. (2012), "Macroeconomic Influences on Japanese Hotel Stock Returns", *Journal of Hospitality Marketing & Management*, 21: 81-99.

Defrizal, Sucherly, et.al. (2015), "The Determinant Factors of Sectoral Stock Return in Bullish and Bearish Condition at Indonesian Capital Market", *International Journal of Scientific & Technology Research*, 4 (7): 209-214.

Djamaluddin, Said, et.al. (2017), "The Influence of Fundamental Factors Micro and Macro to Return Expected Through the Intervening Corporate Value in the Listed Real Estate Sector in Bei Periode 2011-2014", *International Journal of Business and Management Invention*, 6 (2): 14-22.

Er, Sebnem & Vuran, Bengu (2012), "Factors Affecting Stock Returns of Firms Quoted in ISE Market: A Dynamic Panel Data Approach", *International Journal of Business and Social Research*, 2 (1): 109-122.

Flannery, Mark J. & Protopapadakis, Aris A. (2002), "Macroeconomic Factors Do Influence Aggregate Stock Returns", *The Review of Financial Studies*, 15 (3): 751-782.

Gjerde, Oystein. & Sxttem, Frode (1999), "Causal Relations among Stock Returns and Macroeconomic Variables in a Small, Open Economy", *Journal of International Financial Markets, Institutions and Money*, 9: 61-74.

Gupta, Rangan & Reid, Monique (2013), "Macroeconomic Surprises and Stock Returns in South Africa", *Studies in Economics and Finance*, 30 (3): 266-282.

Guru-Gharan, Kishor Kumar, et.al. (2009), "Influences of Selected Macroeconomic Variables on U.S. Stock Market Returns and Their Predictability Over Varying Time Horizons", *Academy of Accounting and Financial Studies Journal*, 13 (1): 13-31.

Kasikorn Research Center, "Construction Materials Market Trend", Retrieved February 2018 from http://www.kasikornresearch.com.

Kotha, Kiran Kumar & Sahu, Bhawna (2016), "Macroeconomic Factors and the Indian Stock Market: Exploring Long and Short Relationships", *International Journal of Economics and Financial Issues*, 6 (3): 1081-1091.

Lim, Shu Yi & Sek, Siok Kun (2014), "Exploring the Inter-Relationship between the Volatilities of Exchange Rate and Stock Return", *Procedia Economics and Finance*, 14: 367-376.

Momani, Ghazi F. & Alsharari, Majed A. (2012), "Impact of Economic Factors on the Stock Prices at Amman Stock Market (1992-2010)", *International Journal of Economics and Finance*, 4 (1): 151-159.

Muflih AL-Qudah, Laith Akram (2012), "The Factors that Affect Shares' Return in Amman Stock Market", *Interdisciplinary Journal of Contemporary Research in Business*, 4 (6): 1219-1231.

Mugambi, Mike & Okech, Timothy C. (2016), "Effect of Macroeconomic Variables on Stock Returns of Listed Commercial Banks in Kenya", *International Journal of Economics, Commerce and Management*, 4 (6): 390-418.

Peiro, Amado (2016), "Stock Prices and Macroeconomic Factors: Some European Evidence", *International Review of Economics and Finance*, 41: 287-294.

Rjoub, Husam, et.al. (2009), "The Effects of Macroeconomic Factors on Stock Returns: Istanbul Stock Market", *Studies in Economics and Finance*, 26 (1): 36-45.

Shiu, Yung-Ming (2009), "Economic Factors, Firm Characteristics and Performance: A Panel Data Analysis for United Kingdom Life Offices", *Applied Economics Letter*, 16: 1033-1037.

Tangjitprom, Nopphon (2012), "Macroeconomic Factors of Emerging Stock Market: the Evidence from Thailand", *International Journal of Financial Research*, 3 (2): 105-114.

Thai Cement Manufacturers Association, "Cement Industry in Thailand", Retrieved March 2018 from http://www.thaicma.or.th.

Thailand Futures Exchange, "Market Trading Statistics", Retrieved March 2018 from http://www.tfex.co.th.

Tripathi, Vanita & Kumar, Arnav (2016), "Impact of Financial Crisis on Relationship between Aggregate Stock Returns and Macroeconomic Factors in BRICS Stock Markets", *Journal of Economic Policy & Research*, 12 (1): 2-18.

THE ANALYSIS OF SOCIAL RETURN ON INVESTMENT (SROI) TOWARD THE ELDERLY HEALTH CARE DEVELOPMENT PROGRAM*

Paweena Khampukka[1] and Thumwimon Sukserm[2]

[1,2]Faculty of Management Science, Ubon Ratchathani University,
85 Mueang Si Krieng, Warinchamrap, Ubon Ratchathani Province, Thailand
[1]paweena.k@ubu.ac.th, [2]thumwimon@gmail.com

Abstract

This research was the mixed method that aimed to evaluate the Social Return on Investment (SROI) toward the Elderly Health Care Development Program of Nont-None Subdistrict Administrative Organization, Warinchamrap Distirct, Ubon Ratchathani Province under the fiscal year 2015-2016. The stakeholders were comprised of three groups such as elderly patients, caretaker, and cousin or caretaker of elderly people. The data collection approaches were the unstructured interview and the focus group. Tool for analysis was the social return on investment evaluation form.

The results revealed that both the monetary and non-monetary factors were adapted for two years operating the program. The current worth of this program was 356,514 baht. The worth of operational benefit was 562,005.97 baht. These were presented that the Social Return of Investment was 1.58 more than 1.00. This revealed that the Elderly Health Care Development Program was worth of investment. This meant that one baht on investment enabled the Social Return on Investment to be worth as 1.58 baht.

> **Keywords**: Social Return on Investment, Elderly patients, Caretaker, Local Administrative Organization, Community

Introduction

'No disease is a good fortune'. This previous sentence is absolutely the truth of humankind. The medical and public health goals of Thailand consist of two parts, such as (1) longevity of life, (2) better quality life. As defined by World Health Organization (WHO), it is a "State of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity." This matches the definition of 'quality of life' as the satisfaction awareness and the status of people towards a social life way. It relates with the goal and the expectation of themselves under the cultural, value, social standard, and other contexts. A strong health person of all ages is very important towards the quality of life (Orawan Noiwat, 2012).

In 2012, Thailand will completely become an aging society. Moreover, older Thais have a low income that is lower than a poverty line. According to the physical checkup survey in 2013 found that 2 percent of older Thais are a bedridden or a bed bound elder patient, 19 percent of older Thais are a home bound elder patient. Therefore, Thai government must prepare for entering a completely aging society in four years (Foundation of Thai Gerontology Research and Development institute (TGRI) and the Institute for Population and Social Research (IPSR) - Mahidol University, 2015). Plus, the

Local Administrative Organization (LAO) and the community are encouraged to take care of poor elder person that is the alternative way.

The Health Security Fund and the Local Administrative Organization (LAO) are established for encouraging health care service directly. Especially, four target groups need to gain this service such as juvenile group, elder group, disable person, and chronically ill group. This service are granted a budget by the committee of national health security fund.

This research aimed to evaluate the social return on investment under the elder health system development program of the Nont-None Subdistrict Administrative Organization, Warinchamrap district, Ubon Ratchathani province during the fiscal year 2015 – 2016. The benefits of this research were delivered to the executive of the Nont-None Subdistrict Administrative Organization, including other LAO in order to make the best decision for the better life of elder person.

Literature review

Social impact assessment and social return on investment (SROI)

(Saruenee Unchawanuntakul and Pattaeaporn Yamraor, 2014)

Social Impact Assessment (SIA) is the social value of process that is congruent with the target group requirements and the organizational missions, for example, the poverty reduction, the waste reduction, and disable person, elder person, and juvenile helps.

Social Return on Investment (SROI) defines that the calculation of social impact in order to find a monetized value and compare the value of one baht

investment on the social return.

Return on Investment (ROI) is the measurement of the gain or loss generated on an investment relative to the amount of money invested.

The differences between SROI's results and ROI are a monetary value. It means that SROI enables key values to definitely merge with the program mission. SROI reflects the reification of investment on those programs, in additional, it was developed from social accounting and cost benefit analysis, and has a lot in common with other outcomes approaches.

The conceptual framework of an assessment and SROI

The Social Impact Assessment and the Social Return on Investment are the same conceptual framework that clearly define the goal, quantify and monetize as the figure 1.
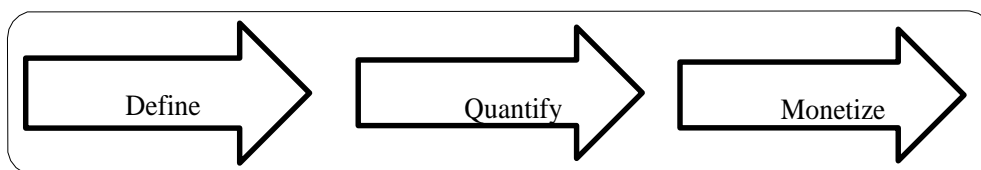
Figure 1 The conceptual framework of an assessment and SROI

Referred to previous the conceptual framework and tools, it is able to conclude five stages of the SROI process as following (Thai Health Promotion Foundation, 2014), such as 1) Establishing scope and identifying stakeholders, 2) Mapping outcomes, 3) Evidencing outcomes and then availability, 4) Establishing impact, and 5) Calculating the SROI.

The Elderly health care development program of the nont-none subdistrict administrative organization, Warinchamrap distirct, Ubon Ratchathani province

Nont-None Subdistrict, Warinchamrap Distirct, Ubon Ratchathani Province is consisted of 12 villages, 7,123 total population. Indeed, there are 942 elder

persons (more than 60 years old) (13.22%). This previous amount includes 139 bed ridden and a house ridden patients (14.76%). Additionally, the Nont-None Subdistrict Administrative Organization's survey report on the quality of life in health care of elder person revealed that elder people mostly had the optical problems, bone diseases, movement problems, and chronically ill, for instance, diabetes and blood pressure. All health problems must immediately and continuously implement the solution. Meanwhile, the local government in Warinchamrap district established the health care network in 2012, in order to be the district of health care management. The approach of this management was the triage that was the sorting of patients and assigning degrees of urgency to cure. However, in this area found that there were only 3 caretakers who passed the health care training from the faculty of Nursing, Ubon Ratchathani University (UBU). Therefore, in order to be completely and sustainably program, all local organizations have cooperated with each other for operating the program.

Stages of SROI process of the Elderly health care development program

The distinguishing SROI is the interaction with the stakeholders on the analysis process such as outcomes decision-making step, outcome mapping step, financial proxies step, and attribution proportion step. The stakeholder participation enables them to definitely accept the results of assessment, including the opinion

exchange and strong cooperation is able to appear. Oppositely, the limitation might be happened such as bias, due to lack of participation of the stakeholders or domination of others. On the other hand, the other principles of assessment comprises the comprehension of changes and interpretation, emphasis on objects, avoidance of the benefits beyond reality, transparency, the confirmation on the right results (Thai Health Promotion Foundation, 2014). The certain period of assessment is 2015 to 2016 only.

The Impact Value Chain

The interview and the documentary data came from the participation analysis or the impact of operational program. This could divide to be nine groups and indeed, such Caretakers, Long term elderly care, Cousin of elder person, People in community, Committee of the elderly health care club, the Nont-None District Administrative Organization, Members of the Nont-None District Administrative Organization, Subdistrict Headmen, and Village Leader, Nont-None Hospital and Village Health Volunteer (VHV), Doctor, Nurse, Physiotherapist of Warinchamrap Hospital, and The faculty of Nursing, UBU. Only the first three groups could be the main stakeholders.

In short, this study process could summarize by using theory of change, for example, input, activities, output, outcomes, and impact.

Data Collection

The outcome indicators and financial proxy

Referred to theory of change, the significant results led to the change measurement that set the indicators to determine the change by comparing none of the elder health care program and financial proxy. This approach needed to transfer these indicators to be monetary value. However, this assessment must be monetary value, plus, indicators and financial proxy had to be congruence and reflection with the real results. This research appointed the indicators and financial proxy along with the causes as see table 1.

The deadweight, displacement, and attribution

According to the interviewing of stakeholders, this research was able to gain the qualitative data of change, even though, they did not have any elder health care program (deadweight) as see table 2 and 3, in terms of the supporting factors on attribution as see table 4. However, this research did not find any displacement, it meant that the benefits did not negatively impact on the stakeholders or people in society at large.

The benefits period and drop-off

Referred to assessment criteria, this research focused on the previous two years ago only without the cost and prospective benefit forecasts, therefore, it did not analyze the benefits period and drop-off of program after completing.

As table 2, the outcomes and the impact were a significant data that need time to collect by interviewing, focus group, cooperating analysis between the researchers and the stakeholders. This research emphasized on input, activities, and output, therefore, the stakeholders were important and the results must evaluate to be a concrete object. Due to the elder health care program is currently operating, the drop-off is set to be zero or none of benefit reduction during the assessment period. The results of this research are demonstrated as table 4.

Table 1 The indicators selection and financial proxy

Stakeholders	Outcomes	Reasons
1. Caretakers who passed the training	completely health care knowledge and income increment	This program has been running for almost three years. It aimed to encourage and employ caretakers who passed the training. The training was able to exactly increase their confidence on health care jobs.
	happiness on helping other people in the community	Caretakers confessed that they were happy to help people in their community rather than other communities, because if they worked in other communities, they might support only one elder people, but if they still work for their community, they were able to treat many elder patients. In this phenomenon enabled them to be very happy which was congruent with Chandoevwit and Thampanishvong (2015). They studied about the value of social interaction along with satisfaction of Thais. Their results revealed that offering help to others could make more satisfaction and happiness to workers. If it was calculated to be value, it was approximately 40 percent of monthly income. It meant the local government were willing to pay money 40 percent of monthly income, in order to sustain caretakers' satisfaction.
2. Long term elderly care	healthy of elder patients	The training by the faculty of nursing, UBU was able to build three caretakers gaining new health care knowledge and confidence. Presently, they can visit elder patients approximately 1-2 times per week.
	More happiness of elder patients	Mostly, the home bound and bed bound elder patients were poor. Obviously, caretakers visited and treated them. It made them more happiness and increased their powerful life. It confirmed this statement by 29 elder patients under this program. Indeed, it was congruent with Chandoevwit and Thampanishvong (2015). They studied about the value of social interaction along with satisfaction of Thais. Their results revealed that interaction with neighbors occasionally could build satisfaction. If it was calculated to be value, it was approximately 17 percent of monthly income. It meant the local government were willing to pay money 17 percent of monthly income, in order to sustain caretakers' satisfaction.
3. Cousin of elder person	Diminution of the health care expenditure	Cousins of elder person had to pay for the transportation and expenses for medical treatment. Later, caretakers helped them suspending the previous action. Consequently, the expenditure for all health care were decreased

Table 2 Deadweight without the Elderly health care development program

Stakeholders	Outcomes	Data from interviewing and focus group	Deadweight - DW (%)
1.Caretakers who passed the training	completely health care knowledge and income increment	-2015, the Subdistrict Administrative Organization (SAO) paid a compensation to Miss Krue and Miss Chan for health care on elder patients about 5,900 baht/month. For Miss Lert's compensation was 6,100 baht/month. Their working period was 4 months. - 2016, SAO paid the compensation to Miss Krue, Miss Chan, and Miss Lert about 4,500 baht/month for 12 months working period.	DW =0%
	happiness on helping other people in the community	- Originally, Miss Krue was a village health volunteer and happy to helping other people in her community about 20%. Later, she became a caretaker. Her happiness was 100% that increased about 80%. -Originally, Miss Chan and Miss Lert were a village health volunteer and happy to helping other people in their community about 50%. Later, they became a caretaker. Their happiness was 100% that increased about 50%.	DW = (20+50+50)/3 Dw = 40%
2. Long term elderly care	healthy of elder patients	- 2015, the cost of rehabilitation of elder patients related to the compensation of three caretakers approximately 5,967 baht per each or 198.9 baht per day. The visiting schedule of elder patients needed all three caretakers. Therefore, the cost of this was 66.3 baht per caretaker. - 2016, the cost of rehabilitation of elder patients related to the compensation of three caretakers approximately 4,500 baht per each or 150 baht per day. The visiting schedule of elder patients needed all three caretakers. Therefore, the cost of this was 50 baht per caretaker.	DW = 0%
	More happiness of elder patients	- 2015, the home bound and bed bound elder patients were selected to join the program about 35 elder persons and during this time, some of them passed away.	78/29 =2.69 from 10 full scores or 26.9% DW) =100-

		-2016, 41 elder patients were in this program .Later, 29 elder patients in 31 elder patients found the happiness after treating from caretakers.	26.9%(DW = 73.1%
3.Cousin of elder person	Diminution of the health care expenditure	Before having caretaker in the community, the cousins of elder patients had to bring their elder patients to hospital and needed to back for picking them to home .All these must be spent a lot of money, including, inconvenient for the cousins of elder patient .Later, after caretaker appearing, the cousins did not need to bring their elder patient to hospital . This phenomenon definitely helps them to decrease the health care expenditure.	DW =0%

Table 3 The weight of the supplementary factors (Attribution)

Stakeholders	Outcomes	Attribution (%)	Reasons
1.Caretakers who passed the training	completely health care knowledge and income increment	100	The health care knowledge of caretaker increased because of joining the training course for caretaker. This was benefits from SAO about 100%.
	happiness on helping other people in the community	100	The happiness of caretaker was increased because of helping elder patients in their community. This was benefits to SAO about 100%.
2.Long term elderly care	healthy of elder patients	100	The elder patients were increasingly healthy because of caretaker's treatment. This was benefits to SAO about 100%.
	More happiness of elder patients	100	The elder patients were increasingly happiness because of caretaker's treatment. This was benefits to SAO about 100%.
3. Cousin of elder person	Diminution of the health care expenditure	100	The health care expenditure was decreased because of caretaker's services. This was benefits to SAO about 100%.

Table 4 Stakeholders, results, indicators, and financial proxy

Stakeholders	Outcomes	Indictors	Financial Proxies
1. Caretakers who passed the training	completely health care knowledge and income increment	per diem/ compensation	Compensation in 2015 (4 months) (baht/person/year) 1.person x 6,100 baht x 4 months x) 1-0 (x 1 =24,400 baht 2. persons x 5,900 baht x 4 months x)1-0 (x 1 =47,200 baht Compensation in 2016)12 months(3. persons x 4,500 baht x 12 months x)1-0 (x 1 =162,000 baht Total 233,600 baht
	happiness on helping other people in the community	Amount of Happiness caretaker	Happiness in 2015 (4 months))baht/person/year(1. person x) 0.4 x 6,100 x 4 (x)1-0.5 (x 1 =4,880 baht 2. persons x) 0.4 x 5,900 x 4 (x)1-0.35 (x 1 =12,272 baht Happiness in 2016)12 months (3 persons x) 0.4 x 4,500 x 12 (x)1-0.40 (x 1 =38,880 baht Total 56,032 baht
2. Long term elderly care	healthy of elder patients	Amount of rehabilitation times	2015 (4 months) (baht/person/year) 3 persons x 3 times x 66.3 baht/time x 30 days x 4 months x (1-0) x 1 = 71,604 baht 2016 (12 months) 3 persons x 3 times x 50 baht/time x 30 days x 12 months x (1-0) x 1 = 162,000 baht Total 233,604 baht
	More	Amount of	2015 (4 months)

	happiness of elder patients	happiness elder patient	(baht/person/year) 29 persons x (0.17 x 1,329 x 4 months) x (1-0.731) x 1 = 7,049.92 baht <u>2016 (12 months)</u> 29 persons x (0.17 x 1,329 x 12 months) x (1-0.731) x 1 = 21,149.76 baht <u>Total 28,199.68 baht</u>
3. Cousin of elder person	Diminution of the health care expenditure	Transportation cost between home and hospital	<u>2016 (4 months)</u>)baht/person/year(5 persons x 4 times per year x 100 baht)1-0(x 1 =2,000 baht 5 persons x 4 times per year x 50 baht)1-0 (x 1 =200 baht <u>Total 2,200 baht</u>
Grand total			**553,635.68 baht**

Table 5 The budget of the Elderly health care development program

The budget	**2015**	**2016**
1. The Nont-None Subdistrict Administrative Organization and the Local Health Security Fund (77,180 baht) and the Development of the Life Quality Program (14,500 baht)	91,680	150,000
2. The Faculty of Nursing, UBU (The training cost 35,000 x 3 persons)	105,000	
Total	**196,680**	**150,000**
Grand Total		**346,680**

Source: The Elderly Health Care Development Program of Nont-None Subdistrict Administrative Organization, Warinchamrap Distirct, Ubon Ratchathani Province under the fiscal year 2015-2016

The Calculation of SROI

This research set the benefit assessment of the program during the fiscal year 2015 – 2016. The Elderly Health Care Development Program was impacted to the stakeholders since the beginning of program. Therefore, the calculation of SROI during the program operation did not deduct the drop-off value. All benefits were transferred to be a present value as 2016, along with the proportional deduction 5 percent. This number was not adjusted the inflation.

During 2 years of the program operation, this research applied both monetary and non-monetary factors. The present value was about 356,514 baht and the benefits from the operation was valued

as 562,005.97 baht. Therefore, SROI was about 1.58 that meant one baht investment would be social return about 1.58 baht. It

presented that SROI value greater than 1.00. Consequently, this program is worth to invest as table 6.

Table 6 SROI

Lists	2015	2016	Total Present Value
1. Inputs	196,680.00	150,000.00	356,514.00
2. Benefits	167,405.92	386,229.76	562,005.97
		SROI	**1.58**

Remarks: Based year was 2016 and proportional deduction 5%
Source: From the calculation

Regarding the benefit calculation, it demonstrated the proportion of three stakeholders, such as the majority benefits (59.53%) belonged to caretakers. Because they attended the training and encouraged them to gain the health care knowledge. They were able to use their capacity to support their community rather than out of their community. Even though, the compensation of others were higher than current compensation. Oppositely, they preferred to stay inside their place and be happiness to support their hometown.

Other groups were very important. The benefit value was 40.14% that belonged to home bound and bed bound elder patients. They were very happy due to supporting from caretakers. On the other hand, the mostly elder patient ages were more than 75 years old, career as agriculturist. According to their career, they had to heavily use their body for working. It led their body to deteriorate. Indeed, they needed caretakers to encourage. Moreover, their economic status were poor. In consequence, caretakers gave

them a hand to help. It made them very happy.

Recommendations

Referred to the excellent results, the sender (caretakers) and the receiver (elder patients) were happiness and engagement of each other. Even though, they were not in family relationship. To be continue this program and build the interdependent community, this research was recommend as following:

1) The Nont-None SAO should build a new caretaker by seeking the relatives of elder patients or other youths in the community. They had the potential to encourage for continuing the program. If the local organization is able to continuously build a caretaker in the community, this program is still created the great benefits for all people.

2) Because Thailand will become the aging society soon, if other communities adapt the Nont-None SAO's program,

caretakers would be the important person to support the mission of the local organization and create the peaceful society along with healthy and happiness people in the future.

3) After treating by caretaker and supporting the local health care fund, the poor elder patients were able to be more healthy and happiness. Caretakers were able to solve the worst environment to be the safety area for elder patient, such as the hygiene and safety toilet. This phenomenon enabled elder patients to please using the new toilet, in addition, walking to the toilet could help them to rehabilitate their strong healthy. Some of them could walk by themselves. From this reason, the local organization should continuously allocate the budget to provide the medical instrument and health care fund.

References

Chandoevwit and Thampanishvong (2015), "Valuing Social Relationships and Improved Health Condition among the Thai Population," Journal of Happiness Studies, Vol. 17, No. 5, pp. 2167-2189.

Foundation of Thai Gerontology Research and Development institute (TGRI) and The Institute for Population and Social Research (IPSR) - Mahidol University (2015), Thais Elder People Survey in 2014. Retrieved by March 29, 2017 from http://www.dop.go.th/upload/knowledge/knowledge_th_20161608145901_1. pdf.

Orawan Noiwat (2012), "Healthy and Quality of Life," Online Newsletter of Health Sciences, Department of Health Sciences, Sukhothai Thammathirat Open University, Retrieved by March 03, 2017 from http://www.stou.ac.th/Schools/ Shs/booklet/book55_3/pbhealth.html. Saruenee Unchawanuntakul and Pattaeaporn Yamraor (2014), SIA and SROI Handbook. New Entrepreneur and Business Incubation, Faculty of Commerce and Accountancy, Thammasat University.

Thai Health Promotion Foundation (2014), Local Health Care Development Handbook: Beyond Healthy. Retrieved by March 16, 2017 from http://www.med.cmu.ac.th/ dept/commed/2015/images/files/pdf/manual_co mmhealth.pdf.

STUDY OF THE RELATIONSHIP BETWEEN MARKETING MIX, SERVICE QUALITY, CUSTOMER SATISFACTION AND CUSTOMER LOYALTY IN THE SMART PHONE

Yunli Mei[1] and Piraphong Foosiri[2]

[1,2]School of Business, University of Thai Chamber Of Commerce
126/1 Vibhavadee-Rangsit Rd., Dindang, Bangkok 10400, Thailand
[1]maisiemiu1019@live.cn, [2]foosiri@hotmail.com

Abstract

As the Smart phone market is growing as well as the development of society, now Thailand is full of Smart phones. In 2012, the Android and IOS system Smart phone also occupied the Smart phone market quickly. It is estimated that the Smart phone market competition will be more intense. All kinds of brands of Smart phones will choose to cut prices to attract customers, and the Smart phone market competition will be fierce. More and more customers must face the choice of which goods to buy; the competition among the enterprises is becoming fiercer. So, simply satisfying the customers achieved already can not make the enterprises survive in the industry. Therefore, the essential purpose of enterprise has become how to retain the customers and cultivate customers' loyalty. Under this background, writers in a large number of absorbing predecessors on the basis of existing research results, by investigating the influences among the marketing mix (7P), service quality, customer satisfaction and customer loyalty, expected to explore the mechanism of customer loyalty and provide Smartphone Enterprise certain help to win the competitive advantage from the perspective of customers.

This article will introduce the factors that can affect the customer loyalty from the marketing mix, service quality and customer satisfaction. Chapter 1 will introduce the whole study's details including study questions, study benefits, scope of the study and the operating definition. Chapter 2 will review about the literature which includes conceptual framework and research hypothesis. Chapter 3 will focus on the research in research design, research tools, and the data collection and data analyze. Chapter 4 will show the result of the study. Chapter 5 will be the conclusion and discussion after the study and research.

Keywords – Marketing mix, Service Quality,
Customer satisfaction and Customer Loyalty

Introduction

As mobile broadband is finally gaining momentum in the kingdom, 2014 is shaping up to be another exciting year for the Thai ICT market. Operators will benefit from increased smart device usage, but will struggle with competition from OTT services at the same time. Fixed broadband growth will remain low, while regulatory challenges over mobile spectrum will continue to impede growth while the mobile gaming market is set to flourish.

The worldwide smart phone market reached yet another milestone, having shipped one billion units in a single year for the first time. Since the 21st century, more and more enterprises have started to realize the importance of increasing the customers' satisfaction and customer loyalty for the enterprise's survival and development in today's increasingly competitive market environment. Because of the previous study showing that the cost of attracting new customers is 5 times to the cost of keeping the old customer, this means loyal customers can bring more benefits to the enterprises. There have been many scholars put forward that maintaining long-term relationships with customers, and improving customer satisfaction and customer loyalty is closely related to corporate profits and survival.

Under the external pressure of market competition, the study of factors that can affect customers' loyalty management, so as to develop and implement the customer management, to provide comprehensive and differentiated services for customers and fulfill the customers' high commitment are important guarantees for enterprises to keep long-term and bidirectional interaction relations with customers.

Literature review and hypothesis

The hypothesis is in the following:

H1: Demographic characteristics can influence the customer satisfaction.

H1.1: The gender of customer can influence the Customer satisfaction

H1.2: The age of customer can influence the customer satisfaction

H1.3: The nationality of customer can influence the customer satisfaction

H1.4: The education level of customer can influence the customer satisfaction

H1.5: The occupation type of customer can influence the customer satisfaction

H1.6: The monthly income of customer can influence the customer satisfaction

Marketing Mix

In 1964, McCarthy proposed 4 P's marketing mix, named by product, Price, Place and the channel and Promotion. Than in 1981, Booms and Bitner on the basis of this put forward 7 P's marketing mix. The three added P are: increase the People, tangible demonstration (Physical Evidence) and Process these elements. The 7 P's also constitutes the basic framework of service marketing.

The 7P is the basic of service marketing; it focuses on the service and stands in the point of view of customer. The 7P theory usually thinks about the customers' waiting, the customers' buying, the customers' own consumption knowledge and the requirement of the customer who was contacted in the process of consumption.

According to many researchers found that the customer satisfaction and trust is being influenced by the price perception (Oliver, 1997; Peng& Wang, 2006; Chengetal, 2008).And customer satisfaction is how a customer evaluates the product performance (Gustafsson, Johnson and Roos, 2005). Varki and Colgate (2001), whereby customer satisfaction from pricing was found to positively affect overall customer satisfaction.

Enterprise should put the pursuit of customer satisfaction first, followed by effort to reduce the customer purchase cost, and fully notice the purchase convenience in the customer purchase process (Professor Robert F. Lauter). The market competition in the overall competition for the customers, and whether they have customers or not, mainly depends on the relationship between corporate and customers, and customers' satisfaction with the corporate products and service. Marketing mix factors are important for the customer satisfaction research. And improving customer satisfaction will increase the

customer repurchase behavior (Cardozo. R.N.) The hypothesis is in the following:

H2: Marketing mix factors can influence the customer satisfaction

H2.1: Product can influence the customer satisfaction

H2.2: Price can influence the customer satisfaction

H2.3: Place can influence the customer satisfaction

H2.4: Promotion can influence the customer satisfaction

H2.5: People can influence the customer satisfaction

H2.6: Process can influence the customer satisfaction

H2.7: Physical evidence can influence the customer satisfaction

Service quality

A business with high service quality will meet customer needs whilst remaining economically competitive. Improved service quality may increase economic competitiveness. This aim may be achieved by understanding and improving operational processes, identifying problems quickly and systematically, establishing valid and reliable service performance measures and measuring customer satisfaction and other performance outcomes.

SERVQUAL or RATER is a service quality framework. SERVQUAL was developed in the mid-1980s by Zeithaml, Parasuraman and Berry. SERVQUAL means to measure the scale of Quality in the service sectors. The SERVQUAL service quality model was developed by a group of American authors, 'Parsu' Parasuraman, Valarie Zeithaml and Len Berry in 1985. It highlights the main components of high quality service. The SERVQUAL authors were collapsed into 5 factors:

1. Reliability: The ability to perform the promised service dependably and accurately;

2. Assurance: The knowledge and courtesy of employees and their ability to convey trust and confidence;

3. Tangibles: An appearance of physical facilities, equipment, personnel and communication materials;

4. Empathy: A provision of caring, individualized attention to customers;

5. Responsiveness: Willingness to help customers and to provide prompts service.

Customer satisfaction is influenced by service quality, price, environment and individual differences. Zeithaml and Binter (1990) pointed out service quality equals customer satisfaction to some extent because these two concepts are the comparison between their expectation and the actual service they receive. Turel and

Serenko(2006) found that perceived service quality and perceived value are the key constructs affecting the customer's satisfaction with mobile services. Some scholars (e.g. Parasuraman et al., 1985, 1988) believe that service quality leads to satisfaction.

Service quality decides customer satisfaction (Strandvik and Lijander 1994). And there is a positive relationship between service quality and customer satisfaction. Because service quality is the basic factor and it is also the most important factor that impacts customer satisfaction (Zeithaml&Bitner1996; Parasuraman, Zeithaml and Berry1994; Cronin and Taylor1992; Oliver1993; Bitner1990). The hypothesis is in the following:

Ho3: Service quality factors cannot influence the customer satisfaction

H3: Service quality factors can influence the customer satisfaction

Ho3.1: Tangible cannot influence the customer satisfaction

H3.1: Tangible can influence the customer satisfaction

Ho3.2: Reliability cannot influence the customer satisfaction

H3.2: Reliability can influence the customer satisfaction

Ho3.3: Responsiveness cannot influence the customer satisfaction

H3.3: Responsiveness can influence the customer satisfaction

Ho3.4: Assurance cannot influence the customer satisfaction

H3.4: Assurance can influence the customer satisfaction

Ho3.5: Empathy cannot influence the customer satisfaction

H3.5: Empathy can influence the customer satisfaction

Customer satisfaction and customer loyalty

Customer Satisfaction is a term frequently used in marketing. It is a measure of how products and services supplied by a company meet or surpass customer expectation. Customer satisfaction is defined as "the number of customers, or percentage of total customers, whose reported experience with a firm, its products, or its services (ratings) exceeds specified satisfaction goals." In a survey of nearly 200 senior marketing managers, 71% responded that they found a customer satisfaction metric very useful in managing and monitoring their businesses. Customer satisfaction metrics measure subjective responses to factors such as pricing, product delivery, issue resolution, the company's ability to respond, dependability, and personalization. When companies measure customer satisfaction, they often survey a sample set, which is

comprised of a predetermined number of customers. It is assumed that the data obtained from the sample set will represent the larger customer base. The different types of customer satisfaction metrics are used to gauge how well the company is meeting market expectations and identify areas that could benefit from improvements.

A degree of customer loyalty, it is a quantitative concept. And customer loyalty is due to the influence of the quality, price, service and other factors to make the customers have feelings about particular businesses' products or services, and form degree of preference and long-term repurchase of the product or service. USA senior marketing expert Jill Griffin believes that customer loyalty is customer out of business or brand preference and repurchases degree. The real customer loyalty is a behavior, and customer satisfaction is a kind of attitude. According to statistics, when the ratio of enterprises retains customers increased by 5%, profit can be increased 25% to 100%. Many scholars also expressed directly that the loyal customer is the main source of enterprise's competitive advantage. Therefore, to retain customer loyalty is a very important task for enterprise operators.

Customer loyalty is influenced by customer satisfaction directly (Cronin and Tayor, 1992). Goodman et. (1995) also pointed out that customer satisfaction leads to customer loyalty. And Fomell (1992) also mention customer satisfaction increases customer loyalty. Service quality, customer satisfaction and customer loyalty is very closely related (Kandampully, 1998). Both the marketing mix and service quality have relationships with customer satisfaction and customer satisfaction has a relationship with customer loyalty. The hypothesis is in the following:

Ho4: Customer satisfaction cannot influence the customer loyalty

H4: Customer satisfaction can influence the customer loyalty
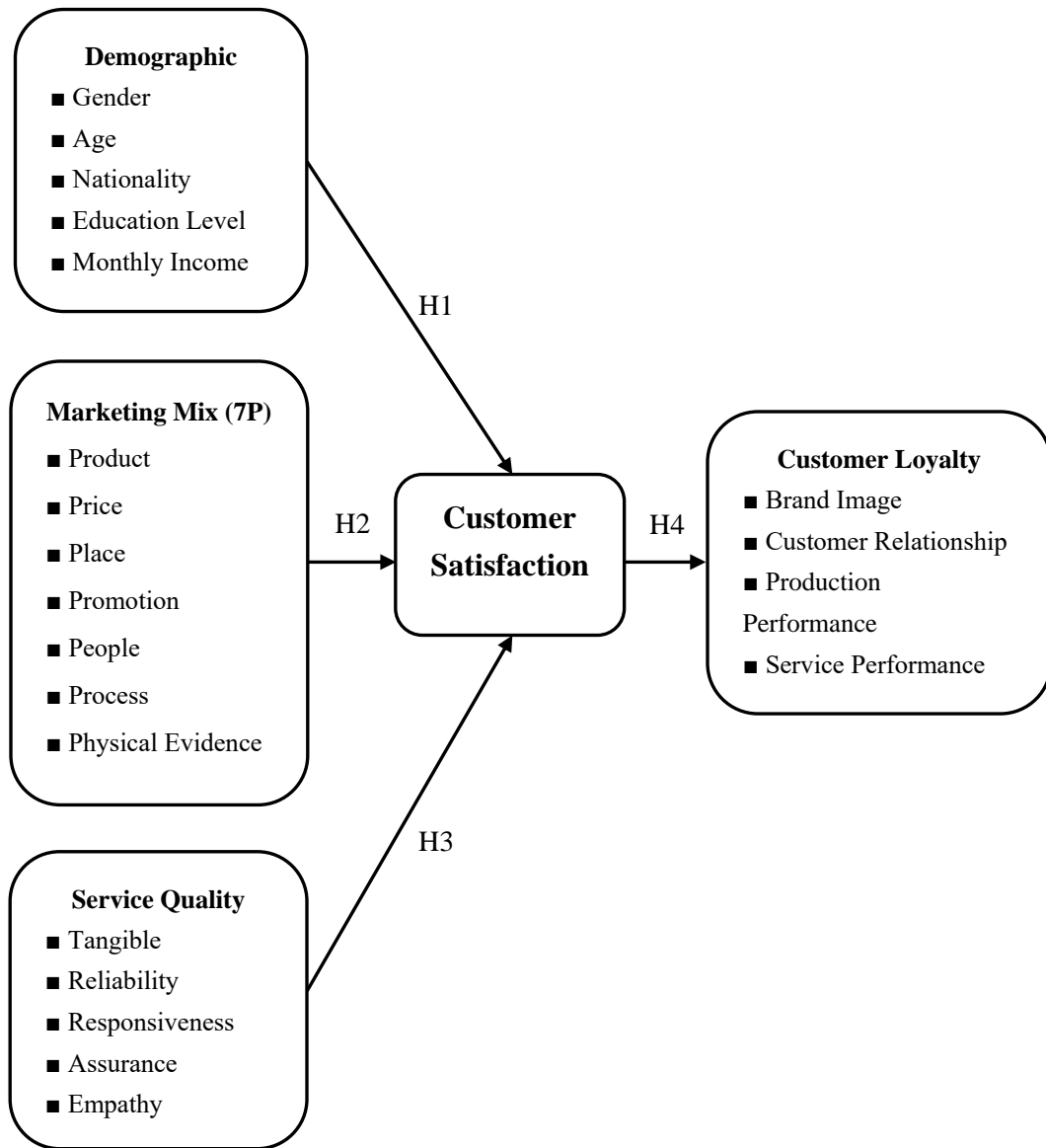
Figure 1 Conceptual framework

Figure 1 was the conceptual framework of this study, it show the relationship among the demographic, marketing mix, service quality, customer satisfaction and customer loyalty. And the selected factors of each part.

Population and sample

The population of customer used Smart phones in the Thailand. According to the information was given by IDC (International Data Corporation) which indicated the population of customers who use Smart phones in Thailand is 284.4 million.

The sample size of this research based on Yamane (1973) recommended the formula for random sample size to study a research as below

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

n = Numbers of Sample

N= Proportion of population in this study who use the Smart-phone in Thailand about 284.4 millions

e = Probability of error that is 0.05 or 5% (at 95% confidence level)

Calculation for the sample size for the study has been calculated according to the recommendation as follows:

n = 399.99 samples

After conclude this formula the sample size is approximately equal to 400 samples. Therefore, this study was collected 400 valid samples in order to complete the research.

Research Instrument

According to the research framework, the research focused on 6 parts:

Part 1 Demographic: Includes Gender, Age, Nationality, Education level and monthly Income. This research used nominal scale to measure the demographic data.

Part 2 Marketing mix: Includes Product, Price, Place, Promotion, People, Process and Physical Evidence. This part will use nominal scale and Likert scale 5 point to measure it. It includes 7Ps which was ranked from very unimportant to very important.

Part 3 Service quality: Includes 5 aspects which are Tangible, Reliability, Responsiveness, Assurance and Empathy, and which was ranked from very dissatisfied to very satisfy. This part will use Likert scale 5 point to measure it.

Part 4 Customer satisfactions: This part will use the Likert scale 5 point to measure its data, and ranked from very dissatisfied to very satisfy from 6 factors. Customer Relationship, Production Performance, and Service Performance use the Likert scale 5 point and ranked from very unimportant to very important.

Part 5 Customer loyalty: Includes 4 factors which is Brand Image, Customer satisfaction, production performance and service performance will ranked from very

dissatisfied to very satisfy.

Data Collection

There are 2 sections of the data collection. **Primary data:** Collect data from the questionnaire and the target group is customers in Thailand by random sampling people who using the Smart-phone. **Secondary data:** Collecting from textbook, articles, magazines and some related research for information in idea, theory study and references data.

Data Analysis

Descriptive Statistics are used to describe the basic features of the data was gathered in various ways.

Percentage: Used to analyze part 1 of questionnaire-demographic, such as: Gender, Age, Nationality, Education Level and Monthly Income.

Inferential Statistics are used to test hypothesis

Test is for hypothesis 1.1 Gender; 1.2 Age; 1.3 Nationality; hypothesis 1.4 Education Level and hypothesis 1.5 Monthly Income.

Pearson Product Moment Correlation Coefficient is a common measurement of the correlation (Line dependence) between two variables that are used for test hypothesis 2, 3, 4

Results

This study total collected 400 questionnaires from the internet. In the describe statistic, the result show the demographic of respondent which was male occupied 42.5% and female was 57.5%, the major age range was 21-30 years old (71.25%), the major nationality of respondents was Thai (85.8%), major highest education level of respondents was bachelor (73.5%), the major occupation of respondents was students (33.75%), the major range of monthly income was 20,001-30,000 Baht (33.5%).

Test for hypothesis 1.1 Gender; 1.2 Age; 1.3 Nationality; hypothesis 1.4 Education Level and hypothesis 1.5 Monthly Income. According to the sig Value to consider the hypothesis: If sig value is larger than 0.05, then accept the Ho; otherwise if the sig value is less than 0.05, then reject Ho. The details were show in following:

Table 1 Correlation between demographic and customer satisfaction

	Gender		Age		Nationality		Highest level of education		Occupation		Monthly Income	
	sig	Result	sig	Result	sig	Result	sig	Result	sig	Result	sig	Result
The overall satisfaction for the product location	.736	Accept	.548	Accept	.009	Reject	.359	Accept	.004	Reject	.266	Accept
The overall satisfaction for the product quality	.396	Accept	.932	Accept	.033	Reject	.596	Accept	.126	Accept	.744	Accept
The overall satisfaction for the product price	.298	Accept	.868	Accept	.122	Accept	.143	Accept	.740	Accept	.945	Accept
The overall satisfaction for the staff service	.706	Accept	.214	Accept	.006	Reject	.185	Accept	.014	Reject	.205	Accept
The overall satisfaction for the purchase environment	.552	Accept	.707	Accept	.055	Accept	.110	Accept	.001	Reject	.114	Accept
The overall satisfaction for the promotion activity	.935	Accept	.972	Accept	.870	Accept	.467	Accept	.008	Reject	.424	Accept

Pearson Product Moment Correlation Coefficient is a common measurement of the correlation (Line dependence) between two variables that are used for test hypothesis 2, 3, 4.

Table 2 Correlation between marketing mix and customer satisfaction

	Product		Price		Place		Promotion		People		Process		Physical evidence	
	sig	Result	sig	Result	sig	Result	sig	Result	sig	Result	sig	Result	sig	Result
The overall satisfaction for the product location	.000	Reject	.000	Reject	.000	Reject	.000	Reject	.000	Reject	.000	Reject	.000	Reject
The overall satisfaction for the product quality	.000	Reject	.000	Reject	.000	Reject	.000	Reject	.000	Reject	.000	Reject	.000	Reject
The overall satisfaction for the product price	.000	Reject	.000	Reject	.000	Reject	.000	Reject	.000	Reject	.000	Reject	.000	Reject
The overall satisfaction for the staff service	.000	Reject	.000	Reject	.000	Reject	.000	Reject	.000	Reject	.000	Reject	.000	Reject
The overall satisfaction for the purchase environment	.000	Reject	.000	Reject	.000	Reject	.000	Reject	.000	Reject	.000	Reject	.000	Reject
The overall satisfaction for the promotion activity	.000	Reject	.000	Reject	.000	Reject	.000	Reject	.000	Reject	.000	Reject	.000	Reject

About Pearson Correlation to test the relationship between marketing mix and customer satisfaction. If the sig > 0.05, then accept Ho; otherwise, if sig < 0.05, then reject Ho.

Table 3 Correlation between service quality and customer satisfaction

	Tangible		Reliability		Responsiveness		Assurance		Empathy	
	Sig	Result	Sig	Result	Sig	Result	Sig	Result	Sig	Result
The overall satisfaction for the product location	.000	Reject	.000	Reject	.000	Reject	.000	Reject	.000	Reject
The overall satisfaction for the product quality	.000	Reject	.000	Reject	.000	Reject	.000	Reject	.000	Reject
The overall satisfaction for the product price	.000	Reject	.000	Reject	.000	Reject	.000	Reject	.000	Reject
The overall satisfaction for the staff service	.000	Reject	.000	Reject	.000	Reject	.000	Reject	.000	Reject
The overall satisfaction for the purchase environment	.000	Reject	.000	Reject	.000	Reject	.000	Reject	.000	Reject
The overall satisfaction for the promotion activity	.000	Reject	.000	Reject	.000	Reject	.000	Reject	.000	Reject

About Pearson Correlation to test the relationship between marketing mix and customer satisfaction. If the sig > 0.05, then accept Ho; otherwise, if sig < 0.05, then reject Ho.

Pearson Product Moment Correlation Coefficient has values between $-1 < r < 1$ mean the level of significance is: If r has valuable $(-)$ which indicates that X and Y have Negative Correlations; If r has valuable $(+)$ which indicates that X and Y have Positive Correlations; If r has valuable (0) which indicates that X and Y have No Correlations; If r has close to 1 which indicates that X and Y Correlations have Positive Correlation and the Correlation became stronger; If r has close to -1 which indicates that X and Y Correlations have Negative Correlation and the Correlation became more and more strong; If r has close to 0 which indicates that X and Y Correlation became more and more weak.

Table 4 Correlation between customer satisfaction and customer loyalty

	The corporate image of product is the reason why I chose to repurchase			The corporate has a great relationship with its customer			A good corporate product performance			The corporate performs a great service		
	sig	Result	r	sig	Result	r	sig	Result	r	sig	Result	r
The overall satisfaction for the product location	.000	Reject	.561	.000	Reject	.587	.000	Reject	.633	.000	Reject	.625
The overall satisfaction for the product quality	.000	Reject	.553	.000	Reject	.475	.000	Reject	.614	.000	Reject	.580
The overall satisfaction for the product price	.000	Reject	.535	.000	Reject	.480	.000	Reject	.556	.000	Reject	.579
The overall satisfaction for the staff service	.000	Reject	.564	.000	Reject	.523	.000	Reject	.661	.000	Reject	.625
The overall satisfaction for the purchase environment	.000	Reject	.557	.000	Reject	.495	.000	Reject	.636	.000	Reject	.604
The overall satisfaction for the promotion activity	.000	Reject	.549	.000	Reject	.579	.000	Reject	.619	.000	Reject	.588

Conclusion

This study was found the Gender, Age, Highest level of education and Monthly income of demographic is not related to the customer satisfaction. Marketing mix is related to the customer satisfaction. Service quality is related to the customer satisfaction. Customer satisfaction is related to the customer loyalty, and they have a positive correlation.

Discussion

Base on the data which collected from 400 respondents. After surveying and analyzing these data, researcher found: Mostly, the smartphone's user is female. That means the female customer is the main purchase power of the Smartphone. Customers who purchase the most Smartphones are the customer group in the 21-30 years-old and who have a Bachelors Degree and work for a company with 20,001-30,000 Baht monthly income.

In this research, Customer satisfaction includes the overall satisfaction for the product location, product quality,

product price, staff service, and purchase environment and promotion activity. According the chapter 4 results shown, this research found that the gender of the customer can influence the overall satisfaction for the product location, product price, staff service, and purchase environment and promotion activity, except product quality. The age of the customer can influence the Customer satisfaction. The nationality of the customer can influence the overall satisfaction for product price, purchase environment and promotion activity, it cannot influence the overall satisfaction for the product location, product quality and staff service. The educational level of the customer can influence the Customer satisfaction. The occupation type of the customer can influence the overall satisfaction for the product quality and product price, but it cannot influence the overall satisfaction for the product location, staff service, and purchase environment and promotion activity. The monthly income of the customer can influence the Customer satisfaction.

1. In the research, price can influence the customer satisfaction. People can influence the customer satisfaction. Process can influence the customer satisfaction.

In the previous research, according to many researchers found that the customer satisfaction and trust is being influenced by the price perception (Oliver, 1997; Peng& Wang, 2006; Chengetal, 2008). And customer satisfaction is how a customer evaluates the product performance (Gustafsson, Johnson and Roos, 2005). Varki and Colgate (2001), whereby customer satisfaction from pricing was found to

positively affect overall customer satisfaction.

And previous research already mentioned that enterprise should put the pursuit of customer satisfaction first, followed by effort to reduce the customer purchase cost, and fully notice the purchase convenience in the customer purchase process (Professor Robert F. Lauter). The market competition in the overall competition for the customers, and whether they have customers or not, mainly depends on the relationship between corporate and customers, and customers' satisfaction with the corporate products and service. Marketing mix factors are important for the customer satisfaction research. And improving customer satisfaction will increase the customer repurchase behavior (Cardozo. R.N.)

2. According to the research, the 5 factors of service quality (Reliability, Assurance, Tangibles, Empathy and Responsiveness) can influence the customer satisfaction.

In the previous research, customer satisfaction is influenced by service quality, price, environment and individual differences. Zeithaml and Binter (1990) pointed out service quality equals customer satisfaction to some extent because these two concepts are the comparison between their expectation and the actual service they receive. Turel and Serenko(2006) found that perceived service quality and perceived value are the key constructs affecting the customer's satisfaction with mobile services. Some scholars (e.g. Parasuraman et al., 1985, 1988) believe that service quality leads to satisfaction.

Service quality decides customer satisfaction (Strandvik and Lijander 1994). And there is a positive relationship between service quality and customer satisfaction. Because service quality is the basic factor and it is also the most important factor that impacts customer satisfaction. (Zeithaml&Bitner1996; Parasuraman, Zeithaml and Berry1994; Cronin and Taylor1992; Oliver1993; Bitner1990).

3. According to the research's results, the researcher found that both marketing mix and service quality have a relationship with the Customer satisfaction, and Customer satisfaction also has a relationship with Customer loyalty.

In the previous research, Customer loyalty is influenced by customer satisfaction directly (Cronin and Tayor, 1992). Goodman et. (1995) also pointed out that customer satisfaction leads to customer loyalty. And Fomell (1992) also mention customer satisfaction increases customer loyalty. Service quality, customer satisfaction and customer loyalty is very closely related (Kandampully, 1998). Both the marketing mix and service quality have relationships with customer satisfaction and customer satisfaction has a relationship with customer loyalty.

Implication of business

The Smartphone corporate should pay more attention on the Thai students and employees of companies who are 21-30 years-old ages with a Bachelor's Degree education level and 20,001-30,000 baht monthly income in both male gender and female gender.

Smartphone design and Smartphone quality are very important for the customer. So, the corporate should focus on these two important points to improve the marketing mix type to attract more customers. Reasonable price and value also are important for the Smartphone corporate. The Smartphone corporate should establish more channels to customers to purchase Smart phone, especially in On-line and off-line channel. About the promotion aspects, the Smartphone corporate should pay attention to reduce the Smartphone's price to attract customers. Smartphone corporate also needs to focus on advertisement, image promotion and gift promotion ways. On the people factor, the Smartphone corporate should train more responsible staff and focus on the communication between customer and staff, because these two points are very important for corporate. Staff attitude and reliable staff also are important for the corporate. The corporate should provide professional service to customers.

Smartphone corporate should focus on the corporate image, good relationship with customers, product performance and service performance, because these factors are important for a corporate to attract customers and keep the customer loyalty.

Limitation & further research

This research used Online Survey Tools to create the questionnaire and to collect the 400 questionnaires. Google Drive does not have enough programs to help me to analyze the data that was collected

from Online Survey Tools. For example, the Online Survey Tools just helped me analyze the data and create statistic programs and some simple figures that were useless in the thesis. After opening statistic programs, the researcher must change the choice instead of numbers; it's a waste of time. The researcher sent the questionnaire link by social chatting tools (Face book, we chat, and LINE) to friends, and the respondents helped to spread the link to their friends too.

This research just focused on some small parts that are marketing mix, service quality, customer satisfaction and customer loyalty. The way to collect the data by lack of fraction of coverage (sending the link one by one is too singular, maybe would have different results and feedback)

In the future research, this research should discuss how customer relationship management can influence the customer loyalty and the relationship between them. The research should use some more authority and convincing on-line websites to do the research questionnaire, and sending the questionnaire / collecting data more abroad, and survey in diversity categories.

References

Aaker, D.A., & Day, G.S. (1990). *Marketing Research, 4thEd*. New York: Wiley cop.

Ajzen,I.,& Fishbein , M. Attitudes and normative beliefs as factors influencing behavioral intentions. *Journal of personally and social psysocal*, 1972, 21, 1-9

Anderson, Erin W., & Mary Sullivan. (1993). *The Antecedents and Consequences of Customer Satisfaction for Firms*, Marketing Science, 12, 125–143.

Basu, Kunal and Dick, Alan (1994). Customer Loyalty: Toward an Integrate Conceptual Framework. *Journal of the Academy of Marketing Science, 22 (2)*. (pp. 99-113).

Bendapudi, N., & Berry, L. (1997). Customers' motivations for maintaining relationships with service providers; *Journal of Retailing*, 73(1), 15-37.

Bitner,M. J. (1990). Evaluating Service Encounters: The Effects of Physical Surroundings and Employee Responses. *Journal of Marketing*, 54(2), 69–82.

Cardozo, R. N. (1965). "An experimental study of customer effort, expectation, and satisfaction. *Journal of Marketing Research*", 244-249

Cheng, T. C., Lai, L. C., & Yeung, A. C. (2008). The Driving Forces of Customer Loyalty: A Study of Internet Service Provider sin Hong Kong. *International Journal of E-Business Research*, 26-42

Cronin, J. J., and Taylor, S. A. (1992). Measuring Service Quality: A Reexamination and Extension. *Journal of Marketing,* 56(3), 55–68.

Cuadernos de Diffusion, 7(13), 101-107.Retrieved July 8, 2007, from EBSCOhost database.

Deborah McCabe, Mark S. Rosenbaum, and Jennifer Yurchisin(2007). "*Perceived Service Quality and Shopping Motivations: A Dynamic Relationship,*" Services Marketing Quarterly, 29 (1), 1-21.

DevindraHardawar(2012). The magic moment: *Smartphones now half of all U.S. mobiles.* Venture Beat. Venture Beat Mobile Beat.

Francis Buttle (1996). "*SERVQUAL:* review, critique, research agenda," *European Journal of Marketing*, Vol.30, Issue 1 (pp. 8–31)

Fornell, C. (1992). A National Customer Satisfaction Barometer: The Swedish Experience. *Journal of Marketing*, 56(1), 6–21.

Gartner (2009). Gartner Says *Worldwide Mobile Phone Sales to End Users Grew 8 Per Cent in Fourth Quarter 2009*; Market Remained Flat in 2009.

Gartner (2010). Gartner Says *Worldwide Mobile Device Sales to End Users Reached 1.6 Billion Units in 2010; Smart phone Sales Grew 72 Percent in 2010.*

Gartner (2012). Gartner Says *Worldwide Smart phone Sales Reached Its Lowest Growth Rate With 3.7 Per Cent Increase in Fourth Quarter of 2008.*

Gartner (2012). Gartner Says *Worldwide Sales of Mobile Phones Declined 2 Percent in First Quarter of 2012; Previous Year-over-Year Decline Occurred in Second Quarter of 2009.*

Gartner (2012).*Worldwide market share for smart phones*. finance.yahoo.

Gartner (2012). Gartner Says *Worldwide Sales of Mobile Phones Declined 3 Percent in Third Quarter of 2012; Smart phone Sales Increased 47 Percent*.

Gartner (2013). Gartner Says *Worldwide Mobile Phone Sales Declined 1.7 Percent in 2012.*

Gartner (2013). "*Quarterly Device Sales In 2011*" (Info-graphic). Mobile Statistics.Mobile Statistics.

Goodman, Fichman, Lerch.Snyder, 1995.*Customer-firm relationships, involvement and customers satisfaction*. Academy of management journal 38(5), 1310-1324.

Gustafsson, A, Johnson, MD & Roos, I 2005,The Effects of Customer Satisfaction, Relationship Commitment Dimensions, and Triggers on Customer Retention", *Journal of Marketing,*Vol. 69(pg. 210–218)

Kandampully, J. (1998). Service Quality to service loyalty: *a relationship which goes beyond customer services.* Total Quality Management & Business Excellence,9(6), 431-443.

Kumar, V (2008). Managing Customers for Profit: *Strategies to Increase Profits and Build Loyalty*. Philadelphia: Wharton School Publishing.

Lee Graham (2011). *As Smart phone Prices Fall, Retailers Are Leaving Money on the Table,* According to the NPD Group. NPD Group. The NPD Group, Inc.

Lewis, R.C. & Boom, B.H. (1983) "*The Marketing Aspects of Service*" in Berry, L., Shostack, G. and Upah, G. (Eds), "*Emerging Perspective on Services Marketing*"American Marketing Association, (p. 99-107)

Lijander, V., Strandvik, T., 1997. Emotions in Service Satisfaction. *International Journal of Service Industry Management*, 8(2), 148-169.

Luis Filipe Lages & Joana CosmeFernandes(2005). "The SERPVAL scale: A multi-item instrument for measuring service personal values", *Journal of Business*

Marc Einstein (2014), *Industry Principal for Digital Media and Telecoms*, Frost and Sullivan

Macintosh, G.andLockshin, LS. (1997), "Retail Relationshipsand Store Loyalty: A Multi-Level Perspective", *International Journal of Research in Marketing*, Vol.14 (pp. 487- 497).

Montoya-Weiss, Mitzi M., Glenn B. Voss and Dhruv Grewal (2003), "Deter-minants of Online Channel Use and Overall Satisfaction with a Relational, Multichannel Service Provider, *"Journal of the Academy of Marketing Sci-ence,* 31 (4), 448–5

Maute, M. F. &. Dube´, L. (1999). Patterns of emotional responses and behavioural consequences of dissatisfaction. *Applied Psychology: An International Review,* 48: 349–366.

Nyeck, S., Morales, M., Ladhari, R., & Pons, F. (2002). "*10 years of service quality measurement: reviewing the use of the SERVQUAL instrument*."

Nielson (2011). *The Nielsen Company.GENERATION APP 62% OF MOBILE USERS 25-34 OWN SMARTPHONES*.

Oliver, R.L. (1993), "*A conceptual model of service quality and service satisfaction*: compatible goals, different concepts", in Swartz, T.A., Bowen, D.E. and Brown, S.W. (Eds), Advances in Services Marketing and Management, Vol. 2 (pp. 65-85).

Oliver, L. R. (1999). When consumer loyalty? *Journal of Marketing*, 33-44

Parasuraman, A., Zeithaml, V., & Berry, L. (1985). A conceptual model of service quality and its implications for future research. *Journal of Marketing*, 49, 41-50. Retrieved from http://dx.doi.org/10.2307/1251430

Parasuraman, A., Zeithaml, V., & Berry, L. (1988). *SERVQUAL:* a multiple item scale for measuring consumer perceptions of service quality. *Journal of Retailing,* 64(1), 12-40.

Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1994), "Reassessment of expectations as a comparison standard on measuring service quality: implications for further research", *Journal of Marketing*, Vol. 58 No. 1, January (pp. 111-24).

Peng, Leong, W. Y. & Qing. (2006). Impact of Relationship Marketing Tactics (RMTs) on Switchers and Stayers in a Competitive Service Industry. *Journal of Marketing Management*, 25-59.

Reichheld, Frederick F., and Thomas Teal (2001). *The Loyalty Effect (Paperback)*. Reprint ed. Cambridge: Harvard Business School Press.

Ruyter, K. (1997). Measuring service quality and service satisfaction: an empirical test of an integrative model. *Journal of Economic Psychology*, 18, 387-406.

Turel, O. and Serenko, A. (2006) "*Satisfaction with mobile services in Canada: An empirical investigation*", Tele communications Policy, 30: 314-331.

Varki, S. and M. Colgate (2001) "The role of price perceptions in an integrated Model of behavioral intentions", *Journal of Services Research*, 3: 232–240.

Zeithaml, Parasuraman& Berry(1990). "*Delivering Quality Service; Balancing Customer Perceptions and Expectations*," Free Press Research, Vol.58, Issue 11(pp. 1562–1572).

Zeithaml, V.A., Berry, L. L., and Parasuraman, A. (1996). The Behavioral Consequences of Service Quality. *Journal of Marketing*, 60(2), 31–47.

Appendix

The Smart phone brand that you are using now

☐ **Samsung**   ☐ **Apple**   ☐ **Huawei**   ☐ **LG**

☐ **Lenovo**   ☐ **Others**

Part 1: General information

Please check (√) by filling in the blank of each items of questionnaire below

1. Gender   ☐ Male   ☐ Female

2. Age   ☐ Less than 20-years-old   ☐ 21-30
                 ☐ 31-40   ☐ Over 41

3. Nationality   ☐ Thai   ☐ others (Please specify)
                                        _____

4. Highest level of education
          ☐ High School   ☐ Bachelor   ☐ Master   ☐ Doctor

5. Please indicate one category that best description of your occupation.
          ☐ Student   ☐ Owner of business
          ☐ Employee in private company   ☐ Government's employee
          ☐ Unemployed or Retired   ☐ others (Please specify)
                                             _____

6. Income/month (Baht)
          ☐ Less than 10,000   ☐ 10,001-20,000
          ☐ 20,001-30,000   ☐ 30,001-40,000
          ☐ More than 40,001

Part 2: Marketing mix

7. How important of marketing mix factors of your smartphone? Please follow your real feeling to fill the blank by (√)

	Very unimportant ←	Unimportant	Neutral	Important	Very important →
☐ **Product**					
Smart phone Design					
Smart phone Quality					
Smart phone Brand					
☐ **Price**					
The smart phone price is reasonable					
Value of the smartphone (good price with good quality)					
☐ **Place**					
On-line					
Off-line					
Mail-order					
Telephone					
☐ **Promotion**					
Advertisement					
Image promotion					
Gift					
Reduce price					
☐ **People**					
Staff Attitude					
Staff is reliability					
Staff is responsible					

Communication between customer and staff					
☐ **Process**					
Process of purchase smart phone(buy and pay)					
Professional service to customer					
☐ **Physical Evidence**					
Facilities of stores					
Stores Environment					

Part 3: Service quality

8. How satisfied of service quality of your smart phone? Please use the (√) to fill the blank

	Very dissatisfied	Dissatisfied	Acceptable	Satisfied	Very satisfied
Tangibles					
Entity shop's elegant environment					
Staff clean attire					
Reliability					
Ensure the product quality					
Zero interest purchase					
Overall satisfaction with the service quality					
Overall satisfaction with the service quality					
Responsiveness					

Staff is willing to provide service					
Staff's good service attitude					
Assurance					
Staff check correct and efficient					
Staff service different customers with personalized service					
Empathy					
Reasonable arrangement on business hours					
Concerned about the customer and provide convenient service					

Part 4: Customer satisfaction

9. How satisfied of your own satisfaction about your smart phone? Please accord to your real feeling to select the level of your own satisfaction in (√)

	Very dissatisfied	Dissatisfied	Acceptable	Satisfied	Very satisfied
The overall satisfaction for the product location					
The overall satisfaction for the product quality					
The overall satisfaction for the product price					
The overall satisfaction for the staff service					
The overall satisfaction for the purchase environment					

The overall satisfaction for the promotion activity					

Part 5: Customer loyalty

10. How important of customer loyalty factors in your smart phone? Please use (√) to select your real feeling

	Very dissatisfied ←	Dissatisfied	Acceptable	Satisfied	Very satisfied →
The corporate image of the products is the reason why I chose to shopping again					
The corporate has a great relationship with its customer					
A good corporate product performance					
The corporate performs a great service					

Part 6: Additional information from the respondents

11. Please describe or explain (in detail) your satisfaction, dissatisfaction, suggestion and/or comment on quality of any service:

_____

_____

_____

_____

MARKETING INTELLIGENCE STRATEGY AND MARKETING PROFITABILITY: AN EMPIRICAL INVESTIGATION OF TOURISM BUSINESSES IN THAILAND

Wannasa Wangsankaew[1], Prathanporn Jhundra-Indra[2] and Saranya Raksong[3]

[1,2,3]Mahasarakham Business School, Mahasarakham University
41/20 Kham Riang, Kanthara Wichai, Maha Sarakham, 44150, Thailand
[1]wanna.bella@gmail.com, [2]prathanporn.j@acc.msu.ac.th, [3]saranya.r@acc.msu.ac.th

Abstract

Marketing intelligence strategy is an ability of the firm to apply information and data to distribute a better market understanding and implementation. It has been established as source of competitive advantage because it reflects ability in customer responding and decision making in any situations. Then, this paper aims to examine the association of marketing intelligence strategy and marketing profitability. The data is collected by questionnaire mailing survey of the 274 tourism businesses in Thailand. The OLS regression analyses are utilized to examine and prove all hypotheses. The finding shows that marketing intelligence strategy plays an important role on marketing profitability.

Introduction

The age of data and information are beginning. Information is such a valuable assets of the firm (Bosch, 2016). The firm with effective marketing information created a business success (Theodosiou & Katsilkea, 2014). Likewise, the speedy changes of business environment and information requirement is growing, resulting the managers need to grasp correct data at the right time (Öztürk, 2012). Marketing intelligence is the strategy that deals with data and information. Besides, marketing intelligence strategy focused on the implementation of information such clients, market, competitors and contribute marketing decision maker to improve marketing activities, planning, employment and control (Albescu & Pugna, 2014). Additionally, the rise of computer technology and the online world have effected smaller organizations more easily accessible to information. The firm required effective methods for searching, storage, applying and implementation activities related to information in order to determine the customer needs and fulfill (Fleisher, 2007). The increasingly competitive environment, provider requires an effective marketing intelligence strategy.

The global population ages and wandering convert to an economy and more rapid than before as well as global economy will continue rely on tourism (Tsiotsou & Ratten, 2010). The enlarged highlight on sustainability and standard of living decisions will also seriously influence to tourism business. Beside, Office of the National Economic and Social Development Board of Thailand presented 2016 annual report as of March, 1th 2017, tourism and service industry had a revenue that represented 14% of GDP. Furthermore, it is an important sector that contributes to employment and returns that contribute to the country's economic and social development. Essentially, the service business mainly delivers intangible value to meet their customers need that required all intelligence capabilities (Wöber, 2003). The nature of the tourism industry is a highly dependent on the environment and any change of circumstance affect the service performance (Kothari, Xiang, & Fesenmaier, 2008). In addition, tourist behavior changes because of their easier access to the travel data and information. Moreover, the tourism industry requires intelligence to be adaptability, because it is faced the change of natural disasters, political change, tourist behavior, and the slowdown of the world economy (Tsiotsou & Ratten, 2010; Öztürk, 2012). Resultantly, tourism business is a type of firms operational that rely on marketing information. As a result, tourism businesses need to know more about markets and learn to take advantage on the abundance of information available. The key research question of this research is how marketing intelligence strategy has an influence on marketing profitability. This research is aimed to investigate for the empirical evidence on the association between marketing intelligence strategy and marketing profitability of tourism businesses in Thailand.

Literature review

Marketing intelligence strategy

The marketing intelligence is being studied in view of the information system to support marketing decisions making.

Additionally, in strategic perspective of marketing intelligence is an ability of organization. Marketing intelligence is an intangible ability that can be provided competitive advantage and firm performance.
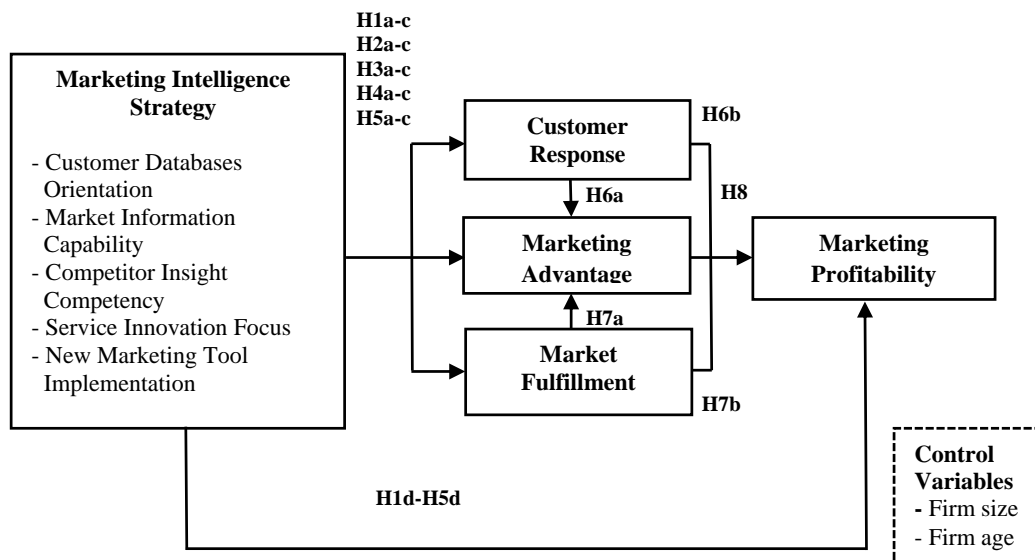

Figure 1 Conceptual model of marketing intelligence strategy
and its consequences

Venter and Van Rensburg (2014) were indicated the components of marketing intelligence that were information about customers, competitors, suppliers, other market information and marketing tools adaptation. Besides, Dalkir (2011) mentioned as based on knowledge management theory, that innovation brought out the skills and learning from the information generated throughout the creation of innovation process as knowledge. Besides, Schoenherr and Swink (2015) also mentioned about organizations that have the skills to innovate and develop new products/service to enhance better customer response. The typical perspective of marketing intelligence dimension regards information of customer, market, and competitors. Further, consideration service innovation is also as a dimension of marketing intelligence.

Customer database orientation

Customer databases orientation is the concentration of the firm on exploring, keeping track, and customer's

information correcting as well as feedback to provide the better customer response and prevent customer from switching to other companies (Kelly & Erickson, 2004; Narver & Slater, 1990). Aforementioned, knowledge is rising from data analyzing and information linkage (Dalkir, 2011). Correspondingly, Bhat and Darzi (2016) clarified customer knowledge which had a positive influential effect on customer loyalty and competitive advantage. Customer information exposed customers favor and dislikes, allowing better product innovation and offering product to meet customer needs, integration of customer information consistently has the impact on firm performance (Carbonell et al., 2009). Moreover, Jayachandran et al., (2004) presented the customer knowledge process which had a positive impact on customer response capability and firm performance. An understanding of customer desires required a strongly knowledge generating to explain the main characteristic of customers interactions. Likewise, an integrated customer database of organization that rises the greater understandings of hidden and expressive customer needs enhance marketing opportunities and benefits to provider in expressing faster responses to the market (Schoenherr & Swink, 2015). Hence, the hypotheses are proposed as follows:

Hypothesis 1: Customer databases orientation will have a positive influence on (a) customer response, (b) market fulfilment, (c) marketing advantage, and (d) marketing profitability.

Market information capability

An evaluating potential customer is consisted of data, information, knowledge, and ability to gather and analyze. The data and information are the fundamental of knowledge. Likewise, Kandemir (2005) defined market knowledge as organized and structured information about the market related to customers, competition, marketing channel partners, and market trends and events. The market knowledge competence arises from collecting market information, sharing it among organizational members. In this research, market information capability is defined as the ability to explore, accumulate, analyze, exploit data of potentials customer and overall market for effective marketing plan to expand and accommodate new customers in a timely manner (Theodosiou & Katsikea, 2013; Moorman, 1995). Besides, Kandemir (2005) found that the market information was contributed to firm's market knowledge competence, and it had a positive impact on customer performance. Likewise, Meunier-FitzHugh and Piercy (2006) also suggested organization benefited from effective processing systems and feedback information enhance marketing competitive. Aforementioned, quality of market (potential customers) information might critical impact on marketing advantage and performance. Hence, the hypotheses are proposed as follows:

Hypothesis 2: Market information capability will have a positive influence on (a) customer response, (b) market fulfilment, (c) marketing advantage, and (d) marketing profitability.

Competitor insight competency

Competitor insight competency is defined as the ability of firm to track, analyze, predict competitor's information and create networks to exchange competitor's information

(Narver & Slater,1990; Bierly & Hämäläinen, 1995). The firms should acquire competitors information and coordinated across departments (Narver & Slater, 1990). The firm focuses on knowing insight competitor will enhance marketing plan and firm performance. Competitive intelligence is a part of marketing intelligence that emphasize on competitors and competitive environment (Valeriu, 2014). Competitor insight deals with the requirement to gain information about competitors. The usage of competitor information includes optimizing prices, expanding product lines to cover unserved market, improve service, and obtain market share. The main goals of the competitors knowledge is acknowledge the early warning and prevention of surprises that can have a major impact on the market share, reputation, turnover, and profitability. Additionally, Hernandez et al., (2015) indicated that the benefit of rivals and business partner as a source of strategic knowledge helped firm generated suitable marketing activities to achieved performance. Hence, the hypotheses are proposed as follows:

Hypothesis 3: Competitor insight competency will have a positive influence on (a) customer response, (b) market fulfilment, (c) marketing advantage, and (d) marketing profitability.

Service innovation focus

Innovation can arise when the market requirements a new things, demand-pull, or the ideas of firms (Hjalager, 2010). Besides, incremental innovations are continuous improvements which frequently happen in the service business, whereas radical innovation is a technological revolution happening in intense situations when new services replaced (Carlisle et. al., 2013). Marketing intelligence related to marketing knowledge, which derived from data and information analyzing process, comparing and linked experiences, and benefits to implementation (Dalkir, 2011). Service innovation focus is refer to the concentration of a firm to acquire and assimilate knowledge, transform it into new, unique abilities and ideas, and produce these ideas by first generating and commercializing new or improved service (Hjalager, 2010; Branzei, & Vertinsky 2006). Innovation in tourism service context is about novelty, in terms of travel destinations service protocol and service processes (Hjalager, 2010). Moreover, Golestan and Mashhadi (2016) suggested innovation service process which regarding knowledge-based activities consist sourcing, receive, sharing and evaluation. Besides, service innovation has positive effect on the firm performance under sufficient existing knowledge (Evanschitzky et. al, 2015). Hence, the hypothesis is proposed as follows:

Hypothesis 4: Service innovation focus will have a positive influence on (a) customer response, (b) market fulfilment, (c) marketing advantage, and (d) marketing profitability.

New marketing tool implementation

New marketing tool implementation is defined as an adaptation of the firm to execution of freshness marketing's techniques and instrument with appropriate and efficiency for marketing operations (Sashittal & Jassawalla, 2001). The application of new marketing tools regard to the implementation of

emerging one and adjustments from exiting tool implementation likes the concept of incremental and radical innovation. Besides, Zampetakis et al., (2014) mentioned about marketing program implementation effectiveness depended on the novelty of marketing program and creative climate that organization encouraged employees to design and apply. Marketing tool is technique and material that helps business archive their marketing goals (Thapa & Verma, 2014). Additionally, Huang and Chang (2014) presented that the adaptation technology e-health as a marketing tool would increase customer satisfaction by reducing a waiting time and response their demands as quickly, reducing a service cost and achieving operational goals that enhance firm performance. Moreover, Vavrečka, and Mezuláník (2015) suggested that interacted with tourist through digital communication tool rose service efficiency, it helped to response quickly by comprehensive information and collecting feedback as information for service improvement. As discussed above, the hypothesis is proposed as follows:

Hypothesis 5: New marketing tool implementation will have a positive influence on (a) customer response, (b) market fulfilment, (c) marketing advantage, and (d) marketing profitability.

Customer response

Customer response was associated with the activities to provide added value for customers such as the adaptation of the product or service, solutions for customer problems, and built the relationship with the customer (Pehrsson, 2011). Additionally, customer response was involved a focus on customers by identify, analyze, and answering their needs (Johnson et al., 2003). Customer response was referred to the strategic action of firms which immediately responded to currently customers' needs by accurately offering products and services value within an appropriate time (Lee & Lin, 2005).

The firms that had ability to quickly customer respond and helpfulness services allowed the firm to produce difference service, maintain existing customer loyalty and provided extends service value (Lee & Lin, 2005). Additional, Lu and Yang (2010) suggested that customer response capability of firm could reduce a crucial cost and time. Likewise, Jayachandran, et al., (2004) proposed that customer satisfaction was rising from effective and customer response speed, enhanced organization performance. Additional, timeliness customer response could provide good reputation over competitors and enhance competitive advantage (Lu &Yang, 2010). Thus, hypothesize the relationship as follows:

Hypothesis 6: Customer response will have a positive influence on (a) marketing advantage, and (b) marketing profitability

Market fulfillment

Customer needs response was a worthy ability for the reason that they allowed the firm to monitor and shifting customer requirements encountered and immediately replies to that which delivered value fulfillment

(Waranantakul & Ussahawanitchakit, 2012). Furthermore, Chuwiruch et al., (2015) described about customer needed fulfillment as a capability of the firm to analyzing with properly and immediately, understood, and reacted to customers desire by new products or services proposing that value added in to require customer satisfaction. According to Kohli and Jaworski (1990) mentioned that customer fulfillment could generate greater valuable customer leading to growing of competitive advantage by offering product/service that dissimilarity to meet their unaware demanding. This research is extended to market fulfillment that is defined as the organization offerings and delivers the value of services or products to cover unserved market and hidden desire by fully response the overall market needs, to prevent the new entry and increase the market share. Additional, Dolnicar (2008) also provided the firm should emphasize of market segmentation that can use to strengthen their competitive advantages by analyzing the tourists and divided into a subgroup to helps firm aware tourist needs that not been responded, then selecting suitable tourist group and offering consistent new/distinct service to fulfill their needs. Thus, hypothesize the relationship as follows:

Hypothesis 7: Market fulfilment will have a positive influence on (a) marketing advantage, and (b) marketing profitability.

Marketing advantage

In this research, marketing advantage is defined as the firm's position that gets the trust of customers, accessible and distinctive image of service offerings with lower cost than competitors' position (Kotler & Keller, 2009). Correspondingly, marketing advantage can be described as new products/service included high quality and reasonable price, outstanding quality including modern innovation, unique, and good reputation over its competitors (Thipsri & Ussahawanitchakit, 2008). Furthermore, Morgan (2012) described a firm positional advantage that can be obtained from comprehensive product/service-based such offer differ value of product/service including pre-after sale, price-based such lower service offering price, such as trusted brand image, quality reputation, and organization image, delivery-based such as product/service availability and accessibility. Moreover, Hendar et al., (2017) mentioned the position of the firm that had seen as the excess over market share or profits in comparison to the competitors that had a positive influence effect on marketing performance. Thus, hypothesize the relationship as follows:

Hypothesis 8: Marketing advantage will have a positive influence on marketing profitability

Marketing profitability

Marketing profitability is defined as the position of the firm related to any operational outcome that shows marketing achievement of the firms including sales growth, market share, and overall profits (Narver & Slater, 1990). The profitability has measurement by allocation of revenues and costs to customer segments or individual customers, such the profitability of those segments and/or individual customers

can be calculated (Van Raaij et al., 2003). Likewise, firm performance that can be measured in two aspects comprehensive of subjective form are non-financial measure such customer satisfaction and loyalty, corporate image, and firm reputation; and the objective form financial measure such sales growth, and market share (Lahiri et. al., 2009). Correspondingly, the marketing profitability measure should capture firm performance at both current and future levels.

Research methodology

The population consisted of outbound tourism businesses in Thailand with effective license totaling 1,359 firms chosen from website of division of tourism business and guide registration, Tourism Authority of Thailand. The sample size was 289 firms by using formula calculation of Cohen (1988). Moreover, the constructs in the conceptual model were evaluating each of which measures item a five-point Likert scale, ranging from 1 = strongly disagree, to 5 = strongly agree. All constructs were developed for measuring from the definition of each, as well as from previous literature reviews. The questionnaire were checked by two experienced academics before data collection. Moreover, to ensure the construct validity, the size of the factor loading of all variables are ranged from 0.64 – 0.98, which are greater than 0.50 cut-off score and statistically significant (Hair et al., 2010). The Cronbach's alpha coefficient are presented ranged from 0.704 – 0.921 that are greater than 0.70 to confirm the internal consistency of the measures which were used in this

research (Nunnally & Bernstein 1994; Hair et al., 2010). The data collection was around eight weeks. The questionnaires mail were sent to 1,359 marketing executive/marketing manager of outbound tourism firms. A telephone call was used as the follow-up method after two weeks for increasing the response rate. The total returned usable questionnaires after removing incomplete questionnaires were 274 represented response rate 20.16%. The received questionnaires were separated into two equal as first and second groups, and test the difference. The results provide that statistically significant difference not occur between the two groups. Thus, nonresponse bias does not pose a significant problem in this research.

Results and discussion

The Ordinary Least Squares (OLS) regression was employed in this research to examine the hypothesized relationships. Correspondingly, the regression equation is a linear combination of the independent variables that best explains and predicts the dependent variable. The results of the correlation analysis present that the inter-correlation coefficient is 0.241 - 0.693 which does not exceed 0.80 (Hair et. al., 2010). Moreover, the correlation in Table 8 also shows that the maximum value of VIF is 2.413, which is lower than the cut-off score of 10 (Hair et. al., 2010). Both correlations and VIF ensure the non-existence of multicollinearity problems.

The result of the OLS regression analysis are clarified in Table 2. Firstly, the results presented that customer database orientation (CDO) is significantly and

positively related to marketing profitability (H1d: $\beta\_26 = 0.289$, p<0.01). The customer knowledge process enhances customer response capability which reflects to customer response speed and organization performance (Jayachandran et al., 2004). **Thus, Hypothesis 1d is supported.**

However, customer database orientation has insignificant effect on customer response (H1a: $\beta\_1 = -0.111$, p>0.05), market fulfillment (H1b: $\beta\_8 = -0.050$, p>0.05) and marketing advantage (H1c: $\beta\_15 = 0.100$, p>0.05). The performance of the service firms depend on ability of human resource and environment

(Geetha et al., 2017). The firm has limited resource and budget that does not have an ability to rise better outcomes. Also, the management of customer database relies on technology and analytical skills to make the data effectively which require both times and budget. The customer portfolio can be seen as the database of the firm; it can rise customer value and also increase serving cost (Thakur & Workman, 2016). The firm has information about customers but lack of analysis skills, and budget may not be effective. **Thus, Hypotheses 1a, 1b, and 1c are not supported**.

Table 1 Descriptive statistics and correlation matrix of marketing intelligence strategy and all constructs

Variables	CDO	MIC	CIC	SIF	NMTI	CR	MF	MA	MP	FA
CDO	1.000									
MIC	.663**	1.000								
CIC	.578**	.576**	1.000							
SIF	.549**	.576**	.561**	1.000						
NMTI	.467**	.513**	.457**	.686**	1.000					
CR	.241**	.294**	.340**	.421**	.410**	1.000				
MF	.244**	.196**	.463**	.418**	.471**	.572**	1.000			
MA	.318**	.235**	.360**	.418**	.464**	.571**	.687**	1.000		
MP	.475**	.334**	.401**	.511**	.438**	.511**	.584**	.693**	1.000	
FA	-.060	.018	-.010	-.102	-.281**	-.170**	-.089	-.101	-.076	1.000
FS	.090	.015	-.074	.167**	.193**	.114	.035	.147*	.163**	.201**

*$p < 0.05$, ** $p < 0.01$*

Secondly, it is found that market information capability (MIC) has significantly and positively related to market fulfillment (H2b: $\beta\_9 = 0.270$, p<0.01) and marketing advantage (H2c:

$\beta\_16 = 0.180$, p<0.05). This result demonstrated that firms use market information to understand potential customer and provide service to fulfill their needs. Market information is

contributed to firms' knowledge competence and influence on customer performance (Kandemir, 2005). The effective processing systems can benefit the firm by feeding back market information and effect to highly marketing competitive advantage (Meunier-FitzHugh & Piercy, 2006). **Thus, Hypotheses 2b and 2c are supported.**

However, market information capability has no significant effect on customer response (H2a: $\beta\_2 = 0.066$, $p>0.05$), and marketing profitability (H2d: $\beta\_27 = -0.144$, $p>0.05$). The firms that focus on potential customer and new market may not affect exiting customer response. Also, the firm that has potential of market information and ability to provide a new service to new market that may affect the investment and not generate short-term marketing profitability. The firm which lacks of information technology and human resource analytical skills may not enhance firm performance (Mao et al.,

2016). Thus, **Hypotheses 2a and 2d are not supported**.

Thirdly, the result found that competitor insight competency (CIC) has significant positive related to customer response (H3a: $\beta\_3 = 0.192$, $p<0.01$), market fulfillment (H3b: $\beta\_10 = 0.402$, $p<0.01$), and marketing advantage (H3c: $\beta\_17 = 0.194$, $p<0.01$). The competitors' information helped to evaluate the competitors' capabilities and then designed strategies to prevent market and serve customer demand (Valeriu, 2014). The competitor insight related to the data collection and information analysis helped the firm to develop strategy and enhanced competitive advantage (Rittenburg et al., 2007). Moreover, competitor information was caused a new product/service launching success by improving product/service innovation to meet market demand (Schoenherr & Swink, 2015). **Thus, Hypotheses 3a, 3b, and 3c are supported.**

Table 2 Results of the relationships among marketing intelligence strategy and its consequences

Independent Variables	Dependent Variables					
	CR	MF	MA	MA	MP	MP
CDO (**H1a-d**)	-.111	-.050	.100		**.289****	
	(.078)	(.072)	(.075)		**(.072)**	
MIC (**H2a-d**)	.066	**.270****	**.180***		-.144	
	(.081)	**(.074)**	**(.078)**		(.074)	
CIC (**H3a-d**)	**.192****	**.402****	**.194****		.112	
	(.074)	**(.069)**	**(.072)**		(.069)	
SIF (**H4a-d**)	**.212***	.121	.127		**.277****	
	(.083)	(.077)	(.081)		**(.077)**	
NMTI (**H5a-d**)	.138	**.385****	**.319****		.115	
	(.082)	**(.076)**	**(.080)**		(.076)	
CR (**H6a,b**)				**.242****		**.120***
				(.052)		**(.055)**
MF (**H7a,b**)				**.540****		**.172****
				(.051)		**(.061)**
MA (**H8**)						**.494****
						(.062)
FA	**-.275***	.086	-.400	-.066	-.021	-.009
	(.121)	(.111)	(.117)	(0.87)	(.111)	(.088)
FS	.212	-.061	.149	.219	.165	.145
	(.122)	(.112)	(.119)	(.088)	(.113)	(.090)
Adjusted R^2	**.218**	**.331**	**.252**	**.523**	**.325**	**.508**
Maximum VIF	**2.413**	**2.413**	**2.413**	**1.553**	**2.413**	**2.126**

* p < 0.05, ** p < 0.01

However, competitor insight competency has no significant effect on marketing profitability (H3d: $\beta_{28} = 0.112$, p>0.05). Information about the competitor may not affect the profitability of the organization, because tracking the competitors shows that firms are followers. Additionally, Desai (2013) presented the market followers concentrated on a smaller segment of the market may cause the budget then decreased the firm performance. Also,

Geyskens et al., (2002) indicated that leader firms with a few direct channels were expected to achieve greater gains in financial performance than follower with a broader channel. **Thus, Hypothesis 3d is not supported.**

Fourthly, it is found that service innovation focus (SIF) has significant positive related to customer response (H4a: $\beta_4 = 0.212$, p<0.05) and marketing profitability (H4d: $\beta_{29} = 0.277$, p<0.01). Service innovation has a positive impact

on market orientation which emphasis on customers' requirements and response (Alam, 2007). Service innovation effects on the improvement of the firm performance under sufficient existing knowledge (Caminsón & Monfort-Mir, 2012). Likewise, López and Ramos (2015) suggested that service innovation effects flew through three main channels: costs savings, enhanced productivity, and process which increased firm performance. **Thus, Hypotheses 4a and 4d are supported.**

Nevertheless, service innovation focus has no significant effect on market fulfillment (H4b: β_{11} = 0.121, p>0.05) and marketing advantage (H4c: β_{18} = 0.127, p>0.05). This result demonstrates that firms are used to focus on service innovation may rise the cost which has decreased impact to competitive advantage. The customer is an important part of building service innovation by service co-creation and information source (Evans, 2016). Accordingly, Evanschitzky et al., (2015) were mentioned the successful innovations must provide positive benefits as compared to the costs. Additionally, customers required for participate in service process, reduced the likelihood of continuous use of service innovation. **Thus, Hypotheses 4b and 4c are not supported.**

Fifthly, the result found that new marketing tool implementation (NMTI) is significant positive related to market fulfillment (H5b: β_{12} = 0.385, p<0.01) and marketing advantage (H5c: β_{19} = 0.319, p<0.01). The ability of the firms to adapt technology tools in their works increased service performance (Huang & Chang, 2014). Likewise, Popa et al., (2016) suggested that online marketing tools have attracting prospect customers and developing relationships with potential customers. New marketing tool implementation reaches for marketing advantage by adapting new tool that enhances lower cost service and creates differentiate by technology marketing tool. **Thus, Hypotheses 5b and 5c are supported.**

On the contrary, new marketing tool implementation has no significant effect on customer response (H5a: β_5 = 0.138, p>0.05) and marketing profitability (H5d: β_{30} = 0.115, p>0.05). The adaptation of new marketing tools require more time, knowledge, skill and budget at the beginning compared to those that are non-virtual (Galati et al., 2017). Additional, Wang et al., (2017) mentioned employees in service business most required professional knowledge and skill to prepare a delightful service applying. **Thus, Hypotheses 5a and 5d are not supported.**

Lastly, the customer response is significant positive related to marketing advantage (H6a: β_{22} = 0.242, p<0.01), and marketing profitability (H6b: β_{33} = 0.120, p<0.05). The customer response capability of the firm reduced a crucial service cost and time. The rapid respond and helpfulness services to customers allow an organization to differentiate its product and service from competitors, maintain customer loyalty and extend the value provided to customers (Lee & Lin, 2005). **Thus, Hypotheses 6a and 6b are supported.**

Moreover, the analyses indicate that market fulfillment has significant positive related to marketing advantage (H7a: β_{23} = 0.540, p < 0.01) and marketing profitability (H7b: β_{34} = 0.172, p < 0.01). The firms have provided

new alternative service choices to the market raising more market share and customer satisfaction (Mol et. al., 2012). Furthermore, the firms strengthen their competitive advantages by analyzing customers' needs, and offering consistent new/distinct service to fulfill customer needs and enhance service performance (Dolnicar, 2008). **Thus, Hypotheses 7a and 7b are supported.**

Additionally, the analyses indicate that marketing advantage has significant and positive related to marketing profitability (H8: $\beta_{35} = 0.494$, p < 0.01). These findings suggested that marketing profitability can be derived from marketing advantage. The marketing advantage can be obtained from product/service-based such offer different value of product/service or lower price (Morgan, 2012). The position of the firm that superior to competitor in market share or profits, rise marketing performance (Hendar et. al., 2017). **Thus, Hypotheses 8 is supported.**

Conclusions

The aim of the research is to contribute to the empirical examination of the relationships among marketing intelligence strategy, customer response, market fulfillment, marketing advantage, and marketing profitability of tourism business in Thailand. The results presented that marketing intelligence strategy has a crucial role on customer response, market fulfillment, marketing advantage and marketing profitability. However, some dimension of marketing intelligence strategy has not effects on outcomes. The development of customer databases, market information, analysis

and implementation of service innovation rises cost, and requires more time and human resources skills.

Research contributions

Marketing intelligence used to consider as an operational system whereas this research respect marketing intelligence as the ability of the firm which allowed a business to achieve marketing advantage and led to marketing performance. The findings revealed that the competency of competitor information had an effect on the speed of customer response, provided a service to unserved market, and increased marketing advantage. Moreover, this research presented the interesting dimension such service innovation focus as a part of marketing intelligence explained by knowledge and information that rose through service innovation process.

The research findings have managerial implications for marketing practitioners who are responsible for marketing strategic planning in capability development of organizational. First of all, this research benefits the marketing executives to identify and justify the key components of marketing intelligence strategy that may be more crucial in a severe competitive. The results of this research recommend components of marketing intelligence strategy which are the key components for enhancing the outcomes which included customer response, market fulfillment, marketing advantage, and marketing profitability. Surely, the marketing executives should concentrate on competitor insight competency, service innovation focus and new marketing tool implementation, because these are the significant factors

of marketing intelligence strategy. Especially, competitor insight competency is the ability of firm to track, analyze, predict competitor's information and create networks to exchange the competitors information that helps to evaluate the capabilities of competitors in the market, legally and ethically, and enhance response strategies to prevent market and serve customer demand. Small and medium-sized businesses likes tourism business, need to focus on study and analysis information about their competitors and build information exchange network, because they can adjust strategy to fit the situation. Additionally, service innovation focus is concentration of a firm to acquire and assimilate knowledge, transform it into new, unique abilities and ideas, and produce these ideas by first generating and commercializing new or improved service to response customer. Service organization such tourism firm should emphasize on create a new service that helps to deliver better service and expand the channel. Moreover, new marketing tool implementation is an adaptation of the firm to execution of new marketing's techniques and communication instrument with suitable and efficiency to service operations. The knowledge to exploitation new marketing tool of the firm can enhance better marketing process and reduce error to response customer demand.

The nature of tourism industry depends on the environment which constantly changing and hard to control. The firm that have the marketing data and information analysis skills will help businesses adapted to the situation. For example, marketing intelligence enhances the firm ability to develop a tour program related to tourists' behavior and environment changes. It leads the firm to generate a marketing profitability. This research result can be gained many important insights for managerial contribution. The firm's marketing executive particularly in the outbound tourism business in Thailand understand how their firm can create capability propositions to enhance marketing advantage, and achieve better marketing profitability.

Directions for future research

The finding of this research indicate that the need for further research is apparent. Firstly, this research was collected data only from tourism business in Thailand. The future research could investigate the effect of marketing intelligence strategy and marketing profitability in the different businesses such as consumer goods businesses, to understand how this strategy works in tangible product businesses. Additionally, further research using multiple businesses samples would strengthen the generalizability of results. Secondly, this research only used questionnaires to collect the data and was explored through a cross-sectional survey. The limitation of data collected raise to a precise moment in time, and lack of in-depth information and tactic, it would be beneficial to brings a longitudinal study to examine how strategy modifications to the firm and changes. Moreover, further research with qualitative methods such as case study and in-depth interview would extend the interestingness and in-depth information. Lastly, the nature of tourism

and services are intangible and difficult to control, it depends on the environments more than tangible products. The further research could compare service and consumer goods businesses would deliver an interesting results of marketing intelligence strategy.

References

Alam, I. (2007). New service development process: emerging versus developed markets, *Journal of Global Marketing*. 20:43-55.

Albescu, F., & Pugna, I. B. (2014). Marketing intelligence–the last frontier of business information technologies. Romanian Journal of Marketing, (3) 55-68.

Bierly, Paul E. & Hämäläinen, Timo. (1995). Organizational learning and strategy. *Scandinavian Journal of Management*, 11(3): 209-224.

Bhat, S. A., & Darzi, M. A. (2016). Customer relationship management: an approach to competitive advantage in the banking sector by exploring the mediational role of loyalty. *International Journal of Bank Marketing,* 34(3), 388-410.

Bosch, V. (2016). Big data in market research: why more data does not automatically mean better information. *GfK Marketing Intelligence Review,* 8(2), 56-63.

Branzei, O., & Vertinsky, I. (2006). Strategic pathways to product innovation capabilities in SMEs. *Journal of Business Venturing*, 21(1), 75-105.

CaminsÓn, C. & V. M. Monfort-Mir. (2102). Measuring innovation in tourism from the schumpetarian and the dynamic-capabilities perspectives, *Tourism Management*. 33, 776-789.

Carbonell, P., Rodr´ıguez-Escudero, A. I., & Pujari, D. (2009). Customer involvement in new service development: an examination of antecedents and outcomes. *Journal of Product Innovation Management*, 26(5), 536–550.

Carlisle, S., Kunc, M., Jones, E., & Tiffin, S. (2013). Supporting innovation for tourism development through multi-stakeholder approaches: Experiences from Africa. *Tourism Management*, 35, 59-69.

Chuwiruch, N., Jhundra-Indra, P., & Boonlua, S. (2015). Marketing innovation strategy and marketing performance: a conceptual framework. *In Allied Academies*

International Conference. Academy of Marketing Studies. Proceedings (Vol. 20, No. 2, p. 82). Jordan Whitney Enterprises, Inc.

Cohen, J. (1988). Statistical power analysis for the behavioral sciences, (2nd ed.). Hillsdale, NJ: Erlbaum.

Dalkir, Kimiz. (2011). Knowledge Management in Theory and Practicc, MIT Press, March 4.

Desai, S. S. (2013). An analysis of the competitive marketing strategies of the hospitality industry in UAE. *IUP Journal of Management Research*, 12(1), 22.

Dolnicar, S. (2008). Market segmentation in tourism. *Tourism Management, Analysis, Behaviour and Strategy*, 129-150.

Evans, N. G. (2016). Sustainable competitive advantage in tourism organizations: a strategic model applying service dominant logic and tourism's defining characteristics. *Tourism Management Perspectives,* 18, 14-25.

Evanschitzky, H., Iyer, G. R., Pillai, K. G., Kenning, P., & Schütte, R. (2015). Consumer trial, continuous use, and economic benefits of a retail service innovation: the case of the personal shopping assistant. *Journal of Product Innovation Management,* 32(3), 459-475.

Fleisher, C. S. (2007). Using open source data in developing competitive and marketing intelligence. *European journal of marketing*, 42(7/8), 852-866.

Galati, A., Crescimanno, M., Tinervia, S., & Fagnani, F. (2017). Social media as a strategic marketing tool in the Sicilian wine industry: Evidence from Facebook. *Wine Economics and Policy*. 6(1), 40-47.

Geetha, M., Singha, P., & Sinha, S. (2017). Relationship between customer sentiment and online customer ratings for hotels-An empirical analysis. *Tourism Management,* 61, 43-54.

Geyskens, I., Gielens, K., & Dekimpe, M. G. (2002). The market valuation of internet channel additions. *Journal of marketing*, 66(2), 102-119.

Golestan, A. N., & Mashhadi, H. T. H. (2016). Performance effects of market orientation and the mediating role of innovation of service process in insurance industry: case study of Dana Insurance Company. *International Journal of Management, Accounting and Economics*, 3(1), 28-44.

Hair, J.F., Black, W.C., Babin, B.J., & Anderson, R.E. (2010). Multivariate Data Analysis. Seventh Edition. Prentice Hall, Upper Saddle River, New Jersey.

Hendar, H., Ferdinand, A. T., & Nurhayati, T. (2017). Introducing the Religio-Centric positional advantage to Indonesian small businesses. *Management & Marketing*, 12(1), 78-102.

Hernandez, E., Sanders, W. G., & Tuschke, A. (2015). Network defense: pruning, grafting, and closing to prevent leakage of strategic knowledge to rivals. *Academy of Management Journal*, 58(4), 1233-1260.

Hjalager, A.-M. (2010). A review of innovation research in tourism, *Tourism Management*. 31(1): 1-12.

Huang, E., & Chang, C. C. A. (2014). Case studies of implementation of interactive e-health tools on hospital Web sites. *e-Service Journal,* 9(2), 46-61.

Jayachandran, S., Hewett, K., & Kaufman, P. (2004). Customer response capability in a sense-and-respond era: the role of customer knowledge process, *Journal of the Academy of Marketing Science,* 32(3), 219-233.

Johnson, J. T., Barksdale, H. C., & Boles, J. S. (2003). Factors associated with customer willingness to refer leads to salespeople. *Journal of Business Research*, 56(4), 257-263.

Kandemir, D. (2005). A study of market knowledge competence as a source of SBU performance. Michigan State University: Doctoral Dissertation.

Kelly, E.P. & Erickson, G.S. (2004), Legal and privacy issues surrounding customer databases and e-merchant bankruptcies: reflections on Toysmart.com, *Industrial Management & Data Systems*, Vol. 104 No. 3, pp. 209-17.

Kohli, A.K. & B.J. Jaworski (1990). Market orientation: the construct, research propositions, and managerial implications. *Journal of Marketing,* 54(2), 1-18.

Kothari, T., Xiang, Z., & Fesenmaier, D. R. (2008). The impact of a marketing information system: a case study of Smart-Baltimore. *Information Technology & Tourism*, 10(1), 59-74.

Kotler & Keller, (2009). Marketing Management. 13th Edition. New Jersey: Prentice Hall.

Lahiri, S., Kedia, B. L., Raghunath, S. & Agrawal, N. M. (2009). Anticipated rivalry as a moderator of the relationship between firm resources and performance, *International Journal of Management,* 26(1), 146-158.

Lee, G. & Lin, H. (2005).Customer perceptions of e-service quality in online Shopping. *International Journal of Retail & Distribution Management, 33*(2), 161-176.

López, A., & Ramos, D. (2015). Innovation in services: The case of rural tourism in Argentina. *Emerging Markets Finance and Trade,* 51(3), 635-646.

Lu, C. S., & Yang, C. C. (2010). Logistics service capabilities and firm performance of international distribution center operators. *The Service Industries Journal,* 30(2), 281-298.

Mao, H., Liu, S., Zhang, J., & Deng, Z. (2016). Information technology resource, knowledge management capability, and competitive advantage: the moderating role of resource commitment. *International Journal of Information Management*, 36(6), 1062-1074.

Meunier-FitzHugh, L., & Piercy, N. (2006). Integrating marketing intelligence sources-Reconsidering the role of the Salesforce. *International Journal of Market Research,* 48(6), 699-716.

Mol, J., Ming Chiu, M., & Wijnberg, N. (2012). Love me tender: New entry in popular music. *Journal of Organizational Change Management, 25*(1), 88-120.

Moorman, C. (1995). Organizational market information processes: cultural antecedents and new product outcomes. *Journal of marketing research*, 318-335.

Morgan, N.A. (2012). Marketing and business performance. *Journal of the Academy of Marketing Science,* 40(1), 102-119.

Narver, John C. & Slater, Stanley F. (1990). The effect of a market orientation on business profitability. *Journal of Marketing*, 54: 20-35.

Nunnally, J. C., & Bernstein, I. H. (1994) Psychometric theory (3rd ed.). New-York: Mcgrew-Hill.

Öztürk, S., Okumuş, A., & Mutlu, F. (2012). Segmentation based on sources of marketing intelligence, marketing intelligence quotient and business characteristics in software industry. *Istanbul University Journal of the School of Business,* 41(2), 227-240.

Pehrsson, A. (2014). Firms' customer responsiveness and performance: the moderating roles of dyadic competition and firm's age. *Journal of Business & Industrial Marketing*, Vol. 29, No. 1, pp. 34-44.

Popa, A. L., Tarca, N. N., & Sasu, D. V. (2016). An experiment on using online marketing tools for promoting higher education services. Annals of the University of Oradea. *Economic Science Series*, 25(2).

Rittenburg, T. L., Valentine, S. R., & Faircloth, J. B. (2007). An ethical decision-making framework for competitor intelligence gathering. *Journal of business ethics,* 70(3), 235-245.

Sashittal, H. C., & Jassawalla, A. R. (2001). Marketing implementation in smaller organizations: definition, framework, and propositional inventory. *Journal of the Academy of Marketing science*, 29(1), 50-69.

Schoenherr, T., & Swink, M. (2015). The roles of supply chain intelligence and adaptability in new product launch success. *Decision Sciences*, 46(5), 901-936.

Thakur, R., & Workman, L. (2016). Customer portfolio management (CPM) for improved customer relationship management (CRM): Are your customers platinum, gold, silver, or bronze?. *Journal of Business Research*, 69(10), 4095-4102.

Thapa, S., & Verma, S. (2014). Analysis of green marketing as environment protection tool: a study of consumer of Dehradun. *International Journal of Research and Engineering*, 1(3), 20-28.

Theodosiou, M., & Katsikea, E., (2013). The export information system: an empirical investigation of its antecedents and performance outcomes. *Journal of International Marketing*, 21 (3), 72–94.

Thipsri & Ussahawanitchakit, (2008). Effects of technological on new product development and export performance: an empirical research of exporting cosmetics business in Thailand. *International of strategic Management.* 8(2), 1-11.

Tsiotsou, R., & Ratten, V. (2010). Future research directions in tourism marketing. Marketing intelligence & planning, 28(4), 533-544.

Valeriu, I. (2014). Competitive intelligence analysis-scenarios method. *The Annals of The University of Oradea*, 329.

Van Raaij, E. M., Vernooij, M. J., & van Triest, S. (2003). The implementation of customer profitability analysis: a case study. *Industrial Marketing Management,* 32(7), 573-583.

Vavrečka, V., & Mezuláník, J. (2015). Digital marketing communication tools in the process of implementation of marketing strategy of the tourist area Jeseníky-East. *Marketing Identity*, 3(1/1), 374-388.

Venter, P., & Van Rensburg, M. J. (2014). The relationship between marketing intelligence and strategic marketing. *South African Journal of Economic and Management Sciences,* 17(4), 440-470.

Wang, Y. C., Luo, C. C., & Tai, Y. F. (2017). Implementation of delightful services: From the perspective of frontline service employees. *Journal of Hospitality and Tourism Management,* 31, 90-104.

Waranantakul, W. & P. Ussahawanitchakit (2012). Marketing knowledge absorptive capacity and marketing performance: an empirical investigation of food product exporting businesses in Thailand. *International Journal of Business Strategy*, 12(3), 62-80.

Wöber, K. W. (2003). Information supply in tourism management by marketing decision support systems. *Tourism Management*, 24(3), 241-255.

Zampetakis, L. A., Gruys, M. L., & Dewett, T. (2014). Ideas and implementation: the effective implementation of novel marketing programmed in small-to medium-sized Greek firms. *Creativity and Innovation Management*, 23(2), 168-182.

DOMINANT FACTORS INFLUENCING TRAINING EFFECTIVENESS (LEARNING AND TRANSFER PERFORMANCE) OF SMES IN BEIJING, CHINA: A STUDY ON THE HOTEL SECTOR

Yan'e Li[1] and Rawida Wiriyakitjar[2]

[1]International College, University of the Thai Chamber of Commerce
[2]School of Business, University of the Thai Chamber of Commerce
126/1 Vibhavadee-Rangsit Rd., Dindang, Bangkok 10400, Thailand
[1]89021123@qq.com, [2]rawida@gmail.com

Abstract

By drawing on existing literatures, the dominant factors influencing training effectiveness of SMEs in hotel sector in Beijing, China were modeled and investigated in this paper. Methodologies were employed to explore the dominant factors and how they work. It is found that trainee motivation, training need, training design, training implementation, continuous learning culture, and support from supervisors and peers influence learning performance directly, and indirectly impact transfer performance through learning performance. In addition, all of the influence is positive. The implications about small and medium hotels, specialists, organizations paying attention to the training effectiveness, and the relative study were discussed.

Key words: Human resource, Human resource development, Training, Training effectiveness, Learning performance, Transfer performance.

Introduction

SMEs play a big role in economy, and around half the SMEs in Asia-Pacific Economic Cooperation (APEC) are in Indonesia and China (Chris, 2001). Chinese SMEs account for 99.7% of the total number of national enterprises, and micro and small enterprises account for 97.3%. SMEs create as much as 60% of the GDP (gross domestic product), 59% of the tax, 60% of the import and export. They provide 80% of jobs in cities and towns (Communication Information News, 2013). In addition, WTO (World Trade Organization) reports, China will be one of the most attractive destinations by 2020 (He, 2000). The Hotel Sector as a part of the tourism industry is becoming more important. Unfortunately, intensified competition, lack of talents, high separation rate, and family-based management structure limit the survival and development of SMEs (Yushui, 2013; Yongxia, 2013).

Training is needed to improve the level of employees and managers, because it is an important component to competitive success and enterprise strategy (Gerald, 2000). Previous research results have consistently found that SME training implementation result in better company performance (Mako', 2005). However, direct losing of output, less application, prediction of high cost comparing benefit, financing difficulties and lack of professionals lead to the reluctance of investment in formal training programs (Tung-Chun, 2001; Antonios, 2011).

Considering the disadvantage of SMEs' training and the importance to SMEs, efficiently controlling the dominant factors that influence the training effectiveness is very meaningful. Because service industries are more dynamic than manufacturing, further training is more common in the service sector (Nai-Wen, 2008).

Until now, literatures concentrated on, the factors influencing the training effectiveness, training success, and transfer of training, or only focus on an enterprise (Nurhazani and Issam, 2012; Vasiliki, 2012; Junchuan *et al.*, 2001; Xinyuan, *et al.*, 2004), a special field (Hyochang *et al.*, 2006), or overseas (Dan and Amanuel, 2005). Less attention was paid on SMEs in China, especially the hotel industry, although it has its own distinct characteristics. This study was designed to test the influence of various factors on training effectiveness. The objectives of this research include: (1) To evaluate the dominant factors influence the learning performance and transfer

performance of SMEs that focus on the Hotel Sector in Beijing, China, and how they work; (2) To investigate the relationship between learning performance and transfer performance.

Literature review

SME

SME has been variously defined. The most common criterion is the number employed, but capitalization, assets, sales or turnover and production capacity are also used by various economies (Chris, 2001). The most common definition standard is less than 100 employees (Chris, 2001).

In China, the thresholds are established based on staff headcount, turnover, and balance sheet total as the one established by European commission, in addition, the characteristics are considered. In lodging and restaurant industry, the enterprises that have employees less than 300, or business income which is less than ￥100 million, are micro, small and medium-sized enterprises, in which the hotels with less than ten employs, and less than ￥1 million business income are micro-sized enterprises (The national statistics and the ministry of finance, 2011). Most of micro-enterprises have

not yet reached a stage that training is needed, what they need first are specialist assistance with business planning (Boocock *et al.*, 1999). The smallest SMEs are often reluctant to fund any kind of training at all (Nai-Wen, 2008). This study did not cover the micro-enterprises. For the convenience of judgment, the hotel size depending on the number of rooms further which is the main measuring standard was considered here (Xiangmin, 2005).This study concentrates on the hotels with the number of rooms is equal or less than 600.

Training effectiveness

In this study, training effectiveness refers to the extent to which individuals considered they had acquired and applied what they have gained in the training to the job, which is evaluated by learning performance and transfer performance (Xiao, 1996; Baldwin and Ford, 1988; Junchuan et al., 2001; Business Dictionary, 2015).

Kirkpatrick's four-level evaluation model evaluates training effectiveness by reaction, learning, behavior, and results (Kirkpatrick, 1959, 1987, 1996). However, the fourth level almost needs

the participation of each department. It is a big challenge to the trainings in SMEs, so results level was not considered in this study.

It is found that most of the studies about training evaluation focused on trainee reactions and the degree of learning (Tracey *et al.*, 1995). However, the performance on end-of-training did not mean the future performance on-the-job (Severin, 1952). Measuring the changes of job performance and relating these changes to measuring the achievement of learning goals are more appropriate evaluation (Kreiger *et al.*, 1993). Baldwin and Ford (1988), and Ford and Weissbein (1997) assessed training effectiveness by learning and retention which is regarded as training outputs, and generalization and maintenance which is regarded as conditions of transfer. In this study, the training outputs and conditions of transfer are modified to training performance and transfer performance separately.

Baldwin and Ford (1988), and Ford and Weissbein (1997) believed that learning and retention have direct effects on generalization and maintenance. Similarly, even though some study found that there is no-significant relationship between learning performance and transfer performance, more researches illustrated that there is significant and positive relationship between them (Eddie and Danny, 2001; Hyochang *et al.*, 2006; Carnevale and Schultz, 1990). Based on the conclusions above, it is hypothesized:

H1: Learning performance significantly influences transfer performance.

In addition, higher amounts of researches on training effectiveness are based on trainer＇s or manager＇s perspectives. However, the frontline employee＇s perspective is important to be considered, because trainee＇s reaction is a potential predictor of training effectiveness (Xinyuan *et al.,* 2004; Morgan and Casper, 2000). Employee＇s perspective was adopted while evaluating the training effective in this study.

Designing factors influencing training effectiveness

The very common model (Table A-1) researching training effectiveness was established by Baldwin and Ford (1988), and further updated by Ford and Weissbein (1997). The factors were obtained mainly according to this model.

Training design dimension in Baldwin and Ford＇s Model consists of the incorporation of learning principles, the sequencing of training materials, and the

job relevance of training contents (Baldwin and Ford, 1988; Ford and Weissbein, 1997). These three factors are included in training design and training implementation of the training process. Tracey and Tews (1995) deemed opinions to training concentrated on evaluation of training need, training implementation, and training assessment. However, a long-standing principle showed that trainers must first assess the cause of a performance situation to ensure an appropriate intervention is employed (McGehee and Thayer, 1961). It looks more appreciate to consider training dimension by training process, which means training need and training assessment are added.

Trainees' characteristics in Baldwin and Ford's Model consists of ability, personality, and motivation, which may directly influence training transfer (Baldwin and Ford, 1988; Ford and Weissbein, 1997), among which motivation was a very popular one tested by the previous studies (Baldwin and Ford, 1988; Ford and Weissbein, 1997; Vasiliki and Maria, 2012; Hamid et al., 2012). Motivation was even treated as a very important factor influencing training effectiveness (Xinyuan *et al.*, 2006; Vasiliki, 2012). Desinmone and Harris (1998) indicated that motivation

of trainee determined trainability. So, only motivation was kept in trainee characteristics.

All the above efforts were transferred to the following ten hypotheses:

H1: Learning performance significantly influences transfer performance.

H2: Training process related factors significantly influence learning performance.

H3: Trainee motivation significantly influences learning performance.

H4: Trainee motivation significantly influences transfer performance.

H5: Work environment significantly influences learning performance.

H6: Work environment significantly influences transfer performance.

Conceptual framework

According to the prior researches and incorporating appropriate variables for SMEs in hotel sector in China, the conceptual framework is as follow (Figure 1).

Research methodology

Population and sample

The population of this study is the employees who work in small and medium hotels according to the data from National Bureau of Statistics of China, which is 150,808 (http://data.stats.gov.cn/workspace/index?m=fsnd).
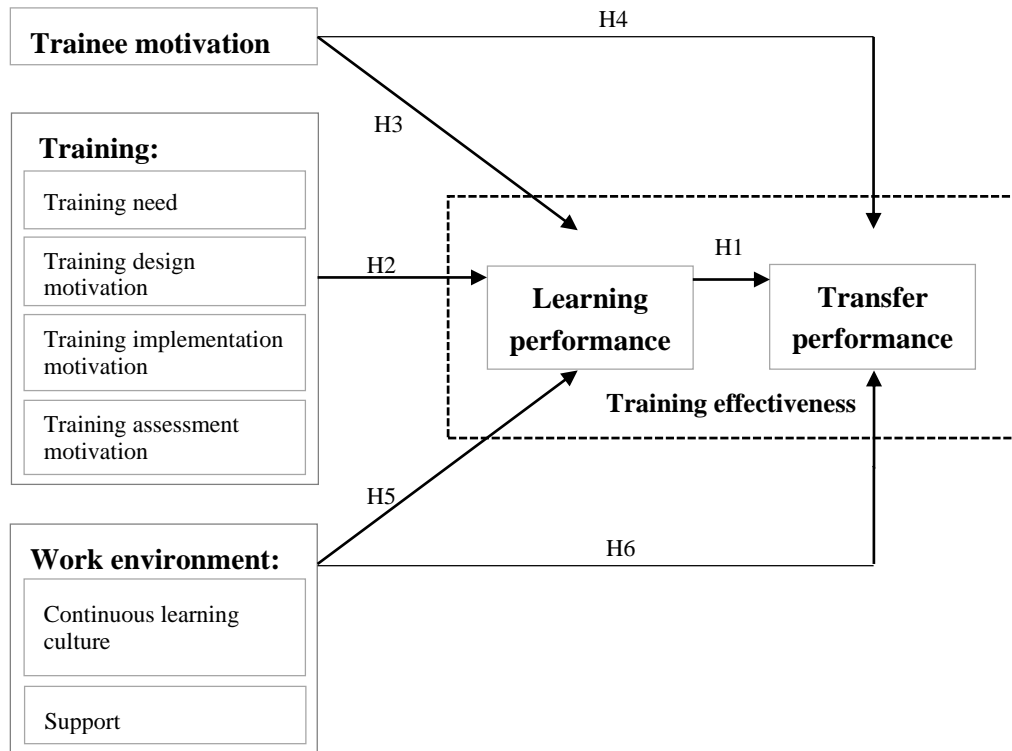

Figure 1 Conceptual framework

According to formula by Yamane (1973), the sample size of this study at 95% confidence level was calculated as follow:

$$n = \frac{N}{1+Ne^2} = \frac{150,808}{1+150,808 \times 0.05^2} = 377.02 \approx 378$$

Considering the invalid questionnaires that might exist, 400 questionnaires were randomly distributed to respondents in 16 districts of Beijing to ensure that the valid questionnaires collected back are more than 378, which accords to the distribution of population (Table A-2).

Questionnaire design and measures pretest of research instrument

A series of items in questionnaires to measure all of factors were derived according to the conceptual framework and the previous literatures (Tun-chun, 2001; Swaminathan and Gowri, 2011; Xinyuan et al., 2004; Hyochang et al., 2006; Akhila et al., 2011; Osman, 2010; Tracey et al., 1995; Jane, 1998; Dan and Amanuel, 2005; Noe and Schmitt, 1986; Kossek et al., 1998; Pugh and Bergin, 2006; Lee, 1995; The Ministry of Labor and Social Security, and China

association of worker education and vocational training, 2008; Rouiller and Goldstein, 1993; Xiao, 1996). Based on the review, a draft of the questionnaires consisting of Chinese version and English version were designed, and the pretest was carried out to ensure that the survey instrument is easy to understand for the respondents by evaluating its validity and reliability. 30 employees working in the SMEs of hotels in Beijing, China, were investigated. They were not included in the main study sample.

The retest reliability test and the Cronbach's alpha coefficient were implemented, and 0.7 is regarded as the cutoff value for being acceptable and reliable according to the suggestion from previous researches (Cronbach, 1951; Nunnally and Bernstein, 1994). The results in Table 1 show that the questionnaires can produce consistent results.

Table 1 Reliability test by Cronbach's alpha

No.	Variables	Amount of items	Cronbach's Alpha	
			Pretest	Final
1	**Training**	**4**	**0.930**	**0.900**
	Training need	3	0.821	0.787
	Training design	5	0.890	0.841
	Training implementation	6	0.900	0.889
	Training assessment	4	0.856	0.842
2	**Work environment**	**2**	**0.937**	**0.875**
	Continuous learning performance	6	0.883	0.885
	Support	6	0.948	0.886
3	**Trainee motivation**	**7**	**0.860**	**0.845**
4	**Learning performance**	**3**	**0.734**	**0.784**
5	**Transfer performance**	**4**	**0.800**	**0.866**

There are three steps to test the validity of questionnaires: First of all, the specialists in the area of human resource development or management in hotel industry were asked to evaluate whether the factors influence the training effectiveness. Then, professionals of English and Chinese language were invited to evaluate the quality of the translation between two versions. Finally, the 30 employees were asked to fill out the questionnaires and to give suggestion about any item that could be ambiguous or hard to understand or difficult to answer.

Basing on comments and suggestions from each step of validity test, some items in the questionnaires were modified.

Data collection and analysis

On door to door basis, 41% of the hotels were randomly visited. The researcher sought help from well-connected friends who could reach to the respondents,

which made the other 59% of the hotels visited. Questionnaires were randomly sent out to the respondents who were non-managerial employees, because front-line employee's perspective was adopted in this study. The completed survey forms were collected directly.

The collected data was analyzed through the following methodologies:

Descriptive analysis was used for analyzing demographic information (Sadegh and Azadeh, 2012).

Correlation analysis was used for testing whether there were close relationship between independent variables and dependent variables. The factors did not significantly influence the dependent variables were rejected. Pearson correlation coefficient (R) and the Probability (P) were used in the study (Iman, 2013; Anderson et al, 2013). Based on the result of correlation analysis, regression analysis and multiple regression analysis were mainly used to finally get the dominant factors, and test how these factors influenced the dependent variables (Dan and Amanuel, 2005; Nurhazani and Issam, 2012; Xinyuan et al., 2004).

Results

Summary the demographic information by using descriptive analysis

378 valid questionnaires from 46 hotels were collected back. A demographic profile about respondents was provided in Table2

Data analysis and findings

Correlation analysis

The correlation matrix (Table 3) proved that all the variables were related significantly with each other, which provides an adequate basis for the regression analysis and multiple regression analysis (Anderson et al, 2013).

Hypothesis testing

The regression analysis was used for testing hypothesis. The results (Table 4 and Table 5) showed that, all the regressions were statistically significant ($P < 0.05$). Learning performance could explain 46.5% ($R^2=0.465$) of the variation of the transfer performance. Trainee motivation could explain 39.6% ($R^2=0.396$) and 46.3% ($R^2=0.463$) of the variation of the learning performance and transfer performance separately. Learning performance positively affects

the transfer performance, in addition, trainee motivation positively influence learning performance and transfer performance too (B＞0).

Multiple regression analysis was carried out to test the second, the fifth, and the sixth hypotheses. According to the results in Table 5, Model 3 of the second hypothesis which has the best goodness of fit was chosen, because it not only had the biggest R^2(0.336 ＞ 0.313 ＞ 0.275) and adjusted R^2(0.331＞0.309＞0.274), but also had the smallest standard error of the estimate. In this model, training assessment was removed. Similarly, Model 2 was chosen respectively in the fifth and the sixth hypotheses. The chosen three regression equations of the

Models are statistically significant (P＜0.05).

Considering the value of T-test in Table 6, each predictor makes sense (P＜0.05). Among factors of training process, training implementation is the most important variable influencing the learning performance, which is followed by training need and training design (0.244 ＞ 0.238 ＞ 0.164). The tested relationships were positive (B＞0). In work environment dimension, both continuous learning culture and support from supervisors and colleagues could positively affect learning performance and transfer performance (B＞0), and the former one worked more than

Table 2 Demographic of respondents

Demographic		Frequency	Percent
Gender	Male	132	34.9
	Female	246	65.1
Age	18-22	106	28.0
	23-27	129	34.1
	28-32	58	15.3
	33-37	31	8.2
	38-42	26	6.9
	Over 42 years old	28	7.4
Marital status	Single	211	55.8
	Married	167	44.2
Educational level	Under high school	76	20.1
	High school	129	34.1
	Associate, bachelor	169	44.7
	Master	4	1.1
Working years	Below 3 years	142	37.6
	3-6 years	129	34.1
	7-10 years	50	13.2
	11-14 years	18	4.8
	Over 14 years	39	10.3

Table 3 Correlation matrix

	TN	TD	TI	TA	CL	Su	TM	LP	TP
TN	1								
TD	0.724**	1							
TI	0.645**	0.773**	1						
TA	0.617**	0.666**	0.675**	1					
CLC	0.618**	0.675**	0.684**	0.649**	1				
Su	0.565**	0.611**	0.655**	0.592**	0.778**	1			
TM	0.504**	0.494**	0.462**	0.436**	0.532**	0.517*	1		
LP	0.514**	0.525**	0.524**	0.451**	0.521**	0.497*	0.630**	1	
TP	0.598**	0.595**	0.602**	0.516**	0.614**	0.604*	0.680**	0.682*	1

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

TN = Training need, TD = Training design, TI = Training implementation,

TA = Training assessment, CLC = Continuous learning culture, Su = Support,

TM = Trainee motivation, LP = Learning performance, TP = Transfer performance.

Table 4 Regression results of H1, H3, & H4

Hypotheses	R	R²	F	P-value
H1 (TP on LP)	0.682	0.465	326.878	0.000
H3 (LP on TM)	0.630	0.396	246.999	0.000
H4 (TP on TM)	0.680	0.463	323.754	0.000

Table 5 Multiple regression of H2, H9, H10

Hypotheses	Model Name	R²	Adjusted R²	Std. Error of the Estimate	F	P-value
H2	1	0.275[b]	0.274	0.63827	142.936	0.000
(LP on T[a])	2	0.313[c]	0.309	0.62230	85.459	0.000
	3	0.336[d]	0.331	0.61260	63.110	0.000
H5	1	0.272[f]	0.270	0.63986	140.361	0.000
(WE[e] on LP)	2	0.293[g]	0.289	0.63132	77.712	0.000
H6	1	0.377[h]	0.375	0.61366	227.112	0.000
(WE on TP)	2	0.417[i]	0.414	0.59427	134.057	0.000

a. T is training.

b. Predictors: (Constant), training design

c. Predictors: (Constant), training design, training need

d. Predictors: (Constant), training design, training need, training implementation

e. WE is work environment.

f. Predictors: (Constant), continuous learning culture

g. Predictors: (Constant), continuous learning culture, support

h. Predictors: (Constant), continuous learning culture

i. Predictors: (Constant), continuous learning culture, support

the later one ($0.341 > 0.232$, $0.365 > 0.320$).

The results of the hypothesis testing are shown in the following Table 7. Based on the hypothesis testing results, the conceptual framework was modified as follow (Figure 2).

Table 6 Regression results of H1, H2, H5, H6, H9, & H10

Hypotheses	Model	Unstandardized Coefficients		Standardized Coefficients	t	P-value
		B	Std. Error	Beta		
H1	(Constant)	1.147	0.147		7.823	0.000
	LE	0.707	0.039	0.682	18.080	0.000
H2	(Constant)	1.408	0.171		8.250	0.000
	TI	0.245	0.068	0.244	3.600	0.000
	TN	0.206	0.054	0.238	3.818	0.000
	TD	0.165	0.075	0.164	2.189	0.029
H3	(Constant)	1.214	0.160		7.606	0.000
	TM	0.667	0.042	0.630	15.716	0.000
H4	(Constant)	0.988	0.156		6.335	0.000
	TM	0.747	0.042	0.680	17.993	0.000
H5	(Constant)	1.557	0.173		8.978	0.000
	CLC	0.343	0.069	0.341	4.934	0.000
	Su	0.226	0.067	0.232	3.353	0.001
H6	(Constant)	1.121	0.163		6.863	0.000
	CLC	0.380	0.065	0.365	5.813	0.000
	Su	0.323	0.063	0.320	5.093	0.000

Conclusion, discussion, and recommendation

Conclusion and Discussion

Dan and Amanuel (2005) tested training effectiveness by post-training declarative knowledge, training transfer, training generation, and training maintenance. Hamid et al. (2012) only focused on the transfer of the training. This study paid attention on both learning performance and transfer performance, which supported the method of Hyochang et al. (2006). In addition, it tested the relationship between learning performance and transfer performance further. The finding showed that learning performance positively influenced transfer performance, which supports the previous studies (Baldwin and Ford, 1988; Ford and Weissbin, 1997; Hyochang, et al., 2006).

Vasiliki and Maria (2012) only paid attention on trainee characteristics, training design, and work environment. Vimala and Yanan (2011) concerned on types of training, training environment and work environment. This study is a synthesis of these.

Training

Training design was not only evaluated by content, but also evaluated by training objectives, material, pedagogical methods, the length of the course, trainers, the organization of the training and training environment were considered in this study.

Table 7 Summary of the hypothesis testing results

| Item	Hypothesis	Result
H1	Learning performance significantly influences transfer performance.	Accepted
H2	H2: Training process related factors significantly influence learning performance.	Rejected
	H2-1: Training need significantly influences learning performance.	Accepted
	H2-2: Training design significantly influences learning performance.	Accepted
	H2-3: Training implementation significantly influences learning performance.	Accepted
	H2-4: Training assessment significantly influences learning performance.	Rejected
H3	Trainee motivation significantly influences learning performance.	Accepted
H4	Trainee motivation significantly influences transfer performance.	Accepted
H5	H9: Work environment significantly influences learning performance.	Accepted
	H9-1: Continuous learning culture significantly influences learning performance.	Accepted
	H9-2: Support significantly influences learning performance.	Accepted
H6	H10: Work environment significantly influences transfer performance.	Accepted
	H10-1: Continuous learning culture significantly influences transfer performance.	Accepted
	H10-2: Support significantly influences transfer performance.	Accepted
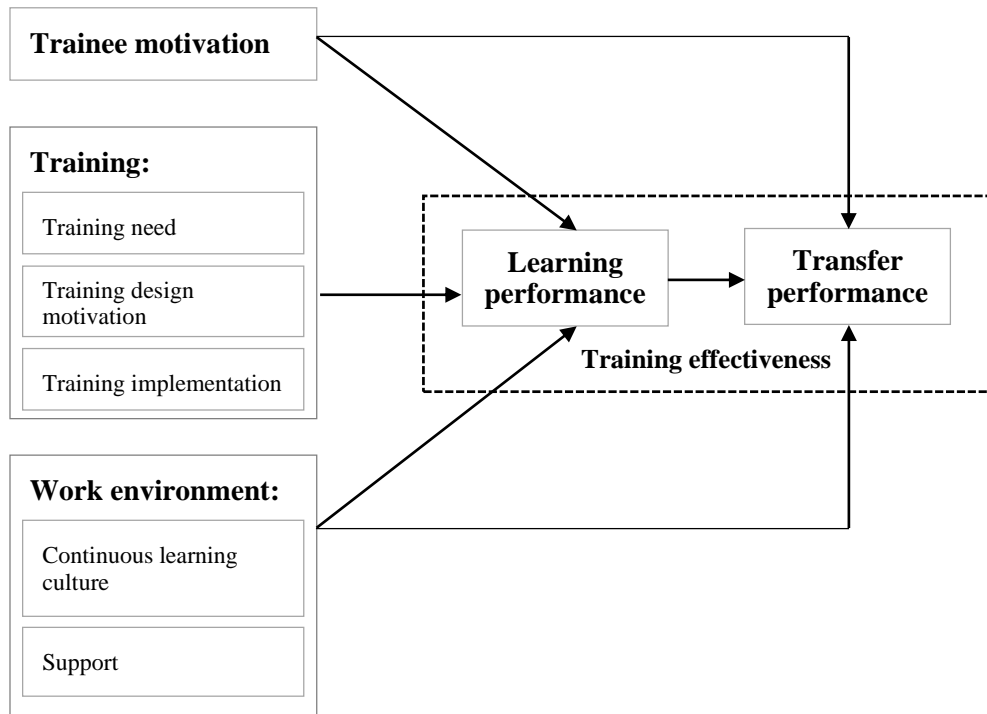
Figure 2 Conceptual framework

Content has a positive impact on learning and acquisition (Hyochang *et al.*, 2006; Vasiliki, 2012). Iqbal (2010) proved that training methods, trainer, training management, training environment, and training material have significant positive impact on reaction in training and learning. Xinyuan *et al.* (2006) found that training assessment has a significant influence on training effectiveness, but training implementation does not work. Junchuan *et al.* (2001) further revealed that training assessment has significant impact on learning performance, which is

contradicted by this study. The reasons could be that training assessment is not that efficient because of the lack of professionals or the test results fail to use for stimulating training effectiveness.

Trainee motivation

If the employees are fully motivated towards training program, they will pay full attention and there will be more chances for success of training program (Punia and Saurabh, 2013). Training motivation is the factor which had significant influence on the training effectiveness (Hyochang *et al.*, 2006;

Punia and Kant, 2013; Hamid *et al.*, 2012; Homklin *et al.*, 2013), which is supported by this study.

Work environment

Continuous learning culture has significant impact on training or application rate (Tracey *et al.*, 1995; Elangovan and Karakowsky, 1999). This study further emphasized that there is positive impact. There is strong relationship between management support and training effectiveness (Tunchun, 2001). Supervisors are directly related to transfer performance (Birdi and Kamal, 2005; Hyochang *et al.*, 2006), but peer support enhances learning transfer (Jefferey *et al.*, 1995; Xinyuan *et al.*, 2004).

In online learning, consistent learning environment and support from supervisors only affect learning performance, but not transfer performance (Hyochang *et al.*, 2006). Nurhazani and Issam (2012) argued that rewards system and social support from top management and supervisors make positive contribution to training effectiveness. It is found that organizational environment affects training effectiveness (Junchuan et al., 2001), which is supported by this paper.

Contributions and limitation

Considering the financial limitations of SMEs (Ferna ́ndez and Nieto, 2005), it is very significant to achieve a good training effectiveness with low cost in small and medium hotels. It is meaningful to increase the success of trainings or make the training more efficient by controlling the dominant factors well as follows:

It is needed to assess training need with appropriate method to find out the right training need accurately and supply the right content by appropriate approach in an applicable environment. It is important that organize the training well in a good training environment, and implement training by a right trainer.

Building performance appraisal system that ties financial reward with competence and distributing the challenging job assignment that employee is interested in are good methods to develop continuous learning culture. The immediate supervisors could supply time for trainee to attend training and condition to apply what the trainee learned, and show feedback about the application.

There are rarely researches focused on dominant factors influencing training effectiveness in SMEs of hotel sector in

Beijing, China. The findings provide precondition for the further study about one dimension, which could be training, work environment, trainee characteristics in this scale.

The study only focused on the hotel sector in the Beijing, which will limit the generalization. It is a large amount of questions to some respondents, and they did not answer carefully. The sampling groups came from various backgrounds, which might lead to more explanations were needed by some respondents. Therefore, the answer might be distorted. In addition, the variables used for evaluating the hypotheses are only part dimensions chosen from the systematic measurement built by previous researchers, which might increase or decrease the score of each variable.

Management implication

Hotels, training organizations, and specialist can utilize results of this study as a guideline for improving training effectiveness. To ensure the quality of training in SMEs of Hotel industry, they can make sure the training need, training design, training implication, trainee motivation, continuous learning culture, and support should be achieved.

Even though training need, training design, and training implication are very important to ensure training quality, trainee motivation and work environment could be paid more attention, because it not only directly affect learning performance, but also directly influence on transfer performance.

Recommendations for the future research

Future research can collect data from more industries and areas or other one area, or focus on one of the variables used in this study with more systematic dimensions. Training effectiveness can be evaluated further to result level. The supervisor's perspective and peer's perspective can be considered, even exam score can be used for testing the variables, especially the learning performance part.

References

Akhila K., Ravi K. P., Sunitha G., & Danaiah P. (2011). Analysis and Evaluation of Training Effectiveness. *Human Resource Management Research, 1*(1), 1-7. doi: 10.5923/j.hrmr.20110101.01

Anderson, D., Sweeney, D., Williams, T., Camm, J., & Cochran, J. (2013). *Statistics for Business & Economics*. Cengage Learning.

Antonios, P. (2011). Barriers to employee training and learning in small and medium-sized enterpirses (SMEs). *Development and learning organizations, 25*(3), 15-18. doi: 10.1108/14777281111125354

Baldwin, T. T., & Ford, J. K. (1988). Transfer of training: A review and directions for future research. *Personnel Psychology, 41*, 63-105.

Birdi, K. S., & Kamal, S. (2005). Evaluating the effectiveness of creativity training. Journal of European Industrial Training, 29, 2-3.

Boocock, J. G., Loan-Clarke, J., Smith, A. J., & Whittaker, J. (1999). Management training and development in small and medium-sized enterprises: An assessment of the effectiveness of Training and Enterprise Councils in the East Midlands. *Journal of Small Business and Enterprise Development, 6*(2), 178-190

Business Dictionary (2015). Effectiveness. *Business Dictionary*. Retrieved November 30, 2015, from http://www.businessdictionary.com/definition/effectiveness.html

Carnevale, A. P., & Schulz, E. R. (1990). Evaluation practices. *Training and Development Journal, 44*, 23-29.

Chimote, N. K. (2010). Training Programmes: Evaluation of Trainees' Expectations and Experience. *IUP Journal of Organizational Behavior, 9*(3), 28-47.

Communication Information News (2013). Small and medium-sized enterprises are of great significance to economic upgrade. Retrieved November 30, 2015, from http://finance.eastmoney.com/news/1350,20130416285736941.html.

Chris, H. (2001). *Profile of SMEs and SME issues 1990-2000*. Retrieved November 30, 2015, from http://www.pecc.org/resources/1659-profile-of-smes-and-sme-issues -in-apec-1990-2000?path=.

Cronbach, L. J. & Meehl, P. E. (1955). Construct Validity in Psychological Tests. *Psychological Bulletin, 52*(4), 281–302. doi:10.1037/h0040957.

Dan, S. C., & Amanuel, G. T. (2005). Individual and contextual influences on multiple dimensions of training effectiveness. *Journal of European Industrial Training, 29*, 604 -626.doi: http://dx.doi.org/10.1108/03090590510627085

Eddie W. L. C., & Danny C. K. H. (2001). A review of transfer of training studies in the past decade. *Personnel Review, 30*(1), 102 – 118

Elangovan, A., & Karakowsky, L. (1999). The Role of Trainee and Environmental Factors in Transfer of Training: An Exploratory Framework. *Leadership & Organization Development Journal, 20*(5), 268-276.

Ferna´ndez, Z., & Nieto, M. J. (2005). Internationalization strategy of small and medium-sized family businesses: some influential factors. *Family Business Review, 18*(1), 77.

Ford, J., K., & Weissbein, D., A. (1997). Transfer of training: an updated review and analysis. *Performance Improvement Quarterly, 10*(1), 22-41.

Hamid, W. W., Saman, M. M., & Saud, M. S. (2012). Exploring Factors Influencing the Transfer of Training Using a Grounded Theory Study: Issues and Research Agenda. *Procedia-Social and Behavioral Sciences, 56*, 662-672.

He, G. (2000). Work report for the tourism development in China. *Tourism Survey*, (1), 2-14.

Homklin, T., Takahashi, Y., & Techakanont, K. (2013). Effects of Individual and Work Environment Characteristics on Training Effectiveness: Evidence from Skill Certification System for Automotive Industry in Thailand. *International Business Research, 6*(12), 1-16.

Hyochang, L., Sang-Gun, L., & Kichan, N. (2006). Validating E-learning factors affecting training effectiveness, *International Journal of Information Management, 27*(1), 22-35. doi:10.1016/j.ijinfomgt.2006.08.002

Iman (2013), *The effect of the electromagnetic radiation from high voltage transformers on student's health in Hebron District*. Retrieved December 4, 2015, from http://staff.najah.edu/sites/default/files/The_Effect_of_the_Electromagnetic_Rad iation_from_High_Voltage_Transformers_on_Students_Health_in_Hebron_Dist rict.pdf

Iqbal, M. Z. (2011). An empirical analysis of the relationship between characteristics and formative evaluation of training. *International business resea*

Jane, Y. (1998). Line managers as career developers: rhetoric or reality? *Personnel Review, 27*, 378-395.

Junchuan, Z., Xinyuan, Z., Guizhi, D., & Xueqing, Q. (2001). An Empirical Study on the Factors Influencing Training Effectiveness in the Hospitality Organizations. *Tourism Tribune, 16*(4)

Kirkpatrick, D. L. (1959). Techniques for evaluating training programmes. *Journal of the American Society of Training and Development, 13*, 3-9.

Kirkpatrick, D. L. (1987). Evaluation of training. In R. L. Craig (Ed.), *Training and development handbook: A guide to human resource development*. New York: McGraw-Hill.

Kirkpatrick, D. L. (1996). Great ideas revisited. *Training & development*, 54-59.

Kossek, E. E., Roberts, K., Fisher, S., & Demarr, B. (1998). Career self-management:a quasi-experimental assessment of the effects of the effects of a training intervention. *Personnel Psychology, 51*, 935-962.

Lee, D. H. (1995). *The relationship of Learning and Transfer in Organization Training Programme* (Doctoral Dissertation). Sungkyunkwan University.

Mako', C. (2005). Training and competence development in the SME sector: The Hungarian case. *Journal of East European management studies, 10*, 156-185.

McGehee, W., & Thayer, P. W. (1961). *Training in business and industry*. New York: Wiley.

Morgan, R. B., & Casper, W. J. (2000). Examining the factor structure of participant reactions to training: A multidimensional approach. *Human Resource Development Quarterly, 11*(3), 301-317.

Nai-Wen, C., Chih-yun, W., & Yeh-yun, L. C. (2008). Does training facilitate SME's performance? *The international journal of human resource management, 19*, 1962-1975. Retrieved December 4, 2015, from https://www.econbiz.de/Record/does-training-facilitate-sme-s-performance-chi-nai-wen/10003791456

Noe, R. A., & Schmitt, N. (1986). The influence of trainee attitudes on training effectiveness: That of a model. *Personnel Psychology,* 39, 497-523.

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York: McGraw-Hill.

Osman Y. (2010). The factors affecting training effectiveness and research findings. *Global Journal of Science Frontier Research, 10*, 2-7.

Punia, B. K., & Asurabh, K. (2013). A review of factors affecting training effectiveness vis-à-vis managerial implications and future research direction. *International journal of advanced research in management and social sciences, 2*(1), 151-164.

Pugh, K., J., & Bergin, D., A. (2006). Motivational influences on transfer. *Educational Psychologist, 41*(3), 147–160. doi:10.1207/s15326985ep4103_2.

Rouiller, J. Z., & Goldstein, I. L. (1993). The relationship between organizational transfer climate and positive transfer of training. *Human resource development quarterly, 4*(4), 377-390.

Sadegh, R., & Azadeh, T. (2012). Evaluation of Employees' Job Satisfaction and Role of Gender Difference: An Empirical Study at Airline Industry in Iran. *International Journal of Business and Social Science, 3*(1), 1- 7.

Severin, D. (1952). The predictability of various kinds of criteria. *Personnel Psychology,* 5, 93-104.

Swaminathan, J., & Gowri, S. U. (2011). Perceived effectiveness of training and development: a case study in stc technologies pvt ltd., chennai. *International Journal of Current Research, 33*(6), 181-184.

The Ministry of Labor and Social Security, & China association of worker education and vocational training (2008). *Training materials to corporate trainer (Assistant and corporate trainer level), volume two*, Beijing, China: Xinhua Publishing House.

Tracey, J.B., Tannenbaum, S.I., & Kavanagh, M. J. (1995). Applying trained skills on the job: The importance of the work environment. *Journal of applied psychology, 80*(2), 239-252.

Tracey, J. B., & Tews, M. J. (1995). Training effectiveness: Accounting for individual characteristics and the work environment. *The Cornell Hotel and Restaurant Administration Quarterly, 36*(6), 36-42.

Tun-chun, H. (2001). The relation of training practices and organizational performance in small and medium size enterprises. *Education + Training*, 43(8/9), 437-44.

Vasiliki, B., & Maria, S. (2012). Evaluation of factors affecting training transfer onsafety in the workplace: a case study in a big factory in Greece, *Industrial and Commercial Training, 44*(4), 223 – 231.

Vimala, S., & Yanan, H. (2011). A study on training factors and its impact on training effectiveness in Kedah State Development Corporation, Kedah, Malaysia. *International journal of human resource studies, 1*(2), 136-156.

Xiangmin, Z. (2005). *Hotel management*. Beijing, China: Tsinghua University Press.

Xiao, J. (1996). The relationship between organizational factors and the transfer oftraining in the electronics industry in Shenzen, China. *Human Resource Development Quarterly*, (7), 55-73.

Xinyuan, Z., Junchuan, Z., & Namasivayam, K. (2004). Factors Affecting Training Success in China. *Journal of Human Resources in Hospitality & Tourism, 3*, 89-105. doi:10.1300/J171v03n01_08

Yamane, T. (1973). *Statistics: An Introduction Analysis* (3rd ed.). New York: Harper and Row.

Yongxia, Y. (2013). The analyses about the development of present situation of small and medium-sized enterprise. *The small and medium-sized enterprise management and science & technology, 1*, 21-22. Retrieved December 4, 2015, from http://wuxizazhi.cnki.net/Sub/jlrgl/m/ZXQX201301.html

Yushui, M. (2013).The analysis of present situation and countermeasures to the difficulty of recruitment high turnover rate in small and medium-sized enterprise. *The modern business, 37*(11), 65-66. Retrieved December 4, 2015, from http://mall.cnki.net/magazine/Article/XDBY201311040.html
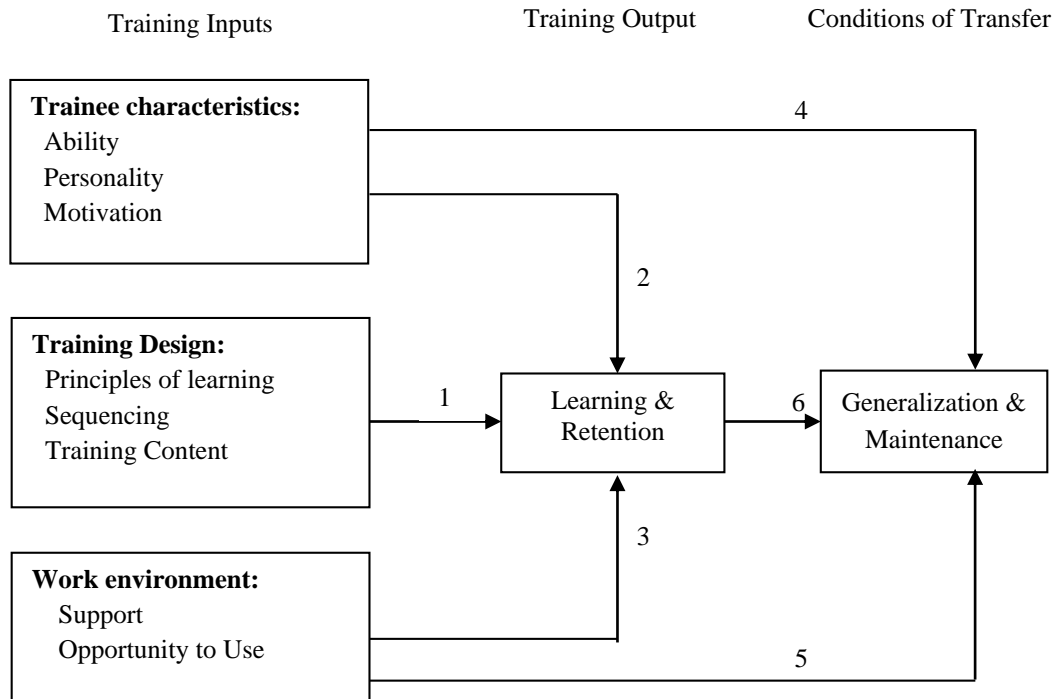
Appendix

Training Inputs   Training Output   Conditions of Transfer

```
┌─────────────────────────┐                                    4
│ Trainee characteristics:│───────────────────────────────────────────┐
│   Ability               │                                            │
│   Personality           │────────────────────────┐                   │
│   Motivation            │                         │                   │
└─────────────────────────┘                         │ 2                 │
                                                     ▼                   ▼
┌─────────────────────────┐        1      ┌──────────────┐   6  ┌──────────────────┐
│ Training Design:        │──────────────▶│ Learning &   │─────▶│ Generalization & │
│   Principles of learning│               │ Retention    │      │ Maintenance      │
│   Sequencing            │               └──────────────┘      └──────────────────┘
│   Training Content      │                      ▲                       ▲
└─────────────────────────┘                      │ 3                     │
                                                  │                       │
┌─────────────────────────┐                       │                       │
│ Work environment:       │───────────────────────┘                       │
│   Support               │                                               │
│   Opportunity to Use    │──────────────────────────────────────────────┘
└─────────────────────────┘                        5
```

Figure A Baldwin and Ford's model

(Source: Ford and Weissbein, 1997, p.24)

Table A Distribution of employees working in SMEs of the hotel in Beijing

No.	District	No. of hotel	No. of employees	% of employees	Sub-sample size
1	Chaoang District	809	102,080	24.22%	97
2	Dongcheng District	394	86,068	20.42%	82
3	Haidian District	696	76,303	18.10%	72
4	Xicheng District	473	50,789	12.05%	48
5	Daxing District	85	22,791	5.41%	22
6	Fengtai District	264	20,655	4.90%	20
7	Shunyi District	88	18,042	4.28%	17
8	Changping District	95	13,486	3.20%	13
9	Shijingshan District	51	6,589	1.56%	6
10	Huairou District	57	4,382	1.04%	4
11	Fangshan District	61	4,053	0.96%	4
12	Tongzhou District	44	4,029	0.96%	4
13	Mentougou District	34	3,888	0.92%	4
14	Miyun District	31	3,154	0.75%	3
15	Pinggu District	31	2,620	0.62%	2
16	Yanqing District	29	2,553	0.61%	2
	Total	**3,242**	**421,482**	**100.00%**	**400**

(Source: Beijing Municipal Bureau of Statistics, China, 2013)

MOBILE PAYMENT SERVICES ADOPTION: AN EMPIRICAL INVESTIGATION OF THE EFFECTS OF CUSTOMER PERCEIVED VALUE AND CUSTOMER SATISFACTION ON ADOPTION INTENTION

Xiaohong Yang[1], Nattapan Buavaraporn[2] and Prattana Punnakitikashem[3]

[2]School of Business, University of the Thai Chamber of Commerce, Thailand
126/1 Vibhavadee-Rangsit Rd., Dindang, Bangkok 10400, Thailand
[3]College of Management, Mahidol University, Thailand
69 Vipawadee Rangsit Road, Samsennai, Phayathai District, Bangkok 10400, Thailand
[2]Nattapan_bua@utcc.ac.th

Abstract

Considering the way for enhancing intention to adopt new products and services in the highly competitive market, customer perceived value and customer satisfaction are two imperative factors in the marketing context. This paper therefore aims primarily at investigating the relationships among customer perceived value, customer satisfaction and behavioral intention in adopting mobile payment service in new developing country, particularly in China. Questionnaire survey method was employed and distributed to respondents who have had experience using mobile payment service such Questionnaire Star, QQ, Alipay and Wechat payment websites. 376 valid questionnaires from mobile users in China were collected from Shanghai, Hangzhou and Guangzhou. Descriptive analysis and Structure Equation Model (SEM) were adopted to investigate the relationships of all variables in the research conceptual model. The results indicate that customer perceived value has a direct effect towards customer satisfaction, and indirect effect on intention through customer satisfaction in the mobile payment services of China.

Keywords: Customer perceived value; customer satisfaction; behavioral intention; mobile payment; China.

Introduction

Considering the advancement of wireless communication technologies, mobile phone became more imperative as part of everyone life. Driven by the increasing mobility of this modern society, the number of mobile phone accounts has increased rapidly in recent years and the mobile telephony industry has grown significantly. In line with these developments, mobile services have increasingly become a part of everyday life (Hwang *et al.*, 2007). Practitioners and researchers have studied the emergence of mobile commerce (m-commerce) due to the high potential impact on the future business in this digital era (Chu & Pan, 2008). As part critical enabler of successful mobile commerce, mobile payment will continue to facilitate secure electronic commercial transaction between organizations or individuals. Understand the intention to adopt mobile payment is therefore of interest in further development of m commerce industry.

In recent decades, the research related to mobile payment adoption have been studied by a number of researchers and made a great achievements (Dahlberg *et al*., 2008; Chen, 2008). Even though there are some extant number of studies on mobile payment adoption, mobile payment is still an early stage since 2000s, however, this research area is now developing rapidly and widely disseminated in the scholarly literature. Particularly in China, mobile payment adoption studies still lag behind, concerning the reasons that this mobile payment services has become widely adopted recently. Therefore, there are few empirical studies focusing on factors influencing the adoption of mobile payment from customers' point of view in China. Furthermore, the studies of factors affecting the adoption of mobile payment is not well explored and established, whereas Western scholars have done a lot of research about technology acceptance. These provided valuable references related to the adoption and development of information technology industry, in which is imperative for business arena. The relevant research about mobile payment in China, however, is still in the early stage and needed for further empirical study for investigating the extent to which the conclusion drawn from western scholars is suitable for China context.

According to a report from iResearch China, China's third-party mobile payments GMV (gross merchandise volume) could grow from 6.0 trillion yuan in 2014 to 18.3 trillion yuan in 2018, representing the annual growth rate of 32%. However, although the mobile payment has been developed in China, the development of the mobile payment business in China has not yet reached the expected level. Additionally, the previous literature indicated that China has a largest potential mobile payment market in the world, the mobile payment technology has been achieved, and customer adoption intention is the key matter which hindered the development of mobile payment (Luo *et al.,* 2010). In

order to investigate customer intention, customer perceived value and customer satisfaction are considered the most impetrative driver; and have a strong predictive power to the adoption intention. Although, customer perceived value and customer satisfaction have been widely studied in many related research, assessing these concepts in mobile payment service is still in the early stage (Zhu, 2011). Hence, it is of particular interest in assessing the effects of customer perceived value and customer satisfaction on intention to adopt mobile payment in China for contributing to scholarly literature and practice.

Therefore, the objectives of this study are (1) To investigate the relationship between customer perceived value and customer satisfaction of mobile payment service in China; (2) To investigate the relationship between customer satisfaction and intention to adopt mobile payment service in China; (3) To investigate the relationship between customer perceived value and intention to adopt mobile payment service in China.

Literature review

Mobile payment is one kind of service refers to the user using mobile phone to finish payment on the consumption of goods and service. However, various researchers and institutions have defined this term from different perspectives.

China's scholar defines that mobile payment as the transaction activity which is the communication way such as short message service, wireless application protocol by means of mobile communication devices such as mobile phone, PDA and laptop (Chen *et al.*, 2006). In this paper, a broader definition of Wang & Chou (2012) is adopted, which specifies that mobile payment as "a form of payment where the user uses a mobile device to realize information exchange and complete fund transfer from the payer to the payee for the purpose of payment by way of accessing communication networks or using short-range communication technologies". Mobile payment can be used in a variety of payment scenarios such as payment for digital content (e.g. ring tones, logos, news, music, or games), concert or flight tickets, parking fees, and transportation such as bus, underground, train, and taxi fares (Dahlberg *et al.*,2006). As the mobile payment is considered as fast moving and growing services, understanding factors affecting intention to adopt this technology is therefore imperative in providing scholarly literature with new perspective.

In order to investigate factor affecting intention to adopted mobile payment service, literature related to technology adoption was reviewed. Besides the widely adopted Technology acceptance model (TAM), Venkatesh *et al.* (2003) developed UTAUT model to explain technology acceptance and intention to use. UTAUT is developed based on eight

prominent user adoption models. Some key constructs were derived: effort expectancy is similar to subjective norm in TPB and DOI's image; performance expectancy which is similar to perceived usefulness in TAM and relative advantage in DOI; facilitating condition which is similar to compatibility in DOI and perceived behavioral control in TPB. Later on, based on a review of the extent literature, Venkatesh *et al.* (2012) identified UTAUT 2 model which consists of 7 factors: performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value and habit. According to Venkatesh *et al.* (2003), performance expectancy is the degree to which using the system will improve their job performance; Effort expectancy is the degree of ease associated with the use of the system; Social influence refers to an individual's perception that significant others believe the individual should adopt the information system; Facilitating conditions is the perception of an individual believes that an organizational and technical infrastructure exists to support the use of the technology system; Hedonic motivation is defined as the fun or pleasure derived from using a technology; Price value refers to the the consumer's cognitive trade-off between the cost of using the technology and the perceived benefits; Habit is the extent that individuals tend to execute behaviors automatically. UTAUT 2 is more substantial improvement in explaining variance of behavioral intention. Therefore, UTAUT 2 represents a comprehensive theoretical framework and has enjoyed high popularity and strong empirical validation in a variety of discipline and task environment (Baptista & Oliveira, 2015). UTAUT 2 as a new model, the studies used this to examine acceptance of mobile payment are still much limited. In this study, the author therefore developed the research conceptual model considering the customer perceived value as the antecedent of intention to use mobile payment service, by integrating some variables from UTAUT 2 model, which accorded to perceived value (Zhu, 2011). According to Kim et al. (2010) and Zhu (2010), costs include price value and facilitation condition, benefits included performance expectancy, effort expectancy and hedonic motivation.

Woodruff (1997) proposed that "customer perceived value is a customer's perceived performance for an evaluation of those product attributes, attribute performances and consequences arising from use that facilitate (or block) achieving the customer's goals and purpose in use intention. The method to measure customer perceived value normally use single dimension and an item based the single dimension but some researchers also develop a multidimensional scale for the measurement of perceived value of a service (Sweeney & soutar , 2001; Petrick,2002). The customer perceived value is considered as important antecedents of customer satisfaction (Cronin *et al.*, 2000)

The concept of consumer satisfaction occupies a central position in marketing thought and practice. Churchill & Surprenant (1982) defined customer satisfaction as an outcome of marketing activity and serves to link processes culminating in purchase and consumption with post-purchase phenomena. It also can be defined as the degree to which one believes that an experience evokes positive feelings (Oliver & Rust, 1994). Satisfaction refers to the perceived discrepancy between prior expectation and perceived performance after consumption (Oliver,1980).

Behavioral intention is the tendency that customer take some action and a statement linking customer own and action to be happen in the future. Ajzen & Fishbein (1977) pointed out that the most direct method to forecast customer's action is to understand customer's intention to do decision. In this study, behavioral intention was divided to three kinds: repurchase intention; word of mouth and price premium. Repurchase intention refers to the possibility of repurchase and choice, it is very important for company because customer repurchase is the best way to keep market share for company (Bolton *et al.*, 2000). After 1994, it was formed two different conceptual framework of customer behavioral intention which was satisfactory dominant theory and value dominant theory. Cronin *et al.* (2000) thought which conceptual is reasonable depend on the character of the study. There are four different model developed by previous researchers. The value model treated perceived value as the most important factor which affects behavioral intention directly. And the results from this model showed that perceived value

affect behavioral intention directly and satisfaction affect behavioral intention indirectly through perceived value (Sweeney *et al.*, 2001). The satisfaction model thought that satisfaction has a direct impact on behavioral intention and perceived value affect behavioral intention indirectly (Lapierre, Filiatrault & Chebat, 1999). The indirect model pointed out that perceived value and satisfaction affect behavioral intention together and perceived value also have a impact on behavioral intention (Patterson & Spreng, 1997). The last one is research model, research model explain the relationship between each variables and put them into a comprehensive framework (Cronin, 2000).

According to these studies, most of the studies examined the customer perceived value affect behavior intention through customer satisfaction. Ruy et al.(2008) explained the relationship among overall quick-casual restaurant image, perceived value, customer satisfaction, and behavioral intentions in the quick-casual restaurant industry and the findings showed that customer satisfaction can act as a partial mediator in the relationship between overall quick-casual restaurant image/perceived value and behavioral intentions. Furthermore, Kuo et al. (2009) founded perceived value positively influenced post-purchase intention in mobile value-added services by analyzing the data collect from college and graduate students of 15 major universities in Taiwan.

Based on the previous researches about the relationship among customer perceived value, customer satisfaction

and behavior intention, Kim et al. (2010) developed a Value-based Adoption Model (VAM) to examine the adoption of Mobile Internet (M-Internet) as a new Information and Communication Technology (ICT) from the value perspective and found consumers' perception of the value of M-Internet is a principal determinant of adoption intention, and the other beliefs are mediated through perceived value. Zhu (2011) constructed theoretical model of continued use intention of mobile internet based on the theory of continued use, combining with theory of customer perceived value, customer satisfaction and social cognitive, integrating theoretical model of ECT and TPB. According to above researches and mobile payment is a service similar with the mobile internet service, this study developed the research conceptual framework by considering the UTAUT 2 model to explain the intention to adopt mobile payment service from the customer perceived value perspective, and put it into the original model of relationship among customer perceived value, customer satisfaction and behavior intention to examine whether perceived value affect behavior intention of adopt mobile payment service directly.
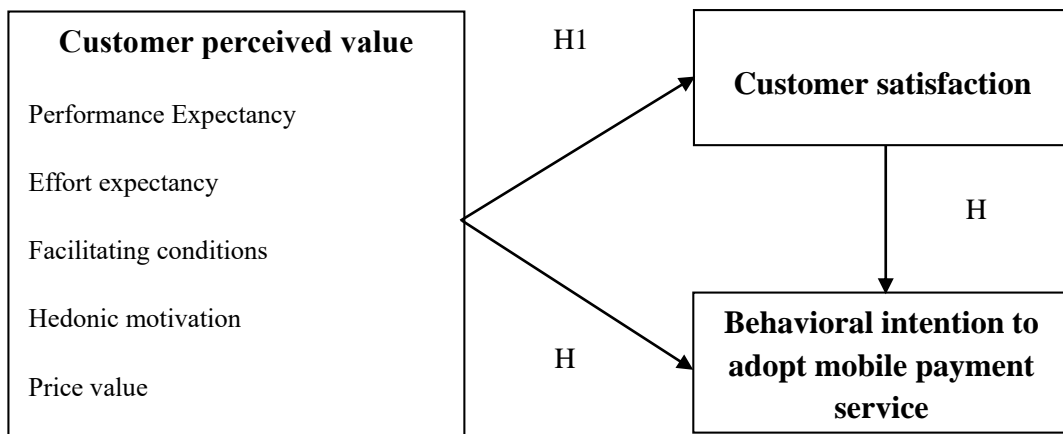
Finger 1 Research conceptual framework

Considering the research conceptual developed for this study, there main hypotheses are proposed as follows;

H1: Customer perceived value directly affects customer satisfaction in mobile payment service.

H2: Customer satisfaction directly affects customer behavioral intention to use mobile payment service.

H3: Customer perceived value directly affects customer behavioral intention to use mobile payment service.

Research methodology

To achieve the objective of this research, literature review was conducted for developing the research conceptual framework to investigate the intention to adopt mobile payment service. Considering the research conceptual model proposed in the previous section, the quantitative research approach is considered appropriate for examining the relationship among perceived value, customer satisfaction, and behavioral intention to adopt the mobile payment service. In this section, the research methodology is explained to understand how this research is conducted to achieve the objectives of this study.

Questionnaire survey instrument is developed considering literature review for collecting empirical data for testing research conceptual model. The instrument is designed and tested to ensure the reliability and validity. Descriptive statistics analysis and SEM analysis were conducted to investigating the relationships among proposed variables

An online questionnaire was distributed to collect empirical data in Eastern China. The questionnaire consists of four parts. Part 1 is designed with screening question in order to find the suitable respondents; Part 2 are questions related to customer perceived value; Part 3 are questions related customer satisfaction in using mobile payment service; Part 4 behavioral intention questions were asked as the last section. Overall, cronbach's alpha value must be above 0.8 and each dimension's Cronbach's alpha value should be above 0.7

Based on the questionnaire design, the author used descriptive statistics to summarize the demographic characteristics and the measurement scale of items. Structure Equation Model (SEM) was used to explore the relationship between the variables and hypothesis. The author used exploratory factor analysis (EFA) and Confirmation factor analysis (CFA) to remove some low loading items. In term of multiple the linear regressions where there are intermediate variables and indirect effects to each variable, the author used Path analysis to do the test.

The Bartlett's test and KMO test are used to examine the appropriateness of data in factor analysis performance. The KMO of the questionnaire was 0.861(>0.6), and the Bartlett's Test of Sphericity also get a significant level with 0.000 (<0.01) in the result. Hence, the questionnaire has good common variance, which is suitable for factor analysis. Data analysis results will be explained in the next following section

Data analysis results

In this research, descriptive statistics was analysed to explain the demographic data of respondents. Exploratory factor analysis (EFA), Confirmatory factor analysis (CFA) and structural equation model (SEM) were employed to test model fit and relationships between independent and dependent variables of the proposed model. Hypotheses were tested based on SEM analysis. Detailed analysis results are as follows.

Exploratory factor analysis (EFA) is a statistical method to identify the underlying relationship between measured variables which can be removed some loading items. The results of EFA showed that the factor loading of all items were high than 0.50 except PE4, FC3, HM4, CS5, BI2. "PE4= Using mobile payment service makes the handling of payments simple and easier"; "FC3= Using mobile payment service fits into my life style"; "HM4= The actual

process of mobile payment would be pleasant"; "CS5= Customer service in mobile payment service is professional" and "BI2= I will use mobile payment service even the cost increasing" are removed due to them have performance in other components.

Confirmation factor analysis (CFA) is a multivariate statistical procedure that is used to test how well the measured variables represent the number of constructs (Brown, 2014). The results of CFA indicated that there were 4 items should be removed from the model structure with the loadings less than 0.5. They are FC4 (0.08), HM5 (0.39), CS4 (0.45) and BI5 (0.41), respectively. After finished factor analysis, the remained factors would be used in path analysis. In statistics, path analysis is used to describe the directed dependencies among a set of variables (Hair, Black, Babin, Anderson & Tatham, 2006).
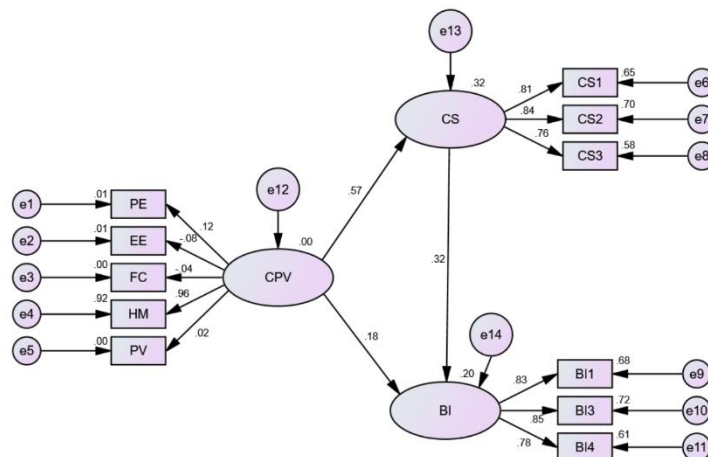

Figure 2 Standardized estimate of path analysis

In structural equation model, the main model fitting evaluation was summarized as follows: every index got the good evaluation index except RMESA value was 0.043 (< 0.08) with an acceptable index. Hence, the model's overall fitting effect is good.

Parameter estimation is a method for estimating the total distribution of the sample. The results of this study are presented in the table 1 below:

Table 1 Regression weight

		Estimate	S.E.	C.R.	P
Customer < ------ Satisfaction	Customer perceived value	0.570	1.669	2.354	.019*
Behavioral < ------ Intention	Customer satisfaction	0.320	.076	5.220	***
Behavioral < ------ Intention	Customer perceived value	0.183	.503	1.786	.074

*Note: *<p<0.05, **<p<0.01, ***<p<0.001*

S.E. =Standard error, C.R. =Critical ratio.

For the default model, the direct effect, indirect effect and total effect of the latent variables in Amos shown as the following table 2:

Table 2 The standard effect of model

	Direct Effect	Indirect Effect	Total Effect
CPV—CS	0.570	0	0.570
CS----BI	0.320	0	0.320
CPV—BI	0.183	0.182	0.365

Table 3 Summary of hypothesis testing

Hypothesis	Results
H1: Customer perceived value directly affects customer satisfaction in mobile payment service.	**Accepted**
H2: Customer satisfaction directly affects customer behavioral intention to use mobile payment service.	**Accepted**
H3: Customer perceived value directly affects customer behavioral intention to use mobile payment service.	**Rejected**

Discussion and conclusion

In this research, the hypothesis testing results indicated that customer perceived value directly affect customer satisfaction. With this regards, perceived value of mobile payment service included performance expectancy, effort expectancy, facilitating conditions, hedonic motivation and price value. However, the analysis results showed that some relationship testing of these factors are not accepted.

According to the related literature review, many previous researches founded that perceived value is the important antecedent of customer satisfaction (Brady & Cronin, 2001; Cronin et al., 2000). In this research, performance expectancy has a linear relationship with customer perceived value with estimate score of 0.12. Mobile payment service as a new method to achieve payment which seems not giving more helpful to customer than internet based devices. In realistic, most customers believed that mobile payment service brings more convenience than ease of usefulness. This research presented that effort expectancy and facilitating condition have no relationships with customer perceived value in using mobile payment service. The result of this research also supported the prior research conducted by Kim *et al.*, (2010). This means that if customer can get high enjoyment, they will be more satisfied with the mobile payment service. However, there is no significant relationship between price and perceived value of mobile payment service which is different from the result suggested by Zhu (2011). Based on the real situation, the price value in mobile internet refers to the network traffic charge and it refers to the commission charge in mobile payment service. Network traffic fee depends on how much net access in mobile phone and most of the mobile payment service do not have commission charge, even it exist, it is very low. Hence, price value play different role in different industry and it seems no much

relationship with customer satisfaction in mobile payment service.

According to the related literature review, Anderson & Sullivan (1993) found that level of customer satisfaction on perceived benefits of service provider affect customer repurchase intentions positively. Oliver (1997) also indicated that customer satisfaction is considered have a positive impact on customer behavior. Soderlund & Ohman (2005) also found that customer satisfaction is significantly related to two specific intention constructs: intentions as expectations and intentions as wants. Li & Zhang (2016) found that customer perceived value affect behavioral intention through customer satisfaction on the electronic market in China. The result of hypothesis 2 highlighted the importance that when customer satisfaction level is higher, the behavioral intention to adopt mobile payment service will be increasing.

Both satisfaction and customer perceived value appears to be the direct antecedents of behavior intention (Mcdougall & Lewesque, 2000). However, some researches showed that perceived value affect behavioral intention directly and satisfaction affect behavioral intention indirectly through perceived value

(Sweeney et al., 2001). Kuo et al. (2009) founded perceived value positively influenced post-purchase intention in mobile value-added services. The result of hypothesis 3 indicated that customer perceived value indirectly affect customer behavioral intention through customer satisfaction. As mobile payment service was a new and rapidly developed industry, customer's perceived value involved more aspects from customer perspectives. On the other hand, customer perceived value could directly affect customer satisfaction, however, customer perceived value consist of five dimensions were not significance as the antecedence of behavioral intention.

Overall, this research has been proved with three main hypotheses which are; customer perceived value directly affect customer satisfaction in mobile payment service; customer satisfaction directly affect customer behavioral intention in mobile payment service and customer satisfaction act as a mediator in the relationship between customer perceived value and customer behavioral intention; whereas there appears to be no direct relationship between customer perceived value and behavioral intention as shown in the following model.
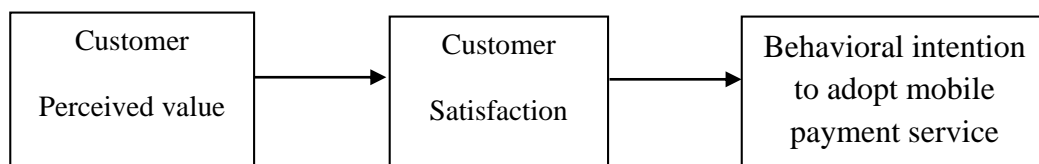
The findings of this study also provide managerial implications for Mobile payment service providers. Considering the statistical results that indicated that customer perceived value is the antecedent of customer satisfaction; and customer perceived value depends on the perceived benefit and perceived sacrifice. Therefore, service providers should increase customer's perceived benefit and decrease their perceived sacrifice for enhancing the satisfaction of mobile payment service users. For example, service provider can highlight value of mobile payment services against traditional payment services; and emphasize more functional advantages and behavioral compatibility of mobile payment services; and design the reasonable fee package for using mobile payment to lower the sacrifice. Service provider also can focus on improving internet speed to make the mobile payment more efficient. Though mobile payment is easy and low risk, service providers still need to focus on presenting easy-to-use mobile payment systems with well-designed interfaces and good security system to enhance user satisfaction. The hedonic and habit aspect should be taken in to consideration, besides creating apps that enhance enjoyment and excitement, service providers should try to constantly reinforce users' habit with value added services. For the social influence aspect, service providers and marketers can expand user bases and their sources of revenue by leveraging the effects of social influences. Even the price value of mobile payment service had no significant effect on customer satisfaction, the service providers could take some promotion or activities to encourage customer to use mobile payment service.

Concerning the limitation of this research study, there are some recommendations for future research. Firstly, future research can use different measurement model to explain customer perceived value of mobile payment in China. More factors should be explored and incorporated into the research conceptual model such as perceived service quality, perceived risk to examine factors affecting intention to use mobile payment services. Secondly, the future research may adjust the scope of study by focusing on the payment systems provided by Alipay, Wechat pay, Baidu which are considered major mobile payment service providers in China. Lastly, this research investigated effects of perceived value and customer satisfaction on behavioral intention in mobile payment service in eastern area of China where is considered the most developed section, future study should therefore adopting this model to investigate in other areas for generalization purpose.

Reference

Ajzen, I., & Fishbein, M. (1977). Attitude-behavior relations: A theoretical analysis and review of empirical research. *Psychological bulletin, 84(5),* 888.

Anderson, E. W., & Sullivan, M. W. (1993). The antecedents and consequences of customer satisfaction for firms. *Marketing science, 12(2),* 125-143.

Baptista, G., & Oliveira, T. (2015). Understanding mobile banking: The unified theory of acceptance and use of technology combined with cultural moderators. *Computers in Human Behavior*, *50*, 418-430.

Brady, M. K., & Cronin Jr, J. J. (2001). Some new thoughts on conceptualizing perceived service quality: a hierarchical approach. *Journal of marketing, 65(3),* 34-49.

Brown, T. A. (2014). *Confirmatory factor analysis for applied research*. Guilford Publications.

Chen, L. D. (2008). A model of consumer acceptance of mobile payment. *International Journal of Mobile Communications, 6(1)*, 32-52.

Chen, H. P., & Tang, J. (2006). Research of mobile payment user and user behavior. *Journal of Management Sciences in China (in Chinese), 19(6)*, 48-55.

Chu, C. P., & Pan, J. G. (2008). The forecasting of the mobile Internet in Taiwan by diffusion model. *Technological Forecasting and Social Change, 75(7)*, 1054-1067.

Churchill Jr, G. A., & Surprenant, C. (1982). An investigation into the determinants of customer satisfaction. *Journal of marketing research*, 491-504.

Cronin, J. J., Brady, M. K., & Hult, G. T. M. (2000). Assessing the effects of quality, value, and customer satisfaction on consumer behavioral intentions in service environments. *Journal of retailing, 76(2),* 193-218.

Dahlberg, T., Mallat, N., Ondrus, J., & Zmijewska, A. (2006). Mobile payment market and research–past, present and future. *Working Papers on Information Systems, 6(48).*

Dahlberg, T., Mallat, N., Ondrus, J., & Zmijewska, A. (2008). Past, present and future of mobile payments research: A literature review. *Electronic Commerce Research and Applications, 7(2),* 165-181.

DeVellis, R. F. (1991). *Scale development: Theory and applications: Sage*. Newbury Park, CA.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). Multivariate data analysis 6th Edition. Pearson Prentice Hall. New Jersey.

humans: Critique and reformulation. *Journal of Abnormal Psychology, 87*, 49-74.

Kim, C., Mirusmonov, M., & Lee, I. (2010). An empirical examination of factors influencing the intention to use mobile payment. *Computers in Human Behavior, 26(3)*, 310-322.

Kuo, Y. F., Wu, C. M., & Deng, W. J. (2009). The relationships among service quality, perceived value, customer satisfaction, and post-purchase intention in mobile value-added services. *Computers in human behavior, 25(4),* 887-896.

Lapierre, J., Filiatrault, P., & Chebat, J. C. (1999). Value strategy rather than quality strategy: A case of business-to-business professional services. *Journal of* Business Research, 45(2), 235-246.

Liu, L. & Zhang, N. (2016). Research on the relationship between customer perceived value, satisfaction and loyalty--- Empirical analysis based on the electronic commerce market. *Journal of Information Resources Management*, *6(3),*50-57.

Luo, X., Li, H., Zhang, J., & Shim, J. P. (2010). Examining multi-dimensional trust and multi-faceted risk in initial acceptance of emerging technologies: An empirical study of mobile banking services. Decision support *systems*, *49*(2), 222-234.

McDougall, G. H., & Levesque, T. (2000). Customer satisfaction with services: putting perceived value into the equation. *Journal of services marketing, 14(5)*, 392-410.

Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of marketing research*, 460-469.

Oliver, R. L., & Rust, R. T. (Eds.). (1994*). Service Quality: New Directions in Theory and Practice*, Sage.

Patterson, P. G., & Spreng, R. A. (1997). Modelling the relationship between perceived value, satisfaction and repurchase intentions in a business-to-business, services context: an empirical examination. *International Journal of service Industry management, 8(5)*, 414-434.

Petrick, J. F. (2002). Development of a multi-dimensional scale for measuring the perceived value of a service. *Journal of leisure research, 34(2),* 119.

Ryu, K., Han, H., & Kim, T. H. (2008). The relationships among overall quick-casual restaurant image, perceived value, customer satisfaction, and behavioral intentions. *International Journal of Hospitality Management, 27(3)*, 459-469.

Söderlund, M., & Öhman, N. (2005). Assessing behavior before it becomes behavior: an examination of the role of intentions as a link between satisfaction and repatronizing behavior. *International Journal of Service Industry Management, 16(2)*, 169-185.

Sweeney, J. C., & Soutar, G. N. (2001). Consumer perceived value: The development of a multiple item scale. *Journal of retailing, 77(2)*, 203-220.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS quarterly*, 425-478.

Venkatesh, V., Thong, J. Y., & Xu, X. (2012). Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology. *MIS quarterly, 36(1),* 157-178.

Wang, P., & Chou, W. (2012). *Trends and Prospects of Mobile Payment Industry in China 2012-2015—Creating Innovative Models, Boosting Mobile Financial Services.* Financial Services Industry Center of Excellence, Deloitte China.

Woodruff, R. B. (1997). Customer value: the next source for competitive advantage. *Journal of the academy of marketing science, 25(2),* 139-15.

Zhu, X, H. (2011). *Research on the Intention of Consumer Behavior of Mobile Internet Users.* Retrieved March 12, 2011, from CNKI website: http://cdmd.cnki.com.cn /Article/CDMD-10293-1011226194.htm

FACTORS INFLUENCING INTENTION TO QUIT OF PHYSICIAN FROM HEALTHCARE FACILITY IN BANGKOK

Wayo Assawarungruang[1] and Phusit Wonglorsaichon[2]
[1,2]University of Thai Chamber of Commerce
126/1 Vibhavadee-Rangsit Rd., Dindang, Bangkok 10400, Thailand
[1]nonggeng@hotmail.com, [2]dr.phusit@gmail.com

Abstract

The purpose of this study was to investigate the effects of job stress, pay satisfaction, and career growth on intention to quit and the mediating effects of job satisfaction on the relationship between job stress and intention to quit, pay satisfaction and intention to quit, and career growth and intention to quit. Our findings from the survey of 444 physicians working at healthcare facility in Bangkok demonstrated that job stress, pay satisfaction, and career growth had the effect on intention to quit sorted by strength of the total effect and job satisfaction played a full mediating role in the relationship between pay satisfaction and intention to quit but played a partial mediating role in the relationship between job stress and intention to quit, and career growth and intention to quit. Implications of these findings and avenues for future research are discussed.

Key words: Physician, Intention to quit, Job satisfaction, Job Stress, Pay satisfaction, Career growth

Introduction

Because of incommensurate amount of physician, many of healthcare facilities in Thailand, both public and private, are faced with human (physicians) resource management problem (Ariyasriwattana, 2007). World health organization (WHO) has recommended that physician /population ratio of any nation should not be below 1:1,000 (Deo, 2016), yet the statistics show that Thailand is still far behind (0.49:1,000) (Strategy and planning division, ministry of health, 2015).

The medical council of Thailand (TMC) (2015) stated that newly graduated physicians quit their job from healthcare facilities of minister of health more than 50%, annually. Subsequently, TMC studied in those physicians and reported top 10 reasons why they quit their job that can be grouped into 3 categories, i.e. job stress, pay satisfaction, and career growth (TMC, 2015). Hence, the factors that influence either physician retention or intention to quit interest many of researchers, especially in the Bangkok.

Objectives of the study

1. To study the effects of job stress, pay satisfaction, and career growth on intention to quit.

2. To study the mediating effects of job satisfaction on the relationship between job stress and intention to quit, pay satisfaction and intention to quit, and career growth and intention to quit.

Literature review

Intention to quit

Intention to quit is the possibility that employee will quit their job in the period of time (Chao, Jou, Liao, 2015). Since March and Simon (1958) firstly developed intention to quit model in 1958, many researchers present different type of the model (Mobley, 1977, 1978, 1979; Bluedorn, 1982; Sheridan, Abelson, 1983; Lee, Mitchell, 1994; Price, 1977, 2000). Mostly, they pay attention with factors, i.e. intention to quit, on quit behavior. Certainly, intention to quit is the best predictive factor to prognose quit behavior. In addition, it can explain the variety of such behavior (Gu, Huang, Chen, 2006).

One of goal of business organizations is to decrease employee quit rate for decrease recruitment and training cost

for new employee. At the same time, they will be loss of potential employee. Hence, the application of organizational behavior theories will increase employee retention, yet decrease employee intention to quit (Nyberg, 2010).

Cost of new employee recruitment can be as high as 50% – 60% of employee annual payment. Furthermore, if calculate from total cost, it could be as high as 90% – 200% of that employee annual payment. The total cost is included cost of examine applicants, cost of new employee training, cost of hiring the recruiter, cost of sorting process, cost from new employee error, cost from loss of continuous sale, cost from employee morale decrease, etc. Consequently, it will affect organizational productivity (Cascio, 2006).

Job satisfaction

Job satisfaction is the individual perception combine with their emotion and behavior that response or determine attributes from their job resulting in intention to do something, i.e. to quit (Locke, 1976). Individual can be suffered from state that continuously lack of resources; as a result, they feel not satisfied in their job. Hence, they quit their job (Moreno–Jiménez, 2009).

Job satisfaction has relationship with many factors, especially job stress, pay satisfaction, and career growth (Danish, Shahid, Aslam, Ali, 2015; Tariq, 2016). Besides, Job satisfaction are included of satisfaction of nature of work and work environment (Smith, Kendall, Hulin, 1969). Many of literatures stated that job satisfaction is the most important factor that has direct effect on intention to quit (Wang, Van, Christ, Stellmacher, Wagner, Ahlswede, Grubba, Hauptmeier, Hohfeld, Moltzen, Tissington, 2004; Ye, 2005). Thus, it should be investigated more on its specific component, what are the component of job satisfaction and which one has the most effect. One stated that job rewards affect intent to quit, i.e. financial reward, material rewards, and psychological rewards. In addition, individual's demographic data, i.e. gender, age, and marital status, are also the important element of intention to quit (De Gieter, Hofmans, 2015).

Intention to quit can be affected by many other components, such as job stress (Heponiemi, Presseau, Elovainio, 2016), work place violent (Heponiemi, Kouvonen, Virtanen,

2014), physician burnout (Moreno–Jiménez, Gálvez–Herrer, Rodríguez–Carvajal, 2012), income (Tsai, Huang, Chien, 2016), and organizational commitment (Liu, Quan, 2016). Job satisfaction is one of the most interesting factors that frequently mentioned (Gu, Huang, Chen, 2016). Low job satisfaction affects intention to quit of Iraq physician (Ali Jadoo, Aljunid, Dastan, 2015) that get along with many other literatures (Lambert, Lynne Hogan, Barton, 2001; Coomber, Barriball, 2007).

Job stress

Job stress is the state of responsiveness of employee to their job in both positive and negative ways on their body and mind (Jamal, 2005). High job stress might have negative effect on employee health, motivation, productivity, and work safety (Arshadi, Damiri, 2013). Job stress is not only having negative effect on employee health and emotion, but also on their absenteeism and intention to quit. Hence, job stress has been accepted as one of the most important component of job satisfaction as shown in the result from many literatures that convergently conclude that job stress has negatively influence on job satisfaction (Lu, Hu, Huang, 2016; Wu, Zhu, Li, 2012; Jamal, 1990; Harzer, Ruch, 2015; Mansoor, Fida, Nasir, 2011; Gray–Toft, Anderson, 1981). Moreover, many literatures stated that job stress has negatively influence on intention to quit (Liu, Onwuegbuzie, 2012; Kim, Kao, 2014; Han, Han, Choi, 2015).

Physicians always face with many stresses, such as prolong work time, inappropriate work environment and condition, i.e. too many patients in restricted time, shifting sleep time, loss power of decision, i.e. from political and economical policy, loss of work–life balance, low salary, long period of study and practice, low career growth, high responsibility, feeling of failure when patient die, and fear of legal issue from unintentional malpractice (Burbeck, Coomber, Robinson, & Todd, 2002; Klein, Frie, Blum, Von dem Knesebeck, 2011).

Job stress becomes important problem, because its effect on both employee and organization (Barling, Kelloway, Frone, 2005). High level of job stress may have negative effect on employee productivity. Moreover, it may result in negative attitude and behavior (Barling, 2005; Gilboa, Shirom, Fried, Cooper, 2008).

Pay satisfaction

The equity theory states that pay satisfaction based on one's cognitive and comparative process (Adams, 1963; Lawler, 1990; Lum, 1998). Employee will seek for equilibrium state from their input and output in some dimensions, such as compensation or recognition (Adams, 1963; Greenberg, 1987, 1990; Milkovich, Newman, 2008). Employee sense their equity by comparing their input/output ratio of their work with those in the same position both in and out of organization (Lawler, 1971).

When employee compare their input/output ratio to other employee, the results come in 3 different ways. First, when they feel their output is over their input, their feel over–reward. Second, when they feel their input is over their output, their feel under–reward. Last, the most desirable state, when they feel their input equal to their output and the reward is reasonable. When input/output ratio is not in the desirable state, employee may feel guilt or unsatisfied, then the restoration of equity process will begin (Greenberg, 1987, 1990; Huseman, Hatfield, Miles, 1987; Huseman, Hatfield, 1990). Under–reward employee will try to make

equity by decrease their input, such as increase absenteeism, arrive at work late, increase time to take a break, and decrease productivity or out their job, that are all bad result for organization (Greenberg, 1990).

Meta–analysis by Williams, McDaniel, and Nguyen (2006) stated that pay satisfaction has negative association with intention to quit. Particularly, intention to quit will decrease when there are rising of pay satisfaction. In contrast, intention to quit will increase when there are falling of pay satisfaction (Dailey and Kirk, 1992; Motowildo, 1983). Lum (1998) found that pay satisfaction has both direct and indirect effect on intention to quit.

Career growth

Career growth is a perception of the individual on opportunity to growth and development of themselves (Jans, 1989; Daud, 2014). Organizational career growth has more specific meaning that is an opportunity to growth and development in their current organization. Spector (2003) gave another meaning of career growth, he called career ladder, which is position growth of employee who have effort to promote their efficacy and necessary skills. Spector's

concept interest researchers and was developed into many career growth promotional models (Choi, 2011; Erdogan, 2006; Ho, 2009; Weng, 2010). Weng and McElroy (2012) developed the most recognized model which lays down 4 main dimensions of career growth. Firstly, career goal progression. Secondly, professional ability development. Thirdly, promotional speed. Finally, remunerational growth. Besides from growth velocity, payment growth is one of the predictors that can indicate how employee are rated by their employer or organization (Weng, 2010).

Career growth, obviously, plays important role to decrease employee intention to quit (Weng, McElroy, 2012). Career growth has association on employee attitude and behavior (Weng, Xi, 2010). 4–dimension of career growth by Weng and McElroy have negative effect on voice behavior, i.e. quit (Weng, 2014). However, newer concept by Weng stated that career growth is not static concept, but relationship between career growth and voice behavior is changed by level of the career. Hence, organization should keep adapt their strategies to manage with fluctuant situations and differentiation of careers.

Conceptual framework

The conceptual framework in this study was modified from the conceptual framework of March and Simon (1958), Price (1977), Mobley (1978), Price and Mueller (1986), and Hom and Griffeth (1995). The independent variables were job stress, pay satisfaction, and career growth. The dependent variable was the intention to quit. The mediator was job satisfaction. All the independent variables were drawn into the conceptual framework of this study together with the dependent variable and mediator. The conceptual framework of this study was presented in the following model:
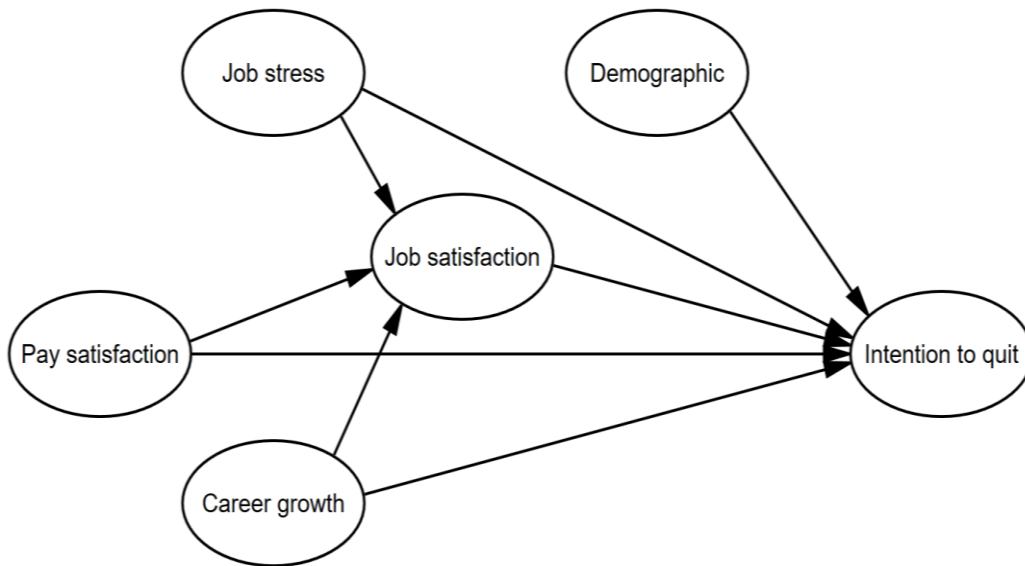
Figure 1 Conceptual framework

Hypothesis

The following hypothesis are tested;

Hypothesis 1 (H1): Job stress, pay satisfaction, and career growth is related to intention to quit.

Hypothesis 2 (H2): Job stress, pay satisfaction, and career growth is related to job satisfaction.

Hypothesis 3 (H3): Job satisfaction is related to intention to quit.

Hypothesis 4 (H4): The relationship between job stress, pay satisfaction, career growth, and intention to quit is mediated by job satisfaction.

Methodology

Sampling design

The total number of physicians in Bangkok is approximately 7,886 (Ministry of health, 2015). The minimum number of samples were calculated based on the number of physicians in Bangkok using the formula of Krejcie and Morgan (1970). Kline (2005) recommended that a sample size in excess of 200 is suitable to effectively employ Structural Equation Modelling (SEM) nonetheless Wolf (2015) suggested that a sample size in excess of 460 is not recommended.

$$n = \frac{\chi^2 Np(1-p)}{e^2(N-1) + \chi^2 p(1-p)}$$

When n = minimum sample size

   N = population size

   e = deviation of random sampling

   χ^2 = chi–square for the 95% level of confidence at 1 degree of freedom

   p = population proportion

Set sampling deviation to 0 . 0 5 therefore

n
$$= \frac{(3.841)(7,886)(0.5)(1-0.5)}{(0.05^2)(7,886-1) + (3.841)(0.5)(1-0.5)}$$

   = 366.3041 rounded up to 367

Addition with 20% chance of drop out. Consequently, the sample size comes to 440 respondents.

Research instrument

The research instrument to collect data was the questionnaire that composed with 7 parts:

Part 1: For gains the information of the respondent. There were 6 multiple choices questions, including the gender, age, marital status, medical specialty, working period, and salary.

Part 2: For gains the information of the healthcare facility. There were 2 dichotomous questions, including the type and size of the healthcare facility.

Part 3: There were 22 questions for evaluated 5 dimensions of job stress, including the time stress, anxiety stress, role expectation conflict, coworker support, and work–life balance (Shukla and Srivastava, 2016).

Part 4: There were 18 questions with 5–point Likert scale for evaluated 4 dimensions of pay satisfaction, including the level, benefits, raise, and structural and administration (Judge, 1993).

Part 5: There were 15 questions with 5–point Likert scale for evaluated 3 dimensions of career growth, including the career goal, career capacity, and career opportunity (Weng, 2011).

Part 6: There were 7 questions with 5–point Likert scale for evaluated 2 dimensions of job satisfaction, including the intrinsic factors and compensation factors (Fennig, 2000; Melville, 1980).

Part 7: There were 6 questions with 5–point Likert scale for evaluated 2

dimensions of intention to quit, including the affective and cognitive (Roodt, 2013).

Test of research instrument

The research instrument, questionnaire, was tested by multiple procedures.

First, the questionnaires were sent to 4 experts in related fields to investigate content validity and item objective congruence by 3–point Likert scale (–1, 0, 1). The data was collected and calculated for arrhythmic mean of each item of the variables. The item score below 0.5 were excluded (Rovinelli and Hambleton, 1977).

The questionnaire, then, was tested for its reliability by measured Cronbach's alpha coefficient and composite reliability.

Cronbach's alpha coefficient is the most common tool for measure internal consistency and reliability. The cut–off level of Cronbach's alpha coefficient should be higher 0.7 to obtain an adequate scale (Cronbach, 1951). The reliability score was used for every variable in the questionnaire. In addition, the result of all the Cronbach's alpha coefficient indicated that the smallest one was >0.7.

Composite reliability and average variance extracted are also the most common tool for measure reliability and convergent validity, especially in CFA. The cut–off level of composite reliability should be higher 0.7 whereas average variance extracted should be higher 0.5 (Fornell and Larcker, 1981).

The researcher collected first 50 samples to calculate Cronbach's alpha coefficient. After collected all the samples, the researcher went on composite reliability and average variance extracted. The results are shown in Table 1.

Data collection

The data was collected through questionnaires from July to August 2018. 444 questionnaires were collected by quota sampling from private and public healthcare facility equally. The questionnaires were brought to physician through LINE application and Facebook website, by requesting physician to visit specific web pages of questionnaire (Google Doc) to investigate. Google Doc is a free online questionnaire constructor tools, which allows researcher to construct online questionnaire and collect data online. The questionnaire was in Thai language.

Data analysis

In part 1 and 2, the demographic data was collected and analyzed with descriptive statistics. In part 3 to 7, the validity, reliability, composite reliability, and average variance extracted test were conducted to evaluate the items of each variable. The data was collected and analyzed with inferential statistics. The CFA and hierarchical multiple regressions analysis were used to examine the postulated hypothesis. The analysis was done by IBM® SPSS® AMOS® version 22nd.

This research adopted the procedures proposed by Baron and Kenny (1986) for the test of mediation; and a series of statistical analyses to test the hypotheses were employed. IBM® SPSS® AMOS® version 22nd was used to run a set of CFA models. To test Hypotheses 1–3, a hierarchical regression analysis on which we regressed job satisfaction on 3 independent variables (job stress, pay satisfaction, and career growth) and intention to quit was conducted. Importantly, to justify the mediation effect in Hypothesis 4, PROCESS macro developed by Hayes (2013) which involves bootstrapping procedures was used.

Table 1 Reliability and validity test

Variables	Cronbach's α coefficient	Average Variance Extracted	Composite Reliability
Job stress		0.50	0.82
Time stress	.81		
Anxiety stress	.85		
Role expectation conflict	.85		
Co–worker support	.90		
Work–life balance	.92		
Pay satisfaction		0.52	0.81
Level of payment	.98		
Benefits	.94		
Raise of payment	.82		
Structural and administration	.94		
Career growth		0.63	0.83
Career goal	.94		
Career capacity	.97		
Career opportunity	.91		
Job satisfaction		0.69	0.81
Intrinsic factors	.96		
Compensation factors	.91		
Intention to quit		0.77	0.87
Affective	.91		
Cognitive	.79		

Results

Descriptive statistics

Table 2 summarizes the means, standard deviations as well as the correlation matrices for all of the variables except dependent variables (i.e. intention to quit). The result of the Pearson correlation test indicated that the largest Pearson correlation coefficient was < 0.7; therefore, no significant collinearity or multicollinearity were found. After establishing the factor structure for all variables, CFA was employed to establish a valid measurement model prior to testing the structural model and to confirm its validity. Hair, Black, Babin, Anderson, and Tatham (2006) suggested that to be considered as having an adequate fit, all the indices must be measured against the following criteria: $p > 0.05$; $\chi^2/df < 3.00$; GFI, CFI, and NFI > 0.90; and RMSEA < 0.08. The results in Table 3 show that the measurement model fitted the data well.

Tests of hypotheses

To test hypotheses 1–4, hierarchical multiple regression analysis as recommended by Baron and Kenny (1986) was employed. In general, four conditions must be fulfilled to

evidence a mediating effect. Firstly, the independent variable must predict the dependent variable. Secondly, the independent variable must have a significant relationship with the mediator. Thirdly, the mediator must have a significant influence on the dependent variable. Finally, the effect of the independent variable on the dependent variable must be purged or significantly reduced after the effect of the mediator has been taken into consideration.

Table 4 shows that controlling for demographic variables, job stress has a positive significant relationship with intention to quit ($\beta = 0.41$; $p < 0.001$); at the same time, pay satisfaction and career growth have negative significant relationship ($\beta = -0.18$; $p < 0.001$, $\beta = -0.23$; $p < 0.001$, respectively) granting support to H1 which fulfils the first condition. The result reveals that job stress is negatively related to job satisfaction ($\beta = -0.41$; $p < 0.001$); in contrast, pay satisfaction and career growth are positively related ($\beta = 0.19$; $p < 0.001$, $\beta = 0.18$; $p < 0.001$, respectively) which providing supports for H2. Hence, it meets the second condition. The result also indicates that job satisfaction has a negative significant ($\beta = -0.97$; $p < 0.001$) relationship with intention to quit which supports H3. As a result, it fulfills the third

condition. Furthermore, the result reveals that when job stress, pay satisfaction, career growth and job satisfaction were entered into the regression together, pay satisfaction no longer significantly influenced intention to quit ($\beta = 0.01$; $p > 0.05$), while job satisfaction had significant influence on intention to quit which indicated that job satisfaction is fully mediating the relationship between pay satisfaction and intention to quit. Even so, job stress and career growth are still having significant influence on intention to quit ($\beta = 0.03$; $p < 0.05$, $\beta = -0.05$; $p < 0.001$, respectively). However, the beta coefficients are intensely reduced which may indicated that job satisfaction is partially mediating the relationship between job stress and career growth and intention to quit. For all that, H4 was accepted and this result fulfils the fourth condition.

In addition, from the structural model used in CFA, we analyzed for direct, indirect, and total effects of job stress, pay satisfaction, and career growth on intention to quit; subsequently, we followed Preacher and Hayes (2008); thus, we conducted a bootstrap analysis to examine the effects with 500 resamples. The results are presented in Table 5. Linear regression with maximum likelihood estimates and 95% bias corrected confidence intervals (CI) to assess the relationship between job stress, pay satisfaction, and career growth on intention to quit through job satisfaction as the mediator was also employed. Controlling for gender, age, marital status, medical specialty, working period, salary, and type and size of healthcare facility the result indicates that pay satisfaction has no significant direct effect on intention to quit (coefficient < 0.001, CI = (<0.001, <0.001)); nonetheless, job stress and career growth have significant effect on intention to quit (coefficient = 0.03; CI = [0.05, 0.01], coefficient = –0.06; CI = [–0.04, –0.09], respectively), yet there are hardly any effect in compared with their indirect effect through the mediator. All the result, excluding zero, showed a significant indirect and total effect of job stress, pay satisfaction, and career growth on intention to quit through job satisfaction ($p < 0,01$). When expressed as a proportion in which indirect/total effect multiply by 100%, these results suggest that job satisfaction mediate 93%, 100%, and 68% of the total effect of job stress, pay satisfaction, and career growth on intention to quit, respectively. (Freedman, 2001; Sobel, 1982). Remarkably, these results provide support for H4.

Table 2 Means, standard deviations and zero–order correlations.

Variables	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11
1. Gender	0.49	0.50											
2. Age	35.19	10.35	–0.23**										
3. Marital status	0.37	0.48	–0.19**	0.38**									
4. Specialty	0.58	0.50	–0.22**	0.25**	0.13**								
5. Working period	2.48	0.89	–0.22**	0.67**	0.26**	0.21**							
6. Salary	2.19	1.04	–0.18**	0.18**	0.22**	0.19**	0.11*						
7. Type of healthcare facility	0.48	0.50	–0.21**	0.04	0.05	0.20**	–0.07	0.40**					
8. Size of healthcare facility	0.75	0.44	0.15**	–0.01	–0.16**	–0.12*	–0.02	–0.36**	–0.53**				
9. Job stress	3.06	0.41	0.05	–0.05	–0.01	–0.20**	–0.06	–0.19**	–0.13**	0.14**			
10. Pay satisfaction	2.84	0.72	–0.09*	0.18**	0.21**	0.03	0.16**	0.28**	0.06	–0.10*	–0.10*		
11. Career growth	3.27	0.78	0.01	–0.07	0.07	0.01	0.10*	0.08	–0.09	0.02	–0.01	0.47**	
12. Job satisfaction	2.89	0.96	–0.15**	0.33**	0.14**	0.35**	0.29**	0.20**	0.02	–0.10*	–0.48**	0.35**	0.26**

Gender, age, marital status, specialty, working period, salary, type and size of healthcare facility are dummy variables.
**. Correlation is significant at the 0.01 level
*. Correlation is significant at the 0.05 level.

Table 3 Measurement model.

Model	p	χ^2	df	χ^2/df	GFI	CFI	NFI	RMSEA	SRMR
Baseline model (five factors)	0.28	3.81	3	1.27	1.00	1.00	1.00	0.02	0.01

Notes: n = 444, χ^2 = chi–square discrepancy, df = degrees of freedom, GFI = goodness of fit index, CFI = comparative fit index, NFI = normed fit index, RMSEA = root mean square error of approximation, SRMR = standardized root mean square residual.

Table 4 Hierarchical multiple regression result.

Variables	Job satisfaction	Intention to quit		
	Model 1	Model 2	Model 3	Model 4
Control variables				
Gender	–0.03	0.03	–0.01	–0.01
Age	0.24***	–0.24***	0.01	–0.01
Marital status	–0.04	0.09*	0.05**	0.05***
Specialty	0.22***	–0.21***	–0.01	–0.01
Work period	0.01	–0.01	–0.03	–0.01
Salary	–0.01	0.02	0.01	0.02
Type of healthcare facility	–0.13***	0.10*	–0.01	–0.02
Size of healthcare facility	–0.07	0.05	–0.02	–0.02
Independent Variables				
Job stress	–0.41***	0.41***		0.03*
Pay satisfaction	0.19***	–0.18***		0.01
Career growth	0.18***	–0.23***		–0.06***
Mediator				
Job satisfaction			–0.97***	–0.93***
R^2	0.47***	0.47***	0.93***	0.93***
Adjusted R^2	0.46***	0.46***	0.93***	0.93***
F value (Sig. level)	34.67***	34.77***	635.95***	501.81***

Conclusion

The relationship between job stress, pay satisfaction, career growth, and intention to quit. (H1)

The hypothesis aimed to identify job stress, pay satisfaction, and career growth by their effect on intention to quit. According to results of the tests, job stress has positive effect on intention to quit, while pay satisfaction and career growth have negative effect on intention to quit.

The relationship between job stress, pay satisfaction, career growth, and job satisfaction. (H2)

The hypothesis aimed to identify job stress, pay satisfaction, and career growth by their effect on intention to quit. According to results of the tests, job stress has negative effect on job satisfaction, while pay satisfaction and career growth have positive effect on job satisfaction.

Table 5 Bootstrapped mediation results.

Intention to Quit[a]	Model								
	Direct Effect (SE)	95% CI		Indirect Effect (SE)	95% CI		Total Effect (SE)	95% CI	
		Upper	Lower		Upper	Lower		Upper	Lower
Job Stress	0.03[*] (0.01)	0.05	0.01	0.42[**] (0.03)	0.47	0.34	0.45[**] (0.03)	0.51	0.37
Pay Satisfaction	<0.001 (<0.001)	<0.001	<0.001	−0.23[**] (0.04)	−0.15	−0.32	−0.23[**] (0.04)	−0.15	−0.32
Career Growth	−0.06[**] (0.01)	−0.04	−0.09	−0.13[**] (0.04)	−0.05	−0.22	−0.19[**] (0.05)	−0.1	−0.29

Note: 500 Bootstrap samples. Standard Errors indicated within parentheses. Estimates in bold have CIs that are the interval of zero for total and indirect effects indicating significant mediation. Bias correlated confidence intervals (CI) and standard error (SE) reports.
[a] Controlling for gender, age, marital status, specialty, work period, salary, type and size of healthcare facility

[***]. $p < 0.001$, [**] $p < 0.01$, [*] $p < 0.05$.

The relationship between job satisfaction and intention to quit. (H3)

The hypothesis aimed to identify effect of job satisfaction on intention to quit. According to results of the tests, job satisfaction has strong negative effect on intention to quit.

The relationship between job stress, pay satisfaction, career growth, and intention to quit is mediated by job satisfaction. (H4)

The hypothesis aimed to identify job stress, pay satisfaction, and career growth by their effect on intention to quit are mediated by job satisfaction. According to results of the tests, pay satisfaction has no effect on intention to quit, yet job stress and career growth have weak effect on intention to quit when it has job satisfaction as the mediator. Notably, job satisfaction is full mediator on the relationship between pay satisfaction and intention to quit, yet job satisfaction is partial mediator on the relationship between job stress, career growth, and intention to quit.

Discussion

The study examined the influence of job stress, pay satisfaction, and career growth on intention to quit mediated by job satisfaction. We tested a model delineating the relationship between job stress, pay satisfaction, career growth, and intention to quit mediated by job satisfaction which yielded a number of worthwhile results. The findings confirmed that the relationship between job stress, pay satisfaction, career growth and intention to quit was significant. The results have revealed that job stress, pay satisfaction, and career growth had a significant negative, positive, and positive impact on job satisfaction, respectively. Our findings supported several previous studies that have linked job stress, pay satisfaction, and career growth to job satisfaction (Danish, Shahid, Aslam, Ali, 2015; Tariq, 2016). Many studies reported little influence of demographics factors on intention to quit. However, these variables were examined separately. The findings of this study indicated that only marital status influence intention to quit either with or without job satisfaction as the mediator.

Our findings were also in line with Lu, Hu, and Huang (2016) who argued that the job stress is the most important factor that related to job satisfaction (Harzer, Ruch, 2015; Wu,

Zhu, Li, 2012; Mansoor, Fida, Nasir, 2011; Jamal, 1990; Gray–Toft, Anderson, 1981). Moreover, Han et al. (2015) also noted that job stress relates significantly with intention to quit. (Liu, Onwuegbuzie, 2012; Kim, Kao, 2014). In addition, Williams, McDaniel, and Nguyen (2006) noted that if employees satisfied their payment, they would be less willing to quit their job. Besides, Weng and McElroy (2012) emphasized that low career growth opportunity served as a direct and indirect trigger of intention to quit.

Another interesting finding of this study is that physicians who exhibit their positive job satisfaction play a contributing role in decreasing intention to quit. This is in line with Moreno–Jiménez (2009) who argued that individual willingness of quit is essential to job satisfaction, which according to Locke (1976) leads to sustain physicians' retention in the organization.

Because our results corroborate the findings of Moreno–Jiménez (2009), who strongly highlighted support for the ideas that job satisfaction is one of the major factors critical for intention to quit. Finally, our findings suggested that decrease job stress, yet promote pay satisfaction and career growth to increase job satisfaction

which relates to physicians' intention to quit. That is; when emotional support and job satisfaction exists, the intention to quit will be less which can pave avenues for decreasing overall intention to quit.

Implication

This research has important implications for healthcare facility managers who desire to strengthen or develop physician retention by decreasing physician intention to quit. As for those managers earmarked physician fault, they must be aware of issues that need to be taken into consideration when there is a need to revitalize their employees' emotion, physicians' emotion, and renovate their facility. Jadoo, Aljunid, and Dastan (2015) note the need to understand that at the individual level, a physician's intention to quit is often influenced by their feeling of satisfaction in their job. It is important for physician; as Moreno–Jiménez et al. (2012) point out, the feeling of burnout will affect their intention to quit.

Our findings have some interesting implications for practitioners who aim to build the most effective physician job satisfaction for enhancing individual physician retention. The healthcare facility's physician resources policies should be aligned with organizational goals for promote physician job satisfaction. This could include reducing job stress, yet increasing pay satisfaction and promote career growth that places importance role on positive emotions linked to intention to quit. To create a suitable environment for physician work, organizations might look to coaching managers to be more understand what physician need and seek to strengthen policy dynamics where dimensions such as 'work–life balance' or 'level of payment' are inculcated and facilitated. Notably, our results have laid an essential foundation through building on an organizational policy by providing valuable insights into physician job satisfaction and its role on physician intention to quit.

Limitation

Although our study is in-line with many other literatures on the focus of physician intention to quit, the result should be implied with caution as they are subjected to several limitations. First of all, the study is cross–sectional in nature which without an experimental design and longitudinal data, conclusions regarding causal relationship might

cannot be accurately drawn. Second of all, respondents' average age was finally come out just around 35–year–old that might too young when compared with those who older. Hence it might show many of confounders, such as their firm decision of settle down into their workplace. Thus, the implication must be carefully used when the average age of physician is contrast. Last of all, there are many confounders from subtype of healthcare facility, i.e. police hospital, military hospital, university hospital, etc., that might affect the result because physician intention to quit in those facility may be influenced by other factors.

Though it is practical, and there is empirical support for the use of physician job satisfaction as a basis of reducing physician intention to quit (Jadoo, Aljunid, Dastan, 2015) and previous studies have shown strong relationship between quit behavior and intention to quit (Gu, Huang, Chen, 2006), this dependence is still one area for potential improvement. Additional limitation arises as intention to quit is assessed based on the individual perceptions which might not be an accurate indicator of quit behavior.

Recommendation for future research

This study pay attention on both public and private healthcare facilities in Bangkok. To expand the generalizability, especially in a broader context, studies should be conducted in other provinces of Thailand ideally with the whole national setting. Conversely, studies carried out in subtype entities, e.g. police hospital, military hospital, university hospital, etc., may also provide uniqueness and interesting results. Hence, it would be beneficial to replicate this study in various industries and cross into other populations to reaffirm the conclusions made in this study. In addition, research that employs mixed methods included both qualitative and quantitative methodologies associated with constructivism and positivism should be applied, which will has the potential to offer proper analysis and results. Furthermore, future studies should be focused on the similar or different characteristics, especially the age of the sample which may alter or differ the result.

References

Adams, J.S. (1963), "Toward an understanding of inequity," Journal of Abnormal Psychology, Vol. 67, pp. 422–436.

Adams, J.S. (1965), "Inequity in social exchange," Advances in experimental social psychology, pp. 267–299.

Ali Jadoo, S.A. & Aljunid, S.M. & Dastan, I. & Tawfeeq, R.S. & Mustaf, M.A. & Ganasegeran, K. & AlDubai, S.A. (2015), "Job satisfaction and turnover intention among Iraqi doctors—a descriptive cross–sectional multicentre study," Hum Resour Health, Vol. 13, pp. 11–21.

Ariyasriwattana, C. (2007), "The Lack of Physician in the Hospital of Ministry of Health," the Thai Medical Council Bulletin, Vol. 36, No. 3, pp. 206–208.

Arshadi, N. & Damiri, H. (2013), "The relationship of job stress with turnover intention and job performance: moderating role of OBSE," Procedia – Social and Behavioral Sciences, Vol. 84, pp. 706–10.

Barling, J. & Kelloway, E.K. & Frone, M. (2005), Handbook of Work Stress. CA: Sage Publications.

Baron, R. M., & Kenny, D. A. (1986), "The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations," Journal of Personality and Social Psychology, Vol. 51, pp. 1173–1182.

Bluedorn, A.C. (1982), "A Unified Model of Turnover from Organizations," Human Relations, Vol. 35, pp. 135–53.

Burbeck R, Coomber S, Robinson SM, Todd C. Occupational stress in consultants in accident and emergency medicine: A national survey of levels of stress at work. Emergency Medicine Journal 2002;19:234–238.

Cascio, W.F. (2006), Managing Human Resources: Productivity, Quality of Work–Life, profits, 2nd ed. New York: McGraw–Hill.

Chao, M.C. & Jou, R.C. & Liao C.C. & Kuo, C.W. (2015), "Workplace Stress, Job Satisfaction, Job Performance, and Turnover Intention of Health Care Workers in Rural Taiwan," Asia Pacific Journal of Public Health, Vol. 27, No. 2, pp. 1827–36.

Coomber, B. & Barriball, L. (2007), "Impact of job satisfaction components on intent to leave and turnover for hospital–based nurses: A review of the research literature," International journal of nursing studies, Vol. 44, pp. 297–314.

Cronbach, L. J. (1951), "Coefficient alpha and the internal structure of tests," Psychometrika, Vol. 16, pp. 297–334.

Dailey, R. & Kirk, D. (1992), "Distributive and Procedural Justice as Antecedents of Job Dissatisfaction and Intent to Turnover," Human Relations, Vol. 45, pp. 305–17.

Danish, R.Q. & Shahid, A.U. & Aslam, N. & Ali, A. (2015), "The Impact of Pay Satisfaction and Job Stress on Job Satisfaction in Pakistani Firms of Gujranwala District," American Journal of Economics, Finance and Management, Vol. 1, No. 3, pp. 207–210.

De Gieter, S. & Hofmans, J. (2015), "How reward satisfaction affects employees' turnover intentions and performance: an individual differences approach," Hum Resour Manag J, Vol. 25, No. 2, pp. 200–16.

Deo, M. V. (2016), "Time to Revisit Recommendations on Doctor to Population Ratio in India," the Journal of the Association of Physicians of India, Vol. 64, No. 10, pp. 72–74.

Erdoganm, B. & Liden, R.C. & Kraimer, M.L. (2006), Justice and leader–member exchange: the moderating role of organizational culture," Academy of Management Journal, Vol. 49, No. 2, pp. 395–406.

Fennig, S. & Yuval, D. (2002), "Greenstein M, Rabin S, Weingarten M. Job satisfaction among certified and non–certified general practitioners," The Israel Medical Association journal, Vol. 2, No. 11, pp. 823–7.

Fornell, C. & Larcker, D. F. (1981), "Evaluating Structural Equation Models with Unobservable Variables and Measurement Error," Journal of Marketing Research, Vol. 18, No. 1, pp. 39–50.

Freedman, L. S. (2001), "Confidence intervals and statistical power of the "Validation" ratio for surrogate or intermediate endpoints," Journal of Statistical Planning and Inference, Vol. 96, pp. 143–153.

Gilboa, S., Shirom, A., Fried, Y. & Cooper, C. (2008), "A meta–analysis of work demand stressors and job performance: Examining main and moderating effects," Personnel Psychology, Vol. 61, pp. 227–71.

Gray–Toft. P. & Anderson, J.G. (1981), "Stress among hospital nursing staff: its causes and effects," Soc Sci Med A, Vol. 15, pp. 639–47.

Greenberg, J. (1987), "A Taxonomy of Organizational Justice Theories," Academy of Management Review, Vol. 12, pp. 9–22.

Greenberg, J. (1990), "Yesterday, Today, and Tomorrow," Journal of Management, Vol. 16, No. 2, pp. 399–432.

Gu, S.T., Huang, Q.M. & Chen, Z.H.Q. (2006), "Relationship between job satisfaction and turnover intention among physicians from three–grade hospitals," Chinese Journal of Hospital Administration, Vol. 9, pp. 586–9.

Hair, J., Black, W., Babin, B., Anderson, R. & Tatham, R. (2006), Multivariate Data Analysis. 6th Edition. Pearson Prentice Hall, Upper Saddle River.

Han, S.S., Han, J.W. & Choi, E.H. (2015), "Effects of nurses' Job stress and work family conflict on turnover intention: focused on the mediating effect of coping strategies," Asian Women, Vol. 31, pp. 1–20.

Harzer, C. & Ruch, W. (2015), "The relationships of character strengths with coping, work– related stress, and job satisfaction," Front Psychol, Vol. 6, pp. 1–12.

Hayes, A. F. (2013), Methodology in the social sciences. Introduction to mediation, moderation, and conditional process analysis: A regression–based approach. New York: Guilford Press.

Heponiemi, T., Kouvonen, A., Virtanen, M., Vanska, J. & Elovainio, M. (2014) "The prospective effects of workplace violence on physicians' job satisfaction and turnover intentions: the buffering effect of job control," BMC Health Serv Res, Vol. 14, pp 19.

Heponiemi, T., Presseau, J. & Elovainio, M. (2016), "On–call work and physicians' turnover intentions: The moderating effects of job strain," Psychology, Health & Medicine, Vol. 21, pp. 74–80.

Herzberg, F. (1959), The motivation to work, 2nd ed. New York: John Wiley Publisher.

Hill, M.D. (1986), "A theoretical analysis of faculty job satisfaction/ dissatisfaction," Educational Research Quarterly. Vol. 10, pp. 36.

Ho, W.H., Chang, C.S., Shih, Y.L. & Liang, R. (2009), "Effects of job rotation and role stress among nurses on job satisfaction and organizational commitment", BMC Health   Services Research, pp 1–10.

Hobfoll, S.E. (2001), "The influence of culture community and the nested–self in the stress process: Advancing conservation of resources theory," Applied Psychology: An International Journal Vol. 50, pp. 337–421.

Hom, P.W. & Griffeth, R.W. (1991), "A structural equation modelling test of a turnover theory: cross sectional and longitudinal analysis," J Appl Psychol, Vol. 76, pp. 350–66.

Hom, P.W. & Griffeth, R.W. (1995), Employee Turnover, Cincinnati: South–Western College Publishing.

Huseman, R.C. & Hatfield, J.D. (1990), "Equity Theory and the Managerial Matrix," Training and Development Journal, Vol. 44, No. 4, pp. 98–103.

Huseman, R.C., Hatfield, J.D. & Miles, E.W. (1987), "A New Perspective on Equity Theory: The Equity Sensitivity Construct," The Academy of Management Review, Vol.12, No. 2, pp. 222–34.

Jacobs, E. & Roodt, G. (1989), "Organisational culture of hospitals to predict turnover intentions of professional nurses," Health SA Gesondheid, Vol. 13, No. 1, pp. 63–78.

Jans, N.A. (1989), "Organizational commitment, career factors and career/life stage," Journal of Organizational Behavior, Vol. 10, No. 3, pp. 247–66.

Jamal, M. (2005), "Burnout among Canadian and Chinese employees: a cross–cultural study," European Management Review, Vol. 2, pp. 224–30.

Jamal, M. (1990), "Relationship of job stress and Type–A behavior to employees' Job satisfaction, organizational commitment, psychosomatic health problems, and turnover motivation," Human Relations, Vol. 43, pp. 727–38.

Judge, T.A. (1993), "Validity of the Dimension of the Pay Satisfaction Questionnaire: Evidence of Differential Prediction," Personnel Psychology, Vol. 46, pp. 331–55.

Judge, T.A. & Bono, J.E. (2001), "Relationship of core self–evaluations traits–self–esteem, generalized self–efficacy, locus of control, and emotional stability–with job satisfaction and job performance: A meta–analysis," Journal of Applied Psychology, Vol. 86, pp. 80.

Judge, T.A., Heller, D. & Mount, M.K. (2002), "Five–factor model of personality and job satisfaction: A meta–analysis," Journal of Applied Psychology, Vol. 87, pp. 530.

Judge, T.A. & Klinger, R. (2007), "Job Satisfaction: Subjective well–being at work," In M. Eid & R. Larsen (Eds.), The science of subjective wellbeing, New York: Guildford Publication. pp. 393–413.

Judge, T.A. & Larsen R.J. (2001), "Dispositional affect and job satisfaction: A review and theoretical extension," Organizational Behavior and Human Decision Processes, Vol. 86, No. 1, pp. 67–98.

Judge, T.A, Locke, E.A. & Durham, C.C. (1997), "The dispositional causes of job satisfaction: A core evaluations approach," Research in Organisational Behaviour, Vol. 19, pp. 151.

Kim, H. & Kao, D. (2014), "A meta–analysis of turnover intention predictors among U.S. child welfare workers," Children and Youth Services Review, Vol. 47, pp. 214–23.

Klein, J., Frie, K.G., Blum, K. &Von dem Knesebeck, O. (2011) "Psychosocial stress at work and perceived quality of care among clinicans in surgery," BMC Health services research, Vol. 11, pp. 109–17.

Krejcie, R. & Morgan, D. (1970), "Determining Sample Size for Research Activities," Educational and Psychological Measurement, Vol. 30, No. 3, pp. 607–610.

Lambert, E.G., Lynne, H.N. & Barton, S.M. (2001), "The Impact of Job Satisfaction on Turnover Intent: A Test of a Structural Measurement Model Using a National Sample of Workers," The Social Science Journal, Vol. 38, pp. 233–50.

Lawler, E. (1990), Pay and Organizational Effectiveness, New York: McGraw–Hill.

Lawler, E. (1990), Strategic Pay: Aligning Organizational Strategies and Pay Systems. San Francisco: Jossey–Bass.

Lazarus, R.S. (1999), Stress and emotion: A new synthesis. New York: Springer Publishing Co.

Lee, T.W. & Mitchell, T.R. (1994), "An Alternative Approach: The Unfolding Model of Voluntary Employee Turnover," The Academy of Management Review, Vol. 19, No. 1, pp 51–89.

Liu, R.M. & Quan, P. (2016), "Relation between doctor organizational commitment and turnover intention: the mediating role of job satisfaction and self – expectation," Chinese General Practice, Vol. 19, pp. 317–21.

Liu, S. & Onwuegbuzie, A.J. (2012), "Chinese teachers' work stress and their turnover intention," International Journal of Educational Research, Vol. 53, pp. 160–70.

Locke, E.A. (1979) The Nature and Causes of Job Satisfaction. In Dunnette, M.D. Handbook of Industrial and Organizational Psychology. Chicago: Rand McNally. pp. 1297–349.

Lu, Y., Hu, X.M. & Huang, X.L. et al. (2016), "Job satisfaction and associated factors among healthcare staff: a cross–sectional study in Guangdong Province, China," BMJ Open; Vol. 6, pp. 1–9.

Lum, L., Kervin, J., Clark, K., Reid, F. & Sirola, W. (1998), "Explaining Nursing Turnover Intent: JobSatisfaction, Pay Satisfaction, or Organizational Commitment?" Journal of Organizational Behavior, Vol. 19, pp. 305–20.

Mansoor, M., Fida, S. & Nasir, S. (2011), "The impact of job stress on employee job satisfaction A Study on Telecommunication Sector of Pakistan," Journal of Business Studies Quarterly, Vol. 2, pp. 50–6.

March, J.G. & Simon, H.A. (1958), Organizations, New York: Wiley.

Martin, A. & Roodt, G. (2008), "Perceptions of organisational commitment, job satisfaction and turnover intentions in a post merger tertiary institution," SA J Ind Psychol, Vol. 34, No. 1, pp. 23–31.

Maslach, C.A. & Jackson, S.E. (1981), "The measurement of experienced burnout," Journal of Occupational Behavior, Vol. 2, pp. 99–113.

Maslow, A.H. (1943), "A theory of human motivation," Psychological Review, Vol. 50, No. 4, pp. 370–96.

Medical Council of Thailand (2015), For New Physician, Nonthaburi: Medical Council of Thailand.

Melville, A. (1980), "Job satisfaction in general practice implications for prescribing," Social Science & Medicine Part A: Medical Psychology & Medical Sociology, Vol. 14, No. 6, pp. 495–9.

Miceli, M.P. & Mulvey, P.W. (2000), "Consequences of Satisfaction with Pay System: Two Field Studies," Industrial Relations, Vol. 39, pp 62–87.

Michaels, C.E. & Speetor, P.E. (1982), "Causes of employee turnover: a test of the mobley, griffeth, hand, and meglion model," J Applied Psychol, Vol. 67, No. 1, pp. 55–9.

Milkovich, G.T. & Newman, J.M. (2008), Compensation, 8th ed. New York: McGraw–Hill.

Miller, H.E., Katerberg, R. & Hulin, C. (1979), "Evaluation of the Mobley, Horner, and Hollingsworth Model of Employee Turnover," Journal of Applied Psychology, Vol. 64, No. 5, pp. 509–17.

Mobley, W.H. (1977), "Intermediate linkages in the relationship between job satisfaction and employee turnover," Journal of Applied Psychology, Vol. 62, No. 2, pp. 237–40.

Mobley, W.H. (1979), "Griffeth R, Hand H, Meglino B. A review and conceptual analysis of the employee turnover process," Psychological Bulletin, Vol. 86, pp. 493–522.

Mobley, W.H., Horner, S.O. & Hollingsworth, A.T. (1978), "An evaluation of precursors of hospital employee turnover," Journal of Applied Psychology, Vol. 63, No. 4, pp. 408–14.

Moreno–Jimenez, B., Gálvez–Herrer, M., Carvajal, R. & Sanz, V.A. (2012), "A study of physicians' intention to quit: The role of burnout, commitment and difficult doctor–patient interactions," Psicothema, Vol. 24, pp. 263–70.

Moreno–Jiménez, B., Mayo, M., Sanz–Vergel, A.I., Geurts, S., Rodríguez–Muñoz, A. & Garrosa, E. (2009) "Effects of work–family conflict on employees'

well–being: the moderating role of recovery strategies," J Occup Health Psychol, Vol. 14, No. 4, pp. 427–40.

Motowildo, S. (1983), "Predicting Sales Turnover from Pay Satisfaction and Turnover," Journal of Applied Psychology, Vol. 68, pp 484–9.

Nunnally, J. (1967), Psychometric theory. New York: McGraw–Hill Book.

Nyberg, A. (2010), "Retaining your high performers: Moderators of the performance–job satisfaction–voluntary turnover relationship," Journal of Applied Psychology, Vol. 95, No. 3, pp. 440–53.

Price, J.L. (1997), The Study of Turnover, Iowa: State University Press.

Price, J.L. (2000), The development of a causal model of voluntary turnover, Iowa: State University Press.

Price, J.L. & Mueller, C.W. (1986), Absenteeism and Turnover among Hospital Employees. Greenwich: JAI Press.

Rovinelli, R. J., & Hambleton, R. K. (1977), "On the use of content specialists in the assessment of criterion–referenced test item validity," Dutch Journal of Educational Research, Vol.   2, pp. 49–60

Sheridan, J.E. & Abelson, M.A. (1983), "Cusp Catastrophe Model of Employee Turnover," The Academy of Management Journal, Vol. 26, No. 3, pp. 418–36.

Shukla, A. & Srivastava, R. (2016), "Development of short questionnaire to measure an extended set of role expectation conflict, coworker support and work–life balance: The new job stress scale," Cogent Business & Management, Vol.3, No. 1.

Smith, P.C., Kendall, L.M. & Hulin, C.L. (1969) The Measurement of Satisfaction in Work and Retirement, Chicago: Rand McNally.

Sobel, M.E. (1982), "Asymptotic confidence intervals for indirect effects in structural equation models," In: Leinhardt S, editor. Sociological methodology, American Sociological Association, pp. 290–312.

Spector, P.E. (1997), Job Satisfaction: Application, Assessment, Causes, and Consequence. Thousand Oaks: Sage Publications Inc.

Spector, P.E. (2003), Industrial and organizational psychology: Research and practice. 3rd ed. New York: John Wiley & Sons Inc.

Strategy and Planning Division Ministry of health (2015), Report of Health Resources, 1st Ed. Nonthaburi: Ministry of Health.

Tariq, A. (2016), "Organizational Environment, Job Satisfaction, and Career Growth Opportunities: A Link to Employee's Turnover Intentions in University of Sargodha, Pakistan," Journal of Resources Development and Management, Vol. 20. pp 8–14.

Tsai, Y.H., Huang, N. & Chien, L.Y. et al. (2016), "Work hours and turnover intention among hospital physicians in Taiwan: does income matter?" BMC Health Serv Res, Vol. 16, pp. 1–8.

Van, D.R., Christ, O., Stellmacher, J., Wagner, U., Ahlswede, O., Grubba, C., Hauptmeier, M., Hohfeld, C., Moltzen, K. & Tissington, P.A. (2004), "Should I stay or should I go? Explaining turnover intention with organizational identification and job satisfaction," Br J Manag, Vol. 4, pp. 351–360.

Weng et al. (2014), "Organizational career growth and subsequent voice behavior: The role of affective commitment and gender," Journal of Vocational Behavior, Vol. 84, No. 1, pp. 431–41.

Weng, Q.X. & McElroy, J.C. (2012), "Organization career growth, affective occupational commitment and turnover intentions," Journal of Vocational Behavior, Vol. 80, No. 2, pp. 256–65.

Weng, Q.X. & Xi, Y.M. (2010), "A literature review of employees' career growth," Forecasting, Vol. 29, No.6, pp 1–7.

Weng, Q.X. & Xi, Y.M. (2011), "Career growth study: scale development and validity test," Management Review, Vol. 23, No. 10, pp. 132–43.

Williams, M., McDaniel, M.A. & Nguyen, N. (2006), "A Meta–Analysis of the Antecedents and Consequences of Pay Satisfaction," Journal of Applied Psychology, Vol. 9, pp. 392–413.

Wolf, E., Harrington, K., Clark, S. & Miller, M. (2013), "Sample Size Requirements for Structural Equation Models," Educational and Psychological Measurement, Vol. 73, No. 6, pp. 913–934.

Wu, S., Zhu, W., Li, H. et al. (2012), "Workplace violence and influencing factors among medical professionals in China," Am J Ind Med, Vol. 55, pp. 1000–8.

Ye, R. (2005), "Analysis on the causes of employee turnover in state–owned enterprises," PhD thesis, Southwest Jiaotong University, Chengdu, China.