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ARTIFICIAL INTELLIGENCE HEALTHCARE: AN EMPIRICAL STUDY ON USERS' ATTITUDE AND INTENTION TO USE TOWARD A PERSONAL HOME HEALTHCARE ROBOT TO IMPROVE HEALTH AND WELLNESS CONDITIONS IN BANGKOK, THAILAND

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Abstract

A while ago, taking pills used to be something which senior people did. But, it is not like that anymore as everyone at all ages seems “to talk pills” for their allergies, vitamins, and supplements, or treatments. This study is identifying the perception of innovation acceptance in healthcare and wellness sector. While a number of this technology is yet fairly undeveloped at the moment, we can anticipate sophisticated Artificial Intelligence to one day significantly influence our everyday lives. This study designed to take the user's attitudes and intention to use a personal home healthcare robot into account. This study applies the Technology Acceptance Model (TAM) and exploratory variables, including perceived enjoyment, the need to belong, and household size, to analyze users' attitudes and intention to use a personal home healthcare robot. Notwithstanding, a total of 403 respondents, who lived in Bangkok with at least one elderly in a family are focused, are participating in this study. The major findings are the perceived enjoyment when using a robot and the need to belong to the user to have an impact on perceived ease of use and perceived usefulness of a robot. In particular, the perceived ease of use and perceived

usefulness have a strong impact on the user attitude which significance to the intention to use. The insight derived from people who have high health consciousness and one of their family members has carried a congenital disorder. The study has provided the unique contribution which is people of different household size have a different attitude and intention to use a home healthcare robot. By encouraging people to use a home healthcare robot, therefore, the study confirms to convince people with its feature function benefits, its advantage benefits, and feasibilities of its ease of use of a home healthcare robot.

Introduction

Artificial intelligence (AI) is a fast-growing technology that focuses on building intelligent machines which be able to act and think humanly and rationally (Rouse, 2010). For decades, many computer scientists encompass AI to act and react in the same way similar to humans. It mimics the process of real neural networks to deeply learn how doing a sophisticated information processing which enables them to execute complex functions in a friendly way such as voice and facial recognition (Frank, 2016). An article from Ayers (2016), also mentions the stimulation of human intelligence is moving quickly along with big data integration. In the near future, AI will visibly impact to human everyday activities, such as an automated transportation, performing dangerous jobs with high accuracy, medical diagnostics, and improved elderly care.

A numerous of home robots have been developed to perform a particular function. A service robot is able to provide utilitarian helps collaboratively to users such as vacuum cleaning, dishwashing (Dautenhahn, 2007), and helping the elderly and disabled (Shimp

& Kavas, 1984). One example of robotic assistance is in a medical and healthcare sector. A home robot can interact with patients and check their health conditions. This helps the doctor increase their time efficiency by reducing time spent on non-emergency home visits (Bertalan, 2018). Notwithstanding, health conditions of 4 million patients around the world will be remotely investigated by 2020 (Chamberlin, 2016). Furthermore, the healthcare and wellness services are especially demanding in the future. A study of “The Future of Thailand's Healthcare Industry” (2018) reveals Thailand will become an aging society by 2020 and counted as 30% of all population by 2050. Thus, home healthcare robot can considerably improve people a better life.

This study will interpret a personal home healthcare robot powered by AI technology. As claimed by Pillo Health team (2016), a personal home healthcare robot is a smart pills dispenser that encourages people of all ages to have an improved health management. It capable of voice and facial recognition system for an unlimited number of family members. It safely organizes human medications and supplements by holding up to 250 pills at a time, distributing the precise

pills for each family members at the proper time, and automatically re-ordering. They also claimed a personal home healthcare robot is combined with Siri service to answer and provide the medical advice from latest and verified sources. Additionally, the healthcare companion is able to directly connect with healthcare professionals, and syncs with smart connected objects to notify reminders.

Literature review

Perceived enjoyment (PE)

Perceived enjoyment is defined as the degree of using technology or appliance to fulfill particular activities which provide joy and fun aside from normal outcomes (Arkin, Fujita, Takagi & Hasegawa, 2003). Similarly, the study of Venkatesh (2000) reveals that perceived enjoyment has a positive effect on user's technology acceptance. In particular, perceived enjoyment is an integral motivation that impacts the perceived usefulness through perceived ease of use. Another research by Li (2011) explains the intention to use the online social network is strongly influenced by perceived enjoyment. Likewise, another study confirms that the higher the perceived usefulness and perceived ease of use, the greater impact to the perceived enjoyment (Teo & Noyes, 2011).

Need to belong (NtB)

Need to belong is defined as a desire for acceptance from the society which can be fulfilled by repeated interaction with the same people (Baumeister & Leary, 1995). Another study indicates the need

to belong is an extent of acceptance in a group of people that have interpersonal attachments (Utz, Tanis & Vermeulen, 2012). A study of the relation between human and robot explains people are excited about building a positive relationship with others for their well-being (Eimler, Kramer & Von der Putten, 2010). In particular, people are going to use and maintain a service robot for their lives when there was a positive association between people and a service robot. Furthermore, the artificial agent technologies can motivate the need to belong. There has a significant impact on the need to belong toward the intention to use in technologies (Read, Robertson & McQuilken, 2011).

Perceived usefulness (PU)

Perceived usefulness is defined as the extent to which users have a confidence in a certain level of using a specific technology to improve their job performance (Davis, 1989). Perceived usefulness is the value expected by people from using a specific technology. It is an important factor for people to adopt a technology (Venkatesh & Davis, 2000). During the technology acceptance procedure, perceived usefulness is an initial determinant (Mou, Shin & Cohen, 2016). A study of telemarketing found perceived usefulness has a positive impact on the user's attitude and real adopters are more likely to believe in technology advantages (Curran & Meuter, 2005). Also, salespeople have a more positive attitude to the specific technology when they perceived technology's usefulness (Robinson, Marshall & Stamps, 2005). Thus, Davis (1989) confirms the perceived usefulness

has a strong association with variables such as attitude and satisfaction.

Perceived ease of use (PEOU)

Perceived ease of use is defined as the degree to which human perceived a technology requires free effort to use such as time and resources (Davis, 1989). Importantly, the system should be easy to understand and simple to operate (Rogers, 2005). This related to the concept of Chao & Zipf (1950) explains people will adopt the technology that needs the least effort. Davis (1989) also stated perceived ease of use as one of the factors for the user's technology acceptance, which has an impact on users attitudes and behavior. According to Wu (2011), a study of developing an explorative model for Software as a Service (SaaS) adoption reveals that perceived ease of use and perceived usefulness are main factors that form user's attitude and intention to use technology. Comparably, perceived ease of use and perceived usefulness have a significant impact on readiness to use mobile commerce (Thakur & Srivastava, 2013).

Attitude (ATT)

Attitude is defined as the term which generally used to indicate the behavior intention (Schwarz, Wdowiak, Almer-Jarz & Breiteneker, 2009). Attitude is indicated as a prominent factor of people to start their activities (Kremer-Hayon & Tillema, 1999). Attitude also described as positive or negative feelings of people about doing an action (Hill, Fishbein & Ajzen, 1977). As claimed by Davis (1989), there is an impact of people attitude toward intention to use new

technology. Also, one empirically found the positive relationship between attitude and intention to use credit cards (Kaynak & Harcar, 2001). As well as Robinson, Marshall & Stamps (2005) found the positive attitude encourages salespeople to use the new technology. It means an attitude toward service provider has a positive impact toward intention to use (Shimp & Kavas, 1984).

Intention to use (IU)

Intention to use is defined as an indicator that takes a motivational attribute affecting the future technology use (Lopez-Nicolas, Molina-Castillo & Bouwman, 2008). Also, people have a behavioral intention which desires to do a particular action, also an intention to use can predict an action to use in order to fulfill their activity (Ajzen & Fishbein, 1980). One study found behavioral intention directly impact actual behavior, whereas behavioral intention is influenced by two factors including attitude toward objects and subjective norm (Ajzen & Fishbein, 1980). A positive attitude toward the technology has a direct impact on behavioral intention to use the technology (Davis, 1989). Based on TAM, behavioral intention is influenced by users attitude because a study of consumer acceptance of virtual store found there is the relationship among attitude, belief, intention, and behavior (Chen, Gillenson & Sherrell, 2004).

A difference in household size (HS) and elderly care

Elderly care becomes a big market. Referring to Phillipson (2015), a family

is the main responsible people to senior people, but in the present day, most elderly people are left alone at home or cared in a retirement home. Phillipson (2015) continue to mention key proofs for this includes family size is shrinking, dual-career family in which both parents have to work, and people are living longer, changes in social value and attitude to family obligations. According to World Health Organization (WHO), United Nations (UN) stated on “Health statistics and information systems” (2002) that people in the age over 60 years old are referred to the older population. A survey of “Household Size & Composition in Thailand” (2017) had revealed by United Nations (UN) Population Division Department of Economic and Social Affairs that there is a continuous upward trend of a share of household with member ages over 60 years old. Based on United Nations (UN), an average household size is 3.7 while an average number of children per household is 1.6. Therefore, this study will classify household size into 3 groups including an average household size with 3-4 family members living together. Secondly, a below average household size with less than 3 family members living together, Lastly, an above average household size with more than 4 family members living together.

Research methodology

The study aims to determine the perception of technology acceptance toward a personal home healthcare robot. It is to investigate the attitude and intention to use of a family with elderly people but has a different household size. One article explains the demand for home healthcare service will increase as 80 percent of help will be supported by family caregivers (Kaplan & Berkman, 2016). The number of the family member who available to care elderly people has declined which caused by the changes in demographics and social values such as a lifespan of the number of elders has increased as well as the number of independent and very sick elderly people. And, the number of women in the workforce has increased which they previously may provide care for the elderly family members. Likewise, the family structure and relationship quality can indicate the degree and kind of care. The article also mentions the willingness of family members can be reinforced by supportive and supplemental services such as a personal care, home health care, adult daycare (Kaplan & Berkman, 2016). According to Ayers (2016), which claim the study of a computer scientist at Washington State University, Matthew Taylor, which explains the elderly people will possibly stay at home as independently long as a home robot can assist in their daily activities.

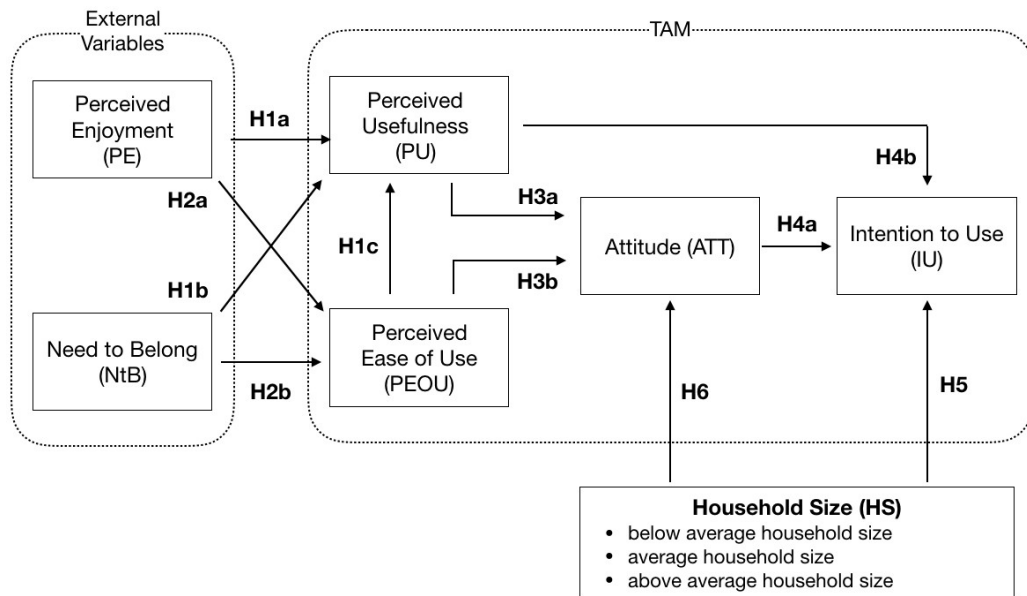


Figure1 The research model

This study conducts a quantitative research analysis. A total of 403 users responded and individual attitude was evaluated by the Five-Likert scales structured questionnaires, with responses ranging from 1 (strongly disagree) to 5 (strongly agree). The distribution of the online survey was on the Internet and social networking. The online survey was collected through the non-probability technique which is convenience sampling, also quota sampling to investigate mean difference among different household size toward intention to use a home healthcare robot.

Based on the previous research paper on users' attitudes toward service robots in South Korea, the total of 904 respondents participated in the study (Park & del Pobil, 2013). Comparably, the total of 609 respondents was conducted from another study of the adoption of teaching assistant robot and a technology

acceptance model approach (Park & Kwon, 2016). In this study, the total Bangkokian population is approximately 8.28 million people ("Bangkok Population", 2017). Thus, the data of 403 qualified respondents will construct, which is efficient to represent the Bangkokian population who lived in Thailand at least 6 months and have at least one elderly person in the family, at a confidence level of 95%, the margin of error of 5%. Furthermore, demographic information of respondents such as gender, age, education, household size and structure, health-conscious perception, and congenital disorder condition were collected. The demographic profile of samples is exhibited in Table 2.

Based on Figure 1, the research model was designed to study of users' attitude of a personal home healthcare robot could determine by investigated

parameters of perceived enjoyment, the need to belong, perceived usefulness, perceived ease of use, attitude, intention to use, and household size. The research model and scales of measurement were adopted from the previous research paper on users' attitudes toward service robots in South Korea (Park & del Pobil, 2013). Referring Davis (1993), there have four factors of TAM including four items of perceived usefulness, four items of perceived ease of use, three items of the user's attitude, and three times of user's intention to use. Besides, four items of

perceived enjoyment are adapted from the study of Igbaria, Iivari & Maragahh (1995) and Koufaris (2002), also five items of the need to belong are adapted from the study of Leybman, Zuroff, Fournier, Kelly & Martin (2010) and Leary, Kelly, Cottrell & Schreindorfer (2013). Eventually, the research scales of measurement in Appendix A were used to specifically create an online survey to understand users' attitude to improve health and wellness conditions in Bangkok, Thailand.

Table1 The scale of statistics (n=31)

Variables	Cronbach's Alpha	Number of Items
Perceived enjoyment	0.951	4
Need to belong	0.908	5
Perceived usefulness	0.959	4
Perceived ease of use	0.916	4
Attitude	0.928	3
Intention to use	0.893	3

Referred Nunnally (1978), the Cronbach's alpha should be greater than 0.7 to determine the reliability of the items in the questionnaire. The scale statistic of the Cronbach's alpha on the pilot study is closely internal consistency which exhibited in Table 1.

Therefore, these constructed items of measurement are rationally accepted to conduct further processes of data collection and analysis. Based on the Figure1, it consists of 6 models and 11 developed hypotheses are aligning with

the research model. Model 1 has PU as the dependent variable which includes H1a - H1c. Model 2 has PEOU as the dependent variable which includes H2a - H2b. Model 3 has ATT as the dependent variable which includes H3a - H3b. Model 4 has IU as the dependent variable which includes H4a - H4b. Model 5 has IU as the dependent variable which includes H5. Below are details of the ten hypotheses statement. Model 6 has ATT as the dependent variable which includes H6. Below are details of the 11 hypotheses statement.

Model 1

Hypotheses	Statement
H1a	Perceived usefulness (PU) of a home healthcare robot is positively impacted by perceived enjoyment (PE) of a home healthcare robot.
H1b	Perceived usefulness (PU) of a home healthcare robot is positively impacted by the level of need to belong (NtB) of users.
H1c	Perceived usefulness (PU) of a home healthcare robot is positively impacted by perceived ease of use (PEOU) of a home healthcare robot.

Model 2

Hypotheses	Statement
H2a	Perceived ease of use (PEOU) of a home healthcare robot is positively impacted by perceived enjoyment (PE) of a home healthcare robot.
H2b	Perceived ease of use (PEOU) of a home healthcare robot is positively impacted by the level of need to belong (NtB) of users.

Model 3

Hypotheses	Statement
H3a	The user attitude (ATT) toward using a home healthcare robots is positively impacted by perceived usefulness (PU) of a home healthcare robot.
H3b	The user attitude (ATT) toward using a home healthcare robots is positively impacted by perceived ease of use (PEOU) of a home healthcare robot.

Model 4

Hypotheses	Statement
H4a	The user intention to use (IU) a home healthcare robot is positively impacted by the users' attitude (ATT) toward using a home healthcare robot.
H4b	The user intention to use (IU) a home healthcare robot is positively impacted by perceived usefulness (PU) of a home healthcare robot.

Model 5

Hypotheses	Statement
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H5	There is a significant mean difference in household size (HS) on user's intention to use (IU) a home healthcare robot.
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Model 6

Hypotheses	Statement
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H6	There is a significant mean difference in household size (HS) on user's attitude (IU) toward a home healthcare robot.
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Results and discussions

Sample demographic profile

As exhibited in Table 2, which summarized the demographic characteristics of 403 respondents who have lived in Bangkok at least 6 months and have at least one elderly person in the household. Majority of respondents is female at 50.9% and male at 49.1%. The respondents who participated in this study are Boomer II (26.8%), Gen X (35.2%), Gen Y (30.3%), and Gen Z (7.7%). Boomer II are people who were born in 1955-1965. Gen X are people who were born in 1966-1976. Gen Y is people who were born in 1977-1994. Gen Z is people who were born in 1995-2012. As reported by American Express, Gen X has greater purchasing power than any other generations (Peralta, 2015). More than half of respondents hold Bachelor's degree (73.9%) followed by Master's

degree or higher (26.1%). Additionally, a greater number of respondents considers revealing that they have at least one of their family members carry a congenital disorder (58.6%) and none of the family members carry a congenital disorder including themselves (41.4%). With reference to sample health-consciousness, 18.4% of the total respondent are always self-aware of a healthy lifestyle. 2.7% of total respondents often concern about a healthy lifestyle. 42.7% of total respondents sometimes consider about health-consciousness. 6.7% of the total respondents seldom determine their healthy lifestyle, and 29.5% of the total respondents never realize health-consciousness. With regard to household size, the majority have an average household size with 3-4 people in the family (32.8%), followed by an above average household size (33.5%) and a below average household size (33.7%).

Table 2 Sample demographic profile

Demographic	Characteristic (n=403)	Frequency	%
Gender	Male	198	49.1
	Female	205	50.9
Year of birth	Boomer II	108	26.8
	Gen X	142	35.2
	Gen Y	122	30.3
	Gen Z	31	7.7
Education	Above bachelor's degree	105	26.1
	Bachelor's degree	298	73.9
Congenital disorder	Yes	236	58.6
	No	167	41.4
Health consciousness	Always	74	18.4
	Often	11	2.7
	Sometimes	172	42.7
	Seldom	27	6.7
	Never	119	29.5
Household size	Below average household size	132	32.8
	Average household size	135	33.5
	Above average household size	136	33.7

Hypotheses 1

Pearson's correlations

Table 3 Correlation matrix for hypotheses 1

Variable	Mean	SD	Perceived enjoyment	Need to belong	Perceived ease of use	Perceived usefulness
Perceived enjoyment	3.7246	0.89887	1			
Need to belong	3.5787	0.86550	0.826*	1		
Perceived ease of use	3.6179	0.83013	0.661*	0.739*	1	
Perceived usefulness	3.8083	0.89655	0.817*	0.818*	0.692*	1

* Correlation is significant at the 0.01 level (1-tailed)

According to the Table 3 of the Pearson's Correlation Matrix, which indicates Perceived Enjoyment, The Need to Belong, Perceived Ease of Use, and Perceived Usefulness have a positive relationship with each other with P-value less than 0.05. The Kent State University has described the correlation coefficient

can imply the direction of the relationship, which -1 has a negative linear relationship, 0 has no relationship, and +1 has a positive linear relationship. Although, the magnitude of the correlation implies the strength of the relationship, which $0.1 < |r| < 0.3$ has a weak correlation, $0.3 < |r| < 0.5$ has a

moderate correlation, and $0.5 < |r|$ has strong correlation (“LibGuides: SPSS Tutorials: Pearson Correlation”, 2018). Therefore, all hypotheses in model 1 have a positive and strong relationship, which includes Perceived Enjoyment

(PE) and Perceived Usefulness (PU) at 0.817 correlation, Need to Belong (NtB) and Perceived Usefulness (PU) at 0.818 correlation, and Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) at 0.692 correlation.

Inferential analysis and multicollinearity validation

Table 4 Multiple linear regression for hypotheses 1

Hypotheses	Variable	Standardized Coefficient (β)	Sig.	VIF	Result
H1a	Perceived enjoyment	0.423	0.000	3.203	Supported
H1b	Need to belong	0.360	0.000	3.983	Supported
H1c	Perceived ease of use	0.146	0.000	2.245	Supported
R square			0.741		
Adjusted R square			0.739		

Additionally, the Variance Inflation Factors (VIFs) were verified to validate the multicollinearity problem. The Table 4 reveals VIFs are less than 5.00, which implies that no critical issues exist for the data analysis. Therefore, the regression equation for Perceived Usefulness (PU) is $0.331 + (0.422 * PE) + (0.373 * NtB) + (0.158 * PEOU)$. Also, R Square point out that 74.1% of all three independent variables including Perceived Enjoyment (PE), the Need to Belong (NtB), and Perceived Ease of Use (PEOU) could well explain the dependent variable of Perceived Usefulness (PU) of using a home healthcare robot at 95% of confidence level or 0.05 significance level. The P-value of all three independent variables, including Perceived Enjoyment (PE), the Need to

Belong (NtB), and Perceived Ease of Use (PEOU), are less than 0.05 which can indicate H1a, H1b, and H1c are supported. In consequence, Perceived Enjoyment (PE), the Need to Belong (NtB), and Perceived Ease of Use (PEOU) have statistically significant positive influenced on Perceived Usefulness (PU) of using a home healthcare robot at the Standardized Coefficient (β) of 0.423, 0.360, 0.146 respectively. By this, Standardized Coefficient (β) also confirms that Perceived Enjoyment (PE) of using a personal home healthcare robot has the strongest impact to the Perceived Usefulness (PU), followed by the Need to Belong (NtB) and Perceived Ease of Use (PEOU) of a home healthcare robot.

Hypotheses 2

Pearson's correlations

Table 5 Correlation matrix for hypotheses 2

Variable	Mean	SD	Perceived enjoyment	Need to belong	Perceived ease of use
Perceived enjoyment	3.7246	0.89887	1		
Need to belong	3.5787	0.86550	0.826*	1	
Perceived ease of use	3.6179	0.83013	0.661*	0.739*	1

*Correlation is significant at the 0.01 level (1-tailed)

According to the Table 5 of the Pearson's Correlation Matrix, which indicates Perceived Enjoyment, The Need to Belong, and Perceived Ease of Use have a positive relationship with each other with P-value less than 0.05. As prior mentioned about the correlation

coefficient, it can conclude that all hypotheses in model 2 have a positive and strong relationship, which Perceived Enjoyment (PE) and Perceived Ease of Use (PEOU) at 0.661 correlation, Need to Belong (NtB) and Perceived Ease of Use (PEOU) at 0.739 correlation.

Inferential analysis and multicollinearity validation

Table 6 Multiple linear regression for hypotheses 2

Hypotheses	Variable	Standardized Coefficient (β)	Sig.	VIF	Result
H2a	Perceived enjoyment	0.157	0.008	3.148	Supported
H2b	Need to belong	0.610	0.000	3.148	Supported
R Square			0.555		
Adjusted R Square			0.552		

Additionally, the Variance Inflation Factors (VIFs) were verified to validate the multicollinearity problem. The Table 6 reveals VIFs are less than 5.00, which implies that no critical issues exist for the data analysis. Therefore, the regression equation for Perceived Ease of Use (PEOU) is $0.985 + (0.145 * PE) + (0.585 * NtB)$. Also, R Square point out that 55.5% of all two

independent variables including Perceived Enjoyment (PE) and the Need to Belong (NtB) could well explain the dependent variable of Perceived Ease of Use (PEOU) of using a home healthcare robot at 95% of a confidence level or 0.05 significance level. The P-value of all two independent variables, including Perceived Enjoyment (PE) and the Need to Belong (NtB) are less than 0.05 which

can indicate H2a and H2b are supported. In consequence, Perceived Enjoyment (PE) and the Need to Belong (NtB) have statistically significant positive influenced on Perceived Ease of Use (PEOU) of using a home healthcare robot at the Standardized Coefficient (β) of 0.157, 0.610 respectively. By this,

Standardized Coefficient (β) also confirms that the Need to Belong a personal home healthcare robot of users has the strongest impact to the Perceived Ease of Use (PEOU), followed by Perceived Enjoyment (PE) of using a home healthcare robot.

Hypotheses 3

Pearson's correlations

Table 7 Correlation matrix for hypotheses 3

Variable	Mean	SD	Perceived ease of use	Perceived usefulness	Attitude
Perceived ease of use	3.6179	0.83013	1		
Perceived usefulness	3.8083	0.89655	0.692*	1	
Attitude	3.5997	0.86334	0.620*	0.759*	1

**Correlation is significant at the 0.01 level (1-tailed)*

According to the Table 7 of the Pearson's Correlation Matrix, which indicates Perceived Ease of Use, Perceived Usefulness, and Attitude have a positive relationship with each other with a P-value less than 0.05. As prior mentioned about the correlation coefficient, it can

conclude that all hypotheses in model 3 have a positive and strong relationship, which Perceived Usefulness (PU) and Attitude (ATT) at 0.759 correlation, and Perceived Ease of Use (PEOU) and Attitude (ATT) at 0.620 correlation.

Inferential analysis and multicollinearity validation

Table 8 Multiple linear regression for hypotheses 3

Hypotheses	Variable	Standardized Coefficient (β)	Sig.	VIF	Result
H3a	Perceived usefulness	0.181	0.000	1.918	Supported
H3b	Perceived ease of use	0.635	0.000	1.918	Supported
R square			0.594		
Adjusted R square			0.592		

Additionally, the Variance Inflation Factors (VIFs) were verified to validate the multicollinearity problem. The Table 8 reveals VIFs are less than 5.00, which implies that no critical issues exist for the data analysis. Therefore, the regression equation for Attitude (ATT) is $0.593 + (0.188 * \text{PEOU}) + (0.611 * \text{PU})$.

Also, R Square point out that 59.4% of all two independent variables including Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) could well explain the dependent variable of Attitude (ATT) toward using a home healthcare robot at 95% of a confidence level or 0.05 significance level. The P-value of all two independent variables,

including Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) are less than 0.05 which can indicate H3a and H3b are supported. In consequence, Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) have statistically significant positive influenced on user's attitude (ATT) toward using a home healthcare robot at the Standardized Coefficient (β) of 0.181, 0.635 respectively. By this, Standardized Coefficient (β) also confirms that Perceived Ease of Use (PEOU) has the strongest impact to the user's attitude (ATT), followed by Perceived Usefulness (PU) of using a home healthcare robot.

Hypotheses 4

Pearson's correlations

Table 9 Correlation matrix for hypotheses 4

Variable	Mean	SD	Perceived usefulness	Attitude	Intention to use
Perceived usefulness	3.8083	0.89655	1		
Attitude	3.5997	0.86334	0.759*	1	
Intention to use	3.6940	1.00967	0.856*	0.793*	1

**Correlation is significant at the 0.01 level (1-tailed)*

According to the Table 9 of the Pearson's Correlation Matrix, which indicates Perceived Usefulness, Attitude, and Intention to Use have a positive relationship with each other with a P-value less than 0.05. As prior mentioned about the correlation coefficient, it can

conclude that all hypotheses in model 4 have a positive and strong relationship, which Perceived Usefulness (PU) and Intention to Use (IU) at 0.856 correlation, and Attitude (ATT) and Intention to Use (IU) at 0.793 correlation.

Inferential analysis and multicollinearity validation

Table 10 Multiple linear regression for hypotheses 4

Hypotheses	Variable	Standardized Coefficient (β)	Sig.	VIF	Result
H4a	Attitude	0.600	0.000	2.363	Supported
H4b	Perceived usefulness	0.337	0.000	2.363	Supported
R square			0.781		
Adjusted R square			0.779		

Additionally, the Variance Inflation Factors (VIFs) were verified to validate the multicollinearity problem. The Table 10 reveals VIFs are less than 5.00, which implies that no critical issues exist for the data analysis. Therefore, the regression equation for Intention to Use (IU) is $-0.297 + (0.676 \cdot \text{PU}) + (0.394 \cdot \text{ATT})$. Also, R Square point out that 78.1% of all two independent variables including Perceived Usefulness (PU) and Attitude (ATT) could well explain the dependent variable of Intention to Use (IU) a home healthcare robot at 95% of a confidence level or 0.05 significance level. The P-value of all two independent variables,

including Perceived Usefulness (PU) and Attitude (ATT) are less than 0.05 which can indicate H4a and H4b are supported. In consequence, Perceived Usefulness (PU) and Attitude (ATT) have statistically significant positive influence on Intention to Use (IU) a home healthcare robot at the Standardized Coefficient (β) of 2.363, 2.363 respectively. By this, Standardized Coefficient (β) also confirms that user's attitude (ATT) has the strongest impact to Intention to Use (IU), followed by Perceived Usefulness (PU) of using a home healthcare robot.

Hypotheses 5

One-way ANOVA

Table 11 One way ANOVA for hypotheses 5

ANOVA					
Intention to use	Sum of squares	df	Mean square	F	Sig.
Between groups	22.927	2	11.463	11.852	0.000
Within groups	386.884	400	0.967		
Total	409.811	402			

Table 12 Scheffe's post hoc test for hypotheses 5

Household size (I)	Household size (J)	Mean difference (I-J)	Sig.
Below average household size	Average household size	-.45875	.001
	Above average household size	-.54590	.000
Average household size	Below average household size	.45875	.001
	Above average household size	-.08715	.767
Above average household size	Below average household size	.54590	.000
	Average household size	.08715	.767

According to the Table 11 which compares an effect of different household size levels (HS) on the intention to use (IU) a home healthcare robot. An analysis of variance shows that the effect of different household size levels (HS) on the intention to use (IU) a home healthcare robot is significant, $F(2, 400) = 11.852$, $p = 0.000$.

Likewise, the table 12 of the Scheffe's Post hoc Test indicates that there are

statistical differences in mean scores of intention to use (IU) a home healthcare robot among different household size. Multiple Comparisons shows which group is specifically different from one another, $P \leq 0.05$. There is a difference between a below average household size and an average household size, also a difference between a below average household size and an above average household size at 95% confidence level. Therefore, H5 is supported.

Hypotheses 6

One-way ANOVA

Table 13 One way ANOVA for hypotheses 6

ANOVA					
Attitude					
	Sum of squares	df	Mean square	F	Sig.
Between groups	10.992	2	5.496	7.616	0.001
Within groups	288.644	400	0.722		
Total	299.636	402			

Table 14 Scheffe's post hoc test for hypotheses 6

Household size (I)	Household size (J)	Mean difference (I-J)	Sig.
Below average household size	Average household size	-.19860	.163
	Above average household size	-.40501	.001
Average household size	Below average household size	.19860	.163
	Above average household size	-.20641	.137
Above average household size	Below average household size	.40501	.001
	Average household size	.20641	.137

According to the Table 13 which compares an effect of different household size levels (HS) on the user's attitude (ATT) toward a home healthcare robot. An analysis of variance shows that the effect of different household size levels (HS) on user's attitude (ATT) toward a home healthcare robot is significant, $F(2, 400) = 7.616, p = 0.001$.

Likewise, the table 14 of the Scheffe's Post hoc Test indicates that there are statistical differences in mean scores of user's attitude (ATT) toward a home healthcare robot among different household size. Multiple Comparisons shows which group is specifically different from one another, $P \leq 0.05$. There is a difference between a below average household size and an average household size at 95% confidence level. Therefore, H6 is supported.

Conclusions, limitations and recommendations

The empirical quantitative study is to discover and analyze the perception of users toward a personal home healthcare robot which is a smart pills dispenser powered by Artificial intelligence

technology that encourages people of all ages to have an improved health management. The research model was fine-tuned from a paper of users' attitudes toward service robots in South Korea (Park & del Pobil, 2013). The research model consists of the TAM model and exploratory variables. The TAM model by Davis (1993) includes four factors: Perceived Usefulness, Perceived Ease of Use, Attitude, and Intention to Use. The exploratory variables include Perceived Enjoyment, The Need to Belong, also the Household Size. Besides, a family with an elderly where different in household size was concentrated as Phillipson (2015) confirmed the key proof of changes in social value and attitude to family obligations, while Ayers (2016) mentioned that the seniors can stay at home as independently long as a home robot can assist in their daily activities.

Giving a care to elderly people is a focused task, not everyone can perform well in a similar way to family members do. Unfortunately, the changes in social value have impacted to the elderly care. Essentially, it is fundamental to develop an awareness of elderly care issue which Thailand will become an aging society by 2020 ("The Future of Thailand's Healthcare Industry", 2018). Thus, the

government or Ministry of Social Development and Human Security should emphasize on educating people to cope with elderly cares and improving well-being conditions. With the innovation revolution and technology advancement, Artificial Intelligence technology has gradually developed to improve people life, of course, health condition and elderly care.

Therefore, there are six hypotheses to be analyzed, and the analysis derived from the Pearson's Correlation, Multiple Linear Regression, and One-Way ANOVA have resulted in a conclusion of this study. Eventually, the data of 403 respondents, who participated in the online survey, was collected through the non-probability techniques which are convenience sampling and quota sampling. The analysis results of this study obtained from Bangkokian who lived in Thailand at least 6 months and have at least one elderly person in the family. By means of this, roughly half of men and female was evaluated by Five-Likert scales structured questionnaires. All of them possess a bachelor's degree or higher. The greater part of them aged 60 years and over whose health-consciousness is generally high and at least one family member carries a congenital disorder.

The below details are theoretical contributions of study:

- Intention to use of a home healthcare robot was well explained by user's attitude and perceived usefulness at 78.1%. In particular, uses' attitude has a larger impact on intention to use

than the perceived usefulness of a home healthcare robot.

- Perceived usefulness of a home healthcare robot was well explained by perceived enjoyment, the need to belong, perceived usefulness at 74.1%. In particular, perceived enjoyment has a larger impact on perceived usefulness than the need to belong and perceived ease of use respectively.
- User's attitude toward a home healthcare robot was explained by perceived ease of use and perceived usefulness at 59.4%. In particular, perceived ease of use has a larger impact on attitude than the perceived usefulness of a home healthcare robot.
- Perceived ease of use a home healthcare robot was explained by the need to belong and perceived enjoyment at 55.5%. In particular, the need to belong has a larger impact on perceived ease of use than the perceived enjoyment of a home healthcare robot.
- There is a significant mean difference in household size on the user's intention to use a home healthcare robot. In particular, there is a difference between a below average household size and average household size, and between a below average household size and above average household size.
- There is a significant mean difference in household size on the user's attitude toward a home healthcare robot. In particular, there is a difference between a below average household size and average household size.

According to "Ageing population in Thailand" (n.d.) states Thai government provides health service through networks of Health Centers and Primary Care Units (PCU). These centers are organized by The Ministry of Public Health (MoPH) and Community Health Centers. They provide curative, preventive and promotive services which are normally staffed by one to three health professionals and community health workers who trained to assist health professionals in interacting with people in the community. The study has provided insights to supportively introduce a personal home healthcare robot to the market. It can assist professional health personnel to give a care to all elderly people. Likewise, elderly people would not stay at the health center or retirement home if they had a choice. A personal home robot enables elderly people to independently stay at home as long as it can assist in their daily activities. Therefore, by encouraging people to use a home healthcare robot, it is to convince people with its feature function benefits, its advantage benefits, and feasibilities of its ease of use. It is to create demand by showing the enjoyment of using home healthcare robot while the need to belong a home healthcare robot is another consideration to put in the communication messages. Both of the logical and emotional sides should be applied when developing marketing campaigns or design the communication messages. For example, providing video tutorials on how to use, generating a content about product trails and reviews from users, showing its ease of use and its benefits to people as individual and family. Moreover, the marketing and campaigns should be clear and

understandable. It should be separately designed for two groups of users. The result of this study confirms that people with different household size have a different attitude and intention to use a home healthcare robot. It is to consider to have different campaigns to a below an average household size, which has least than 3 people, and an average household size and over (more than three people live together).

Limitations and future directions

This study primarily conducted under the Technology Acceptance Model (TAM) to examine the perception of technology acceptance and to fulfill the research objectives. Notwithstanding, there are other technology adoption models to be considered on the future studies. Moreover, the context of study concentrated only in Bangkok. It is the capital city and the population is closed to 13% of the country's population (Thailand population, 2018). The future studies can, therefore, expand the context of study to cover the respondents in different provinces or regions of Thailand. Meanwhile, this research emphasized only household size. Other demographic factors, such as occupation, specific congenital disorder, can be considered to gain more upscale insights. According to Liu, Hao & Zhang (2016) mentioned the factors impacted by aging care such as family size, economic, culture, social status, and the accessibility of community resources. Eventually, future studies are to perform more detailed analyses should consider these limitations.

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POLLUTION COST AS A VARIABLE FOR CALCULATING GREEN GDP

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Article info	Abstract
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Keywords: Sustainable development, Pollution costs, Air pollution, Water pollution, Shadow prices, stochastic frontier analysis	Pollution cost is an important variable in the calculation of Green GDP, which is an indicator of economic development under the green economy concept. This paper relies on the SFA to estimate the cost of air and water pollution in Thailand. During the past 20 years, Thailand has been subject to an average pollution cost of about 2,209,936 million baht (\$63,141 million). The average air pollution cost is about 827,383.11 million baht (\$23,640 million) and average water pollution costs approximately 1,382,552.84 million baht (\$39,501 million). This study also confirms that the pollution problems affecting health, quality of life, and human capital are worsening. Therefore, the government should take the necessary measures through regulations and strict penalties to control pollution. It should also raise awareness of the long-term impact of pollution on human capital and economic development.

Introduction

Sustainability was introduced under Agenda 21 as a guide for governments and policymakers in the implementation of alternative methods for development in the twenty-first century. Agenda 21 is a global voluntary action plan for the implementation of sustainable development in society, the economy, and the environment (Mebratu, 1998). The plan specifies population, consumption, and technology as forces of environmental change. Moreover, it is necessary to take steps to reduce the consumption pattern of luxuries and inefficiencies in certain areas of the world. While global support for sustainable development has grown, policies and plans are required to achieve a sustainable balance between consumption, poverty, human capital development, and technology in order to respond to human needs and manage natural resources (Todaro and Smith, 2012).

At the present time, the direction of economic development is based on the Adoption of the Post-2015 Development Agenda which is a sustainable development plan for the twenty-first century where every country in the world agrees upon a common aim of implementation in order to achieve sustainable development in the future. The implementation of Agenda 21 is fundamental to the Adoption of the Post-2015 Development Agenda and has resulted in the continuing development of true sustainability to balance economic, social, and natural resources, and aims to achieve the integration of people, planet, prosperity, peace, and partnership (the five Ps).

The basic concept of sustainable development must take into account economic, social and natural resources (OECD, 2014). The results from OECD countries indicate that sustainability is not only highlighted by economic development and the cost of social and natural resources, but also human capital (OECD, 2013). All of these factors influence the effect of sustainable development on the well-being of citizens (OECD, 2011). The OECD has reported increased overall social welfare along with economic growth, taking into account the effect on the environment and natural resources (OECD, 2008). This concept of a green economy clarifies and identifies sustainable development. The green economy is calculated by Green GDP and concerns the wastage of natural resources and well-being of citizens from the present through to the future (UNEP, 2011).

Under the concept of a green economy, the growth of income and employment is driven by public and private investment to reduce carbon emissions, pollution, and energy consumption, as well as making efficient use of resources to protect the loss of biodiversity and ecosystems (Bartelmus, 1999; Dasgupta, 2009). The most important aim of a green economy is economic growth with increased environmental quality and social equity (Fang et al., 2006). The key to its achievement is to create conditions for public and private investment which focus on the environmental and social effects (Frankel, Jeffrey A., 2003). The green economy concept of the UNEP is said to be an indicator of economic growth, whereby GDP will need to be adjusted by pollution, resource depletion, degenerative ecosystems, and the effect of natural capital loss. All of these

indicators represent the green gross domestic product (Green GDP).

Green GDP is an indicator of a green economy, reflecting comprehensive sustainability under the concept of sustainable development and environmental accounting (Brekke, K. A., 1994). Currently, overall global consumption is growing at a higher rate due to the increasing size of the population. An increase in the global population has caused a reduction in resources, even though advances in technology have been developed to help address the issue. In fact, renewable resources are limited in both quantity and quality (Hartwick, 1994; Aaheim and Nyborg, 1995; Lintott, J., 1996). In addition, accelerating production to support economic growth also causes degradation of natural resources and the environment, and pollution problems are increasing since these costs are ignored because the value of environmental goods and services are not bought or sold in the market and seen as production costs (Vellinga and Withagen, 1996). For this reason, it can be said that the use of the Gross Domestic Product (GDP) may not reflect sufficiently comprehensive economic development (Costanza et al., 2009). GDP cannot distinguish between the economic activities enhancing the prosperity of the country and the negative impact on nature, pollution, and resource degradation (Fox, J., 2012), but Green GDP can (Solow, 1986; Hartwick, 1990; Maler, 1991; Asheim, 1994; and Pemberton and Ulph, 1997).

At present, Thailand follows the guidelines for developing countries that rely on the concept of sustainable development. Therefore, in order to encourage the development of Green

GDP and support the country to achieve sustainable and balanced development in terms of economy, society, and environment this research aims to estimate the pollution cost (considering only air and water pollution) in the case of Thailand during the years from 1996–2016. This paper is part of the research on “Concepts and Measurements of the Green Gross Domestic Product of Thailand in the Context of Sustainable Development” by Sonthi (2019).

Linkage between pollution cost and Green GDP

Todaro and Smith (2012) reflected that “sustainable development remains a balance between economic growth and the conservation of natural resources” while at the same time “sustainable development responds to the needs of the current generation without losing sight of the needs of the future generation”. Economic growth and overall life quality in the future depends on the environment. The quality of natural resources in each country such as air, water, and soil form the basis for consideration.

Natural resources are crucial to the next generation. Economic growth and quality of life are calculated in the form of national income, and environmental accounting is therefore important. Policymakers will use national income or capital assets as key factors in the decision-making process. Currently, capital assets encompass only manufactured capital, except for human capital (knowledge, experience, and skills) and environmental capital (forests, soil quality, and rangeland), which are

important factors closely related to economic growth and quality of life.

The basic concept of Green GDP involves bringing in traditional GDP to cut natural capital, which has a different definition. There is currently no clear method for calculating Green GDP, particularly in respect of natural capital. This remains a statistical limitation and the options continue to be debated, such as the cost of pollution, environmental degradation and destruction, and the cost of reducing pollution or damage resulting from it (Fang et al., 2006).

In the approach to green accounting, there is a simple model for computing Green GDP, as in the format selected by the Congressional Budget Office (CBO) (1994); Bartelmus (1999); Qi, Coggins and Lan (2000); Wang (2004); Fang et al. (2006); and Findiastuti (2011).

The CBO (1994) pointed out that national income accounting has been a policy priority over the last 50 years. Economic data can be useful for policymakers in the decision-making process. However, national income accounting currently has limitations because the support functions are based only on the economic interpretation regarding the wealth of nations, gauging income, and measuring the market value of goods and services. It is essential that in addition to traditional GDP, Green GDP is used to improve national income accounting based on the quality of air, soil, water, stock of natural resources, and the price of asset flows and stocks, as outlined by Bartelmus (1999), whose purpose was to assess the long-term sustainability of economic performance by Green GDP. Using the Rio Earth Summit concept with the System of Environmental and Economic

Accounting (SEEA) by the UN and converting the natural production account into assets, three models can be used to obtain Green GDP. These are (1) Supply-use identify, (2) Value-added (environmentally adjusted), and (3) Domestic-product.

From the calculated model for Green GDP, the CBO concluded that it can reflect changes in the value of fixed capital consumption and environmental costs. During the period of operation, the ability to split the calculations to reflect unsustainability occurs when gathering the cost of natural capital. Environmentally-adjusted net capital formation is calculated by deducting consumption and environmental costs from fixed capital. The figures can reflect a country's wealth through its capital accumulation and economic environment — Green GDP and natural capital are also subject to debate. Since the calculation is based on pricing, the valuation of natural phenomena is extremely important. Therefore, the variables of economic policy macroeconomics and expenditure on environmental costs created by economic agents have recently been adjusted.

In addition, Y Fang (2006) presented a method of calculating Green GDP in a similar way using the pollution cost approach with the SEEA of the UN, consisting of three ways. Qi, Coggins, and Lan (2000) chose the production approach. The three ways used by Fang et al. (2006) to calculate Green GDP are as follows:

(1) Production approach: $EDP = \text{aggregate output} - \text{intermediate input} - \text{environmental cost}$;

(2) Income approach: $EDP = \text{payment for labour} + \text{net production tax} + \text{consumption of fixed capital} + \text{operation surplus with deduction of environmental expenditure}$;

(3) Expenditure approach: $EDP = \text{terminal consumption} + \text{capital with deduction of environmental expenditure} + \text{net export}$

Moreover, the consideration of natural capital takes into account the pollution cost. Wang (2004) also calculated Green GDP and its effect on the accumulation of human capital. In addition, traditional GDP offsets the cost of natural resources resulting from environmental degeneration. Pollution levels across the country according to the theory and tools used for accounting environmental pollution loss; a primary factor in the preparation of Green GDP, also deducts the cost of human capital from traditional GDP in one step. However, this study examined a particular area in each community, rather than overall.

Findiastuti (2011) calculates environmental productivity (Green GDP) using a macroeconomic measure, TFP, and shadow prices (an important part of the environmental calculation). Furthermore, the concept presented by Herman E. Daly to calculate the sustainable social net national product deducts defensive expenditure and depreciation of natural capital, and can be expressed by the following equation:

$$SSNNP = NNP - DE - DNC$$

(2.1)

where

SSNNP is the sustainable social net national product.

NNP is the net national product.

DE is defensive expenditure (damage to environmental resources caused by production and consumption).

DNC is the depreciation of natural capital.

In 2015, Malaysia calculated its Green GDP using Herman E. Daly's concept, based on the research by Vaghefi, Siwar, and Aziz (2015). This study defines Green GDP as being calculated from GDP by offsetting the loss of natural resources and deducting defensive expenditure. Data from the World Bank indicates that natural resource depletion is the sum of net forest depletion, energy depletion, and mineral depletion, while defensive expenditure merely uses carbon dioxide (CO₂). The growth of traditional GDP, real GDP, and Green GDP in Malaysia is still moving in a positive direction, indicating that the country is on the path towards sustainable growth and concerned about the issue of natural capital.

It can be seen that one very important variable in the calculation of Green GDP is the cost of pollution. Natural capital or pollution costs can be classified into two types: actual costs and imputed costs. The actual cost relates to expenditure for environmental protection, remediation, and treatment, which can be difficult to collect. The imputed cost is derived from the estimation method for the cost of maintaining the environment or the amount of pollution emitted into it.

Estimating the cost of pollution is known as shadow pricing. Shadow price estimates can vary widely depending on the estimation method used. The findings

of the study indicate that the shadow price can be calculated as follows:

Willingness to pay (WTP)

WTP is the most each person is willing to pay for the direct and indirect benefits obtained from something, such as natural or ecosystem services for creating and maintaining well-being or helping it to increase. This is the difference between the maximum WTP and consumer surplus (Harris and Roach, 2018). The shadow price relies on WTP and its use in environmental valuation techniques can vary. For example, there is the cost of illness method, replacement cost method, and preference method, consisting of two categories: revealed preference and stated preference. The most common technique used in this approach is the travel cost model (TCM), hedonic pricing, and the contingent valuation method (CVM).

These approaches use surveys to ask individuals or a sample group to estimate the total economic value of what they are willing to pay for increases in welfare. The limitation of this approach is that it is costly, takes a lot of time, and requires

a large sample size. Moreover, it is difficult to screen for facts because the participants may not have sufficient knowledge, and the questionnaire may be misinterpreted, etc.

Benefit transfer method

This method represents the estimation or transfer value of natural resources and the environment by relying on similar prior research (Harris and Roach, 2018). This technique can be performed in two ways: benefit function transfer or unit value transfer. The advantage of this technique is that it saves time and money but caution is required as to the accuracy of results (Johnston, R.J., et al., 2015).

Output distance function

Following Kumbhakar and Knox Lovell (2000), the output distance function $[Do(x, y)]$ is an output-expanding approach to measure the distance between a point of production and the boundary of production possibilities. It characterises output sets, dualled with the revenue frontier based on Shephard's lemma in duality theory.

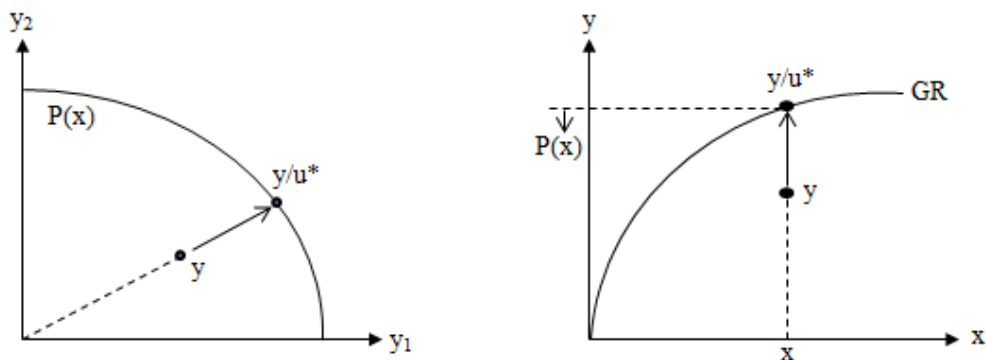


Figure 1 Output distance function

Source: Kumbhakar and Knox Lovell (2000)

In Figure 1, $Do(x, y)$ is defined in terms of output sets $P(x)$, y is the output vector producible with input x , but so is the radially expanded output vector (y/u^*) , and therefore $Do(x, y) = u^* < 1$. $Do(x, y)$ is a convex function in y , representing a core property of output distance function.

To estimate the shadow price following this method, the stochastic production frontiers model (SFA model) can be used. This model allows for technical inefficiency and is based on the Log-Linear Cobb-Douglas form using the OLS estimation. Therefore, the equation can be written as:

$$\ln y_i = \beta_0 + \sum_n \beta_n \ln x_{ni} + v_i - u_i \quad (2.2)$$

where

y_i is the output vector producible with input x .

x_{ni} is the inputs x .

v_i is error term in part the two-sided noise component. It is assumed to be iid and symmetric, distributed independently of u_i .

u_i is error term in part the nonnegative technical inefficiency component.

Therefore, the error term of this model is. It is asymmetric since $u_i \geq 0$, and v_i and u_i are distributed independently of x_i . This study uses this method to estimate shadow prices or pollution costs.

Methodology

This study uses the output distance function and its duality with the revenue function, relying on stochastic frontier analysis (SFA) to compute the shadow price of pollution; that is the pollution cost as a result of air and water pollution.

The inclusion of air pollution is necessary to adjust the units from parts per billion (ppb) to milligrams per kilograms (mg/kg) before converting physical units into monetary units. SFA is used because of the fundamental idea in economic production that productive efficiency involves allocating inputs and seeking to avoid waste (Kumbhaker and Knox Lovell, 2003). Productive efficiency represents economic efficiency; a distance measurement to an economic frontier or boundary of production possibilities. Furthermore, the limitation of available data is the most important criteria applied in this method.

Following Färe et al. (1993); Kumbhaker and Knox Lovell (2003); and Dang and Mourougane (2014), shadow prices can be derived via the duality theory using Shephard's lemma from the output distance function to maximise the revenue function as follows:

$$\begin{aligned} r(x, p) &= \max_y \{p_y^T y : y \in P(x)\} \\ &= \max_y \{p_y^T y : D_o(x, y) \leq 1\} \end{aligned} \quad (3.1)$$

Following Dang and Mourougane (2014), the above function can be applied to estimate shadow prices by the following definition:

$$D(x, y, w) = \inf \left[\phi > 0 : (x, \frac{y}{\phi}, w) \in T \right] \quad (3.2)$$

where D is the output distance function ranging from 0 to 1, defining a set of inputs (x) to produce vector outputs (y, w), whereby y represents good output and w bad output (pollutant). The properties of the output distance function satisfy at homogeneous degree 1 in good output, non-decreasing in good output, non-increasing in bad output and input,

and weak disposability. This assumption infers that the summations of all bad outputs are not greater than the total outputs.

From (1) to (2), the model by Färe et al. (1993) is applied to derive bad output, shadow price (pw) is defined by the maximisation problem and pw is expected to be negative as follows:

$$\begin{aligned} \max_{y,w} \quad & p_y y + p_w w \\ \text{s.t.} \quad & D_o(x, y, w) \leq 1 \end{aligned} \quad (3.3)$$

The problem of maximising the Lagrangian is resolved. The shadow price of pollutants based on the output distance function is as follows:

$$p_w = p_y \frac{\partial y}{\partial w} \quad (3.4)$$

Finally, equation (3.4) is used to compute the shadow prices of pollutants with the elasticity obtained by stochastic frontier analysis (SFA).

The use of SFA to estimate elasticity relies on parametric functionality. This study applies the model of Kumbhaker and Knox Lovell (2003), Dang and Mourougane (2014), and Kumbhaker et al. (2015). The different parameters can be written as follows:

Model for air pollution

The model (3.5) define the air pollution, air_{ijt} , $j \in \{SO_2, NO_2, CO, O_3\}$, the volume of air pollution consisting of SO_2, NO_2, CO , and O_3 in region i and in year t as

$$\begin{aligned} -\ln grp_{it} = & \beta_0 + \beta_1 \ln K_{it} + \beta_2 \ln L_{it} + \beta_3 \ln air_{ijt} + \beta_4 \ln pm10_{it} \\ & + \beta_5 \ln K_{it} \ln sq + \beta_6 \ln L_{it} \ln sq + \beta_7 \ln K_{it} \ln L_{it} \\ & + \beta_8 \ln K_{it} \ln air_{ijt} + \beta_9 \ln K_{it} \ln pm10_{it} + \beta_{10} \ln air_{ijt} \ln pm10_{it} + v + u \end{aligned} \quad (3.5)$$

Where

$\ln grp$ is the gross regional product.

$\ln K$ is the value of capital stock.

$\ln L$ is number of units in the labour force.

$\ln air$ is vector of air pollution.

$\ln pm10$ is the volume of PM10.

$\ln K_sq$ is the square of capital stock.

$\ln L_sq$ is the square of the labour force.

$\ln K \ln L$ is the interaction between the capital stock and the labour force.

$\ln K \ln air$ is the interaction between the capital stock and air pollution.

$\ln K \ln pm10$ is the interaction between the capital stock and PM10.

$\ln air \ln pm10$ is the interaction between the air pollution and PM10.

v is the error term in part of the two-sided noise component. It is assumed to be iid and symmetric, distributed independently of u .

u is the error term in part of the nonnegative technical inefficiency component.

Water pollution model

The model (3.6) define the water pollution, $water_{ijt}$, $j \in \{BOD, \text{ Total}$

Coli, Fecal Coli, NH₃-N, the volume of water pollution consisting of BOD and NH₃N} in region i and in year t as

$$\begin{aligned} -\ln grp_{it} = & \beta_0 + \beta_1 \ln K_{it} + \beta_2 \ln L_{it} + \beta_3 \ln K_{it} \ln L_{it} + \beta_4 \ln water_{ijt} \\ & + \beta_5 \ln water_{ijt_sq} + \beta_6 \ln K_{it_sq} + \beta_7 \ln L_{it_sq} \\ & + \beta_8 \ln K_{it} \ln water_{ijt} + \beta_9 \ln L_{it} \ln water_{ijt} + v + u \end{aligned} \quad (3.6)$$

Where

$\ln grp$ is the gross regional product.

$\ln K$ is the value of capital stock.

$\ln L$ is the number of units in the labour force.

$\ln water$ is vector of water pollution.

$\ln K_sq$ is the capital stock squared.

$\ln L_sq$ is the labour force squared.

$\ln K \ln water$ is the interaction between the capital stock and water pollution.

$\ln L \ln water$ is the interaction between the labour force and water pollution.

v is the error term in part of the two-sided noise component. It is assumed to be iid and symmetric, distributed independently of u .

u is the error term in part of the nonnegative technical inefficiency component.

Equations (3.5) and (3.6) are used to estimate the elasticity of good and bad output before applying the parameter received to calculate the pollution cost, representing the shadow prices of air and water pollution in equation (3.4).

The variables for SFA are based on the production function, data on good output as the gross regional product (GRP_{it}), capital stocks (K_{it}), and labour force (L_{it}), divided into seven regions and taken from the Office of the National Economic and Social Development Board during the period from 1997 to 2016.

Results

The research methodology in this paper focuses on estimating air and water pollution using stochastic frontier analysis (SFA). The air pollution cost estimation is separated into six models according to gas emission type (SO₂, NO₂, CO, O₃, and PM₁₀). The total amount of gas emission in the air is included in a single model because all types of gas emission have the same units except PM₁₀. Whereas water pollution is separated into five models to estimate the cost of pollution according to each type of pollutant value and those that combine water pollution values in a single model, as presented in parts I and II. The estimated costs of pollution is then tested in part III to establish its long-run relationship with health expenditure to

confirm the validity of the estimated pollution costs and demonstrate the linkage between pollution problems and economic development.

Part I

The estimation results for elasticity, good output, and air pollution using SFA are shown in Table 1. The elasticity of gas emissions to output, separating each type of gas emission is shown to have a coefficient inconsistent with the conditions of the model. Based on the results, only one of the SO₂ emissions to output has a statistically significant elasticity value consistent with the model conditions. This result may be because each type of air pollution was considered separately, indicating too little effect on the overall economy, and causing the test results to be unclear.

Whereas improving the model by combining the air pollutant values into a single value and entering the PM₁₀ variable, the coefficient of statistical significance and sign were found to be consistent with the model conditions. The results reflect air pollution more comprehensively than models considered by gas emission type. In addition, when

considering the goodness of fit, the model combining air pollution with a higher AIC value is shown to be a better fit. Therefore, the results of this model are used to estimate air pollution.

As in Table 1, the results of Model Air (A.6) which combines air pollution into a single value shows that labour force elasticity is around 2.5367. The capital stock squared elasticity is around 0.0373, implying that capital stock has a positive effect on good output in the long run. The interaction between capital stock and labour force elasticity is around 0.0693. These coefficients are statistically significant at the 0.05 level.

Moreover, the output production is statistically and significantly associated with air pollution which consists of sulfur dioxide emissions (SO₂), nitrogen dioxide emissions (NO₂), carbon monoxide emissions (CO), and ozone emissions (O₃) but this paper ignores the particulate matter 10 (PM₁₀) since the estimated results are not significant. Air pollution elasticity is estimated at around 0.1146 and the coefficient is statistically significant at the 0.1 level. This result implies that in every production the proportion of air pollution per good output is around 11.46%.

Table 1 SFA estimation in the case of air pollution, 1997–2016

Variables	(A.1) Model SO ²	(A.2) Model NO ²	(A.3) Model CO	(A.4) Model O ³	(A.5) Model PM ¹⁰	(A.6) Model Air
lnK	0.943	1.165	1.804	1.250	1.467*	-0.328
lnL	-9.748***	-9.025***	-13.019***	-8.983***	-8.894***	-2.537**
lnKsq	-0.049*	-0.049*	-0.069**	-0.046*	-0.005	-0.037
lnLsq	0.296**	0.281**	0.414***	0.284**	0.319***	0.051
lnKlnL	-0.010	-0.035	-0.037	-0.046	-0.125*	0.069**
lnSO2	-0.344*					
lnSO2sq	0.002					
lnKlnSO2	0.014					
lnLlnSO2	0.013					
lnNO2		-0.047				
lnNO2sq		-0.003				
lnKlnNO2		-0.008				
lnLlnNO2		0.007				
lnCO			-0.514			
lnCOsq			-0.003			
lnKlnCO			-0.002			
lnLlnCO			0.033			
lnO3				0.001		
lnO3sq				-0.004		
lnKlnO3				-0.009		
lnLlnO3				0.004		
lnPM10					-0.172	0.179
lnPM10sq					0.052**	
lnKlnPM10					0.087**	-0.009
lnLlnPM10					-0.051	
lnAirlnPM10						0.007
lnAir						-0.115*
lnKlnAir						0.006
_cons	64.871***	58.877***	84.497***	58.135***	54.272**	17.896
Standard deviation of technical inefficiency	0.646	0.617	0.791	0.612	0.495	0.533
Standard deviation of random error	0.092	0.092	0.093	0.092	0.084	0.044
Log likelihood	107.138	112.008	88.259	112.179	128.806	210.069
Prob>chi2	0.000	0.000	0.000	0.000	0.000	0.000
Chi-square (X ²)	638.688	677.005	518.923	678.640	868.402	172.251
Converged (1 if converged, 0 otherwise)	1	1	1	1	1	1
AIC	-188.275	-198.015	-150.519	-198.358	-231.612	-390.139
BIC	-150.701	-159.961	-114.835	-160.304	-193.371	-346.015

Note: * significant at the 90% level of confidence, ** significant at the 95% level of confidence, *** significant at the 99% level of confidence

Source: Authors' estimations

Table 2 SFA estimation in the case of water pollution, 1997–2016

Variables	(W.1) Model BOD	(W.2) Model Total Coli	(W.3) Model Fecal Coli	(W.4) Model NH3-N	(W.5) Model Water
lnK	1.937*	0.875	0.944	1.503*	-0.465
lnL	-11.512***	-7.715***	-8.223***	-11.249***	-2.376**
lnKsq	-0.0418	-0.063**	-0.044*	-0.054*	-0.039**
lnLsq	0.362***	0.234*	0.264**	0.346***	0.043
lnKlnL	-0.074	-0.002	-0.035	-0.043	0.076**
lnBOD	0.641				
lnBODsq	-0.027				
lnKlnBOD	0.071				
lnLlnBOD	-0.112				
lnTotal Coli		-0.272			
lnTotal Colisq		0.017**			
lnKlnTotal Coli		0.017			
lnLlnTotal Coli		-0.006			
lnFecal Coli			0.258		
lnFecal Colisq			0.005		
lnKlnFecal Coli			0.028**		
lnLlnFecal Coli			-0.040**		
lnNH3-N				0.720	
lnNH3-Nsq				-0.005	
lnKlnNH3-N				0.011	
lnLlnNH3-N				-0.603	
lnWater					-0.192**
lnWatersq					-0.002
lnKlnWater					0.001
lnLlnWater					0.010*
_cons	74.518	49.518	52.367	75.478	19.142**
Standard deviation of technical inefficiency	0.638	0.468	0.521	0.587	0.526
Standard deviation of random error	0.093	0.083	0.086	0.093	0.044
Log likelihood	113.267	130.499	124.803	113.382	211.705
Prob>chi2	0.000	0.000	0.000	0.000	0.000
Chi-square (X ²)	675.245	897.717	820.575	673.291	178.574
Converged (1 if converged, 0 otherwise)	1	1	1	1	1
AIC	-200.533	-234.997	-223.605	-200.765	-395.409
BIC	-162.292	-196.756	-185.364	-162.523	-354.226

Note: * significant at the 90% level of confidence, ** significant at the 95% level of confidence, *** significant at the 99% level of confidence

Source: Authors' estimations

Part II

The estimation results for elasticity, good output, and water pollution using SFA are shown in Table 2. Estimation of the elasticity of water pollution to output in each model indicates that all coefficients considered for each water pollutant in the model were not statistically significant.

Whereas the model combining water pollution (W.5) into a single value has a statistically significant coefficient according to the model conditions. In addition, when considering the goodness of fit of the model with the AIC value, this model has the highest AIC, indicating that its goodness of fit is better than the others. Therefore, the results for

this model are used to estimate the water pollution cost.

As in Table 2, Model Water (W.5), the results indicate that labour force elasticity is around 2.3756. The square of capital stock elasticity is around 0.0387, implying that capital stock has a positive effect on good output in the long run. The interaction between capital stock and labour force elasticity is around 0.0758. These coefficients are statistically significant at the 0.05 level. In addition, the interaction between the labour force and water pollution elasticity is around 0.0101 and statistically significant at the 0.1 level. The water pollution elasticity is around 0.1915 and the coefficient is statistically significant at the 0.05 level. These results imply that in every production, the proportion of water pollution per good output is around 19.15%.

According to the SFA results, the average air pollution cost for the years from 1997–2016 was about 827,383 million baht (\$23,639 million at an exchange rate of 35 baht/USD). The water pollution cost was about 1,382,552 million baht (\$39,501 million) as shown in Table 3.

Furthermore, the estimated elasticity results for both air and water pollution are close to those achieved by Dang and Mourougane (2014) in their research on the estimation of shadow prices for pollution in selected OECD countries (around 0.021 for air pollution only). Considering the air and water pollutant costs as shown in Table 3 and Figures 1, the results indicate that the pollution cost in Thailand from 1997–2016 is around 2,209,935 million baht (\$63,141 million).

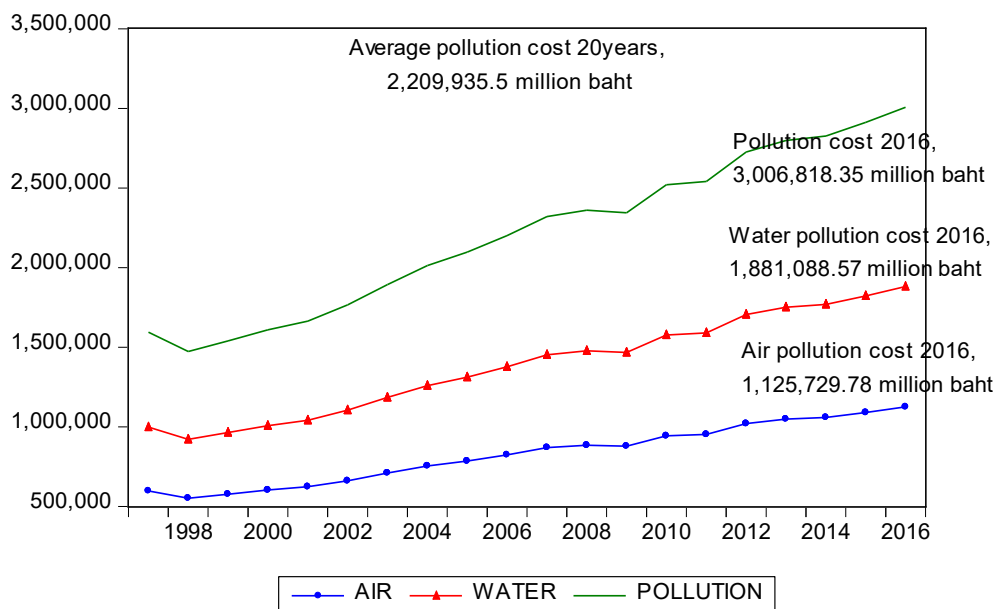


Figure 1 Pollution cost in Thailand during the years 1997-2016

Source: Authors' calculations

Table 3 The Shadow prices of the cost of air and water pollution for Thailand over 20 years

Years	Air pollution cost		Water pollution cost	
	million baht	million dollar us	million baht	million dollar us
1997	596,822.02	17,052.06	997,286.47	28,493.90
1998	551,262.21	15,750.35	921,156.27	26,318.75
1999	576,467.57	16,470.50	963,274.29	27,522.12
2000	602,153.09	17,204.37	1,006,194.67	28,748.42
2001	622,892.71	17,796.94	1,040,850.46	29,738.58
2002	661,193.64	18,891.25	1,104,851.11	31,567.17
2003	708,729.03	20,249.40	1,184,282.50	33,836.64
2004	753,303.05	21,522.94	1,258,765.44	35,964.73
2005	784,850.13	22,424.29	1,311,480.46	37,470.87
2006	823,840.83	23,538.31	1,376,633.72	39,332.39
2007	868,617.35	24,817.64	1,451,455.04	41,470.14
2008	883,606.80	25,245.91	1,476,502.33	42,185.78
2009	877,503.43	25,071.53	1,466,303.64	41,894.39
2010	943,435.45	26,955.30	1,576,475.69	45,042.16
2011	951,359.92	27,181.71	1,589,717.45	45,420.50
2012	1,020,264.89	29,150.43	1,704,857.29	48,710.21
2013	1,047,683.28	29,933.81	1,750,673.28	50,019.24
2014	1,057,996.83	30,228.48	1,767,907.16	50,511.63
2015	1,089,950.17	31,141.43	1,821,301.03	52,037.17
2016	1,125,729.78	32,163.71	1,881,088.57	53,745.39
Average	827,383.11	23,639.52	1,382,552.84	39,501.51

Source: Authors' calculations

The air and water pollution costs are not as high in Thailand at around 33.6% of GDP compared to 24.0% in OECD countries (which only consider air pollution cost). As a developing country, Thailand needs high production capacity and economic activity in order to further develop. For this reason, it seems that pollution emissions and the loss of natural resources are increasing in line with the country's development. Other studies on the environmental cost such as that of Attavanich et al. (2016), adopted the Economic Input Output-Life Cycle Assessment (EIO-LCA) approach. However, this is only a one-year study, based on the 2005 economic input-output table database, and indicates that the cost of environmental damage is

approximately 14.6% of GDP. The pollution cost is different due to this paper has been conducted for 20 years and more current but Attavanich's research has been conducted for one year only, and using the calculation of different pollution costs as well as the proportion of pollution costs that appear in Attavanich's research is measured by the total value added but this paper is measured proportion per GDP.

When comparing the previously mentioned work on environmental cost with the environmental cost results in this paper, the proportion per GDP in the earlier study is less than half that reported in this paper. This is due to the different methods used to convert physical units of pollution into different monetary units,

variation in the years of study, and the alternative definition and scope of environmental cost, and the fact that the earlier work only involved air pollution.

Part III

This section provides the results of the long-run relationship between pollution cost and health expenditure. Based on a review of past empirical studies, pollution problems have contributed to an increase in health expenditure, which is a secondary data that is taken from the World Bank, in the long run (Yu, et al., 2018) and also affected economic growth

(Yazdi, K. S. and Khanalizadeh, B., 2017). This implies that the negative impact of pollution problems is reflected in the relationship between health expenditure and labour productivity which is shown to have a negative effect in the long term. Therefore, this part of the paper provides a cointegration test for the long-run relationship and Pairwise Granger Causality Tests to confirm the validity of the estimated pollution cost and demonstrate that pollution problems have a negative impact on human capital by directly affecting health and indirectly affecting learning. The results are shown in Tables 4 and 5.

Table 4 Cointegration test

Unrestricted cointegration rank test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.667046	20.17807	12.32090	0.0020
At most 1	0.021028	0.382535	4.129906	0.5994

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level

** denotes rejection of the hypothesis at the 0.05 level*

***MacKinnon-Haug-Michelis (1999) p-values*

Unrestricted cointegration rank test (Maximum eigenvalue)				
Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.667046	19.79553	11.22480	0.0013
At most 1	0.021028	0.382535	4.129906	0.5994

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level

** denotes rejection of the hypothesis at the 0.05 level **MacKinnon-Haug-Michelis (1999) p-values*

Source: Authors' estimations

Table 4 shows that the trace statistic is greater than the critical value of $20.17807 > 12.32090$ in the case of a null hypothesis at rank = 0. In addition, in the case of a null hypothesis at rank 1, the results show that the trace statistic is less than the critical value of $0.382535 < 4.129906$. Therefore, these statistics can

indicate that the pollution cost and health expenditure have a statistically significant cointegrated long-run relationship at the 0.05 level. This finding is consistent with Yazdi et al. (2017) and Yu et al. (2018). The test results also confirm that the calculated pollution costs are valid.

Table 5 Pairwise Granger causality tests

Null hypothesis:	F-Statistic	Prob.
There is no Granger causality between health expenditure and pollution cost	0.90792	0.4275
There is no Granger causality between pollution cost and health expenditure	3.52775	0.0597

Source: Authors' estimations

In Table 5, the results of the linkage between pollution problems and human capital through health expenditure by causality testing show that pollution costs cause a statistically significant change in health expenditure at the 0.10 level. This finding is consistent with Yazdi et al. (2017) and Yu, et al (2018) which believes that pollution affects health expenditure in the long run as well as economic growth. This result implies that the impact of pollution has an effect on human capital and labour productivity in the long term through learning and work efficiency (Becker, 1960).

In part of validity tested, it shows that the pollution issues have an effect on human capital through health expenditure. Pollution has increased along with economic growth and although an expanding economy creates more income and may increase the ability to address health issues, in the long term, policymakers should consider the consequences by comparing the marginal cost and marginal benefit to support sustainable economic development.

The population provides labour for the country, and the health of its workers has a positive effect on production and affects economic development because when the labour force or population is in good health they learn more effectively. This is consistent with the concept of Gary Backer who believed that human

capital is a measure of the future income of a person. For this reason, the government should have measures to strictly regulate the amount of air and water pollution in order to prevent a negative impact on long-term economic development. Penalties and tax measures could be implemented to regulate gas and wastewater emissions in industrial, logistics, and other economic activities. The government and related sectors should then integrate cooperation by focusing on participation and awareness of the negative effects of pollution that affect human capital and sustainable economic development. In addition, the government can rely on the results of pollution cost estimation in this dissertation as a framework for determining the budget for controlling pollution in Thailand.

Conclusion and suggestions

Under the concept of sustainable development, traditional GDP cannot comprehensively reflect sufficient economic development, but Green GDP is a better indicator. One of the important variables in calculating Green GDP is pollution cost. This paper estimates the air and water pollution costs by relying on SFA for the years 1997–2016 according to case studies in Thailand. During the past 20 years, Thailand has been subject to an average pollution cost

of about 2,209,936 million baht (\$63,141 million). The average air pollution cost during this period is about 827,383.11 million baht (\$23,640 million) and water pollution costs of approximately 1,382,552.84 million baht (\$39,501 million). However, this paper define the boundaries of air pollution cost, consisting sulphur dioxide (SO₂), nitrogen dioxide (NO₂), carbon monoxide (CO), ozone (O₃), particulate matter 10 (PM₁₀). The water pollution cost is limited to only biochemical oxygen demand (BOD) and nitrogen-ammonia (NH₃-N). There should be air pollution included, such as carbon dioxide (CO₂) and particulate matter 2.5 (PM_{2.5}). Total coli and fecal coli in water pollution cost should also be included for further study.

In addition, the co-integrated long-run relationship test of pollution cost and health expenditure also shows that the pollution issues have an effect on human capital through health expenditure. Pollution has increased along with economic growth and although an expanding economy creates more income and may increase the ability to address health issues, in the long term, policymakers should consider the consequences by comparing the marginal cost and marginal benefit to support sustainable economic development.

The population provides labour for the country, and the health of its workers has a positive effect on production and affects economic development because when the labour force or population is in good health they learn more effectively. This is consistent with the concept of Gary Backer who believed that human capital is a measure of the future income of a person. For this reason, the

government should have measures to strictly regulate the amount of air and water pollution in order to prevent a negative impact on long-term economic development. Penalties and tax measures could be implemented to regulate gas and wastewater emissions in industrial, logistics, and other economic activities. The government and related sectors should then integrate cooperation by focusing on participation and awareness of the negative effects of pollution that affect human capital and sustainable economic development. In addition, the government can rely on the results of pollution cost estimation in this paper as a framework for determining the budget for controlling pollution in Thailand.

In addition to the results of this study, it shows the cost of air and water pollution that has occurred in Thailand over the past 20 years, which is a cost that has been neglected to cause a negative impact on human capital. The resulted can also be used as a framework for determining policies and guidelines for national development, both in the dimensions of the development of the manufacturing sector, investment support, long-term economic development plans, etc. Further, the calculated pollution cost can also be used to calculate the Green GDP, which is an indicator of sustainable development.

This study suggests that the government should pay more attention to the issue of pollution control in industrial production. In this study, air and water pollution costs are counted as production expenditure and negative impact on human capital and long-term development. Moreover, related agencies should pay attention to the regular and systematic collection of information on the amount of pollution.



Because of the amount of air and water pollution is not consistent, this study requires using mathematical techniques to help manage pollution data.

The problem of incomplete data is caused by the record of pollution from

government agencies. Therefore, relevant government agencies should be such information disclosed to the public with easy access and linkage to a database in the form of Big Data for academic and administrative benefits.

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Appendix

Table 1 Summary and descriptive statistics of the air pollutions

	Mean	Std. Dev.	Min	Max	Observations
SO2	45.99	34.64	7.00	184.00	140
NO2	80.04	23.03	30.33	132.76	140
CO	4.44	2.03	1.90	12.67	140
O3	112.54	25.99	40.90	197.60	140
PM10	156.91	57.36	64.48	355.70	140

Table 2 Summary and descriptive statistics of the air pollutions classified by region

Region	Pollution	Mean	Std. Dev.	Min	Max
North East	SO2	27.87	26.52	7.00	114.00
	NO2	96.93	13.46	78.00	129.00
	CO	5.75	2.08	3.05	10.80
	O3	91.48	13.34	74.00	122.00
	PM10	145.28	45.61	88.40	267.25
North	SO2	42.68	49.58	11.57	159.24
	NO2	69.19	9.17	49.27	86.57
	CO	5.46	3.09	2.91	12.67
	O3	118.75	30.19	93.38	197.60
	PM10	217.07	45.51	114.14	293.28
Southern	SO2	21.54	14.09	8.00	67.53
	NO2	54.87	24.45	30.33	108.33
	CO	3.28	1.25	2.08	5.87
	O3	73.55	15.06	40.90	109.33
	PM10	112.79	47.12	64.48	230.70
East	SO2	70.18	20.56	36.44	118.88
	NO2	71.28	9.94	60.11	98.00
	CO	3.65	1.53	2.30	6.77
	O3	125.27	8.87	104.04	143.17
	PM10	121.40	23.65	78.89	171.00
West	SO2	60.20	42.40	16.00	184.00
	NO2	67.28	14.67	49.00	107.00
	CO	2.97	1.34	1.90	8.10
	O3	126.18	14.35	105.00	151.00
	PM10	128.84	32.84	76.00	186.20
Central	SO2	39.91	19.15	9.67	85.00
	NO2	89.96	11.77	72.00	120.00
	CO	4.50	2.60	2.20	12.67
	O3	118.89	13.97	95.00	146.50
	PM10	210.26	52.94	152.25	355.70
Bangkok and its vicinity	SO2	59.55	27.99	25.00	109.82
	NO2	110.76	11.13	89.25	132.76
	CO	5.49	2.08	3.36	9.65
	O3	133.65	12.60	111.40	157.74
	PM10	162.77	45.47	96.11	276.83

Table 3 Summary and descriptive statistics of the water pollutions

	Mean	Std. Dev.	Min	Max	Observations
BOD	1.77	0.42	0.94	4.40	140
NH3N	0.26	0.13	0.05	0.85	140

Table 4 Summary and descriptive statistics of the water pollutions classified by region

Region	Pollution	Mean	Std. Dev.	Min	Max
North East	BOD	1.61	0.21	1.04	1.89
	NH3N	0.30	0.12	0.11	0.56
North	BOD	1.76	0.28	1.08	2.31
	NH3N	0.21	0.18	0.05	0.85
Southern	BOD	1.92	0.36	1.27	2.55
	NH3N	0.26	0.15	0.07	0.61
East	BOD	1.65	0.36	0.94	2.34
	NH3N	0.23	0.08	0.12	0.41
West	BOD	1.56	0.33	0.99	2.22
	NH3N	0.19	0.07	0.08	0.40
Central	BOD	1.77	0.36	1.06	2.56
	NH3N	0.27	0.11	0.12	0.63
Bangkok and its vicinity	BOD	2.13	0.64	1.53	4.40
	NH3N	0.37	0.12	0.20	0.57



THE RELATIONSHIP AMONG PERCEIVED VALUE, CUSTOMER SATISFACTION AND LOYALTY OF CHINESE TOURIST SHOPPING IN BANGKOK: A CASE OF KING POWER DOWNTOWN COMPLEX

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Abstract

Objective - The main objective of this research was to test the relationship among perceived value, shopping satisfaction and loyalty in shopping tourism by studying shopping behavior of Chinese tourists in Bangkok King Power Downtown Complex. Shopping tourism is the most important part of tourism industry. It is clearly understood that shopping tourism industry can improve competitive advantage and get sustainable profit through tourism industry in Thailand.

Methodology - A quantitative study was adopted for collecting data. The 400 primary data was collected by giving Chinese tourists filling out questionnaire between 15 August and 15 September 2015. The data analysis of this research is descriptive, correlation analysis, confirmatory factor analysis and structural equation modeling analysis methodology.

Finding - The result found that the perceived value positively affected on customer satisfaction, the customer satisfaction positively affected on customer loyalty, and the perceived value positively affected which mediated by customer satisfaction on customer loyalty.

Implication and recommendation - Based on the findings and the objectives of this research, we can find out the approaches to facilitate Chinese tourists' perceived value, improve shopping satisfaction and customer loyalty in Bangkok. This is detailed approaches as follows: reducing perceived risk; enhancing communication and setting readable information; expanding the variety of brand; promoting Bangkok as an attractive travel destination.

Introduction

It is considered that shopping is one of the oldest and most important parts of the tourism industry (Hudman & Hawkin, 1989). Shopping has significantly influenced on the economic, social and cultural aspects of the travel destination or host country (Jackson, 1996; Tosum *et al.* 2007). For tourists, shopping is really popular activity among tourists. It can be looked upon as a form of recreation by providing enjoyment and relaxation (Timothy & Butler, 1995) especially the main revenue of Thailand is tourism industry. Thailand is the most popular travel destination in the Asia Pacific region (Thailand tourism report 2015 Q1). More than 30% of the amount of revenue from the tourism industry in Thailand is from shopping. In 2014, the number of Chinese passenger arrivals to Thailand was ranked as the top range in the world (Ministry of Tourism & Sport). MasterCard's latest Global Destination Cities Index 2014 report indicated that the average Chinese visitor spent \$167 per day in Thailand and most of them stayed for one week. Shopping is an important activity for the Chinese tourists. The Market Research Report on Chinese Outbound Tourist (City) Consumption Shopping 2014 indicated that shopping was the highest expenditure to the Chinese outbound tourists. Despite the development of the tourism industry in other Asian countries, Thailand is facing strong competition and challenges in tourism industry. And also it was found that Bangkok didn't take advantage to increase tourist spending under the top ranking of the most popular travelling destination in the world. Therefore, Bangkok should consider how to increase the spending of

tourists, especially in shopping tourism. In previous studies, the strong relationship between tourism and shopping has long been recognized (Jansen, 1998), however few research has delved into the issue of shopping tourism by studying the relationship among perceived value, customer satisfaction and loyalty (Koo, 2003).

Literature review

Shopping tourism

Shopping is the most common and enjoyable activity for tourists undertaken during travelling. It provides a major attraction and motivation for travel (Timothy, 2005). In a UNWTO report presented, shopping tourism will be consolidated as a key segment within the tourism industry, according to its influence in local economies and contribution to the consolidation of destinations and creation of jobs (UNWTO Annual report 2014). With the goal of encouraging shopping tourism, tax free or duty free for foreigners is a tool that has promoted commercial and economic activity in tourism destinations.

Perceived value

Based on shopping motivations of tourists, this research follows Chen and Hu (2010) viewpoint that the perceived value can be divided into utilitarian value and hedonic value. For the utilitarian and hedonic value, Lloyd *et al.* (2011) studied mainland Chinese tourist shoppers perceived value of shopping in Hong Kong took seven dimensions which are product quality, service

quality, price, perceived risk, shop environment, lifestyle and effort. Biyan Wen, & Mengshi Tong (2014) studied the relationship between perceived value and customer shopping satisfaction of Chinese tourist shoppers by studying five dimensions of perceived value including price (promotion and pricing), product (quality and product assortment), shopping environment (atmosphere, layout and convenience), regulation of store (post-service, pay method and guarantee) and the service of employee (professional and timely).

The definition of perceived value of this research is the consumer's overall assessment of the utility of product and hedonic of shopping emotion based on perceptions of what is received and what is given. The dimensions of perceived value are price, product, shopping environment, perceived risk, service quality and effort which are mixed between Lloyd *et al.* (2011)'s perceived value seven dimensions and Biyan Wen, & Mengshi Tong (2014)'s perceived value five dimensions to study Chinese tourists perceived value in duty free shop in Bangkok. In detail, as follow figure 1.

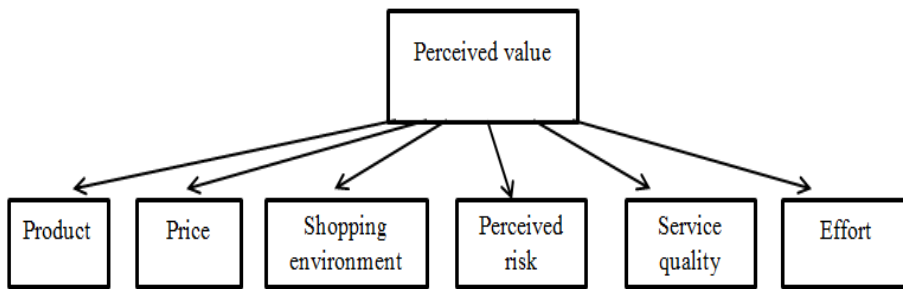


Figure 1 Dimensions of perceived value

Shopping satisfaction

Customer satisfaction is a key factor to succeed business, and can be used as a tool to measure retail fulfillment (Ellis & Marino, 2011). As tourist, shopping satisfaction, Reisinger and Turner (2002) focus on the effect of the kinds of product purchased, different kinds of purchased products have different level of shopping satisfaction. Wong and Law (2003) selected the service quality, variety of goods, price of goods, and quality of goods as dimensions to assess the

tourists' shopping satisfaction of Hong Kong. The dimension of tourist shopping satisfaction of this research will mainly follow Wang and Law (2002)'s points of service quality, variety of goods, price of goods and quality of goods. Since this research focuses on duty free shops, price of goods is replaced to the level of free of tax and promotion.

Customer loyalty

Customer loyalty is an important goal in the consumer marketing community as it

is a key component for a company's long-term sustainability (Chen & Tsai, 2008). In the shopping industry, Adkins *et al.* (2002) suggest that loyalty is a strategy of shopping mall development to increase sales and revenue. In Chen & Tsai, 2008 study suggested that customer loyalty can be defined and assessed by both attitudinal and behavioral dimensions. Oliver (1999) proposed that customer loyalty can be identified in four dimensions which are cognitive loyalty, affective loyalty, cognitive loyalty, and action loyalty. Sirakaya *et al.* (2015) proved that in shopping tourism customer loyalty relates to shopping destination loyalty, and loyalty can be measured by destination re-patronage intention and word of mouth. The definition of customer loyalty of this research follows Sirakaya *et al.* (2015)'s study concluded that customer loyalty relates to shopping destination loyalty. In this research, customer loyalty is reflected by Chinese tourists' loyalty to shop in Bangkok. It is examined that destination re-patronage intention and word of mouth has influenced after Chinese consumer purchasing.

The relationship among perceived value, customer satisfaction and customer loyalty

Based on the American Customer Satisfaction Index model and empirical studies, it was discovered that perceived value has been found to be a significant influence on customer satisfaction and loyalty which is a good predictor for the marketing (Cronin *et al.*, 2000). Eggert and Ulaga (2002) have divided into two types of conceptual models to test the

relationship among the perceived value, customer satisfaction and customer loyalty. The first model aims to test the relationships among customer perceived value, satisfaction and loyalty. The second model aims to test the direct relationship between perceived values and loyalty without satisfaction. The test results revealed a significant relationship among perceived value, customer satisfaction and customer loyalty.

H4 Perceived value has a positive effect mediated by customer satisfaction on customer loyalty.

Based on empirical studies, it was found that perceived value positively influences on customer satisfaction in most cases (Cronin *et al.*, 2000; Eggert & Ulaga, 2002; Chen & Hu 2010; Lloyd *et al.* 2011). All of those studies revealed that perceived value is positively related to customer satisfaction. Therefore a hypothesis is proposed as follows:

H1 Customer perceived value positively relates to customer satisfaction.

Many studies have pointed out a positive relationship between customer satisfaction and loyalty (Brady *et al.*, 2001; Cronin *et al.*, 2000; Johnson & Fornell, 1991). Consumers with a higher level of satisfaction tend to have a stronger intention to repurchase and recommend the purchased product (Zeithaml, 1988). Thus, a hypothesis is proposed as follows:

H2 Customer satisfaction positively relates to customer loyalty.

In the empirical evidences, discoveries were that perceived value can apply to evaluate consumer's post-purchase intention and reflect customer loyalty (Eggert & Ulaga, 2002; Lin, Sher, &

Shih, 2005; Patterson & Spreng, 1997; Petrick, 2002; Lai, *et al.*, 2004). Lin and Wang (2006) also revealed that perceived value positively influences loyalty on mobile commerce in Taiwan. Lloyd *et al.* (2011) discovered in a cross-industrial research that perceived value

has positive effects on post-purchase intention. Thus, the hypothesis is proposed as follows:

H3 Customer perceived value positively relates to customer loyalty.

Conceptual framework

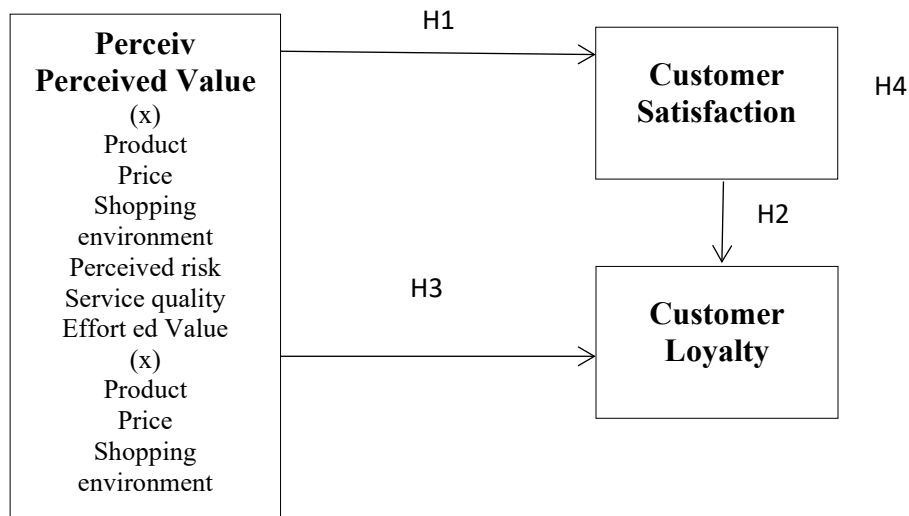


Figure 2 Conceptual frameworks

(Cited from: Lloyd *et al.* 2011; Zeithaml, 1988)

Hypotheses

H1 Customer perceived value positively relates to customer satisfaction directly.

H2 Customer satisfaction positively relates to customer loyalty directly.

H3 Customer perceived value positively relates to customer loyalty.

H4 Perceived value has positive effect mediated by customer satisfaction on customer loyalty.

Data analysis

Sampling and data collection

The 400 primary data was collected by giving Chinese tourists filling out questionnaire from 15 August to 15 September 2015. This research takes simple random to select the sampling units. King Power Downtown Complex was selected as the research's main spot. In this study, the research instrument is a questionnaire which includes four parts.

Those four parts are the demographic information (8 items), customer perceived value (25 items, five points Likert scales), customer satisfaction (5 items, five points Likert scales) and customer loyalty (4 items, five points Likert scales).

Data analysis

In this research there are three parts of statistical analysis, as follows:

Part 1 Descriptive statistics analysis

This research used frequency and percentage to describe the characteristics of Chinese tourist demography, including gender, age, monthly income, objective of the trip, and shopping experience in Bangkok King Power Downtown Complex.

Part 2 Agreement level analysis

The researcher used Mean and Standard Deviation to describe the agreement level of each dimension of variable. Perceived value refers to six dimensions which are product, price, shopping environment, perceived risk, service quality and effort. Shopping satisfaction refers to service quality, variety of goods, quality of goods, level of free of tax and promotion. Customer loyalty refers to attitude loyalty, word of mouth, and likelihood of customer repurchase.

Part 3 Hypothesis testing---Correlation analysis, Confirmatory factor analysis (CFA), and Structural Equation Modeling (SEM) analysis

Correlation analysis is used to test whether the measured dimensions and model are reasonable in this research. Structural equation modeling is a multivariate statistical methodology, and

this method takes a confirmatory approach to analyze a structural theory. Based on the advantage of SEM and the conceptual framework of this research, this research takes the SEM methodology to test four hypotheses about the relationship among perceived value, customer satisfaction and customer loyalty (Harlow, 2014). In order that the SEM methodology is able to work in this research, at first it should take the confirmatory factor analysis which is part of SEM. It can be used to access construct reliability, convergent validity, and discriminant validity of the respective constructs of the conceptual framework (Gnizy, Baker, & Grinstein, 2014). Subsequently, employing model fits indices to assess this research model. The last step, based on the result of CFA and the model fits build the estimated model in SEM to test hypotheses. According to the result of direct effect, indirect effect and total effect indicate the relationship among the perceived value, customer satisfaction and customer loyalty. Then employing standardized regression weights, standard error and CR (standardized regression weights/standard error) to support hypotheses of this research.

Result of analysis

The demographic information

The demographic information includes the number of 400 usable samples. The gender information, female makes up the great majority of the respondents (57.3%). Ages 20-29 (60.5%) is the biggest part of the samples, followed by age 30-39 (23.8%), and age 40-49 (7.3%). The largest portion of monthly income with respondents is 5000-6000

yuan (30.8%), and the smallest portion of monthly income with respondents is 4001-500 yuan (11.3%), the range of monthly income portion is small. The main objective of vacation is travel, and also shopping is the second rank in all items. In this research required respondents to have shopping experiences in King Power Downtown complex. 1 time (64.5%) is the largest portion, followed by 2 times (20%), the smallest portion is 4 times. For the largest portion of budget shopping item is 10% and below (33%), closely followed by 11%-20% (32%). Finally, most of

respondents took independent tours (76.5%). In 400 available questionnaires, the 10% and below budget of shopping group is the largest part, the 41% and above of budget of shopping group is the lowest part. Most of people are select independent tour as the travel mode in Thailand, the different of the guided tour percentage and the independent tour percentage is big from 76.5% to 18.5%. In table 4.1, the result reveals all factors positively relate to each of them, coefficients are smaller than 0.8. In summary, the measured dimensions in the conceptual model are reasonable.

Correlation analysis

Table 1 Correlation matrix

	CL1	CL2	CL3	CL4	CS1	CS2	CS3	CS4	CS5	Effort	SQ	Risk	SE	Price	Product
CL1	1.000														
CL2	0.698	1.000													
CL3	0.580	0.615	1.000												
CL4	0.536	0.548	0.643	1.000											
CS1	0.394	0.352	0.508	0.450	1.000										
CS2	0.445	0.491	0.524	0.558	0.571	1.000									
CS3	0.414	0.416	0.464	0.425	0.481	0.560	1.000								
CS4	0.405	0.467	0.510	0.487	0.455	0.541	0.532	1.000							
CS5	0.428	0.404	0.518	0.490	0.451	0.515	0.498	0.656	1.000						
Effort	0.456	0.428	0.523	0.464	0.527	0.515	0.520	0.519	0.529	1.000					
SQ	0.460	0.423	0.516	0.465	0.588	0.493	0.511	0.465	0.440	0.663	1.000				
Risk	0.466	0.492	0.480	0.435	0.479	0.500	0.589	0.522	0.451	0.628	0.560	1.000			
SE	0.452	0.418	0.529	0.424	0.494	0.523	0.469	0.470	0.475	0.643	0.585	0.653	1.000		
Price	0.389	0.438	0.433	0.410	0.374	0.488	0.430	0.488	0.483	0.522	0.465	0.544	0.578	1.000	
Product	0.435	0.431	0.443	0.442	0.395	0.540	0.459	0.476	0.471	0.495	0.448	0.558	0.613	0.609	1.000

Note 1: Correlation is significant at the 0.01 level (2-tailed).

Note 2: CL is customer loyalty, CS is customer satisfaction, SQ is shopping environment, SE is service quality.

In table 1, the result reveals all factors positively relate to each of them, coefficients are smaller than 0.8. In summary, the measurement dimensions in the conceptual model are reasonable.

Reliability and validity

Convergent validity of CFA results should be supported by item factor loading, construct reliability, and average variance extracted (Hair *et al.* 1998). In this research, confirmatory factor analysis (CFA) was first used to confirm the factor loadings of three variables namely perceived value, customer satisfaction and customer loyalty.

Constructive reliability of this research estimates ranging from 0.848 to 0.89 indicates a satisfactory estimation, because it exceeds the critical value of 0.7 (Hair *et al.* 2006). The average extracted variances of all constructs range between 0.528 and 0.604 which are above the suggested value of 0.5 (Fornell and Larcker, 1981). These indicate that the measurement model has good convergent validity. Therefore, the hypothesized measurement model is reliable and meaningful to test the structural relationships among the constructs.

Assessing model fits

For the first model about the link between perceived value and customer loyalty, the measurement result of this research indicates that $X^2 = 130.188$, $df = 34$, and is significant at $p < 0.05$, as the value of X^2 is sensitive to sample size, so this research took more fit indices to assess the model fit, such as CFI, GFI, NFI and RMSEA. The X^2/df of model is round 3.829, indicating an acceptable fit. Furthermore, CFI= 0.956, GFI=0.905, NFI=0.942, RFI=0.923, and RMSEA=0.084. From the result of first model found that the RMSEA doesn't meet the criteria fit indices. The result indicates that the perceived value can't direct positive effect on customer loyalty. For the second model about the link "perceived value \rightarrow customer

satisfaction \rightarrow customer loyalty", the overall model indicates that $X^2 = 299.851$, $df = 88$, and is significant at $p < 0.05$. The X^2/df of model is round 3.407, indicating an acceptable fit. Furthermore, CFI= 0.939, GFI=0.905, NFI=0.916, RFI=0.900, and RMSEA=0.078. From the result of fit estimates of the second model is fit and available. By comparing the result of the first model and the second model we found that perceived value has effect mediated by customer satisfaction on customer loyalty. For the third model, the result indicates that $X^2 = 297.034$, $df = 87$, and is significant at $p < 0.05$. The X^2/df of model is round 3.414, indicating an acceptable fit. Furthermore, CFI= 0.940, GFI=0.905, NFI=0.917, RFI=0.900, and RMSEA=0.078. The result indicates that this model is fit, and the third model is the most fitness one by comparing the third model and the second model. The result of the third model also supports that perceived value has effect mediated by customer satisfaction on customer loyalty.

Hypotheses testing

The first three hypotheses:

H1 Customer perceived value positively relates to customer satisfaction.

H2 Customer satisfaction positively relates to customer loyalty.

H3 Customer perceived value positively relates to customer loyalty.

Table 2 Hypotheses test

Path	Structural coefficients	SE	CR	P	Test result
Perceived value → customer satisfaction	0.885	0.087	10.1724	***	Support
Customer satisfaction → customer loyalty	0.622	0.135	4.60741	***	Support
Perceived value → customer loyalty	0.216	0.156	1.38462	0.077	Unsupport

Note: $P < 0.05$ (2 tailed), SE is standard error, CR equal to Structural coefficients divide by SE.

Table 2 reports the result of the hypotheses tests. Two out of three are totally supported. Perceived value has a significantly positive effect on customer satisfaction (coefficient is 0.885, CR is 10.1724, and the value of P is smaller than 0.05), customer satisfaction has

significantly positive effect on customer loyalty (coefficient is 0.622, CR is 4.60742, and the value of P is smaller than 0.05), perceived value has no significantly positive effect on customer loyalty. Thus H1 and H2 are supported while H3 is rejected.

Table 3 Direct, indirect and total effect of relationship

Path	Direct effect	Indirect effect	Total effect
Perceived value → Customer satisfaction	0.885		0.885
Customer satisfaction → Customer loyalty	0.622		0.622
Perceived value → Customer loyalty	0.216	0.551	0.767

Table 3 shows the relationship among perceived value, customer satisfaction and customer loyalty. From Table 4.26, the direct effect of perceived value on customer satisfaction is 0.885; the direct effect of customer satisfaction on customer loyalty is 0.622; the direct effect of perceived value on customer loyalty is 0.216, while the indirect effect of perceived value on customer loyalty is

identified (0.551), so the perceived value has an indirect effect (0.551) by customer satisfaction on customer loyalty.

In summary, the result of table 2 and 3 indicates H1, H2, and H4 were supported, however H3 was not support. The result of hypotheses test shows in Table 4.

Table 4 The results of hypotheses test

Hypotheses	Path	β	P	Result
H1	Perceived value \rightarrow customer satisfaction	0.885	<0.05	Supported
H2	Customer satisfaction \rightarrow customer loyalty	0.622	<0.05	Supported
H3	Perceived value \rightarrow customer loyalty	0.216	0.077	Unsupported
H4	Perceived value \rightarrow customer satisfaction \rightarrow customer loyalty	0.551	<0.05	Supported

Conclusion

The demography information was collected by giving Chinese tourist filling out the questionnaire. The findings of demography information reveal the greater proportion of the sample group. In detail, gender is female (57.3%), age is in the range of 20-29 (60.5%), monthly income is in the range of 5001-6000 (30.8%), shopping time is 1 time (64.5%), budget of shopping is in the range of 11%-20% (32%) and travel mode is independent tour (76.5%).

This research employed the SEM technique to test the hypothesized model. At first author used CFA to test reliability and meaning of this model, the result revealed the structure of this research is reliable and meaningful, and the hypothesized model fits is acceptable to data. And the author tested the hypothesis by building the SEM model. The result reported that H1, H2 and H4 were supported, while the H3 was not supported. Based on the result of the hypothesis testing found customer perceived value positively relates to customer satisfaction, customer satisfaction positively relates to customer loyalty and perceived value has positive effect mediated by customer satisfaction on customer loyalty. However perceived

value can't directly relate to customer loyalty.

Discussion

The relationship model of perceived value and customer satisfaction of this research is similar to Lloyd et al. (2011)'s study which indicates seven dimensions of perceived value can direct positive impact on customer satisfaction. The result of this relationship model of perceived value and customer satisfaction in this research is similar to Lloyd *et al.* (2011)'s study through the data analysis, that perceived value with six dimensions that positively relate to customer satisfaction. This research cited Zeithaml (1988) study model to test the relationship between customer satisfaction and customer loyalty. The measured dimensions of customer satisfaction in this research are service quality, variety of goods, quality of goods, level of free of tax and promotion. The loyalty of this research examines destination re-patronage intention and word of mouth of after Chinese consumer purchasing. The result is similar to other studies that customer satisfaction directly relates to customer loyalty for Chinese tourists shopping at duty free shops in Thailand. For the relationship between perceived value and loyalty, this research

tried to follow Lloyd et al. (2011)'s study model that perceived value have positive effects on customer loyalty in shopping tourism. In this research we have two hypotheses talking about the link. H3 refers how the perceived value directly relates to customer loyalty while H4 refers how perceived value has positive effect mediated by customer satisfaction on customer loyalty. The results indicated that H3 was unsupported and H4 was supported. The result proved that the perceived value can't directly affect on customer loyalty, while perceived value can have a positive effect mediated by customer satisfaction on customer loyalty. From the results of standardized factor loading of six sub-dimensions of perceived value found that all of factors positively relate to perceived value, and the effect risk of six sub-dimensions is service quality, effort, risk, shopping environment, product, and price. The low risk and effort were two important dimensions of perceived value to customer satisfaction and customer loyalty.

Recommendations

Based on the findings and the objectives of this research, we can find out the approaches to facilitate Chinese tourists' perceived value and then improve shopping satisfaction and customer loyalty in Bangkok.

Reducing perceived risk is one crucial factor to affect Chinese tourist shoppers' perceived value, customer satisfaction and customer loyalty, so retailers should provide assurances bill, safe payment methods and processes, genuine goods, refunds and guarantees to customers. Thai shop can also put up a way to

identify the genuine products on Chinese website or open online store, and take those stores as a refund service point to reduce perceived risk of Chinese shoppers. Enhancing communication and setting readable information, foreign tourist shoppers have tight time schedule, so during the shopping period many tourists would depend greatly on the salespeople's assistance with efficient communication, and the readable information, such as the map of shopping mall, promotion information and so on. Expanding the variety of brand, Thai store should expand the mall size and brand varieties to attract Chinese tourist shoppers and meet their needs. It is a great idea to promote Bangkok as an attractive travel destination, to build a destination brand. The most factors for Bangkok to attract Chinese tourists include geographical advantage, unique culture, safety, kindness service toward the signal that "smile city", special shopping experience to Chinese tourist shoppers. All these should be strengthened.

Limitations and further research

There are some of limitations of this research. The study respondents group is only Chinese tourists who have shopping experience only in Bangkok King Power Downtown Complex duty free shop. The study destination only focuses on one spot in Bangkok King Power Downtown Complex duty free shop where lots of travel agents have agreements with this company. The dimensions of perceived value depend on literature points, and in order to refine the dimensions of perceived value we need to test the

relevance between dimensions and perceived value. The perceived value in this research just reflects customer experience of after shopping, however perceived value can be affected by before shopping experience and after shopping experience.

There are several different ways for future research about shopping tourist aspect. Future research can consider other nationalities sample group, and the result can be analyzed by comparing the

value of different countries tourists. Future research can expand the survey spot from duty free shop to another category of market such as supermarket, shopping mall, convenience store, or night market. Future research can expand the affecting factors of perceived value of tourist, such as the culture and time pressure which are potential areas for studying tourist perceived value. Future research can consider comparing the perceived value of before shopping to the perceived value of after shopping.

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Appendix

Questionnaire in English

Welcome to Thailand! I come from China, now I am a master's degree student at the University of the Thailand Chamber of Commerce. I am working on a research about Chinese tourist shopping satisfaction in Thailand duty free shops. This questionnaire is anonymous, and the result is used to research. Thank you so much for filling out this questionnaire.

Part 1 Demographic

Please check list in the (✓) and fulfill in the blank for your answer

1. Gender

☐ Male ☐ Female

2. Age

☐ 19 and below ☐ 20–29 ☐ 30–39 ☐ 40–49

☐ 50–59 ☐ 60 and above

3. Monthly income

☐ less than 2,000 yuan ☐ 2,001- 3000 yuan ☐ 3,001-4,000 yuan

☐ 4001- 5000 yuan ☐ 5,001- 6000 yuan ☐ more than 6001 yuan

4. The main objective of travel

☐ Work ☐ Education ☐ Vacation ☐ Visits friends/relatives

☐ Business ☐ Shopping ☐ Other.....

5. Shopping experience times in duty free shop in last year

☐ Never ☐ 1 time ☐ 2 times ☐ 3 times

☐ 4 times ☐ 5 and more than 5 times

6. Is it your own choice to go shopping again in King Power Downtown Complex duty free shop?

☐ yes ☐ No, friends and relatives recommendations

☐ No, salesperson recommendation

☐ No, product information

☐ No, tour guide recommendation

☐ Other.....



7. The budget of shopping of this trip in Bangkok King Power Downtown Complex

- ☐ 10% and above ☐ 11%—20% ☐ 21%—30%
☐ 31%—40% ☐ 41% and above

8. Travel mode for this time

- ☐ Guided tour ☐ Independent tour ☐ Other.....

Part 2 The perceived value

Please check the degrees which best describe level of agreement or disagreement with each statement in the following.

Please check (☐) in the boxes below in the following stable:

1- Strongly disagree; 2- Disagree; 3-Neutral; 4-Agree; 5-Strongly agree

No.	perceived value	1	2	3	4	5
	Product					
1	In King Power Downtown Complex shop have lots of product varieties.					
2	In King Power Downtown Complex shop products are of good quality.					
3	In King Power Downtown Complex shop a broad assortment of brands is offered.					
4	In King Power Downtown Complex shop products are attractive.					
5	In King Power Downtown Complex shop newest version of products is sold.					
	Price					
6	The level of tax free is to customer's profit.					
7	In King Power Downtown Complex shop promotion activity is attractive.					
8	In King Power Downtown Complex shop price of the products are clearly stated to Chinese tourists.					
	Shopping environment					
9	The section layout enables customers to easily find the products they need in Bangkok King Power Downtown Complex shop.					
10	Products are appropriately displayed on the shelves in Bangkok King Power Downtown Complex.					



11	The atmosphere in King Power Downtown Complex shop is pleasant and relaxed.					
12	The building architecture of Bangkok King Power Downtown Complex shop fuses with Thai culture.					
Perceived risk						
13	Paying an unfair price is lower compared between Chinese tourist shoppers and resident shoppers in King Power Downtown Complex shop.					
14	Billing is accurate in King Power Downtown Complex shop					
15	Payment method is safe in King Power Downtown Complex shop.					
16	Don't have fake products in King Power Downtown Complex shop.					
17	The performance of products matches information description, such as advertising					
18	If I brought products from King Power Downtown Complex shop, it would create a favorable perception of me from friends and relatives.					
19	The purchased product can be accurately and timely delivered to airport counter.					
Service quality						
20	Staffs always timely assist customer.					
21	Staffs show great interest in resolving any customer problems.					
22	Staffs in this store can speak Chinese well.					
23	Staffs in this store have enough knowledge to answer customer questions.					
Effort						
24	Waiting time at cash registers is short at King Power Downtown Complex shop.					
25	I spend a short time searching for my interested product at King Power Downtown Complex shop.					
26	I spend a short time explaining my needs to service employee at King Power Downtown Complex shop.					
27	In King Power Downtown Complex shop have clear shopping guide map.					



Part 3 Customer satisfaction

Please check the degrees that best describe the level of agreement or disagreement with each statement in the following.

Please check (\checkmark) in the boxes below in the following stable:

1- Strongly dissatisfied; 2- Dissatisfied; 3-Neutral; 4-Satisfied; 5-Strongly satisfied

Customer satisfaction		1	2	3	4	5
28	Service of staffs in Bangkok King Power Downtown Complex shop.					
29	Variety of products in Bangkok King Power Downtown Complex shop.					
30	Quality of products in Bangkok King Power Downtown Complex shop.					
31	The level of free tax in Bangkok King Power Downtown Complex shop.					
32	Promotion activity in Bangkok King Power Downtown Complex shop.					

Part 4 Customer loyalty

Please check the degrees that best describe the level of agreement or disagreement with each statement in the following.

Please check (\checkmark) in the boxes below in the following stable:

1- Strongly disagree; 2- Disagree; 3-Neutral; 4-Agree; 5-Strongly agree

Customer loyalty		1	2	3	4	5
33	In the future, I plan to return to shop at Bangkok King Power Downtown Complex.					
34	I say positive things about Bangkok King Power Downtown Complex to others.					
35	I would like to recommend this store to my friends and relatives shopping in Bangkok King Power Downtown Complex.					
36	I am proud to tell others that I shopped at Bangkok King Power Downtown Complex.					

Thank you so much!

THE RELATIONSHIP AMONG PERCEIVED VALUE, CUSTOMER SATISFACTION AND LOYALTY OF CHINESE TOURIST SHOPPING IN BANGKOK: A CASE OF KING POWER DOWNTOWN COMPLEX

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Abstract

Objective - The main objective of this research was to test the relationship among perceived value, shopping satisfaction and loyalty in shopping tourism by studying shopping behavior of Chinese tourists in Bangkok King Power Downtown Complex. Shopping tourism is the most important part of tourism industry. It is clearly understood that shopping tourism industry can improve competitive advantage and get sustainable profit through tourism industry in Thailand.

Methodology - A quantitative study was adopted for collecting data. The 400 primary data was collected by giving Chinese tourists filling out questionnaire between 15 August and 15 September 2015. The data analysis of this research is descriptive, correlation analysis, confirmatory factor analysis and structural equation modeling analysis methodology.

Finding - The result found that the perceived value positively affected on customer satisfaction, the customer satisfaction positively affected on customer loyalty, and the perceived value positively affected which mediated by customer satisfaction on customer loyalty.

Implication and recommendation - Based on the findings and the objectives of this research, we can find out the approaches to facilitate Chinese tourists' perceived value, improve shopping satisfaction and customer loyalty in Bangkok. This is detailed approaches as follows: reducing perceived risk; enhancing communication and setting readable information; expanding the variety of brand; promoting Bangkok as an attractive travel destination.

Introduction

It is considered that shopping is one of the oldest and most important parts of the tourism industry (Hudman & Hawkin, 1989). Shopping has significantly influenced on the economic, social and cultural aspects of the travel destination or host country (Jackson, 1996; Tosum *et al.* 2007). For tourists, shopping is really popular activity among tourists. It can be looked upon as a form of recreation by providing enjoyment and relaxation (Timothy & Butler, 1995) especially the main revenue of Thailand is tourism industry. Thailand is the most popular travel destination in the Asia Pacific region (Thailand tourism report 2015 Q1). More than 30% of the amount of revenue from the tourism industry in Thailand is from shopping. In 2014, the number of Chinese passenger arrivals to Thailand was ranked as the top range in the world (Ministry of Tourism & Sport). MasterCard's latest Global Destination Cities Index 2014 report indicated that the average Chinese visitor spent \$167 per day in Thailand and most of them stayed for one week. Shopping is an important activity for the Chinese tourists. The Market Research Report on Chinese Outbound Tourist (City) Consumption Shopping 2014 indicated that shopping was the highest expenditure to the Chinese outbound tourists. Despite the development of the tourism industry in other Asian countries, Thailand is facing strong competition and challenges in tourism industry. And also it was found that Bangkok didn't take advantage to increase tourist spending under the top ranking of the most popular travelling destination in the world. Therefore, Bangkok should consider how to increase the spending of

tourists, especially in shopping tourism. In previous studies, the strong relationship between tourism and shopping has long been recognized (Jansen, 1998), however few research has delved into the issue of shopping tourism by studying the relationship among perceived value, customer satisfaction and loyalty (Koo, 2003).

Literature review

Shopping tourism

Shopping is the most common and enjoyable activity for tourists undertaken during travelling. It provides a major attraction and motivation for travel (Timothy, 2005). In a UNWTO report presented, shopping tourism will be consolidated as a key segment within the tourism industry, according to its influence in local economies and contribution to the consolidation of destinations and creation of jobs (UNWTO Annual report 2014). With the goal of encouraging shopping tourism, tax free or duty free for foreigners is a tool that has promoted commercial and economic activity in tourism destinations.

Perceived value

Based on shopping motivations of tourists, this research follows Chen and Hu (2010) viewpoint that the perceived value can be divided into utilitarian value and hedonic value. For the utilitarian and hedonic value, Lloyd *et al.* (2011) studied mainland Chinese tourist shoppers perceived value of shopping in Hong Kong took seven dimensions which are product quality, service

quality, price, perceived risk, shop environment, lifestyle and effort. Biyan Wen, & Mengshi Tong (2014) studied the relationship between perceived value and customer shopping satisfaction of Chinese tourist shoppers by studying five dimensions of perceived value including price (promotion and pricing), product (quality and product assortment), shopping environment (atmosphere, layout and convenience), regulation of store (post-service, pay method and guarantee) and the service of employee (professional and timely).

The definition of perceived value of this research is the consumer's overall assessment of the utility of product and hedonic of shopping emotion based on perceptions of what is received and what is given. The dimensions of perceived value are price, product, shopping environment, perceived risk, service quality and effort which are mixed between Lloyd *et al.* (2011)'s perceived value seven dimensions and Biyan Wen, & Mengshi Tong (2014)'s perceived value five dimensions to study Chinese tourists perceived value in duty free shop in Bangkok. In detail, as follow figure 1.

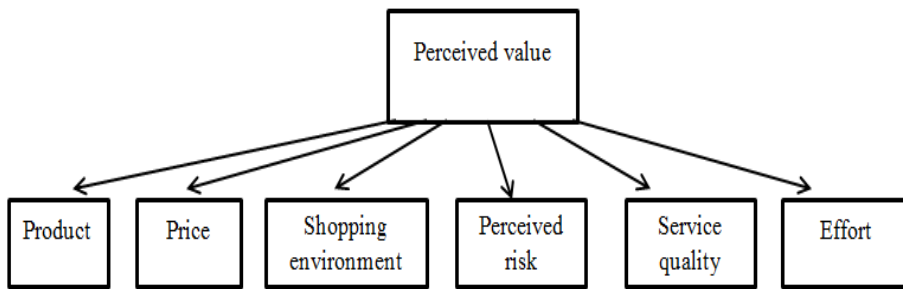


Figure 1 Dimensions of perceived value

Shopping satisfaction

Customer satisfaction is a key factor to succeed business, and can be used as a tool to measure retail fulfillment (Ellis & Marino, 2011). As tourist, shopping satisfaction, Reisinger and Turner (2002) focus on the effect of the kinds of product purchased, different kinds of purchased products have different level of shopping satisfaction. Wong and Law (2003) selected the service quality, variety of goods, price of goods, and quality of goods as dimensions to assess the

tourists' shopping satisfaction of Hong Kong. The dimension of tourist shopping satisfaction of this research will mainly follow Wang and Law (2002)'s points of service quality, variety of goods, price of goods and quality of goods. Since this research focuses on duty free shops, price of goods is replaced to the level of free of tax and promotion.

Customer loyalty

Customer loyalty is an important goal in the consumer marketing community as it

is a key component for a company's long-term sustainability (Chen & Tsai, 2008). In the shopping industry, Adkins *et al.* (2002) suggest that loyalty is a strategy of shopping mall development to increase sales and revenue. In Chen & Tsai, 2008 study suggested that customer loyalty can be defined and assessed by both attitudinal and behavioral dimensions. Oliver (1999) proposed that customer loyalty can be identified in four dimensions which are cognitive loyalty, affective loyalty, cognitive loyalty, and action loyalty. Sirakaya *et al.* (2015) proved that in shopping tourism customer loyalty relates to shopping destination loyalty, and loyalty can be measured by destination re-patronage intention and word of mouth. The definition of customer loyalty of this research follows Sirakaya *et al.* (2015)'s study concluded that customer loyalty relates to shopping destination loyalty. In this research, customer loyalty is reflected by Chinese tourists' loyalty to shop in Bangkok. It is examined that destination re-patronage intention and word of mouth has influenced after Chinese consumer purchasing.

The relationship among perceived value, customer satisfaction and customer loyalty

Based on the American Customer Satisfaction Index model and empirical studies, it was discovered that perceived value has been found to be a significant influence on customer satisfaction and loyalty which is a good predictor for the marketing (Cronin *et al.*, 2000). Eggert and Ulaga (2002) have divided into two types of conceptual models to test the

relationship among the perceived value, customer satisfaction and customer loyalty. The first model aims to test the relationships among customer perceived value, satisfaction and loyalty. The second model aims to test the direct relationship between perceived values and loyalty without satisfaction. The test results revealed a significant relationship among perceived value, customer satisfaction and customer loyalty.

H4 Perceived value has a positive effect mediated by customer satisfaction on customer loyalty.

Based on empirical studies, it was found that perceived value positively influences on customer satisfaction in most cases (Cronin *et al.*, 2000; Eggert & Ulaga, 2002; Chen & Hu 2010; Lloyd *et al.* 2011). All of those studies revealed that perceived value is positively related to customer satisfaction. Therefore a hypothesis is proposed as follows:

H1 Customer perceived value positively relates to customer satisfaction.

Many studies have pointed out a positive relationship between customer satisfaction and loyalty (Brady *et al.*, 2001; Cronin *et al.*, 2000; Johnson & Fornell, 1991). Consumers with a higher level of satisfaction tend to have a stronger intention to repurchase and recommend the purchased product (Zeithaml, 1988). Thus, a hypothesis is proposed as follows:

H2 Customer satisfaction positively relates to customer loyalty.

In the empirical evidences, discoveries were that perceived value can apply to evaluate consumer's post-purchase intention and reflect customer loyalty (Eggert & Ulaga, 2002; Lin, Sher, &

Shih, 2005; Patterson & Spreng, 1997; Petrick, 2002; Lai, *et al.*, 2004). Lin and Wang (2006) also revealed that perceived value positively influences loyalty on mobile commerce in Taiwan. Lloyd *et al.* (2011) discovered in a cross-industrial research that perceived value

has positive effects on post-purchase intention. Thus, the hypothesis is proposed as follows:

H3 Customer perceived value positively relates to customer loyalty.

Conceptual framework

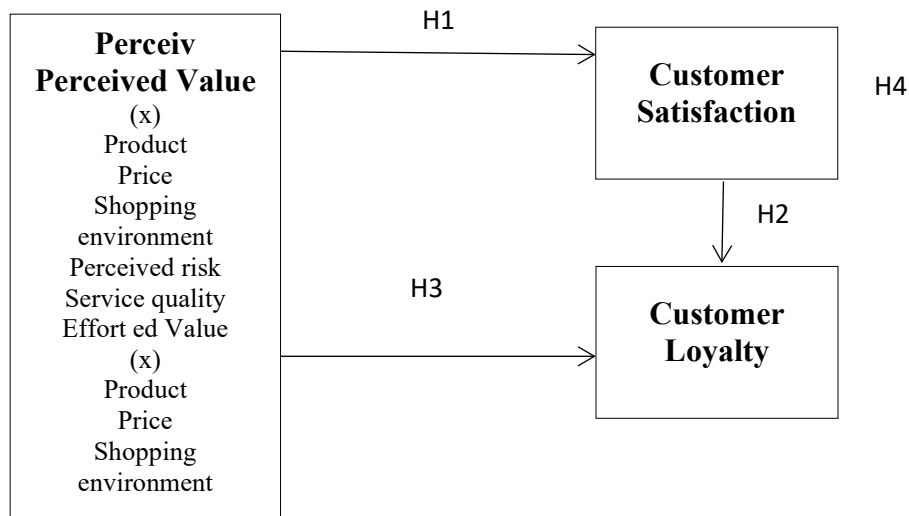


Figure 2 Conceptual frameworks

(Cited from: Lloyd *et al.* 2011; Zeithaml, 1988)

Hypotheses

H1 Customer perceived value positively relates to customer satisfaction directly.

H2 Customer satisfaction positively relates to customer loyalty directly.

H3 Customer perceived value positively relates to customer loyalty.

H4 Perceived value has positive effect mediated by customer satisfaction on customer loyalty.

Data analysis

Sampling and data collection

The 400 primary data was collected by giving Chinese tourists filling out questionnaire from 15 August to 15 September 2015. This research takes simple random to select the sampling units. King Power Downtown Complex was selected as the research's main spot. In this study, the research instrument is a questionnaire which includes four parts.

Those four parts are the demographic information (8 items), customer perceived value (25 items, five points Likert scales), customer satisfaction (5 items, five points Likert scales) and customer loyalty (4 items, five points Likert scales).

Data analysis

In this research there are three parts of statistical analysis, as follows:

Part 1 Descriptive statistics analysis

This research used frequency and percentage to describe the characteristics of Chinese tourist demography, including gender, age, monthly income, objective of the trip, and shopping experience in Bangkok King Power Downtown Complex.

Part 2 Agreement level analysis

The researcher used Mean and Standard Deviation to describe the agreement level of each dimension of variable. Perceived value refers to six dimensions which are product, price, shopping environment, perceived risk, service quality and effort. Shopping satisfaction refers to service quality, variety of goods, quality of goods, level of free of tax and promotion. Customer loyalty refers to attitude loyalty, word of mouth, and likelihood of customer repurchase.

Part 3 Hypothesis testing---Correlation analysis, Confirmatory factor analysis (CFA), and Structural Equation Modeling (SEM) analysis

Correlation analysis is used to test whether the measured dimensions and model are reasonable in this research. Structural equation modeling is a multivariate statistical methodology, and

this method takes a confirmatory approach to analyze a structural theory. Based on the advantage of SEM and the conceptual framework of this research, this research takes the SEM methodology to test four hypotheses about the relationship among perceived value, customer satisfaction and customer loyalty (Harlow, 2014). In order that the SEM methodology is able to work in this research, at first it should take the confirmatory factor analysis which is part of SEM. It can be used to access construct reliability, convergent validity, and discriminant validity of the respective constructs of the conceptual framework (Gnizy, Baker, & Grinstein, 2014). Subsequently, employing model fits indices to assess this research model. The last step, based on the result of CFA and the model fits build the estimated model in SEM to test hypotheses. According to the result of direct effect, indirect effect and total effect indicate the relationship among the perceived value, customer satisfaction and customer loyalty. Then employing standardized regression weights, standard error and CR (standardized regression weights/standard error) to support hypotheses of this research.

Result of analysis

The demographic information

The demographic information includes the number of 400 usable samples. The gender information, female makes up the great majority of the respondents (57.3%). Ages 20-29 (60.5%) is the biggest part of the samples, followed by age 30-39 (23.8%), and age 40-49 (7.3%). The largest portion of monthly income with respondents is 5000-6000

yuan (30.8%), and the smallest portion of monthly income with respondents is 4001-500 yuan (11.3%), the range of monthly income portion is small. The main objective of vacation is travel, and also shopping is the second rank in all items. In this research required respondents to have shopping experiences in King Power Downtown complex. 1 time (64.5%) is the largest portion, followed by 2 times (20%), the smallest portion is 4 times. For the largest portion of budget shopping item is 10% and below (33%), closely followed by 11%-20% (32%). Finally, most of

respondents took independent tours (76.5%). In 400 available questionnaires, the 10% and below budget of shopping group is the largest part, the 41% and above of budget of shopping group is the lowest part. Most of people are select independent tour as the travel mode in Thailand, the different of the guided tour percentage and the independent tour percentage is big from 76.5% to 18.5%. In table 4.1, the result reveals all factors positively relate to each of them, coefficients are smaller than 0.8. In summary, the measured dimensions in the conceptual model are reasonable.

Correlation analysis

Table 1 Correlation matrix

	CL1	CL2	CL3	CL4	CS1	CS2	CS3	CS4	CS5	Effort	SQ	Risk	SE	Price	Product
CL1	1.000														
CL2	0.698	1.000													
CL3	0.580	0.615	1.000												
CL4	0.536	0.548	0.643	1.000											
CS1	0.394	0.352	0.508	0.450	1.000										
CS2	0.445	0.491	0.524	0.558	0.571	1.000									
CS3	0.414	0.416	0.464	0.425	0.481	0.560	1.000								
CS4	0.405	0.467	0.510	0.487	0.455	0.541	0.532	1.000							
CS5	0.428	0.404	0.518	0.490	0.451	0.515	0.498	0.656	1.000						
Effort	0.456	0.428	0.523	0.464	0.527	0.515	0.520	0.519	0.529	1.000					
SQ	0.460	0.423	0.516	0.465	0.588	0.493	0.511	0.465	0.440	0.663	1.000				
Risk	0.466	0.492	0.480	0.435	0.479	0.500	0.589	0.522	0.451	0.628	0.560	1.000			
SE	0.452	0.418	0.529	0.424	0.494	0.523	0.469	0.470	0.475	0.643	0.585	0.653	1.000		
Price	0.389	0.438	0.433	0.410	0.374	0.488	0.430	0.488	0.483	0.522	0.465	0.544	0.578	1.000	
Product	0.435	0.431	0.443	0.442	0.395	0.540	0.459	0.476	0.471	0.495	0.448	0.558	0.613	0.609	1.000

Note 1: Correlation is significant at the 0.01 level (2-tailed).

Note 2: CL is customer loyalty, CS is customer satisfaction, SQ is shopping environment, SE is service quality.

In table 1, the result reveals all factors positively relate to each of them, coefficients are smaller than 0.8. In summary, the measurement dimensions in the conceptual model are reasonable.

Reliability and validity

Convergent validity of CFA results should be supported by item factor loading, construct reliability, and average variance extracted (Hair *et al.* 1998). In this research, confirmatory factor analysis (CFA) was first used to confirm the factor loadings of three variables namely perceived value, customer satisfaction and customer loyalty.

Constructive reliability of this research estimates ranging from 0.848 to 0.89 indicates a satisfactory estimation, because it exceeds the critical value of 0.7 (Hair *et al.* 2006). The average extracted variances of all constructs range between 0.528 and 0.604 which are above the suggested value of 0.5 (Fornell and Larcker, 1981). These indicate that the measurement model has good convergent validity. Therefore, the hypothesized measurement model is reliable and meaningful to test the structural relationships among the constructs.

Assessing model fits

For the first model about the link between perceived value and customer loyalty, the measurement result of this research indicates that $X^2 = 130.188$, $df = 34$, and is significant at $p < 0.05$, as the value of X^2 is sensitive to sample size, so this research took more fit indices to assess the model fit, such as CFI, GFI, NFI and RMSEA. The X^2/df of model is round 3.829, indicating an acceptable fit. Furthermore, CFI= 0.956, GFI=0.905, NFI=0.942, RFI=0.923, and RMSEA=0.084. From the result of first model found that the RMSEA doesn't meet the criteria fit indices. The result indicates that the perceived value can't direct positive effect on customer loyalty. For the second model about the link "perceived value \rightarrow customer

satisfaction \rightarrow customer loyalty", the overall model indicates that $X^2 = 299.851$, $df = 88$, and is significant at $p < 0.05$. The X^2/df of model is round 3.407, indicating an acceptable fit. Furthermore, CFI= 0.939, GFI=0.905, NFI=0.916, RFI=0.900, and RMSEA=0.078. From the result of fit estimates of the second model is fit and available. By comparing the result of the first model and the second model we found that perceived value has effect mediated by customer satisfaction on customer loyalty. For the third model, the result indicates that $X^2 = 297.034$, $df = 87$, and is significant at $p < 0.05$. The X^2/df of model is round 3.414, indicating an acceptable fit. Furthermore, CFI= 0.940, GFI=0.905, NFI=0.917, RFI=0.900, and RMSEA=0.078. The result indicates that this model is fit, and the third model is the most fitness one by comparing the third model and the second model. The result of the third model also supports that perceived value has effect mediated by customer satisfaction on customer loyalty.

Hypotheses testing

The first three hypotheses:

H1 Customer perceived value positively relates to customer satisfaction.

H2 Customer satisfaction positively relates to customer loyalty.

H3 Customer perceived value positively relates to customer loyalty.

Table 2 Hypotheses test

Path	Structural coefficients	SE	CR	P	Test result
Perceived value → customer satisfaction	0.885	0.087	10.1724	***	Support
Customer satisfaction → customer loyalty	0.622	0.135	4.60741	***	Support
Perceived value → customer loyalty	0.216	0.156	1.38462	0.077	Unsupport

Note: $P < 0.05$ (2 tailed), SE is standard error, CR equal to Structural coefficients divide by SE.

Table 2 reports the result of the hypotheses tests. Two out of three are totally supported. Perceived value has a significantly positive effect on customer satisfaction (coefficient is 0.885, CR is 10.1724, and the value of P is smaller than 0.05), customer satisfaction has

significantly positive effect on customer loyalty (coefficient is 0.622, CR is 4.60742, and the value of P is smaller than 0.05), perceived value has no significantly positive effect on customer loyalty. Thus H1 and H2 are supported while H3 is rejected.

Table 3 Direct, indirect and total effect of relationship

Path	Direct effect	Indirect effect	Total effect
Perceived value → Customer satisfaction	0.885		0.885
Customer satisfaction → Customer loyalty	0.622		0.622
Perceived value → Customer loyalty	0.216	0.551	0.767

Table 3 shows the relationship among perceived value, customer satisfaction and customer loyalty. From Table 4.26, the direct effect of perceived value on customer satisfaction is 0.885; the direct effect of customer satisfaction on customer loyalty is 0.622; the direct effect of perceived value on customer loyalty is 0.216, while the indirect effect of perceived value on customer loyalty is

identified (0.551), so the perceived value has an indirect effect (0.551) by customer satisfaction on customer loyalty.

In summary, the result of table 2 and 3 indicates H1, H2, and H4 were supported, however H3 was not support. The result of hypotheses test shows in Table 4.

Table 4 The results of hypotheses test

Hypotheses	Path	β	P	Result
H1	Perceived value \rightarrow customer satisfaction	0.885	<0.05	Supported
H2	Customer satisfaction \rightarrow customer loyalty	0.622	<0.05	Supported
H3	Perceived value \rightarrow customer loyalty	0.216	0.077	Unsupported
H4	Perceived value \rightarrow customer satisfaction \rightarrow customer loyalty	0.551	<0.05	Supported

Conclusion

The demography information was collected by giving Chinese tourist filling out the questionnaire. The findings of demography information reveal the greater proportion of the sample group. In detail, gender is female (57.3%), age is in the range of 20-29 (60.5%), monthly income is in the range of 5001-6000 (30.8%), shopping time is 1 time (64.5%), budget of shopping is in the range of 11%-20% (32%) and travel mode is independent tour (76.5%).

This research employed the SEM technique to test the hypothesized model. At first author used CFA to test reliability and meaning of this model, the result revealed the structure of this research is reliable and meaningful, and the hypothesized model fits is acceptable to data. And the author tested the hypothesis by building the SEM model. The result reported that H1, H2 and H4 were supported, while the H3 was not supported. Based on the result of the hypothesis testing found customer perceived value positively relates to customer satisfaction, customer satisfaction positively relates to customer loyalty and perceived value has positive effect mediated by customer satisfaction on customer loyalty. However perceived

value can't directly relate to customer loyalty.

Discussion

The relationship model of perceived value and customer satisfaction of this research is similar to Lloyd et al. (2011)'s study which indicates seven dimensions of perceived value can direct positive impact on customer satisfaction. The result of this relationship model of perceived value and customer satisfaction in this research is similar to Lloyd *et al.* (2011)'s study through the data analysis, that perceived value with six dimensions that positively relate to customer satisfaction. This research cited Zeithaml (1988) study model to test the relationship between customer satisfaction and customer loyalty. The measured dimensions of customer satisfaction in this research are service quality, variety of goods, quality of goods, level of free of tax and promotion. The loyalty of this research examines destination re-patronage intention and word of mouth of after Chinese consumer purchasing. The result is similar to other studies that customer satisfaction directly relates to customer loyalty for Chinese tourists shopping at duty free shops in Thailand. For the relationship between perceived value and loyalty, this research

tried to follow Lloyd et al. (2011)'s study model that perceived value have positive effects on customer loyalty in shopping tourism. In this research we have two hypotheses talking about the link. H3 refers how the perceived value directly relates to customer loyalty while H4 refers how perceived value has positive effect mediated by customer satisfaction on customer loyalty. The results indicated that H3 was unsupported and H4 was supported. The result proved that the perceived value can't directly affect on customer loyalty, while perceived value can have a positive effect mediated by customer satisfaction on customer loyalty. From the results of standardized factor loading of six sub-dimensions of perceived value found that all of factors positively relate to perceived value, and the effect risk of six sub-dimensions is service quality, effort, risk, shopping environment, product, and price. The low risk and effort were two important dimensions of perceived value to customer satisfaction and customer loyalty.

Recommendations

Based on the findings and the objectives of this research, we can find out the approaches to facilitate Chinese tourists' perceived value and then improve shopping satisfaction and customer loyalty in Bangkok.

Reducing perceived risk is one crucial factor to affect Chinese tourist shoppers' perceived value, customer satisfaction and customer loyalty, so retailers should provide assurances bill, safe payment methods and processes, genuine goods, refunds and guarantees to customers. Thai shop can also put up a way to

identify the genuine products on Chinese website or open online store, and take those stores as a refund service point to reduce perceived risk of Chinese shoppers. Enhancing communication and setting readable information, foreign tourist shoppers have tight time schedule, so during the shopping period many tourists would depend greatly on the salespeople's assistance with efficient communication, and the readable information, such as the map of shopping mall, promotion information and so on. Expanding the variety of brand, Thai store should expand the mall size and brand varieties to attract Chinese tourist shoppers and meet their needs. It is a great idea to promote Bangkok as an attractive travel destination, to build a destination brand. The most factors for Bangkok to attract Chinese tourists include geographical advantage, unique culture, safety, kindness service toward the signal that "smile city", special shopping experience to Chinese tourist shoppers. All these should be strengthened.

Limitations and further research

There are some of limitations of this research. The study respondents group is only Chinese tourists who have shopping experience only in Bangkok King Power Downtown Complex duty free shop. The study destination only focuses on one spot in Bangkok King Power Downtown Complex duty free shop where lots of travel agents have agreements with this company. The dimensions of perceived value depend on literature points, and in order to refine the dimensions of perceived value we need to test the

relevance between dimensions and perceived value. The perceived value in this research just reflects customer experience of after shopping, however perceived value can be affected by before shopping experience and after shopping experience.

There are several different ways for future research about shopping tourist aspect. Future research can consider other nationalities sample group, and the result can be analyzed by comparing the

value of different countries tourists. Future research can expand the survey spot from duty free shop to another category of market such as supermarket, shopping mall, convenience store, or night market. Future research can expand the affecting factors of perceived value of tourist, such as the culture and time pressure which are potential areas for studying tourist perceived value. Future research can consider comparing the perceived value of before shopping to the perceived value of after shopping.

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Appendix

Questionnaire in English

Welcome to Thailand! I come from China, now I am a master's degree student at the University of the Thailand Chamber of Commerce. I am working on a research about Chinese tourist shopping satisfaction in Thailand duty free shops. This questionnaire is anonymous, and the result is used to research. Thank you so much for filling out this questionnaire.

Part 1 Demographic

Please check list in the (✓) and fulfill in the blank for your answer

1. Gender

☐ Male ☐ Female

2. Age

☐ 19 and below ☐ 20–29 ☐ 30–39 ☐ 40–49

☐ 50–59 ☐ 60 and above

3. Monthly income

☐ less than 2,000 yuan ☐ 2,001- 3000 yuan ☐ 3,001-4,000 yuan

☐ 4001- 5000 yuan ☐ 5,001- 6000 yuan ☐ more than 6001 yuan

4. The main objective of travel

☐ Work ☐ Education ☐ Vacation ☐ Visits friends/relatives

☐ Business ☐ Shopping ☐ Other.....

5. Shopping experience times in duty free shop in last year

☐ Never ☐ 1 time ☐ 2 times ☐ 3 times

☐ 4 times ☐ 5 and more than 5 times

6. Is it your own choice to go shopping again in King Power Downtown Complex duty free shop?

☐ yes ☐ No, friends and relatives recommendations

☐ No, salesperson recommendation

☐ No, product information

☐ No, tour guide recommendation

☐ Other.....



7. The budget of shopping of this trip in Bangkok King Power Downtown Complex

- ☐ 10% and above ☐ 11%—20% ☐ 21%—30%
☐ 31%—40% ☐ 41% and above

8. Travel mode for this time

- ☐ Guided tour ☐ Independent tour ☐ Other.....

Part 2 The perceived value

Please check the degrees which best describe level of agreement or disagreement with each statement in the following.

Please check (√) in the boxes below in the following stable:

1- Strongly disagree; 2- Disagree; 3-Neutral; 4-Agree; 5-Strongly agree

No.	perceived value	1	2	3	4	5
	Product					
1	In King Power Downtown Complex shop have lots of product varieties.					
2	In King Power Downtown Complex shop products are of good quality.					
3	In King Power Downtown Complex shop a broad assortment of brands is offered.					
4	In King Power Downtown Complex shop products are attractive.					
5	In King Power Downtown Complex shop newest version of products is sold.					
	Price					
6	The level of tax free is to customer's profit.					
7	In King Power Downtown Complex shop promotion activity is attractive.					
8	In King Power Downtown Complex shop price of the products are clearly stated to Chinese tourists.					
	Shopping environment					
9	The section layout enables customers to easily find the products they need in Bangkok King Power Downtown Complex shop.					
10	Products are appropriately displayed on the shelves in Bangkok King Power Downtown Complex.					



11	The atmosphere in King Power Downtown Complex shop is pleasant and relaxed.					
12	The building architecture of Bangkok King Power Downtown Complex shop fuses with Thai culture.					
Perceived risk						
13	Paying an unfair price is lower compared between Chinese tourist shoppers and resident shoppers in King Power Downtown Complex shop.					
14	Billing is accurate in King Power Downtown Complex shop					
15	Payment method is safe in King Power Downtown Complex shop.					
16	Don't have fake products in King Power Downtown Complex shop.					
17	The performance of products matches information description, such as advertising					
18	If I brought products from King Power Downtown Complex shop, it would create a favorable perception of me from friends and relatives.					
19	The purchased product can be accurately and timely delivered to airport counter.					
Service quality						
20	Staffs always timely assist customer.					
21	Staffs show great interest in resolving any customer problems.					
22	Staffs in this store can speak Chinese well.					
23	Staffs in this store have enough knowledge to answer customer questions.					
Effort						
24	Waiting time at cash registers is short at King Power Downtown Complex shop.					
25	I spend a short time searching for my interested product at King Power Downtown Complex shop.					
26	I spend a short time explaining my needs to service employee at King Power Downtown Complex shop.					
27	In King Power Downtown Complex shop have clear shopping guide map.					

**Part 3 Customer satisfaction**

Please check the degrees that best describe the level of agreement or disagreement with each statement in the following.

Please check (\checkmark) in the boxes below in the following stable:

1- Strongly dissatisfied; 2- Dissatisfied; 3-Neutral; 4-Satisfied; 5-Strongly satisfied

Customer satisfaction		1	2	3	4	5
28	Service of staffs in Bangkok King Power Downtown Complex shop.					
29	Variety of products in Bangkok King Power Downtown Complex shop.					
30	Quality of products in Bangkok King Power Downtown Complex shop.					
31	The level of free tax in Bangkok King Power Downtown Complex shop.					
32	Promotion activity in Bangkok King Power Downtown Complex shop.					

Part 4 Customer loyalty

Please check the degrees that best describe the level of agreement or disagreement with each statement in the following.

Please check (\checkmark) in the boxes below in the following stable:

1- Strongly disagree; 2- Disagree; 3-Neutral; 4-Agree; 5-Strongly agree

Customer loyalty		1	2	3	4	5
33	In the future, I plan to return to shop at Bangkok King Power Downtown Complex.					
34	I say positive things about Bangkok King Power Downtown Complex to others.					
35	I would like to recommend this store to my friends and relatives shopping in Bangkok King Power Downtown Complex.					
36	I am proud to tell others that I shopped at Bangkok King Power Downtown Complex.					

Thank you so much!

FOREIGN TOURISTS' ATTRIBUTE SATISFACTION AND OVERALL SATISFACTION: A CASE STUDY OF THAI RESTAURANTS IN KRABI, THAILAND

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Abstract

With the growth of restaurant establishments and increasing number of foreign tourists in Thailand, understanding the targeted tourist needs and satisfaction is therefore critical for successful management for all restaurants. Thus, the purposes of this research are twofold. First, the author examines the relative importance of restaurant attribute satisfaction in influencing overall satisfaction of foreign tourists with Thai restaurants in Krabi, Thailand. Secondly, using the Importance-Performance Analysis (IPA) framework, the author further assesses the specific attributes of Thai restaurants in Krabi, Thailand that are perceived by foreign tourists to be important to their satisfaction.

Research results revealed a positive relationship between attribute satisfaction and overall satisfaction of foreign tourists in five dimensions including 'price and value', 'food', 'personnel', 'beverage', and 'setting'. The IPA results also illustrated that Thai restaurants in the area are generally successful in satisfying foreign tourists. The findings from this study should indeed provide greater insight into foreign tourists' attribute and overall satisfaction with Thai restaurants in Krabi, Thailand and enable restaurant organizations to better develop resource allocations, marketing strategies, and management plans to attract and retain a larger share of foreign tourists to their restaurants.

Introduction

Although there is a tendency to focus on the tourist's overall vacation experience when discussing about tourism, vacation experience is actually comprised of a series of different experiences such as sightseeing, encounters with the locals, and dining experience (Blichfeldt, Chor, and Ballegaard, 2010). In terms of dining experience, restaurant is perhaps the next visible element after accommodation affecting the attractiveness of a tourist destination, especially in international tourism (Adam, Adongo, and Dayour, 2015). As individual consumers, each tourist would have his or her own preferences in choosing what to do or purchase and once the decision is made, the overall experience may be judged based on such preferences.

Existing literature reveals that eating occasion certainly involves a multitude of actions, and that, consumer preferences and satisfaction depend on a myriad of factors including food, service, restaurant's environment, etc. As Soriano (2003) notes, restaurant enterprises concerned with quality must therefore combine, balance, and manage their tangible and intangible elements. This is because a restaurant's particular synergy of its tangible/intangible product determines its degree and manner of differentiation from competitors and its ultimate value. With that in mind, it is therefore essential for researchers and practitioners in the food service to continue to explore attributes that have the most impact on consumers'

satisfaction. In addition, given the fact that "tourists' expectations and providers' service performance are always changing" (Song, Kong, and Chen, 2008) and that "Thailand is considered an underrepresented country in the cross-cultural research literature" (Polyorat and Sophonsiri, 2010); more efforts are still very much needed in examining tourists' important dining attributes in influencing their attribute satisfaction as well as overall satisfaction with restaurants in Thailand.

Thus, the purposes of this research are twofold. First, the author examines the relative importance of restaurant attribute satisfaction in influencing overall satisfaction of foreign tourists with Thai restaurants in Krabi, Thailand. Secondly, using the Importance-Performance Analysis (IPA) framework, the author further assesses the specific attributes of Thai restaurants in Krabi, Thailand that are perceived by foreign tourists to be important to their satisfaction. The findings from this research not only contribute to the less explored area in hospitality studies regarding the significance of attribute satisfaction on overall customer satisfaction with restaurants, but also provide useful information for restaurant practitioners concerning factors that influence foreign tourists' overall satisfaction. In addition, restaurateurs will also have a better insight into the specific restaurant attributes in which foreign tourists perceive to be important to them and are satisfied or dissatisfied with.

Literature review

Identification of restaurant attributes

Restaurant experience can be considered as a unique bundle of tangible and intangible products and services provided to the consumer (Harrington, Ottenbacher, and Kendall, 2011). Polyorat and Sophonsiri (2010) examined how each dimension of service quality including reliability, tangibles, responsiveness, assurance, and empathy may exhibit different impacts on customer satisfaction and loyalty in the chain restaurant from Thai consumers in Thailand. The study found that Thai customers rely on tangible cues such as restaurant décor and staff appearance when evaluating restaurants' service quality. Relatedly, studies by Kim, Hertzman, and Hwang (2010) and Ryu and Han (2010) also found elements such as food quality, quality of service, price, location, etc. to be important to consumers. Hwang and Zhao (2010) studied factors that influence customer satisfaction and dissatisfaction in the restaurant business. The study results indicated that good value, tasty food, and restaurant cleanness most affected satisfied customers. In terms of the individual attributes, Harrington, Ottenbacher, and Way (2013) also supported earlier studies indicating important attributes for consumers making dining decisions at quick service restaurants as follows: (1) food safety, (2) restaurant cleanliness, (3) food quality, (4) speed of service, (5) perceived value of the food and drink

items, (6) quality of service, (7) staff friendliness, (8) price, (9) variety of menu, and (10) close travel distance.

Recent literature also revealed similar results. As Mason *et al.* (2016) point out, "When consumers perceive that a restaurant provides higher quality food (flavor, freshness, etc.), they tend to be more highly satisfied with their dining experience. Additionally, restaurants that offer higher service quality (speedy service, accuracy of order received, professionalism of staff, etc.) are more likely to have satisfied consumers." Lee, Lee, and Dewald (2016) investigated the relative importance of tangible service attributes toward diners' satisfaction within the upscale dining segment. The findings revealed that table aesthetics, hygiene purity, and vehicle convenience positively affect dining satisfaction. Later study by Sezgin and Göde (2017) found that there are direct and positive relationships between service quality, food quality, perceived value and satisfaction of fast food restaurants' consumers in Turkey. Stefanini, Alves, and Marques (2018) analyzed the effect of hospitality, service quality, and experience marketing on the perception of satisfaction among lunchtime restaurant guests in São Paulo and found service quality (i.e. friendly staff, prompt service, etc.) to have a strong impact on customer satisfaction. In conjunction with service, restaurants' atmosphere such as decorations, quietness, space and comfort was also found to have a moderate impact on customer satisfaction.

Importance-performance of restaurant attributes

Since its introduction in 1977, the IPA framework has been widely employed by researchers of many fields, particularly in tourism and hospitality, in identifying important product and/or service attributes as to enhance customer satisfaction or business performance. In IPA, as Kim and Oh (2002) stated, “importance and performance of products and services are measured on a set of selected attributes.” The importance and performance scores are then classified and directly compared in a two-dimensional IPA grid using arithmetic means (Kim and Oh, 2002; Su, 2013). The two-dimensional grid consists of four quadrants, formed by the horizontal and vertical axes. The vertical axis of the grid shows the perceived importance of attributes to customers, where the horizontal axis illustrates the product or service’s performance in relation to those attributes.

In terms of tourists’ dining attributes, a few studies have applied the IPA framework to explore tourists’ preferences and satisfaction with each specific attribute. Jin, Qi, and Chiang (2008) used IPA to evaluate tourists’ perceptions of hotel, restaurant, and retail sectors in Hong Kong. The study found that Hong Kong’s restaurants achieved good performance in the following areas: proper attitude of staff, provision of clear descriptions of dishes and prices on menus, convenient payment methods, prompt service upon request, and good selection and quality of food/dishes in the

restaurants. However, urgent improvement was required in the area of hygiene and cleanliness of restaurants, which fell into the “concentrate here” category. Hong Kong restaurants also demonstrated poor service performance in the areas of pleasant dining environment, good language and communication skills of staff, adequate staff knowledge about ingredients and methods, and promptness and professionalism in handling complaints. However, visitors considered these service areas less important to them. Lastly, three service attributes including appearance, cleanliness, and tidiness of staff; dishes arrived in optimal time; and convenient operating hours were considered “possible overkill.”

Song, Kong, and Chen (2008) also later employed the IPA framework to study tourists’ satisfaction, perceived value, and repurchase intentions with the airline, hotel, and restaurant services in Hong Kong. The authors found that five restaurant service attributes were captured in the “keep up the good work” quadrant including: quality and variety of food, menu provision, prompt service, convenient payment methods, and staff attitude. Three out of eight highly important attributes were captured in the “concentrate here” quadrant including: restaurant hygiene, staff language and communication skills, and handling complaints. In addition, attributes of low importance that were rated as having a high level of performance included convenient business hours, appearance and tidiness of staff, and arrival time of dishes. Finally, an area that should be

given low priority included dining environment and staff's food and beverage knowledge. Su (2013) conducted an IPA of dining attributes between individual and packaged tourists in Taiwan. The research found that food hygiene and cleanliness of the restaurant fell into the "concentrate here" quadrant in both of the individual and packaged travelers. Two factors including quietness of the restaurant and facilities of the restaurant were identified as "low priority" for the two groups.

Customer's attribute satisfaction and overall satisfaction

In the highly competitive hospitality and tourism industry, customer satisfaction has thus become one of the most critical marketing priorities. This is because customer satisfaction is generally assumed to be a strong indicator of intention to revisit (Barber, Goodman, and Goh, 2011; Joaquin and Magdalena, 2009), positive word-of-mouth (Pantelidis, 2010; Zhang *et al.*, 2010), customer loyalty (Kim and Brown, 2012; Suh and Yi, 2006), and company profitability in general (Cockalo, Djordjevic, and Sajfert, 2011; Ryu and Han, 2010). In the past, customer satisfaction has been measured from two perspectives namely overall satisfaction and attribute satisfaction (Oliver, 2010). Although, overall customer satisfaction and attribute-specific satisfaction are distinct, they are related constructs. According to Tian-Cole and Crompton (2003), overall satisfaction is concerned

with the overall assessment of the services received by the consumer while attribute satisfaction deals with particular aspects of the services received. Overall satisfaction, therefore, can be seen as a function of attribute-level evaluations or performance of various attributes (Chi and Qu, 2009).

With that in mind, a few researchers have examined the relationship between attribute satisfaction and overall customer satisfaction in restaurant settings and suggested that attribute satisfaction is an antecedent of overall satisfaction. Heung, Wong, and Qu (2002) studied tourists' satisfaction with airport restaurant services in Hong Kong and found employee attributes to be the most important factor contributing to tourists' overall satisfaction, which then resulted in repeat visitation and recommendation intentions of guests. A more recent study by Tontini, Söilen, and Silveira (2013) analyzed how different service attributes affect customer satisfaction in pizzeria restaurants and concluded that perceived cleanness of restaurants was found to be the most important attribute in influencing customer's overall satisfaction. Finally, Zhang, Zhang, and Law (2014) conducted an analysis of thousands of online customer reviews covering restaurants in the Dongcheng District of Beijing, China to examine the direct and combined effects of three important attributes on overall customer satisfaction with restaurants. Their study revealed that food taste, followed by employee service, and physical environment all significantly contribute to diners' overall satisfaction.

Previous research has indeed suggested the importance of several determinant attributes, both tangible and intangible, in influencing customer's attribute and overall satisfaction for restaurants. Given empirical evidence indicated in the literature, in this study, the author has thereupon proposed eight hypotheses as follows:

H1: Food satisfaction positively influences overall customer satisfaction.

H2: Beverage satisfaction positively influences overall customer satisfaction.

H3: Personnel satisfaction positively influences overall customer satisfaction.

H4: Setting satisfaction positively influences overall customer satisfaction.

H5: Price satisfaction positively influences overall customer satisfaction.

H6: Value satisfaction positively influences overall customer satisfaction.

H7: Ancillary services negatively influences overall customer satisfaction.

H8: Image negatively influences overall customer satisfaction.

The negative direction given to H7 and H8 is based on the literature review on the importance of restaurant attributes, which reveal the two factors to be less or not important to consumers compared to other factors.

Methodology

During the review of the literature, all of the attributes used in the previous studies were recorded and grouped into different

factors by the author. As a result, eight factors containing 38 attributes were selected based on the frequency of their appearance in previous restaurant studies and then used to develop the questionnaire for this research. The overall customer satisfaction measurement used in this study was a multi-item measure (5 items), in which several individual items were pooled into a single composite measure.

A self-administered questionnaire was used to collect data. The questionnaire consists of three sections. The first section of the questionnaire solicited data on foreign tourists' level of importance and satisfaction with specific attributes of a Thai restaurant. The second section of the questionnaire was designed to collect foreign tourists' level of overall satisfaction with a Thai restaurant. The first two sections of the questionnaire were measured on a 5-point Likert scale (1 = *not important* to 5 = *very important* and 1 = *very dissatisfied* to 5 = *very satisfied*). The last section of the questionnaire was designed to collect foreign tourists' demographic, traveling, and dining-out preferences profiles, where foreign tourists were asked to select the category that corresponded with them.

This research uses convenience sampling method, where the targeted sample mainly consists of foreign tourists who dine at different Thai restaurants located in Klongmuang Beach, Krabi, Thailand. Six restaurants were identified and selected for the research based on their similarities including restaurant type, menu items, size, price range, and seating

capacity. However, due to the closure of two restaurants at the time of data collection, the author could only conduct the survey at four instead of six restaurants.

The author conducted both the pilot and actual studies between the end of March and mid April 2017. Although the survey period was approaching the end of high season (i.e. November - April) for international tourist visitation, the number of foreign visitors during a three-week survey period still made it possible for the author to obtain enough samples close to the planned sample size of 400 respondents. A pilot test was conducted with 50 foreign tourists who dine at the four restaurants a few days prior to the main study. Of the 50 tourists approached, four refused to participate in the survey. As a result, 46 questionnaires were distributed and 35 usable questionnaires were obtained representing an effective overall response rate of 70%.

A pilot test was conducted to test the internal consistency of the questionnaire and to make sure that the survey is understandable. A reliability analysis using Cronbach's alpha was performed. The results of the reliability analysis indicated that the scale was internally

reliable with alpha values of 0.967 for attribute satisfaction (38 items) and 0.855 for overall satisfaction (5 items). The alpha values were well exceeded the minimum standard suggested by Nunnally and Bernstein (1994), who considered an alpha of 0.7 or above as a good indication of reliability (cited in Chi and Qu, 2009). Subsequently, all items were retained with several revisions made to Section 3 of the questionnaire to improve on clarity. As for the actual study, a total of 368 questionnaires were distributed and 349 usable questionnaires were obtained representing an effective overall response rate of 87%.

Results

Demographic, traveling, and dining-out profiles of respondents

Frequency distribution of foreign tourists' demographic information, traveling profile, and dining-out preferences was analyzed. Table 1 and 2 show the demographic and traveling characteristics as well as dining-out preferences and profiles of the respondents, respectively.

Table 1 Demographic and traveling profiles of respondents

	N	%		N	%
Gender			Education level		
Male	162	46.4	Primary	6	1.7
Female	187	53.6	Middle school	28	8.0
Total	349	100.0	High school	99	28.4
			Vocational	18	5.2
			University/college	155	44.4
			Postgraduate	36	10.3
			Other	7	2.0
			Total	349	100.0
Age			Employment status		
11	11	3.2	Full-time	217	62.2
20 or below	74	21.2	Part-time	42	12.0
21-30	76	21.8	Self-employment	38	10.9
31-40	89	25.5	Unemployed	16	4.6
41-50	61	17.5	Retired	36	10.3
51-60	38	10.9	Total	349	100.0
61 or above	349	100.0			
Total	11	3.2			
Marital status			Annual household income		
Single	104	29.8	≤ US\$5,000	31	8.9
Married	231	66.2	US\$5,001-40,000	106	30.4
Widowed	4	1.1	US\$40,001-90,000	118	33.8
Separated	2	0.6	≥ US\$90,001	94	26.9
Divorced	8	2.3	Total	349	100.0
Total	349	100.0			
Nationality			Purpose of visit		
Americas	5	1.4	Holiday/vacation	320	91.7
Europe	301	86.2	Business	10	2.9
Middle East	7	2.0	Visiting relatives/ friends	9	2.6
Asia	32	9.2	Other	10	2.9
Australia/New Zealand	4	1.1	Total	349	100.0
Total	349	100.0			
Traveling with			Mode of Accommodation		
Alone	11	3.2	Hotel	296	84.8
Husband/wife	168	48.1	Hostel	6	1.7
Boyfriend/girlfriend	65	18.6	Rented apartment	12	3.4
Family members	83	23.8	Relative/friend's house	16	4.6
Other relatives	2	0.6	Other		
Friends	14	4.0	Total	19	5.4
Business associates	4	1.1			
Other	2	0.6			
Total	349	100.0			
First time to Krabi			Travel info. source		
Yes	247	70.8	Tourist info center	18	5.2
No	102	29.2	Tourist agency	67	19.2
Total	349	100.0	Online guide	143	41.0
No. of nights in Krabi			Personal reccom.	59	16.9
≤ 3 nights	23	6.6	Hotel/hostel staff	11	3.2
4-6 nights	81	23.2	Other	51	14.6
6-10 nights	98	28.1	Total	349	100.0
≥10 nights	147	42.1			
Total	349	100.0			

Table 2 Dining-out preferences and profiles of respondents

	N	%		N	%
Preferred company			Preferred restaurant type		
Family members	254	72.8	Street food stall	32	9.2
Friends/colleagues	86	24.6	Casual dining	247	70.8
Alone	9	2.6	Fine dining	53	15.2
Total	349	100.0	Other	17	4.9
			Total	349	100.0
Preferred food type			First time to the restaurant		
Vegan	1	0.3	Yes	228	65.3
Vegetarian	18	5.2	No	121	34.7
Non-vegetarian	330	94.6	Total	349	100.0
Total	349	100.0			
Preferred services			Restaurant info. source		
Waiter service	340	97.4	Website	1	0.3
Self service	9	2.6	Online guide	78	22.3
Total	349	100.0	Social media	4	1.1
Preferred cuisine			Advertisements	30	8.6
American	5	1.4	Recommended by friends/relatives	66	18.9
European	89	25.5	Recommended by hotel/hostel staff	17	4.9
Indian	9	2.6	Other	153	43.8
Thai	213	61.0	Total	349	100.0
Other	33	9.5			
Total	349	100.0			

Exploratory factor analysis

Exploratory factor analysis (EFA), specifically the Principal Component Analysis with varimax rotation, was used to determine if the 38 attributes could be conceptualized meaningfully to a smaller number of components and to verify the pre-specified underlying dimensions of attribute satisfaction. The rotated solution of the principal component analysis is shown in Table 3. From this solution, seven factors emerged that

provided interpretable variables. All of the variables within the seven factors had factor loadings well above the lower limit of ± 0.35 , ranging from 0.50 to 0.84. Thus, all of the 38 variables (restaurant attributes) were considered as statistically significant. Moreover, the Cronbach's Alpha values for the seven factors were also robust, ranging from 0.81 to 0.92, indicating high internal consistency among the variables within each factor.

Table 3 Principle Component Analysis of Attribute Satisfaction

Attributes	SSAT	FSAT	PSAT	BSAT	PVSAT	ISAT	ASSAT
Interior décor	.837						
Exterior décor	.836						
Lighting	.770						
Atmosphere of restaurant	.739						
Privacy	.698						
Noise level	.673						
Comfortable furnishings	.656						
Cleanliness of restaurant	.508						
Food quality		.827					
Food taste		.822					
Food presentation		.685					
Cleanliness of food		.673					
Food quantity		.657					
Variety of food		.539					
Service quality			.754				
Friendliness of staff			.727				
Appearance of staff			.721				
Speed of service			.720				
Staff's language & communication skills			.714				
Staff's knowledge of F&B			.505				
Beverage presentation				.772			
Amount of beverage				.757			
Variety of beverage				.751			
Beverage quality				.683			
Cleanliness of beverage				.593			
Price of beverage					.781		
Price of food					.742		
Value of beverage					.683		
Value of food					.660		
Value of experience					.598		
Rating in food guides						.797	
Reviews from others						.783	
Reputation of restaurant						.765	
Advertisements						.716	
Payment options							.730
Parking facilities							.673
Close distance							.659
Convenient hours							.616
Total Variance Explained							
69.25%							
Cronbach's α	0.921	0.893	0.861	0.895	0.915	0.889	0.813
Eigenvalue	5.331	4.203	4.086	3.775	3.463	3.178	2.423
Variance Explained (%)	14.028	11.060	10.753	9.933	9.113	8.362	6.376

7 components extracted. SSAT = Setting Satisfaction, FSAT = Food Satisfaction, PSAT = Personnel Satisfaction, BSAT = Beverage Satisfaction, PVSAT = Price and Value Satisfaction, ISAT = Image Satisfaction, ASSAT = Ancillary Services Satisfaction.

Multiple linear regression analysis

To achieve the first objective of this research, multiple linear regression analysis (MLRA) was employed to: (1) predict foreign tourists' overall satisfaction based upon eight 'attribute satisfaction' dimensions developed from literature review and EFA; and (2) explain the relative importance of each dimension in contributing to foreign tourists' overall satisfaction with Thai restaurants in Klongmuang Beach, Krabi, Thailand. Table 4 shows the results of regression analysis. The significant F-ratio ($F = 105.884$, $\text{sig.} = 0.000$) suggested that the regression of the dependent variable (foreign tourists' overall satisfaction) on the independent variables taken together was statistically significant. In addition, all of the predictors had tolerance values ranging from 0.41 to 0.56 and VIFs lower than 4, indicating no signs of serious multicollinearity effect.

The multiple correlation coefficient (R), coefficient of determination (R^2) and adjusted R^2 were also examined to

predict the goodness-of-fit of the regression model. The correlation coefficient ($R=0.828$) reflected the degree of association between independent variables and dependent variable. The coefficient of determination (R^2) was 0.685 and the adjusted R^2 was 0.678, which indicated that approximately 68% of the variation of the overall satisfaction could be explained by the seven factors altogether. Overall, the goodness-of-fit of the model is satisfactory.

The significance tests were used to examine the relative impact of the independent variables on the dependent variable. Variables that have p -value lower than 0.05 ($p < 0.05$) would be considered in the model. According to the data, five variables emerged as significant and were thus retained in the regression model. The dimension with the heaviest weight in predicting overall satisfaction was 'price and value satisfaction' ($\beta=0.405$), followed by 'food satisfaction' ($\beta=0.239$), 'personnel satisfaction' ($\beta=0.168$), 'beverage satisfaction' ($\beta=0.128$), and 'setting satisfaction' ($\beta=0.104$).

Table 4 Multiple linear regression analysis results

Model Summary							
R	R ²	Adjusted R ²	Std. Error of the Estimate		Durbin-Watson		
.828	.685	.678	.29779		2.032		
ANOVA							
	Sum of Squares	df	Mean Square	F	Sig.		
Regression	65.729	7	9.390	105.884	.000		
Residual	30.240	341	.089				
Total	95.970	348					
Coefficients							
	Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics		
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	.380	.166		2.287	.023		
PVSAT	.349	.041	.405	8.545	.000	.411	2.431
FSAT	.248	.046	.239	5.370	.000	.466	2.145
PSAT	.176	.043	.168	4.104	.000	.553	1.808
BSAT	.116	.040	.128	2.873	.004	.466	2.146
SSAT	.096	.039	.104	2.458	.014	.516	1.938
ASSAT	-.031	.034	-.038	-.917	.360	.526	1.901
ISAT	-.019	.029	-.026	-.641	.522	.561	1.782

Predictors: (Constant), PVSAT, FSAT, PSAT, BSAT, SSAT, ASSAT, ISAT

Dependent Variable: OVERSAT

Importance-performance analysis

Descriptive statistics was used to determine the mean and standard deviation scores of restaurant attribute importance and satisfaction in order to accomplish the second objective of this research. The mean scores of the perceived importance and performance of each attribute were calculated, so that the author could determine its ranking and separate the derived attributes into four quadrants in consonance with the IPA framework.

Quadrant I—‘concentrate here’—contains restaurant attributes to which foreign tourists attach high importance but have poor performance ratings. Two out of 38 attributes were captured in this quadrant including comfortable

furnishings and value of beverage. Quadrant II—‘keep up the good work’—represents a successful area in which the restaurants are perceived to be performing well in the attributes to which are highly important to foreign tourists. A total of 15 out of 38 attributes landed in this quadrant such as food taste, service quality, cleanliness of beverage, cleanliness of the restaurant, value of food, etc. Quadrant III—‘lower priority’—contains low-importance and low-performance attributes in which business practitioners should not be overly concerned about. The results revealed that 17 out of 38 attributes fell into this quadrant including parking facilities, advertisements, beverage presentation, noise level, price of food, price of beverage, and so on. Quadrant IV—‘possible overkill’—contains

attributes that were rated as having low importance, but performance as relatively high. Business practitioners

should treat attributes in this quadrant as unessential. Close distance and food quantity are illustrated in this quadrant.

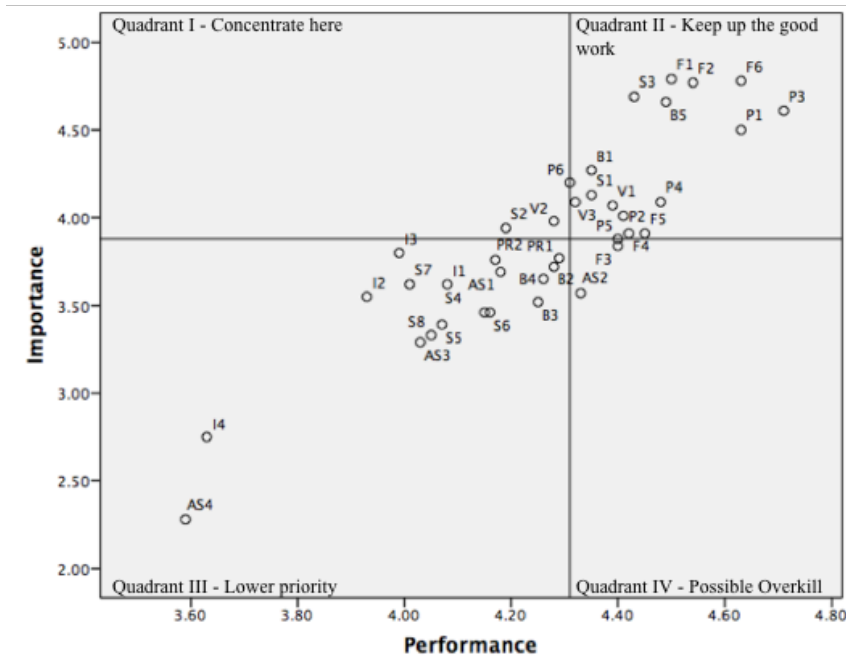


Figure 1 Importance-performance analysis results

F1 = Food taste, F2 = Food quality, F3 = Food quantity, F4 = Food presentation, F5 = Variety of food, F6 = Cleanliness of food; B1 = Beverage quality, B2 = Amount of beverage, B3 = Beverage presentation, B4 = Variety of beverage, B5 = Cleanliness of beverage; P1 = Service quality, P2 = Speed of service, P3 = Friendliness of staff, P4 = Appearance of staff, P5 = Staff's language and communication skills, P6 = Staff's knowledge of food and beverage; S1 = Atmosphere of the restaurant, S2 = Comfortable furnishings, S3 =

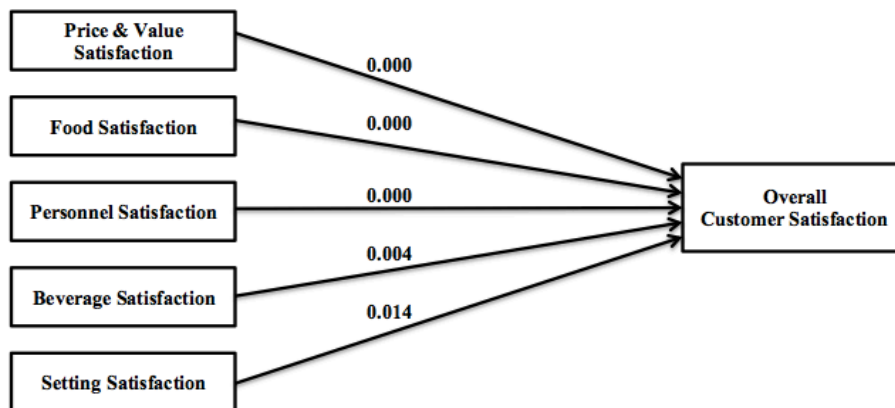
Cleanliness of the restaurant, S4 = Interior décor, S5 = Exterior décor, S6 = Lighting, S7 = Noise level, S8 = Privacy; PR1 = Price of food, PR2 = Price of beverage; V1 = Value of food, V2 = Value of beverage, V3 = Value of experience; AS1 = Convenient operating hours, AS2 = Close distance, AS3 = Payment options, AS4 = Parking facilities; I1 = Reputation of the restaurant, I2 = Rating in food guides, I3 = Reviews/recommendations from others, I4 = Advertisements

Conclusion and discussion

Conclusion

This study has empirically investigated the relative importance of attribute satisfaction on overall satisfaction and identified several attributes that are important to foreign tourists with respect to restaurants. All of the hypotheses of this research are statistically supported by the results of regression analysis, which found five attribute satisfaction factors to be significant at $p < 0.05$. No direct relationships were found between overall satisfaction and ‘ancillary services satisfaction’ as well as ‘image satisfaction’. In the context of this study, foreign tourists’ satisfaction with ‘price

and value’ contributed the most to the prediction of their overall satisfaction, followed by ‘food’, ‘personnel’, ‘beverage’, and ‘setting’ (see Figure 2). This suggests that the happier foreign tourists were with these five dimensions, the more satisfied they would be with their overall dining experience. In order to provide a deeper insight into the topic, an importance-performance analysis was also attempted to discover the specific attributes that are perceived to be important to foreign tourists’ satisfaction in this research. The overall IPA results revealed that Thai restaurants in fact succeeded in making good use of their resources to satisfy foreign tourists as 32 out of 38 attributes fell into the ‘keep up the good work’ and ‘lower priority’ quadrants.



Significant at $p < 0.05$

Figure 2 Final conceptual framework of the study

Discussion

The results from this research confirmed previous research findings in the hospitality industry literature (Chi and Qu, 2009; Zhang, Jiang, and Li, 2013; Zhang, Zhang, and Law, 2014) that a positive relationship exists between attribute satisfaction and overall satisfaction. With regard to the relative importance of attribute satisfaction, the results revealed price and value satisfaction to be the most important contributor of overall satisfaction, followed by food satisfaction, personnel satisfaction, beverage satisfaction, and setting satisfaction (in that order). Such findings are consistent with previous similar studies by Maravić (2016); Pantelidis (2010); and Zhang, Zhang, and Law (2014).

This research has also illustrated the significance of several attribute factors that are coherent with existing restaurant studies. First, the results from this research revealed the importance of price and value in influencing consumers' perceptions toward restaurants. Previous studies by Harrington, Ottenbacher, and Way, 2013; Kim, Hertzman, and Hwang, 2010; and Ryu and Han, 2010 also indicated the general importance of price in influencing consumer experience in restaurants. Harrington, Ottenbacher, and Way (2013) also reported perceived value of food and drink and perceived value of experience as highly and moderately important to restaurant customers, respectively.

This research also supported earlier studies that found food-related elements as significant contributors to consumers'

satisfaction. As Andersson and Mossberg (2004) argued, a lot of focus is still put on food as a competitive advantage within the restaurant sector. Researchers such as Edwards and Gustafsson (2008), Reimer and Kuehn (2005), and Wall and Berry (2007) all found elements such as food quality, food range, etc. were the most determinant of consumer's eating out experience. Apart from food, intangible element such as service is almost as important to customer satisfaction. This is because customers not only evaluate the quality of food, but also the service they encounter during their dining experience (Zhang, Zhang, and Law, 2014). Several earlier studies also supported this notion. Harrington, Ottenbacher, and Way (2013) found speed of service, service quality, and staff friendliness as top attributes that were important to consumers. The communication skills and language abilities of the staff are fairly important for most foreign travelers to enjoy a high quality of service, which could decisively affect the overall satisfaction of travelers (Jin, Qi, and Chiang, 2008).

Beverage is another important aspect of tangible element that is important to restaurant consumers. In conjunction with food, beverage taste and quality were among the most important attributes for consumers in buffet, casual, and fine dining restaurants (Kim, Raab, and Bergman, 2010). Other existing literature also cited beverage presentation (Blichfeldt, Chor, and Ballegaard, 2010; Su, 2013) and cleanliness of beverage (Harrington, Ottenbacher, and Way, 2013; Kim, Raab,

and Bergman, 2010) as significant contributors to customers' overall dining experience. Finally, although food, beverage, and service have been identified as significant variables in restaurant satisfaction, restaurant's atmosphere can be as important. Alonso and O'Neill (2010) listed restaurant's designs, cleanliness of restaurant, etc. as crucial factors for customer satisfaction. Several other studies also indicated that the physical environment created by the restaurant is one such factor positively affecting customer perceptions of restaurant performance (Sulek and Hensley, 2004; Weiss, Feinstein, and Dalbor, 2004).

While some existing literature (Ha and Jang, 2012; Hwang and Zhao, 2010; Soriano, 2003; Wu, 2013) may have found correlations between ancillary services (i.e. parking facilities, location), image (i.e. reputation, ratings in food guides) and customer satisfaction, the statistical results from this study indicated otherwise. This is consistent with the findings on the connection between ancillary services and customer satisfaction from several existing research (Lee, Lee, and Dewald, 2016; Maravić, 2016). Image also did not factor much into the consideration and satisfaction of foreign tourists in this research – the finding in which is coherent with Jin and Lee's (2016) and Andreani, Taniaji, and Puspitasari's (2012) works.

In addition, this study shares similar findings previous literature that used IPA to evaluate foreign tourists' overall satisfaction with the quality of services provided by restaurant sectors. Foreign

tourists in this study, Jin, Qi, and Chiang (2008), and Song, Kong, and Chen (2008) all considered service quality, speed of service, variety of food, quality of food, and cleanliness of the restaurant to be important to them and convenient hours as less important. Similar to Su's study (2013), this research reported food quality, value of food, cleanliness of food, service quality, speed of service, and cleanliness of the restaurant as important attributes for tourists. Moreover, noise level and close distance fell into the 'lower priority' and 'possible overkill' quadrants, respectively, in both studies.

Managerial implications

This study suggested that five out of seven dimensions of attribute satisfaction including price and value, food, personnel, beverage, and setting were significant predictors of foreign tourists' overall satisfaction with Thai restaurants in Klongmuang Beach, Krabi, Thailand. However, not all dimensions have the same predictive power on overall customer satisfaction. Since all businesses have scarce resources, restaurant leaders and managers in the area should not pursuit all attributes but rather allocate resources to improve attributes that are most important to overall guest satisfaction including price and value, food, and personnel (service). The IPA results from this study further provided restaurant practitioners of Thai restaurants in Klongmuang Beach area with a fuller picture of the specific dining

attributes that are in need of further improvement. Two attributes including 'value of beverage' and 'comfortable furnishings' fell into the 'concentrate here' quadrant (Quadrant I). As Murphy and Narkiewicz (2012) stated, the components of consumer value could be understood as consisting of the benefits of product, service, relationship, and brand that the customer must perceive. Such benefits include "the quality of the actual product purchased, the service that goes along with it, the relationship with the people in the organization or the reputation of the brand being purchased." Accordingly, restaurant leaders and managers may improve the value of beverage by increasing the quality of the beverage.

Furthermore, it is important to note that value is also related to cost that includes the money and time it takes for the consumer to make the purchase, which suggests that Thai restaurants in the area may need to consider the total cost to the consumer when setting a price for their menu items. However, price of food and beverage actually fell into the 'lower priority' quadrant (Quadrant III) in this study. This could mean that although price and value satisfaction was found to be the most important predictor of tourists' overall satisfaction, values may actually play a more significant role than price in influencing overall customer satisfaction and that perhaps practitioners should rather focus its investment on improving consumer values.

Despite the fact that physical environment was found to be the least important predictor of tourists' overall satisfaction, variables that make up

setting including cleanliness of the restaurant, atmosphere of the restaurant, and comfortable furnishings are still considered as important to foreign tourists. Therefore, in order to increase customer satisfaction in this area, an effort can be made in providing more comfortable furnishings for consumers.

Research recommendations

This research attempted to contribute to the hospitality literature in the less explored area of the relationship between attribute satisfaction and overall satisfaction. A positive relationship was established between attribute satisfaction and overall customer satisfaction. This confirmed previous research findings in the hospitality literature (Chi and Qu, 2009; Zhang, Jiang, and Li, 2013; Zhang, Zhang, and Law, 2014) in which attribute satisfaction was found to be an antecedent to overall satisfaction. With respect to the relative importance of attribute satisfaction on overall satisfaction, this research also concurs with previous views that food taste, employee service, and physical environment all significantly contribute to diners' overall satisfaction in that order (Zhang, Jiang, and Li, 2013; Zhang, Zhang, and Law, 2014). However, this research extends the existing literature by suggesting price and value as well as beverage as another factors to consider in addition to those previously identified by other researchers.

Concordant with most of the reviewed

literature (e.g. Adam, Adongo, and Dayour, 2015; Andersson and Mossberg, 2004; Harrington, Ottenbacher, and Kendall; 2011; Kim, Hertzman, and Hwang, 2010; Su, 2013; Zhang, Zhang, and Law, 2014), the current study corroborates the claim that a combination of attributes other than food and beverage are also critical for the creation of a rich dining experience. Moreover, since Thailand was considered an underrepresented country in the cross-cultural research literature (Polyorat and Sophonsiri, 2010), the present study also contributes to the cross-cultural studies by examining the customer satisfaction constructs in Thailand.

Finally, this research is the first study to employ quite a comprehensive list of key restaurant attributes as well as the IPA framework to examine the effects of attribute performance on overall satisfaction and the importance-performance of restaurant attributes, respectively, in the Thai context. Therefore, the framework and the attributes examined in this research could be applied to other studies wishing to examine tourists' satisfaction with restaurant services in other tourist destinations in Thailand or even other regions of Asia where local cuisine is the top attraction to tourists.

Limitations and further research

Despite several theoretical and managerial implications, this study was not free from limitations. First, the study was conducted at the end of high season,

and thus findings were only limited to high season travelers. Tourists who travel in different seasons may actually form different opinions about Thai restaurant services in the Klongmuang Beach area. Future researchers could therefore conduct similar surveys in different seasons in order to identify the similarities and differences between the two groups. Secondly, the population of this study was limited to foreign tourists who stayed in Klongmuang Beach, Krabi, Thailand. Hence, the results from the current study may not be generalized beyond this population. Future studies could be conducted in other tourist destinations in Thailand in order to increase the generalizability of these findings. In addition, it is also important to note that 86.2% of the sample surveyed in this study was from Europe. Therefore, the conclusions drawn from the study regarding the population of interest should be used within the context of these limitations.

Thirdly, this study only examined foreign tourists' satisfaction with Thai restaurants. However, the perception of service quality can vary across different types of food service establishments. Consequently, it might be of interest to test the constructs presented in this study in other types of restaurants such as Indian restaurants, hotel restaurants, coffee shops or bars in the area. Fourth, it could be interesting for future research to extend the constructs in this study to examine the effects of tourists' overall satisfaction on repurchase and recommendation intentions for restaurants in the area as customer satisfaction is generally suggested by

numerous existing researchers to be a strong indicator of intention to revisit and positive word-of-mouth. Finally, future studies could extend to examine the moderating effects of restaurant attributes presented in this study. As Zhang, Jiang, and Li (2013) and Zhang, Zhang, and Law (2014) mentioned, not only that attribute satisfaction has a significant influence on overall satisfaction, but the relationship between

the two is also significantly moderated by the performance levels of other attributes. The study of the moderating effects of attributes could thus provide information on the compensation of different attributes to restaurateur in the area who may be limited in resources, and as a result, may not be able to improve certain service dimensions to satisfy their customers.

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EVALUATION OF ETHICAL ORIENTATION AND BUSINESS ETHICS PERCEPTIONS: THE CASE STUDY OF THAILAND

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Abstract

Due to ever-growing alarm at unethical business practices in Thailand, demands for an emphasis to be placed on business ethics have increased dramatically. This study focuses on individuals' differences in terms of their ethical orientation, and how these differences determine business ethics perceptions. One hundred and nineteen college students in Thailand completed an Ethical Position Questionnaire, which was designed to classify respondents into four groups, based on the relativism and idealism dimensions they possessed (Forsyth, 1980). The results show that high relativism and low idealism are related to negative opinions about business ethics. A majority of Thai students are classified as situationists, as they do not rely on moral codes in making ethical judgments, despite their concerns about others' wellbeing. On the other hand, absolutists who adhere to rules and principles, and also cared about others appear to hold strong and positive viewpoints on the importance of business ethics.

Introduction

Since the scandals of Enron in 2001 and WorldCom in 2002 impacted the financial sector, new cases of unethical practices have continued unabated. The latest Volkswagen emission scandal in 2015 is now ranked as one of the seven worst corporate scandals, in which its damage could reach \$87 billion (Kottasova, 2015). High-profile corporate scandals are not limited only to western countries; one notable example is the recent Toshiba accounting scandal in 2015, which not only led to the company incurring an estimated loss of almost \$2 billion, but could also result in them incurring largest fine being set by the Japanese regulators (Fukase, 2015).

Unethical practices in the business world have also raised concerns in the academic world over the past two decades, particularly by pressuring business schools to overhaul the ways that how they educate future business people. In the United States, survey result showed that business students believed that business ethics has worsened, and is likely to be worse in the future (Peterson et al., 1991). Even when the accreditation bodies of business schools require the production of socially responsible business people, these schools have been criticized for their failure to address this issue (Schwartz et al., 1991). Many times in business decision making issues, conflicts occur between the goal of winning and doing the right thing.

In Thailand, business schools in general currently state ethics as one of the necessary qualities they want their students to possess. The academic curriculum is developed by

benchmarking with existing models from the world's top universities, and in compliance with the Commission of Higher Education's Thailand Quality Framework for Higher Education (TQF:HEd). Starting from academic year 2012 onwards, TQF:HEd specifies that all higher education's curricula have to consist of at least 5 learning domains which are ethical and moral development, knowledge, cognitive skills, interpersonal skills and responsibility, and analytical and communication skills (Commission of Higher Education, 2006). Although the existing approach of adding a course on business ethics to the curriculum could satisfy the requirements, the sufficiency and effectiveness of this approach is debatable. Lane et al. (1988), for example, suggest that the impact of just one business ethics course is much weaker than the students' overall experiences in the whole business program.

Even with the emphasis on ethics by both educators and regulators in Thailand, the country's score on ethics particularly directed at corruption levels has not yet improved. For example, Transparency International ranked Thailand 101st in its 2016 Corruption Perceptions Index, a significant slide from its 76th ranking in 2015 (Transparency International, 2017). Consumer deceptions, false advertisements, anticompetitive behaviors, and insider trading are not uncommon features in Thailand. A few recent examples which attracted public attention were the insider trading scandal by top executives from one of Thailand's largest retailers, which resulted in a \$1 million fine being levied on them by the authority (Peel, 2016), and the Rolls-Royce's bribery scandal which involved

Thai Airways, Thailand's national air carrier (Mahitthirook, 2017).

This unethical behavior in Thailand's business environment has spurred a demand for studies on individuals' perceptions towards business ethics. However, based on the researcher's knowledge, there is little empirical evidence which focuses on college students in Thailand, especially as to how these future business executives and entrepreneurs perceive the value of ethics in conducting business. The purpose of this study is to examine Thai students' perceptions of the ethical aspects of business practices, conditional on individuals' differences in terms of their ethical standpoints or approaches. A study that focused on teenagers in Thailand found that their priority was their own personal gain, even if it came about by a corrupt action (Fernquest, 2011). Business schools have to question themselves in terms of the methods they use to teach business ethics. Understanding students' ethical orientations could also assist teachers in designing suitable curriculum for business ethics classes; for example, an emphasis of teaching business ethics should be placed on personal development rather than the injection of ethical knowledge (Griseri, 2002).

Conceptual background and hypotheses

Individuals vary in their approaches towards moral decisions and behaviors. Some rely on religion to guide their direction, whilst others rely on other means. Under the Ethical Position theory, Forsyth (1980) proposed two dimensions, idealism and relativism, in assessing individuals' ethical orientation or ideology. These two dimensions are personal moral principles or positions, which can be developed over the person's lifetime. Both give guidance on judging whether a moral issue is right or wrong. A high idealist is concerned about others' welfare, so this person will avoid harming others at all costs. As for a relativist, he or she does not hold a strong belief on universal ethical rules. To measure a person's ethical stance, Schlenker & Forsyth (1977) developed the Ethics Position Questionnaire (EPQ), which classifies people into 4 groups, subjectivists, situationists, exceptionists, and absolutists; based on the two stated dimensions, as presented in table 1.

Table 1 Ethical Positions (Schlenker & Forsyth, 1977)

	High Relativism	Low Relativism
High Idealism	Situationist	Absolutist
Low Idealism	Subjectivist	Exceptionist

An “absolutist” who receives a high score on idealism and a low score on the relativism dimension, will make decisions and behave in a way that not only yield positive outcomes but also have to follow universally accepted moral rules and principles. Oppositely, a “subjectivist” is someone who relies on themselves, by believing in neither achieving the social goals nor following the ethical rules. For subjectivists, each situation is treated independently, and their feelings or emotions influence their decisions and behaviors.

Those who are highly idealistic and relativistic are called situationists. A “situationist” attempts to achieve the benefits offered to the society, but does not hold a firm belief in moral rules. As such, any decision or behavior that violates the rules would be acceptable. Last is an “exceptionist” who follows the rules, but does not judge actions that carry negative consequences as morally wrong.

Since its development, EPQ has been applied to different types of samples in the business world, see studies by Barnett et al. (1998) on marketing students, and Elias (2002) on accounting professionals and students. Students were required to make decisions on hypothetical situations or ethical vignettes; and their responses were also evaluated in accordance with EPQ guidelines.

An ethical position is believed to be culturally bound. So on a broader scale, Forsyth et al. (2008) conducted a meta-analysis of idealism and relativism across countries. Participants from 29 countries, including 98 from Thailand, completed the EPQ. Using a score from 0 to 1, Thais’ idealism was 0.730 (the overall average was 0.728), whilst

relativism was 0.622 (the overall average was 0.586). When classification was conducted by using the median, western countries were usually categorized under “exceptionism”, whilst eastern countries were categorized under “situationism” or “subjectivism”. Thailand was categorized under “subjectivism”, along with Hong Kong, Japan, and China. The classification of countries as being one of four orientations is far from conclusive, as recent studies have results that are inconsistent with the study by Forsyth et al. (2008). For example, in a study by Woodbine et al. (2012), a majority of the Chinese accountants in their survey were classified as exceptionists; whilst a study by Ramasamy & Yeung (2013) revealed that most Chinese managers were absolutists.

Although Thais possess relatively high relativism and low idealism, when compared to people from other countries; individual differences cannot be ignored. One notable example of EPQ application in Thailand was a study by Singhapakdi et al. (2000) on Thai managers’ ethical ideology and ethical intentions. Participants were asked to evaluate four unethical marketing scenarios, and the results showed that high idealistic and low relativistic managers were positively related to ethical intentions. To ensure an effective ethical climate in an organization, the researchers suggest that ethics training has to focus on the concerns of others’ welfare, whilst the establishment and enforcement of codes of ethics have to be strictly implemented.

Compared to business managers, students who have never been exposed to actual business environments perceive the business world differently. Their perceptions are inevitably shaped by

their experiences in the business school, which could have major implications for business ethics teaching. Allmon et al. (1997) studied business students' perceptions of business ethics, by comparing the survey results from the United States, Australia, and Taiwan. The questionnaire consisted of sixteen ethical items, which ranged from opinions on the business world to the respondent's ethical standpoint. Each item is assessed on the dimension of "self" versus "group" interests, as proposed by Shepard and Hartenian (1990). The "theory of amorality" represents the pursuit of self interest, whilst the opposite is called the "theory of moral unity".

This study contributes to the existing literature on business ethics, and attempts to uncover the relationship of idealism and relativism, to students' ethical perceptions regarding business ethics. Business students, although from the same country and the same university, could possess different ideologies (Fatoki, 2017); and ideologies which are widely believed to have an influence on the individual's opinion regarding ethical issues. Earlier studies seem to support the proposal that idealism is directly associated with ethical judgments (Barnett et al., 1998) and oppositely linked to workplace deviance (Henle et al., 2005). The study in Thailand by Singhapakdi et al. (2000), and a more recent study in Malaysia by Ismail (2014), concluded that idealism is positively related to ethical intentions; whilst relativism and ethical intentions have a negative relationship. Based on the previous findings, the first hypothesis of this study proposes that students' perceptions of business ethics are

determined by both idealism and relativism.

The second hypothesis focuses on the EPQ results; specifically, ethical orientations are a determinant of college students' perceptions of business ethics. For example, absolutists are expected to have a stronger view on ethical issues compared to those in other groups, whilst subjectivists are expected to disregard ethical principles and rely on expediency instead (Allmon et al., 2000).

Methodology

The survey was conducted in classrooms of Mahidol University International College, Thailand during November 2016. Respondents were 119 undergraduate senior students, majoring in Business Administration in the international business and marketing classes. Participation was voluntary, but restricted only to those of Thai nationality.

The questionnaire comprised of 2 parts, the business ethics perception and the EPQ. Part 1 consisted of 16 statements, which sought respondents' opinions on ethical aspects of the business world (Allmon et al., 1997). Each statement was based on a seven-point rating scale, where 1 = strongly agree and 7 = strongly disagree. The standard EPQ, on the other hand, was based on a nine-point scale, where 1 = completely disagree and 9 = completely agree. 52% of the respondents were male and 48% were female, whilst other demographics were not examined due to the samples' similarities.

Findings and discussion

Table 2 presents the averages of Thai students' opinions on business ethics, ranked from the lowest to the highest. Overall, these college students did not have a positive attitude towards the business world, since all statements related to the business world received the average rating of less than half of the 7-point scale. The lowest rating recorded was 2.61, which was the belief that business people behaved dishonestly in order to get ahead of others. Students also held the belief that income maximization is more important than

customer satisfaction, as evidenced by its average rating of 2.66.

Although students did not have an overall optimistic view of the current business world, they seemed confident that the companies they planned to work for, would follow ethical rules. They believed that they were expected to expose any co-workers who behaved unethically, with the average rating slightly edging towards agreement. In addition, Thai students were relatively positive in their own integrity, since this statement received the highest rating of 4.77. The implication was that even if or when future supervisors asked them to do something unethical, they would have the choice of refusing it.

Table 2 Average responses by country

	Thailand (SD)	U.S., Australia, Taiwan
Most people in the business world would do something dishonest if it helped them get ahead.	2.61 (1.45)	2.80, 3.01, 2.93
Even if a company says “customer satisfaction” is its major goal, making money is always more important.	2.66 (1.75)	3.81, 3.27, 2.14
Most members of the business world have lied or invested some excuse in order to get a day off from work.	2.97 (1.52)	2.43, 2.58, 3.23
Most members of the business world take credit for someone else’s work if it helped them get ahead.	3.06 (1.35)	2.95, 3.02, 3.14
Most members of the business world have taken care of personal business on company time.	3.14 (1.42)	2.03, 2.24, 3.00
My company will overlook the methods I use to get results as long as I get the job done.	3.45 (1.53)	4.78, 4.49, 3.79
Integrity is more important than achieving results.	3.48 (1.54)	2.90, 3.17, 3.29
I will have to be willing to do anything to succeed in a business career.	3.60 (1.69)	5.40, 4.32, 4.54
Most members of the business world would let a colleague take the blame for a mistake that they made.	3.69 (1.40)	3.64, 3.70, 3.29
In the business world, making profits is more important than ethical behavior.	3.77 (1.88)	5.06, 4.41, 4.11
A dishonest person who gets results will advance faster than an honest person.	3.80 (1.68)	4.42, 4.33, 2.72
I believe my company will expect me to turn in a co-worker who is dishonest with a customer.	3.81 (1.75)	2.62, 2.87, 3.50
I believe my company will expect me to turn in a co-worker who is accepting bribes.	3.82 (1.88)	1.93, 2.31, 3.05
I believe my company will expect me to turn in a co-worker for falsifying his or her expense account.	3.82 (1.92)	2.13, 2.71, 2.76
It is impossible to succeed in business without occasionally doing something dishonest.	4.59 (1.80)	5.12, 4.64, 2.80
If my boss asks me to do something unethical, I really won’t have a choice about doing it or not.	4.77 (1.67)	5.85, 5.41, 5.64

Note: 1 = Strongly agree and 7 = Strongly disagree. Results from U.S., Australia, and Taiwan are from Allmon et al. (1997)

The last column of Table 2 displays the average responses from Allmon et al. (1997) whose samples were 107, 120, and 331 students from the United States, Australia, and Taiwan, respectively. Generally, students from these countries did not have an optimistic attitude towards the business world, which was

similar to Thai college students. A few interesting outcomes in the case of Thailand should be noted. First, only Thais agree that making profits is more essential than ethical considerations, with the average score of 3.77 which is below 4.00. Second, Thais are willing to do anything to achieve business success,

with an average score of 3.60, whilst the other countries' averages are all above 4.00. Third, Thai students gave lower scores to the statement that integrity is more important than the results achieved. Lastly, Thai students do not believe that companies would expect them to report any wrongdoings of others.

Interestingly, both Thailand and Taiwan's responses are different to those of students from the advanced economies of the U.S. and Australia in a few respects. For example, whilst students from the U.S. and Australia disagree with the statement that dishonesty would provide a better outcome, and end results are more important than the process, Thai and Taiwanese students believe the opposite to be true. Nevertheless, cautions should be exercised prior to reaching any conclusions regarding a comparison of the results between Thailand and other countries, since the studies were conducted during different periods of time.

The EPQ's results reveal that Thai college students score highly on both idealism and relativism, compared to the mean and median of other studies. Specifically, idealism and relativism scores from the sample have means [medians] of 68.5 [70] and 61.4 [63], respectively. These are slightly lower than the findings by Forsyth et al. (2008), in a study with 98 Thai participants, in which revealed idealism and relativism means of 73.0 and 62.2, respectively. As a result, of the figures, Thais were generally classified as being subjectivists in the Forsyth et al. (2008) study. A classification of Thai college students according to ethical ideologies is presented in Table 3. The majority of the samples have high relativism, 56% of the respondents are classified as being situationists, 22% as subjectivists, and 12% as exceptionists, whilst the remaining 10% are absolutists.

Table 3 Ethical ideologies of Thai students

	High Relativism	Low Relativism
High Idealism	Situationists 56%	Absolutists 10%
Low Idealism	Subjectivists 22%	Exceptionists 12%

Regression results presented in Table 4 assign Thai students' idealism, relativism, and gender as independent factors. Whilst gender does not significantly affect ethical opinions, idealism and relativism appear to influence certain opinions on business ethics. Specifically, those students with a high degree of relativism tend to agree

that success in business requires some dishonesty, and outcomes are more important than the method used. Interestingly, they also believe that they are expected to report their colleagues' wrongdoings, but only in situations where their colleagues are falsifying their expense accounts. Highly idealistic students, on the other hand, appear to

place a higher value on integrity than they do on the outcome's achievements; and do not believe that dishonesty is necessary to achieve business success. The regression results support the first hypothesis, which is that high idealism is

positively related to ethical opinions, but high relativism shows a negative relationship. This results also align with the Singhapakdi et al. (2000) study on Thai managers and the Ismail (2014) study on Malaysian accountants.

Table 4 Regression results for relativism and idealism

	Relativism	Idealism
My company will overlook the methods I use to get results as long as I get the job done.	-0.032** (2.462)	0.005 (0.324)
Integrity is more important than achieving results.	0.007 (0.594)	-0.055** (3.646)
I believe my company will expect me to turn in a co-worker for falsifying his or her expense account.	-0.042** (2.649)	0.026 (1.333)
It is impossible to succeed in business without occasionally doing something dishonest.	-0.031** (2.107)	0.062** (3.506)

*Note: Significant F with p-value < 0.05 for all presented regressions. Gender variable is not presented. t-Statistics are in the parentheses. Significance at ** p-value < 0.01 and * p-value < 0.05.*

Students with different ethical ideologies have different opinions about business ethics, as presented in Table 5. Subjectivists, given several scenarios, tend to believe that dishonesty is an integral part of business dealings. For example, they believe that companies do not care about the method as much as the consequence, as evidenced by the lowest average score of 3.15. Also since they do not believe in the value of integrity (average score of 4.12), but believe in the higher possibility of success with dishonesty (average score of 3.69), they are willing to behave more unethically than people from other groups (exceptionists' average score is 4.50). Ironically, these subjectivists are more likely to report the unethical behavior of

other colleagues, than people from other groups.

Looking at the many statements made, the absolutists views are largely opposite to those of the subjectivist group. It should be noted that contradictory viewpoints by absolutists and subjectivists were also observed in Allmon et al. (2000). However, in this study, it is generally agreed that integrity is more important than the results, and that they disagree that companies do not care about the methods used in obtaining the results. T-test results confirm that subjectivists and absolutists possess different opinions on certain business ethics issues, as compared to other ideologies.

Table 5 Average responses by ethical ideology

	Situationsists	Subjectivists	Exceptionists	Absolutists
Most people in the business world would do something dishonest if it helped them get ahead.	2.58	2.65	2.71	2.50
Even if a company says “customer satisfaction” is its major goal, making money is always more important.	2.66	2.46	3.07	2.58
Most members of the business world have lied or invested some excuse in order to get a day off from work.	2.90	3.00	3.07	3.25
Most members of the business world take credit for someone else’s work if it helped them get ahead.	3.07	2.96	3.21	3.00
Most members of the business world have taken care of personal business on company time.	3.07	3.62	2.85	2.83
My company will overlook the methods I use to get results as long as I get the job done.	3.40	3.15	3.71	4.00
Integrity is more important than achieving results.	3.27	4.12*	4.00	2.67
I will have to be willing to do anything to succeed in a business career.	3.70	3.00*	4.14	3.67
Most members of the business world would let a colleague take the blame for a mistake that they made.	3.72	3.54	3.57	4.00
In the business world, making profits is more important than ethical behavior.	3.88	3.04*	4.29	4.17
A dishonest person who gets results will advance faster than an honest person.	3.70	3.69	4.50	3.73
I believe my company will expect me to turn in a co-worker who is dishonest with a customer.	3.78	3.42	4.21	4.33
I believe my company will expect me to turn in a co-worker who is accepting bribes.	3.79	3.38	4.29	4.42
I believe my company will expect me to turn in a co-worker for falsifying his or her expense account.	3.78	3.00**	4.43	5.08*
It is impossible to succeed in business without occasionally doing something dishonest.	4.72	4.08	4.00	5.67*
If my boss asks me to do something unethical, I really won’t have a choice about doing it or not.	4.76	4.50	4.71	5.50

Note: 1 = Strongly agree and 7 = Strongly disagree. Significance from t-test at ** p-value < 0.01 and * p-value < 0.05.

Regression results in Table 6 have students' ethical ideologies as independent dummy variables, where subjectivists are the reference choice. Relative to subjectivists, situationists and absolutists agree that integrity is more important than outcome achievements.

Consistent with results from Table 4, these two groups have a high degree of idealism. Interestingly, both absolutists and exceptionists who have low relativism, hold the same belief about turning in co-workers who forge their expense accounts.

Table 6 Regression results with ethical ideologies

	Situationsists	Exceptionists	Absolutists
Integrity is more important than achieving results.	-0.828 (2.334)*	-0.098 (0.198)	-1.382* (2.635)
I believe my company will expect me to turn in a co-worker for falsifying his or her expense account.	0.605 (1.377)	1.429** (2.324)	1.943** (2.991)

*Note: Subjectivists are reference choice. Significant F with p-value < 0.05 for all presented regressions. Gender variable is not presented. t-Statistics are in the parentheses. Significance at ** p-value < 0.01 and * p-value < 0.05.*

Conclusions

College students in Thailand generally did not have a positive viewpoint about the business world. They perceived business people to be dishonest and result oriented. Business ethics and integrity are secondary, compared to companies' profits. On a positive note, Thai students still hold a strong faith in their own integrity, and would not be willing to behave unethically under their supervisors' influence.

According to the EPQ results, more than half of Thai college students are classified as situationists, who are both idealistic and relativistic. The implication is that although a number of Thai students share high concerns about other's welfare, they may not abide by any specific moral rule. Almost a quarter of the survey respondents were subjectivists who rely on their feelings

and emotions in judging ethical issues. Levels of idealism and relativism were found to be related to certain ethical opinions. Similar to previous findings, low relativism and high idealism appear to directly influence the importance of ethics and integrity. In addition, absolutists tend to place higher valuations on the importance of ethics, whilst subjectivists on the other hand, do not.

The findings suggest that future business leaders possess different ethical ideologies, and do not share the same opinions on business ethics. The teaching of business ethics needs to take these individual differences into consideration, without assuming that all students are identical. First, college students need to understand the relationship between ethical ideology and ethical perceptions. In particular, college students should be trained to be

able to assess both their own and others' ideologies, in order to have a better understanding of different interpretations of the same ethical issues. Second, diverse teaching approaches should be designed in order to meet the needs of students of specific orientations. For example, low idealistic individuals who are less concerned about others should be trained to gather sufficient data on the consequences of a business decision (Henle et al., 2005). In addition, learning about ethical principles may benefit those who rely on existing moral codes more than it benefits relativistic individuals who judge each situation independently. Lastly, one of the challenging tasks of business ethics teachers is how to channel students' ideologies towards high idealism and low relativism, which positively correlates with ethical judgments.

Limitations and future research

There are a few limitations of this study. The sample focused on business students from one university in Thailand; therefore, the student admission criteria of the business school produces a selection bias which could limit a generalization of the findings. Another limitation is that opinions on business ethics were derived from simple

scenarios. Although this simplicity proved to be a benefit during the survey; it does detract from the complexities of ethical issues in the business world, and there is no confirmation that the students' opinions would be translated into actual ethical behavior. Future research should be conducted to address such limitations. A similar survey could be conducted on a larger scale, in order to better represent business students in Thailand or the Thai population. In addition, cross-country studies and comparisons could be employed, since business students from eastern and western countries seem to express different ethical attitudes towards the business world.

Another channel for future research is to study the factors that induce an individual's relativism and idealism orientations. A particularly important pedagogical question is how effective ethics education or training is in influencing ethical perceptions and behaviors of business students who are imbedded with different ethical orientations. A few recent studies have attempted to answer this question, including Aguirre et al. (2017) who suggests that specifically designed ethics teaching methods should be tailored for students from different majors; and Wang & Calvano (2015) who suggest the possibility of introducing a business ethics class in order to foster relativism among students.

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THE RELATIONSHIP AMONG MARKETING MIX, CUSTOMER SATISFACTION AND CUSTOMER LOYALTY OF CHINESE TOURISTS TO BUDGET HOTEL OF CENTRAL BANGKOK

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Abstract

Objective - The objective of this research was to The purpose of this research was to study the customer perception toward marketing mix (product, price, place, promotion, people, process and physical evidence), customer satisfaction and customer loyalty of budget hotel in central Bangkok

Methodology - A quantitative study was adopted for collecting data. The 401 questionnaires are collected from Chinese tourists who ever stayed in budget hotel of Bangkok, Din Daeng, Huikhuang, Phayathai areas. Agreement level and Mutiple regression analyses are used for analyzing data.

Finding - Customer perception toward product, people, process and physical evidence have a positive impact on customer satisfaction. Customer perception toward price, place and promotion has a negative impact on customer satisfaction. Customer satisfaction has a positive impact on customer loyalty.

Practical implications -The target market of economy hotel industry should focus on young people age 20-30.bachelor's degree, income of over 2000 RMB/Month. The product strategy of budget hotel is to provide not only comfortable and clean guest room with variety of facilities but also pleasant atmosphere and security perception. Managers need to develop a unified management system improve the network reservation system, handle the registration courteously and efficiently, strengthening Room Service.

Introduction

Thailand is a tourist country, Bangkok is the capital of Thailand, one of the most visiting choice, Development of Bangkok tourism can promote the development of the hotel industry, the so-called " budget Hotel" refers to affordable price, simple, hotel of small scale; facilities is relatively simple, but decorate the elegant; paying attention to function. Strive for excellence in the core services provided by the hotel. Budget Hotel Bangkok caters to the tourists from all over the world, especially business people, ordinary wage earners, at their own expense, tourists and students preferred, there are broad prospects for development.

In recent years, the demand of tourists visiting Bangkok from simplification to diversification, multi-level development, and Bangkok hotel industry is also diversification, multi type, providing different grades of types of reception service, facilities for different guests favored by the vast number of consumers. An appropriate location, economic price, excellent service, simple and comfortable, safe and convenient hotel industry has emerged, and achieved a leap forward development in just a few years, this is called " budget Hotel".

The consumption level of Thailand is relatively low, it can apply for landing a tourist visa, is attracting more and more tourists from all over the world. Economic Hotel has its important status in the tourist market, comparing the essential programs and services. Although budget Hotel and high-grade hotel level is consistent, the budget Hotel's price is affordable, cost-effective, which was first chosen by

many tourists (such as business travel, travel guests). Therefore, between the high-end and low-end market, budget Hotel is in the middle market comparing with the international standard, Economic Hotel has its advantages despite having some problems.

According to Thai hotel association's data demonstrates that there are 694 budget hotels in Bangkok of 2014(<http://thaihotels.org>). The booking hotel website named Agoda represent that there are 1820 hotels in Bangkok and have 716 hotels is economic hotel (www.agoda.com). They are distributed in 16 areas as following: Sukhumvit , Riverside, Siam, Chidlom-ploenchit, Don Muang, Bangna, Chatuchak, Chiantown, Old city, Silom, Khao San, Pratunam, Ratchadapisek, Ratchaprasong, Sathon, Suvarnabhumi (<http://www.bangkok.com>).

Literature review

Thailand tourism development in recent years

Most Tourists visiting in Thailand countries are mainly from China, Japan, Korea, Singapore, Hong Kong and Taiwan, Europe and the United States. According to Thailand's official statistic show that in 2006, foreign tourists, approximately 13,800,000 passengers, including East Asian tourists accounted for 55.2%, Europe and the USA accounted for 25.3% and 6.7%. In 2009, Americans came to visit Thailand were 627,000 passengers, 573,000 passengers of Germany, 170,000 passengers of Canada, 647,000 visitors of Australia, 88000 tourists of New Zealand, 1000000 visitors of Japan, mainland China, Hong

Kong and Macao are 1450000 passengers. In 2012, only Chinese to Thailand tourists reached 2700000, compared to 2011 increased by 1 million people, accounts for the total number of Thai foreign tourists in 14%, Chinese tourists brought the income of Thailand tourism can achieve 123,000,000,000 baht.(Aili,2014).

Budget hotel

Zhen Zhang (2006) performed that according to the classification of Smith Travel Research, hotel is divided into luxury chain, upper upscale chain, upscale chain, midscale with F& B, midscale without F& B, economic chain, independent and other types. Although they have some differences, the review of budget Hotel is basically the same. They all think that budget Hotel refers to maintain low prices, in the price sensitive consumers of the end market Hotel, belong to the low-grade hotel.

Yaoxin Huang (March 6, 2013) indicated that although budget hotel logged an explosive CAGR of 51.8% over 2006-2011, the market is still far from being saturated. Over the next five years, the number of economic hotels is expected to grow at a CAGR of 25.3%, driven by increasing tourism demand and substitution for traditional hotels.

Budget hotel usually includes lavish accommodation, gourmet, restaurant and bar, fitness and spas as well, Broadband, wireless hotspot, free internet access, safety box. Facilities are provided by hotel such as swimming pool, beauty parlor, car rental, currency exchange, clinic, steam room and sauna, gym, 24 hours room service and laundry service. Friendly staff to the guest can build and

impress or provide good customer relationship. Different hotel room caters to different needs of a guest. Such as standard room, double room.

Marketing mix

Hartono (2010) stated that the concept of marketing mix divided into product and service marketing mix. The service marketing mix consists of product, price, place, promotion, people, physical evidence, and process, generally called 7P's. The product marketing mix consists of Product, price, place and promotion, commonly called 4P's.

Ferrell (2005) pointed out that Product is the core element of the marketing mix strategy that retailers can offer unique attributes and differentiate their product from their competitors. Borden (1984) stated that product is characterized by quality, design, features, brand name and sizes. The products in the budget hotel of Bangkok are very simple; it mainly provides services, included guest room, free Wi-Fi service, breakfast, room service, and beverage and so on.

(Espinete et al., 2003; Monty and Skidmore, 2003) pointed that many prior studies on the determinants of hotel room price have adopted the hedonic pricing models, which assume that the price of a product is a linear function of items. The main idea of these studies is that room price is linked to the presence or absence of various hotel items. It means, the existence of a certain item will influence on hotel quality, then the quality will influence on a customer's willingness to pay. The lower price is one important factor that has impact on customers' considerations. The price of my hotel per night is about 1299 baht to 1799 baht.

Place is another significant element in the marketing mix, Different firms adopt different approaches to meet customers, Ballet pointed out (2004), the dominant factors as 1). the variation in the availability of channel members among the firm's markets and 2).the influence of the foreign environment forces, especially the culture differences, The firms need to adapt its practices to local opportunities .The best method is to establish a basic with flexible policy, so the subsidiaries carry out this policy and make channel strategies fit local requirement. budget hotel of Bangkok usually located in the convenient transportation, densely populated areas, near the airport, bus station, train station or hospital and school (especially university).

Ruyi fu (2013) pointed out that it will be necessary to advertise a sales promotion through Varian means. Firms may use television commercials, newspaper, or magazine advertisement, or sales fliers advertise their promotional pricing. Others may require customers to bring in coupon or certificate in order to get the sales price on an item. Three different types of marketing are important for an effective sales promotion. There are some useful promotion activities of the budget hotel in Bangkok, such as putting forward some promotion and discounting plans in off-season, making advertisement on website.

People are the most basic elements of the service production and delivery which is part of a difference management. Judd (2001) pointed out that if there is no support from the personal, a customer-orientation is not possible to get achievement.In the eyes of customers, a part of the enterprise product, and service

is pointed out by Davidson: "the secret of success lies in recognizing the services and customer contact staff is the company's key role. So people are the importance factor in the product and service. And more training, communication, learning offered to personnel,they will achieve to display the value of the budget hotel.

Process means service delivery process. People and process are inseparable, in the service process, if the service provider can focus, carefully, patiently, for customer service, can give customers high-quality service impression, so customer service satisfaction is high, the process of service management is the key to improve the quality of service. Hirankitti et al.,(2009) stated that the process is clearly perceived by the customer and it forms the basis of customer satisfaction with the purchase. Therefore, process management ensures the availability of budget hotel's quality.

Booms & Bitner (1981:52) pointed out that physical evidence is the environment in which the service delivered and where the firm and customer interact, and any tangible components that facilitate performance or communication of service. The physical evidence of budget hotel in Bangkok is included guest hotel facilities, the hall decoration, the front desk staff smile, guest room decoration, and so on.

The relationship between marketing mix (7ps) and customer satisfaction

Yelkur (2000) stated that the elements in the services marketing mix has influenced positively on customer

satisfaction. It indicates that service organizations should pay more attention to their employees as well as their customers; it would increase both employee motivation and customer satisfaction. As a result, our study supported the argument that there is a positive correlation between the marketing mix and satisfaction.

Relationship between customer satisfaction and loyalty

Getty and Thompson (1994) studied the relationships between quality of accommodation, satisfaction, and the resulting effect on customers' intentions

to recommend the accommodation to prospective customers. Their findings suggest that customers' intentions are a function of their perception of both their satisfaction and service quality with the accommodation experience. Hence, it can be summed-up that there is a positive relationship between customer satisfaction and customer loyalty.

Conceptual framework

The conceptual framework was conducted based on the literature review to study about "The relationship among marketing mix, customer satisfaction and customer loyalty of Chinese tourists to budget hotel of central Bangkok."

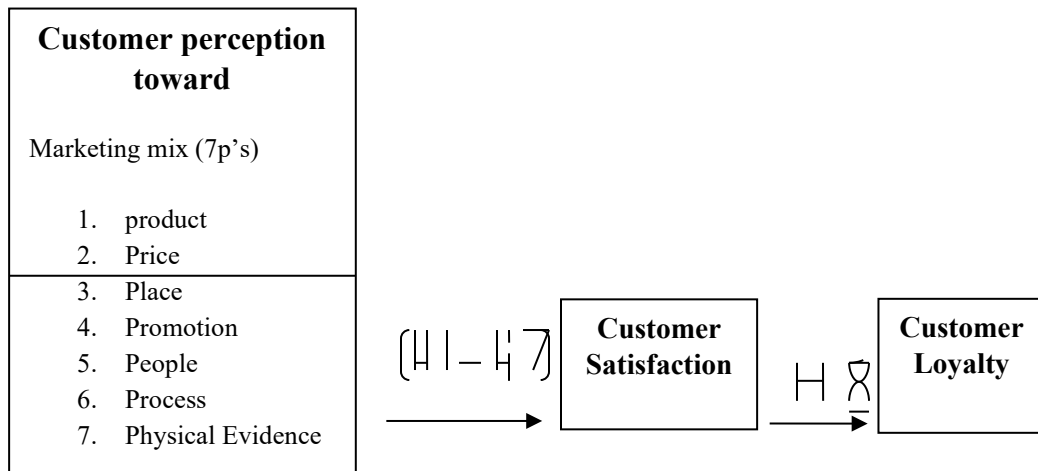


Figure 1 Conceptual framework

Hypothesis

H1: Chinese customer perception toward product of marketing mix (7P's) has a positive impact on customer satisfaction of budget hotel in Bangkok.

H2: Chinese customer perception toward price of marketing mix (7P's) has a positive impact on customer satisfaction of budget hotel in Bangkok.

H3: Chinese customer perception toward place of marketing mix (7P's) has a positive impact on customer satisfaction of budget hotel in Bangkok.

H4: Chinese customer perception toward promotion of marketing mix (7P's) has a positive impact on customer satisfaction of budget hotel in Bangkok.

H5: Chinese customer perception toward people of marketing mix (7P's) has a positive impact on customer satisfaction of budget hotel in Bangkok.

H6: Chinese customer perception toward process of marketing mix (7P's) has a positive impact on customer satisfaction of budget hotel in Bangkok.

H7: Chinese customer perception toward physical evidence of marketing mix (7P's) has a positive impact on customer satisfaction of budget hotel in Bangkok.

H8: Chinese customers' satisfaction has a positive relationship with the customers' loyalty of budget hotel in Bangkok.

Data collection and data analysis

Sampling strategy

The sample size should be at least 400 customers. I will collect questionnaire at least 400 Chinese customers living in economic hotel in Bangkok. According to Department of Education Bangkok metropolitan administration's research results (2015) indicates that the central of Bangkok areas includes phra nkhr, Dusit,

Pom, samphanthawong, Din Daeng, Huai Khwang, Phayathai, Ratchathewi, and Wang Thong Lang. And this research applies random sampling method to find out three areas, there are Din Daeng, Huai Khwang, Phayathai.

Data analysis

Evaluative criteria for the question items with positive meaning, the interval for breaking the range in measuring each is calculated by

$$N (\text{Width of the range}) = \text{Maximum} - \text{Minimum}$$

$$\text{Level} = (5 - 1)/5 = 0.8$$

The researcher analyzed the agreement level of customer perception toward marketing mix (7P's), customer satisfaction and customer loyalty by calculating the

Mean scores in the following ranges:

4.21 – 5.00 are considered as strongly agree

3.41 – 4.20 are considered as agree

2.61 – 3.40 are considered as neutral

1.81 – 2.60 are considered as disagree

1.00 – 1.80 are considered as strongly disagree

There were 3 parts of statistical analysis as following:

Part 1: Descriptive statistics analysis. The researcher described essential in formations that included customer's gender, age, education and income.

Part 2: Agreement level analysis. The questionnaire used Mean and Standard Deviation to describe the agreement level of marketing mix (7P's: Product, Price, Place, Promotion, People, Physical Evidence, Process), customer satisfaction and customer loyalty.

Part 3: Hypothesis testing. The questionnaire used diversified regression to find out the relationship between customer perception toward marketing mix (7P's) and customer satisfaction. The questionnaire used simple regression to find the relationship between marketing mix (7P's) and customer satisfaction, customer satisfaction and customer loyalty.

Data analysis and results

The objective of this chapter was to analysis and interprets data from questionnaire in order to approach the research objectives. In this chapter, the results of the data analysis are consisted of 3 parts as per following:

Analyzing the demography profile of the respondents

The data are presented in term of number and percentage of respondent's bellows. n=401 Based on Table1-Table5,401 usable data from Chinese customers who stayed at budget hotel of Bangkok, we can find that the number of male

customers and female customers are almost the same (male 186, female 215), most of customers are 20-30 years old, education of bachelor's degree, income 2000-5000 RMB/month, stay at economic hotel 1 time /year.

Analyze the agreement level of marketing mix (7P's), customer satisfaction and customer loyalty (mean, SD)

The following data analysis results showed the level of agreement related to 3 issued that includes customer perception toward marketing mix (7P's), customer satisfaction and customer loyalty.

The result showed the agreement level of product of customer perception toward marketing mix (7P's), "The room is neat and clean" (mean=4.46 and SD=0.774) in strongly agree level is the highest of product. "Wi-Fi is fast" (mean=3.65 and SD=0.989) is the lowest that in agree level. And the total product (mean=4.03 and SD=0.856) are agree level.

Results showed the agreement level of price of customer perception toward marketing mix (7P's). "Prices during high seasons and low seasons of this hotel are reasonable" (mean=4.31 and SD= 0.827) in strongly agree level is the highest of price. "The hotel offers excellent prices for the services of food,

beverage, breakfast is attract me” (mean=3.78 and SD=0.934) is the lowest that in agree level. And the total product (mean=4.05 and SD=0.846) are agree level.

The result showed the agreement level of place of customer perception toward marketing (7P's). “There are many choices of public transport from airport to this hotel (such as taxi, airport-link)” (mean=4.35 and SD=0.807) and “Surrounding of this hotel is lively and convenient (such as bars and restaurants, ATM machines, money exchange booths, convenience stores)” (mean=4.35 and SD=0.773) in the agree level are the highest of place. “The location of this hotel is convenient for shopping (Near to MRT or BTS)” (mean=4.17 and SD=.931) is the lowest in agree level. And the total place (mean=4.29 and SD=0.813) is in strongly agree level.

The result showed the agreement level of promotion of customer perception toward marketing mix (7P's), “I can get rich information about the hotel from the Internet” (mean=4.42 and SD=0.754) in agree level is the highest of promotion. “I often get promotional prices from the hotel in comparison with the competition hotels” (mean=3.84 and SD=0.843) is the lowest that in the agree level. And the total promotion (mean=4.068 and SD=0.8518) are agree level.

The result showed the agreement level of customer perception toward marketing mix (7P's), “The staff at the hotel treat every guest fairly” (mean=4.43 and SD=0.866) in agree level is the highest of people. “Staff of this hotel give timely services” (mean=4.11 and SD=0.767) is the lowest in agree level. And the total product (mean=4.24 and SD=0.8188) are agree level.

The result illustrated the agreement level of product of customer perception toward marketing mix (7P's). “The bookings, payment and stay at the hotel are done conveniently.” (Mean=4.37 and SD=0.780) in agree level is the highest of process. “The hotel offers high-class quality services in comparison with the competitor hotels.” (Mean=3.94 and SD=0.756) in the lowest that in agree level. And the total product (mean=4.18 and SD=0.8386) are agree level.

The result showed the agreement level of physical evidence of customer perception toward marketing mix (7P's). “Staff's uniform is neat and clean.” (Mean =4.47 and SD=0.735) in agree level is the highest of physical evidence. “The hotel's overall designs attract me.” (Mean =4.09 and SD=0.775) is the lowest in agree level. And the total physical (mean=4.246 and SD=0.793) is strongly level.

Table 1 Analysis of the agreement level of product of customer perception toward marketing mix (7P's)

Marketing mix(7P's)	Mean	Standard deviation	Level of agreement
1.Product	4.03	0.856	Agree
2.Prcie	4.05	0.846	Agree
3.Place	4.29	0.813	Strongly
			Agree
4.Promotion	4.068	0.8518	Agree
5.Peole	4.24	0.8188	Strongly
			Agree
6.Process	4.18	0.8386	Agree
7.Physical evidence	4.246	0.793	Strongly
			Agree
Total	4.16	0.831	Agree

Table 1 showed that in the total of customer perception toward marketing mix (7P's), "Product" (mean=4.03 and SD= 0.856), "Price" (mean=4.05 and SD=0.846), "Promotion" (mean=4.068 and SD=0.8518) "Process" (mean=4.18 and SD=0.8386) were considered as the agree level of the agreement level. "Place" (mean=4.29 and SD= 0.813), "People" (mean=4.24 and SD=0.8386), "Physical evidence" (mean=4.246 and SD=0.793), were considered as the strongly agree level of the agreement level.

"Place" (mean=4.29 and SD= 0.813) in strongly agree level is the highest of marketing mix (7P's), "Product" (mean=4.03 and SD= 0.856) is the lowest that in agree level.

The overall customer perception toward marketing mix (7P's) (mean=4.16 and SD= 0.831) was considered as the agree level of the agreement level.

The result showed that the Mean score and SD of "I am satisfied with the Supporting facilities." (Mean=4.02 and

SD=0.740), "I am satisfied with the room's comfort level." (Mean=4.18 and SD=0.752), "I am satisfied with the dining quality." (Mean=4.04 and SD=0.861), "This economic hotel service is better than expected." (Mean=4.0 and SD=0.755) were considered as the agree level of the agreement level.

"I am satisfied with the convenient traffic near this hotel." (Mean=4.46 and SD=0.761) is the highest in strongly agree level. "This economic hotel service is better than expected." (Mean=4.0 and SD=0.755) is the lowest in the agree level.

The overall customer perception toward customer satisfaction (Mean= 4.235 and SD=0.773) was considered as the strong agreement level.

The total of customer perception toward customer loyalty. The Mean score and SD of "I will share my pleasant living experience with others." (Mean=4.09 and SD=0.823) is the highest in agree level. "I will recommend-this economic hotel

to my friends.” (Mean=4.05 and SD=0.844) is the second one in agreement level, “I will book this hotel next time I come to Bangkok.” (Mean=4.04 and SD=0.882) is the third one in agree level. “I will say positive things of this hotel to others.” (Mean=3.94 and SD=0.769) is the lowest in the agree level.

The overall customer perception toward customer loyalty (Mean= 4.03 and

SD=0.83) was considered as the agree level of the agreement level.

Data analysis. Hypothesis testing followed by briefing explanting and research objectives.

Hypothesis 1-Hypothesis7: Chinese Customers’ perception toward marketing mix (7P’s) and customer satisfaction

Table 2 Regression analyses between customer perception toward marketing mix (7P’s) and customer satisfactio

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.907 ^a	.822	.819	.24894

a. Predictors: (Constant), Physical total, Place total, Product total, People total, Price total, Promotion total, Process total

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	112.578	7	16.083	259.526	.000 ^b
Residual	24.354	393	.062		
Total	136.932	400			

a. Dependent Variable: CS total

b. Predictors: (Constant), Physical_total, Place_total, Product_total, People_total, Price_total, Promotion_total, Process total

Coefficients^a

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.
	B	Beta		
1 (Constant)	.345		3.646	.000
Product_total	.173	.188	5.550	.000
Price_total	.044	.052	1.298	.195
Place_total	.081	.093	2.800	.005
Promotion_total	-.023	-.027	-.676	.499
People_total	.157	.189	4.595	.000
Process_total	.170	.183	4.508	.000
Physical_total	.324	.350	8.661	.000

a. Dependent Variable: CS total

*. The mean difference is significant at the 0.05 level.

The result of the multiple regression analysis, as presented in Table 2 indicated that the value of Adjusted R Square=0.819, indicating that 81.9% of the variation in the customer satisfaction was influenced by customer perception toward marketing mix (7P's). The significant level of regression was 0.000 (sig<0.05). The significant level of product, people, process and physical evidence were 0.000(sig<0.05).The results indicated that H1, H5, H6, H7 were supported, H2, H3, H4 were unsupported. Furthermore, customer

perception toward product, customer perception toward people, customer perception toward process and customer perception toward physical evidence were statistically significant. Thus, the 4 factors as customer perception toward product, customer perception toward people, customer perception toward process and customer perception toward physical evidence were significantly associated with customer satisfaction.

H8: Customer satisfaction has a positive impact on customer loyalty.

Table 3 Regression analyses between customer satisfaction and customer loyalty

Model Summary

Model	R	R square	Adjusted R square	Std. Error of the estimate
1	.773 ^a	.597	.596	.46244

a. Predictors: (Constant), CS_total

ANOVA^a

Model	Sum of squares	df	Mean square	F	Sig.
1 Regression	126.377	1	126.377	590.958	.000 ^b
Residual	85.327	399	.214		
Total	211.704	400			

a. Dependent Variable: CL_total

b. Predictors: (Constant), CS_total

* The mean difference is significant at the 0.05 level

Coefficients^a

Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.
		B	Beta		
1	(Constant)	-.037		-.218	.828
	CS_total	.961	.773	24.310	.000

a. Dependent Variable: CL_total

* The mean difference is significant at the 0.05 level.

The single regression analysis was performed to examine the relationship between customer satisfaction and

customer loyalty. According to the result presented in the Table 3 it was found that the significant level was 0.000 (sig<0.05)

and the customer satisfaction was correlated 59.6% (Adjusted R Square= 0.596) with customer loyalty, indicating the marked relationship was existed between customer satisfaction and customer loyalty. This means that the customer loyalty was influenced by their satisfaction. Therefore, H8: Customer satisfaction has a positive impact on customer loyalty was supported.

Hypotheses conclusion

H1: Chinese customer perception toward product of marketing mix (7P's) has a positive impact on Chinese customers' satisfaction of budget hotel in Bangkok was supported.

H2: Chinese customer perception toward price of marketing mix (7P's) has a positive impact on Chinese customers' satisfaction of budget hotel in Bangkok was unsupported.

H3: Chinese customer perception toward place of marketing mix (7P's) has a positive impact on Chinese customers' satisfaction of budget hotel in Bangkok was unsupported.

H4: Chinese customer perception toward promotion marketing mix (7P's) has a positive impact on Chinese customers' satisfaction of budget hotel in Bangkok was unsupported.

H5: Chinese customer perception toward people of marketing mix (7P's) has a positive impact on Chinese customers' satisfaction of budget hotel in Bangkok was supported.

H6: Chinese customer perception toward process of marketing mix (7P's) has a positive impact on Chinese customers' satisfaction of budget hotel in Bangkok was supported.

H7: Chinese customer perception toward physical evidence of marketing mix (7P's) has a positive impact on Chinese customers' satisfaction of budget hotel in Bangkok was supported.

Customer perception toward product, people, process and physical evidence have a positive impact on customer satisfaction. The four factors were significantly associated with customer satisfaction.

Customer perception toward price, place and promotion has a negative impact on customer satisfaction.

Hypothesis 8: Customer satisfaction has a positive impact on customer loyalty.

This hypothesis was designed to identify the relationship between customer satisfaction and customer loyalty. The result of this hypothesis test showed that customer satisfaction has a positive impact on customer loyalty.

Discussion

Creating a good marketing mix plan is the most important basis of the hotel management. And primary result of this research, the target market of economic hotel industry should focus on: Yong people age 20-30. Both female and male Chinese customers. Bachelor's degree. Income of over 2000 RMB/Month.

Marketing strategy

According to the result of regression analysis in Chapter 4 with those 4 elements: product, people, process and physical evidence have a positive impact on customer satisfaction, thus the researcher had some implication in these 4 elements as following:

Product strategy

The core products of economic hotel are guest room and service. The product strategy of economic hotel is to provide not only comfortable and clean guest room with variety of facilities (e.g. TV, WI-FI, and refrigerator) but also pleasant atmosphere and security.

People strategy

People are important to deliver service to customers and influence on customer perception. Most managers need to develop a unified management system, such as reward and punishment system, pay more learning and training their staff, and communicate timely with them. They could achieve to display the optimum value of the product in the economic hotel to customers and accomplish the hotel goal.

Process strategy

Process of the economic hotel means the services that customers got from booking, check-in, and room service check-out and so on. Therefore, process management ensures the availability of service during customers stay in the economic hotel, improve the network

reservation system, handle the registration courteously and efficiently, strengthening Room Service (like cleaning services, booking dinner service), it could improve customers' satisfaction and increase the competitiveness with other competitor hotels.

Physical evidence strategy

Visible surroundings can affect the impressions perceived by the customers about service quality of the economic hotel, it is important to provide good service through physical evidence. For example: it would ensure that the guest room is clean, furniture is complete, the overall designs of budget hotel can attract customers.

Overall, the benefit of good atmosphere such as green space, clean uniform and so on could attract customer to return to this hotel.

Recommendations

The research studied the influence of Chinese customer perception toward marketing mix (7P's) customer satisfaction and also the influence of customer satisfaction to customer loyalty. It is expected to obtain results which will provide useful information to improve the budget hotel industry in Bangkok, Thailand. This study can be used as a source of information for the future study in related fields. According to the results of this study, having some recommendations as following:

Demography characteristics

Based on analysis result of 401 collected data from Chinese customers who stay at budget hotels in Bangkok, the researcher found that the number of male customers and female customers are almost the same (male 186 and female 215), most of Chinese customers are young people about 20-40 years old, education of bachelor's degree, income of 2000-8000 RMS/Month, stay at economic hotel twice a year. Thus, the Chinese customers of budget hotel should focus on 20-40 old young people.

Customer perception toward marketing mix (7P's)

Regarding the result of agreement level from chapter 4, marketing mix (7P's) part included product, price, place, promotion, people, process, and physical evidence.

About the product, the agreement level of "Wi-Fi is fast" in agree level is the lowest (mean=3.65). About the price, the agree level of "The hotel offers excellent prices for the services of food, beverage, breakfast is attract me" in agree level is the lowest (mean=3.78). About the place, the agreement level of "The location of this hotel is convenient for shopping (Near to MRT or BTS)" in agree level is the lowest (mean=4.17). About the promotion, the agreement level of "I often get promotional prices from the hotel in comparison with the competition hotels" in agree level is the lowest (mean=3.84). About the people, the agreement level of "Staff of this hotel give timely services" in agree level is the lowest (mean=4.11). About the process, the agreement level of "The hotel offers

high-class quality services in comparison with the competitor hotels" in agree level is the lowest (mean=3.94). About the physical evidence, the agreement level of "The hotel's overall designs attract me" in agree level is the lowest (mean=4.09). So these are questions that budget hotel operators should solve.

These findings can help economic hotel operators to make decision for new marketing strategy. Such as, make Wi-Fi speed faster; make new suitable price strategy, offering reasonable price for the services of food, beverage and breakfast; offering useful suggestion that how to go to the shopping place or scenic spot to customers; do more special promotion on special days of the Internet; train staffs or hire staffs who have special knowledge or skill and give customers timely services; offer high-class quality services in comparison with other competitor hotels; decorate the economic hotel more appealing.

Marketing mix (7P's) and customer satisfaction

Based on the result of regression analysis in chapter 4 that Chinese customer's perception toward marketing mix (7P's) had a positive impact on customer satisfaction. Furthermore, product, people, process and physical evidence had a positive impact on customer satisfaction. budget hotel operators should focus on product in lodging business, such as the guest room, it should meet customers' needs and make them be satisfied budget hotel managers should focus on people in lodging business, such as offering much training and learning to staff and make sure they give friendly and timely services to

customers. Hotel managers should focus on process in lodging business, such as strengthen and improve booking system, enhance check-in and check-out processes, offer timely room services like cleaning services and booking dinner service. Economic hotel operators should focus on physical evidence in lodging business, such as offering cleanly rooms and furniture, adding more green space, improving hotel's overall designs, ensuring staff's uniform.

Limitations and further research

Limitation

From the study of "The relationship among marketing mix, customer satisfaction and customer loyalty of Chinese tourists to budget hotel of central Bangkok" It appears that the limitations have been issued as following:

1. The research area, in order to convince collect data, only focuses on Chinese customers stay in 3 areas (phayathai, Din daeng, Huaikhang) of budget hotel in central Bangkok. There is limitation in the data collection; it could not distribute the questionnaires to other consumer areas, such as the other areas of central Bangkok. It would influence the accurate of study and cannot represent the actual attitude of the whole Chinese customers.
2. The sampling groups come from various backgrounds, which may cause an effect on the questionnaires. Some respondents understand the questionnaires and some respondents

needed more explanations. All of these may impact on the accuracy of the answer given.

3. Answer from the questionnaires might be distorted because the questionnaires were distributed in the economic hotel of three areas in Central Bangkok. Sometimes the answered of respondents were very hurried, also not careful, someone even didn't want to waste their time to answered the questionnaire. Therefore, their answers may not conform to their current satisfaction.

Future research

Firstly, this research only focuses on the Chinese customers in central Bangkok and does not include the customers in other areas. Therefore, the next research for the person who is interested in this issue can focus on the other areas. Such as, Chiang Mai, Chiang Rai, Phuket, Pattaya, Surat Thani, or other Provinces of Thailand. Secondly, this research only focuses on the Chinese customers. Therefore, the next research for the person who is interested in this issue can focus on other countries such as Thai. Thirdly, This study only focuses on some main variables (marketing mix) relating to customer satisfaction and customer loyalty. There might be other variables influence on customer satisfaction and customer loyalty. Therefore, future researcher may investigate more variables relating to customer satisfaction and customer loyalty in staying budget hotel to deeply understand.

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Questionnaire

My name is Yutian xie. I am a student who studies MBA Program in marketing at The University of the Thai Chamber of Commerce, in Bangkok, Thailand. I am doing a research, as the topic of my thesis is “The relationship among marketing mix, customer satisfaction and customer loyalty of Chinese tourist to budget hotel of central Bangkok”. I would be grateful if you fill in the questionnaire in order to complete the research process. The information acquired from this questionnaire will be confidentially used for academic purpose only. Thank you so much!

1. What budget hotel did you stay?
2. What areas of budget hotel did you stay?

___ (1) Din Daeng ___ (2) Huai Khwang ___ (3) Phayathai

Part 1: Customer's basic information

Please check (√) in the ___ that related to your answer.

1. Gender

___ (1) Male ___ (2) Female

2. Age ___ (1) Under 20 years old ___ (2) 20-30 years old
 ___ (3) 31-40 years old ___ (4) Over 40 years old

3. Education level

___ (1) High School/Lower ___ (2) Bachelor's degree
___ (3) Master's degree ___ (4) Doctor degree

4. Income (RMB/month) (RMB:Yuan)

___ (1) Under 2000 ___ (2) 2000-5000 ___ (3) 5000-8000
___ (4) 8000-11000 ___ (5) over 11000

5. How many times do you stay at budget hotel in Bangkok per year?

___ (1) 1 time ___ (2) 2 times ___ (3) 3 times
___ (4) 4 times ___ (5) 5 times ___ (6) More than 5 times

Part 2: Customer perception toward marketing mix (7P's)

Please check the degrees that best describe you agree or disagree with each statement in the following, based on the budget hotel that you stay.

Please check (√) in one of the boxes below in the following scale:

1=strongly disagree; 2=disagree; 3=neutral; 4=agree; 5=strongly agree

	Product	Agreement level				
		1	2	3	4	5
1	The hotel facilities are in good condition (air-conditioner, bed, TV, refrigerator, armoire)					
2	Wi-Fi is fast					
3	The sound-proof effect of the room is good					
4	The decoration of the room is warm and sweet					
5	The room is neat and clean					
6	The hotel is safe (such as the hotel have safe box, security door)					

	Price	Agreement level				
		1	2	3	4	5
1	Prices during high seasons and low seasons of this hotel are reasonable					
2	The service prices rate of this hotel are acceptable					
3	The hotel offers excellent prices for the services of food, beverage, breakfast is attract me					
4	The Price is suitable for the benefits that I got while I stayed in hotel					
5	The hotel offers competitive prices in comparison with other competitor hotels.					

	Place	Agreement level				
		1	2	3	4	5
1	The location of this hotel is convenient for shopping (Near to MRT or BTS).					
2	There are many choices of transportation from airport to this hotel (such as taxi, airport-link)					
3	Surrounding of this hotel is lively and convenient (such as bars and restaurants, ATM machines, money exchange booths, convenience stores)					
4	The hotel has an effective system of electronic booking					



	Promotion	Agreement level				
		1	2	3	4	5
1	Advertising and other means of promotion of this hotel attracts me considerably.					
2	The hotel has a distinctive brand compared to competitors, and this attracts me					
3	There is a variety of sales promotion packages during special festival in this hotel.					
4	I can get rich information about the hotel from the Internet					
5	I often get promotional prices from the hotel in comparison with the competition hotels					

	People	Agreement level				
		1	2	3	4	5
1	Staff of this hotel is friendly					
2	Staff of this hotel give timely services					
3	This hotel's staff have strong professional knowledge					
4	The staff at the hotel treat every guest fairly					
5	Staff are excellent in building good relationship with the guests based on friendship and respect					

	Process	Agreement level				
		1	2	3	4	5
1	The luggage's pickup and delivery service to customer's room of this hotel is nice					
2	Room services (like cleaning services, booking dinner service, wake up calling service) of this hotel is good					
3	Check-in and Check-out processes are fast					
4	The bookings, payment and stay at the hotel are done conveniently					
5	The hotel offers high-class quality services in comparison with the competitor hotels					

	Physical evidence	Agreement level				
		1	2	3	4	5
1	The rooms, furniture of this hotel make me feel comfortable					
2	The hotel's overall design attract me					
3	Environmental comfort level of this hotel is high (such as green space, natural and comfortable furniture)					
4	Staff's uniform is neat and clean					



5	The hotel has high standards of security and safety procedures such as hotel has camera in lift and passageway					
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Part3: Customer satisfaction

Please check the degree that best describe you agree or disagree with each statement in the following, based on the budget hotel that you stay.

Please check (√) in one of the boxes below in the following scale:

1=strongly disagree; 2=disagree; 3=neutral; 4=agree; 5=strongly agree

	Customer satisfaction	Agreement level				
		1	2	3	4	5
1	I am satisfied with the Staff's service					
2	I am satisfied with the Supporting facility					
3	I am satisfied with the hotel location					
4	I am satisfied with the price of this hotel					
5	I am satisfied with the convenient traffic near this hotel					
6	I am satisfied with the cleanly environment of this hotel					
7	I am satisfied with the safety service					
8	I am satisfied with the room's comfort level					
9	I am satisfied with the dining quality					
10	I am satisfied with my decision to choose this hotel					
11	This budget hotel service is better than expected.					

Part4: Customer loyalty

Please check the degree that best describe you agree or disagree with each statement in the following, based on the budget hotel that you stay.

Please check (√) in one of the boxes below in the following scale:

1=strongly disagree; 2=disagree; 3=neutral; 4=agree; 5=strongly agree

	Customer loyalty	Agreement level				
		1	2	3	4	5
1	I will booking this hotel next time I come to Bangkok					
2	I will say positive things of this hotel to others					
3	I will share my pleasant living experience with others					
4	I will recommend-this budget hotel to my friends					

Thank You!

FACTORS AFFECTING CONSUMER'S PURCHASE INTENTION TOWARD JAPANESE CAR IN BANGKOK

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Abstract

Purpose - The purpose of the study aims to investigate brand equity such as brand awareness, brand association, perceived quality and brand loyalty affect to consumer's purchase intention toward Japanese car in Bangkok.

Methodology - Quantitative research was used in this study and the research was analyzed based on validated 400 set of questionnaires and the data were analyzed with mean and standard deviation analysis method. The multiple regression was used to examine the postulated hypothesis.

Findings - The findings indicated that brand equity components affect the consumer's purchase intention toward Japanese car in Bangkok. Brand loyalty that affected the most.

Practical implications - Japanese car companies and related companies should understand consumer's purchase intention toward car. Moreover, companies should comprehend brand equity's components and try to build an effective branding strategy to make the differentiation from their competitor in terms of brand awareness, brand association, perceived quality and brand loyalty then get more advantage in the car market competition.

Introduction

Bangkok is one of the most heavy traffic congested cities in the world; this problem has been getting worse since the government introduced a policy to refund tax for first time car purchasers. It is certain that everybody wants to have better living and convenient lives.

Car is one of the important factors beside basic needs of living things, it is the fifth significant factor to the people of Bangkok. They use car for many activities; work, study, travel, shopping and etc. Car also brings the convenience in traveling, dealing the business, shipping goods and public transportation. It shortcuts a journey and arrive to the destination on time. Moreover car is the symbol of social status showing the occupation, position and lifestyle of the car owner.

The population growth in Bangkok is increasing every day; there are public transportations serving Bangkok people but there are still ineffective and have limitations. Even though there are many buses, taxis, sky trains and underground railways around Bangkok area, they are not enough to serve all Bangkok people, moreover most of public transportations are in downtown not in out of the city.

From over all problem it impact to the numbers of automobile in Thailand is increasingly and continuously since 2003 to 2008. In 2009, there was a political crisis situation that affected Thailand's economic. Numbers of automobile industry produced decreased by approximately 28 percent from 2008. In 2010, Thailand's automobile industry produced 1,645,304 vehicles. In 2011, there was geography crisis situation which was flood disaster in many

districts in Bangkok and many provinces in Thailand. This event effect to automobile industry a lot, cause to decline the numbers of automobile industry produced approximately by 12 percent from 2010 (Thailand Automotive Institute, 2013).

The flood brought sadness and hopelessness to Thais. However, this disaster and other issues concerning the country inspired people to unite and be one. This unity helped the country to regain the economic stability again. The economic stability also pulled the automobile industry up. It brought opulence back to the Thailand's automobile industry then in years 2012 and 2013 Thailand's automobile industry produced nearly 2,500,000 vehicles in each year from then on.

In the current situation Thailand domestic sales that the most popular brand of automobile in the Thailand market is Toyota. Domestic Sales of Toyota car account for 26,683 vehicles in April 2014, it is approximately 38 percent of Thailand's market share, and the inferior popular brands are Isuzu, Honda, Mitsubishi, Nissan, Ford, Mazda, Chevrolet, Suzuki and Hino respectively (Thailand Auto book 2014).

Most of Thai population use Japanese car because the majority brand in the top 10 of Thailand domestic sales are Japanese brands. There were 8 brands of Japanese car from the rank 1-10. It can assume that more Thais prefer to purchase Japanese cars. It might be because the car's slower depreciation value. Thai's majority is in the middle class, purchases cars by cost that they are able to pay and the price of Japanese cars are most acceptable.

Moreover Japanese Car Company in Thailand also has interesting campaigns to attract consumers such as, free the 1st class insurance, free UV protection film, free express maintenance and etc. Therefore, it could be interesting options for inducing consumers to purchase Japanese car. However, there are many alternatives in the automobile market for consumers to select which one is the most appropriate for them.

Brand is one of important factors that impact consumers in order to purchase a car. Every car brand try to build their brand to be on the top of consumers' mind. Therefore, brand equity is important to every product because people can remember the product. Brand equity indicates and shows the value of the product to make consumers recognize and accept the product, conveying the message to the consumers that the product has a good brand image. When consumers accept the product, it will make the product in their mind and ready to meet with their needs. Besides, the products having strong brand equity, can build competitive advantage and keep business life cycle lasting in the market (www.sme.go.th).

Purchasing a car requires a lot of money. For some people, hard work for many years is must to be able to collect money for a car. Brand is one of the factors that consumers are considering concern because nobody prefers to purchase a car with negative brand reputations. So it is not a surprise anymore, that there are intensive competitions in automobile market. Each marketer of automobile companies need to find or create brand strategies to get the customer's attention.

Regarding the popularity of Japanese car in Bangkok and the importance of brand

equity, the researcher would like to study the factors affecting consumer's purchase intentions toward Japanese car in Bangkok. The researcher focused on the factors affecting consumer's purchase intention and brand equity.

Literature review

Consumer's purchase intention

Consumer behavior is the study of the processes involving individuals or groups select, purchase, use or dispose of products, services, idea or experiences to satisfy the needs and desires (Solomon, 2013, p. 31). Consumer's purchasing behavior is influenced by cultural, social, personal and psychological factors moreover consumer also has different in various factors such as age, income, education level and preferences that can affect the way they use goods and services. (Kotler, 2012, p. 173).

A consumer's purchasing behavior caused perception of stimuli which are marketing stimuli and other stimuli that marketers try to create these things on their products or services to attract consumers (Pinkoon, 2013). Marketers try so hard to create stimuli in order to satisfy consumer, however it is not easy because consumer have differ in lifestyle, cultural, social, personal and psychological aspects the factors which affect to consumer's lifestyle that is a pattern of living, it involves activities, interests and opinions. Lifestyle also reflects their choice of how an individual spends or allocates time and money to different products and services. If consumers are pleased the product or service then they would like to

repurchase or suggest to their friends. (Perreau, 2014).

Kotler, 1997 explained that consumer purchasing's behavior happen after the consumer of satisfaction towards a product or service. If the result from product or service is opposite to their expectations they ignore it immediately but if it is beyond their expectation it surely that they prefer to repurchase toward the same product or service again.

Consumers have different needs that depend on the situation, they will try to satisfy their most important and then try to satisfy the next most important. There are five hierarchies of needs composes of psychological needs, safety needs, social needs, esteem needs and self-actualization needs. For example a salesman wants to have his own car for drive to meet a customer (need 1), he prefers a car with safety capacities (need 2), while many his friends use Toyota Vios so he wants to buy it too (need 3), he is a senior salesman and thinks that Toyota Altis is suitable with his position (need 4) and thinking about his future and his family, so Toyota Camry is the appropriate choice (need 5) and in the end he will select the most important need (Maslow, 1970).

Consumer needs become a motivation that they try to respond to their needs. Motivation may refer to reasons that conduct consumer's behavior which is arising from the needs, drives or desires. After motivation occur consumer will struggle to achieve their needs or objectives that could be caused naturally or by learning it (Freud, 1880).

A consumer's purchase intention sometimes depend on personal factor such as age, family life cycle,

occupation, education and personal income. It can vary on span of age, for example when they were kids their parents will be the people who bought things for them. When they grow up, they can make the decision by themselves and they can buy things that they prefer. Family life cycle caused different purchasing behavior. Basically, consumer tend to purchase product in order to respond to their need even sometimes the price is expensive but when they have family that they have to take responsibilities, consumer will change their purchasing behavior automatically (Chaichan, 2001, p.123).

Paszkievicz (2003) explained on her research paper and the paper aimed to cost and demographic factors that affecting on consumer's purchase intention either purchase a new vehicle or lease a used vehicle. By using Consumer Expenditure (CE) Survey data 2000 indicate that 88 percent of all consumer have owned or leased a car. Which, cost is not the predominant factor in choosing to purchase a new car or lease a used car even though leasing a used car is financially less of a burden compared with purchasing a new car, the next most common method of acquiring a car is purchasing new one and leasing a used car stay the least common method.

The data from Consumer Expenditure (CE) Survey suggest that the choice of a car varies by demographics. Moreover, different demographic and various expenses involved in the consumer decision making either purchase a new car or lease a used car and several other factors were also being considered.

Siriwathananukul (2013) explained on his research and in this paper mentioned about influential factors toward

consumer decision making that consist of demographic factors, marketing mix factors and motivation factors. Demographic factor analysis with 400 people and most of representative samples were 290 males which was 72.5 percent. Their ages were between 21-30 years old, which was 90.5 percent. For educational level, majority were Bachelor's degree and their average income was 15,001-30,000 baht/month, which was 77 percent. The researcher found that demographic factors including age and education level only that effect to consumer decision making on buying the eco-car for the first car project of customer in Bangkok.

As many scholar's research, it can summarize that Consumer's purchase intention means the sum total of a consumer's intention affect to behavior on purchasing toward product or service.

Brand equity

A brand is a complex symbol. It is intangible sum of product's attributes, its name, product packaging, and price, its history, reputation, and the way it's advertised. A brand is also defined by consumer's impression of people who use it, as their own experience (Ogilvy, 1995). In the consumer perspective toward brand, they accumulate their experience with the brand then they will gradually create brand image. A brand is simply a collection of perceptions in the mind of consumer (Cowley & Feldwick, 1991). Products provide functional or tangible benefits in term of physical satisfy while brand provide emotional or intangible benefits that can satisfy consumer's passion.

Brand is nothing more or less than the sum of all the mental connections with the people having around it. These will be memories from childhood like things mother had said about it. However, particularly in case of newer brands, memories from advertising (Millward Brown International). Whether consumer's memories in childhood or memories from advertising, they cover all consumer emotional aspects which is intangible such as trust, confidence, familiarity, shared experiences relationship, status and personality.

A brand can deliver up to four levels of meaning; attributes, benefits, values and personality. If a company treats a brand only as a name, it misses the point of branding (Kotler, 1991). These four levels are supported the brand, attributes are shape and image that consumer can recognize and remind them to the brand. Benefits are advantage of product or service which is tangible, value may intangible but consumer has feeling with brand and personality provide characteristic to consumer who use the brand.

Marketers around the world agree that brand image is the powerful factor for successful marketing. Brand image aids marketers differentiate their products or services from competitors. It helps consumer remember impressive products or services. A product was produced by the manufacturer and a brand is selected by consumer when they choose the product (King, 1988). It draws out about the importance of brand image, even products were produced by the same manufacturer but different brands also satisfy the consumer.

When time changes, marketing factor also changes. Siripullop (2000) as

explained on his article, they adore famous brand product without considering any reason. They use expensive brand product without product knowledge, the decision to buy product is only based on the popularity of brand and brand image.

Nowadays, in the era of Generation C which is a new generation and without specific age but divided by using electronic devices and social media addicted behaviors (Decharin, 2012). Consumer have more reasons in order to make a decision on purchasing a product, they now consider the product with reasonable price or the attributes fitting to their needs or not. Therefore, it has an effect to the importance of brand image because they seek for the importance of brand equity and purchasing a valid product.

Brand equity is the added value endowed on products and services. It may be reflected in the way consumer think, feel and act with respect to the brand, as well as in the prices, market share and profitability the brand commands (Kotler, 2012, p. 265).

Aaker (1991) explained that brand equity is a set of brand assets and liabilities linked to a brand, its name and symbol that add to or subtract from the value provided by a product or service to a firm or to that firm's customer.

And brand equity can be grouped into five categories; brand loyalty, brand awareness, perceived quality, brand associations and other proprietary brand assets.

Gasca (2014) proposed in his article that nowadays young people are the most powerful customers, it is necessary to instill brand loyalty to them. Companies

need to understand consumers that what they are thinking and what they are looking for in a brand. Younger generations are mobile and social network individuals. If wants to reach them, the company should be technologically equipped to the company. These youth are more informed today than the past generations and consume information from many different sources.

Chainirun (2011) mentioned in his article which focused on perceived quality and brand association that firms have to define which position of their brand in the market also to present the difference from other products of the same kind. Communication is the most important strategies that firms have to reach to the consumers and one of the most effective methods is through social media. Consumers should understand the product quality to show brand value which are the functionality and emotional values.

Every company try to create brand equity on their products or service because they want to satisfy the consumers need also keep customer-based. Sometimes it is not hard to gain the attention of the customers but to keep them loyal to the brand might be difficult to the retain. Thus, firms need to focus on customer-based brand equity which is the instill the effect of the brand knowledge consumers as far as marketing of the brand (Kotler, 2012, p. 266) is concerned.

According to brand equity theory, there are related significant factors which are brand awareness, brand association, perceived quality and brand loyalty. The researcher had study of periodic research and article started the following;

Brand awareness

Brand awareness is a very important aspect for a brand, product or service in the market. When a new product is introduced into a market the primary aim is to make the target aware of the features of the product, within a year of introducing the product it must become popular by building the awareness of the product and the brand (Kokemuller, 2012).

Rossiter and Percy (1987) described brand awareness is a critical deliberation. It may be thought of as a buyer identify a brand within a category in sufficient detail to make a purchase. It is important to remember that sufficient detail does not always require identification of the brand name. Brand awareness may proceed through brand recognition and brand is recognized at point of purchase. This is a key point in the consideration of brand awareness as a communication objective.

One of the important things in order to maintain brand awareness is advertising. Because the brand is needed to be introduced to the customers and therefore be acknowledged. The firms have to advertised the product from different locations and different situations. Repetition of advertising is used to keep the brand in the consumer's consideration set that set of brands to which a consumer gives serious attention when making a purchase decision (Macdonald and Sharp, 1997).

Therefore in this study, the researcher define brand awareness related with consumer's awareness that consumer having knowledge or discernment of product and gained through consumer's perception, recognition or outside

information. Also, consumer recognize the brand of product or service. Initially, the customers have no knowledge about the brand. The company should come up with a good advertisement to entice the consumers to buy the brand and leave impressive impact to consumer's minds.

Brand association

Aaker (1991) explained that brand associations are all the linkages that exist between a brand and products that enhances the impressions of a particular brand. It may refer to persons, a lifestyle, personality and attitude that creating a reason to purchase of those potential customers who are looking for specific associated physical or emotional features of the product.

Berger (1992) also described brand association involvement with consumer's emotional level and transfer to consumer's perspective toward a product and service. The perspective of consumers in their likelihood will occur after the situation or at the time of purchase and this perspective of purchase will translate into behavior.

Due to brand association related to consumer emotional, the positive associations help to strengthen brands and the equity that is carried into a leverage situation is affected by the types of associations made with the brand (Keller, 1998). Moreover, consumer feel comfort when they sense that the brand fits with their self-concept (Gurhan and Canli, 2007). So the association could be linked to brand personality even human characteristics

Besides, brand association involved with perceived value because it provides value

in several ways. First, perceived value of a brand provides a pivotal reason-to-buy, influencing which brands are included and excluded from consideration, and the brand that is to be selected. And last, perceived value from the product can be used as a positioning strategy of various products, whether a car, a computer, or a shirt. These products can be shown as a premium product for the high-end consumers (Vantamay, 2007).

In this research, brand association relates between consumer's perceived value that consumers can perceive value from brand which is it worth for their money or not also creating reason to purchase. And brand personality is brand characteristic which can match with consumer's personality/ lifestyle and associate with consumer's attitude toward the brand.

Perceived quality

Nakamura (2010) described perceived quality refers to the product quality that customers acknowledge via the look, the touch, and the feel of a product. For example in terms of car, customers would like to glance around the car that they are interested they open the door, sit on the seat, and check the features in quality details.

Perceived Quality may provide a reason to purchase. The brand will have connection with a perception of overall quality. The quality connected with a brand can be a strong factor of comparison and positioning (Aker, 1991). Brand is intangible and the way to proving consumer perceived quality, firms need to deliver reliability and capability of the product to the consumers.

In additional, Zeithaml (1988) explained that perceived quality is the consumer's judgment about a product's overall excellence or superiority. It involves with difference and leadership from objective or actual quality and a higher level abstraction rather than a specific attribute of a product. Firms need to find how product leadership in order to deliver the perceived value to the consumers.

Furthermore, perceived quality may lead to consumers satisfaction, it will occur when consumer perceived product performance on their expectation of product quality also have a good experience with the brand perceived performance and expectation of product quality (Chaudhuri, 2002). Even though there are a lot of definitions from many authors each of the definition has a shared common meaning; which is, perceived quality is the consumer's perception overall components of product quality and product leadership.

Hence in the study, the researcher define perceived quality is consumer perceive quality from product or service and have an appreciation of it. There is a difference between appreciation and satisfaction in term of expectation because satisfaction happens when a product or service met what the consumer's expecting. On the other hand, appreciation happens when a product or service went beyond the consumer's expectation.

Brand loyalty

Brand loyalty is a function of both behavior and attitudes, brand loyalty includes some degrees of commitment toward the quality of a brand that is a function of both positive attitudes and repetitive purchases (Jacoby and Kyner,

1973). Many companies try to create brand loyalty because when consumers are loyal to in the brand, they are familiar with the brand and repurchase the product.

Brand loyalty also can affect purchasing behavior that consumers often repurchase in the brand that they are familiar with. And psychological in terms of the attitude toward the brand (Shetz and Sobel, 2004). Therefore, when companies deliver value of the brand to the consumer, it will affect to consumer's attitude in the positive way and also affect to consumer's purchase intention.

Vaazquez and Iglesias (2001) explain that price premium of the brand can be indicated consumer's brand loyalty. In the paper mentioned that consumer's willingness to pay a price premium for the brand, recommend it to others and buy brand extensions. These are three aspects of the consumer response was able to generate competitive advantages for the brand. Most consumers are willing to pay for the brand that has been evaluated compared to an unknown brand of similar physical characteristics (Yoo, 2000).

However, every brand wants to attract the consumer. The consumers would have the positive feeling about the product in order to make brand loyalty. For this purpose, customer satisfaction is a necessary factor that can move the customers toward it. From this point of view, if the consumers are satisfied with their specific brand they would make repeat purchases and show commitment. Not only satisfaction other factors may affect the brand loyalty of consumer include trust, quality perceived values (Rizwan, 2014). Thereby, these factors

are helpful in creating the multidimensional construct of brand loyalty.

Thus, the researcher define brand loyalty is consumer having familiarity with the brand which they love and faith in the brand of product or service and difficult to change their minds to other brands. And can be measured by price premium and satisfaction.

Brand equity components affect to consumer's purchase intention

Fatteross (2013) stated in the world of competition, product owners try to present the outstanding point of their product to get attention from consumers in many ways. They use marketing strategies in different styles, some use price strategy and some use distribution channel strategy. When the competition situation be like this the consumer's selection towards the product cannot be divided by difference of the products.

Companies try to create own prominent point in order to make consumers remember their product and difference from the competitors it is called "Brand". When consumers have more reason-to-buy, they start asking themselves why they have to pay more. It makes the brand need to have value itself, it called "Brand Equity" (Palmer, 2006).

Aaker (1991) stated Customer-Based Brand Equity (CBBE) is consumer's view toward brand equity that can help consumer interpret, manage and gather the information about the brand of product which the equity will have affect to consumer's purchase intention. Basically, consumer will be pleased in

previously purchased product, high quality, familiarity and importance. Besides, brand equity also support consumer's satisfaction towards the product. The Customer-based brand equity occurs when the customer is familiar with the brand and can afford the favorite, unique brand associations in memory (Keller, 1993).

Pongsiri Kamkankaew and Tatikul Chaiwun (2012) explained on their study that brand association has an effect on purchase decision that entrepreneurs should apply customer relationship management on the business such as creating story about coffee will convey the message to the consumers about ingredient's a cup of coffee or the origin of the coffee beans to make consumer realized the value of product.

Berman (2013) stated in his research, one of the key component marketing efforts is brand awareness which capture consumer attention via the amount of commercial messaging that they see or hear. It could be the mental shortcuts to make their decisions on buying products and services. As consumers remember the brand in their mind, it is easy to communicate with them what the brand is and what it stands for. Consumer decides more quickly from among a number of options that includes one known brand than they decide with a set that includes only unfamiliar ones.

The research of Apiluck Thammawimutti and Sirion Chaipoopirutana (2005) which applied survey the method for obtaining information from respondents of 400 consumers in Bangkok were potential purchasers of Sony Cyber-Shot digital cameras and found that the relationship between the element of

brand equity and purchase intention are moderately positive. Due to the relationships, it showed that the intention and likelihood to purchase Sony Cyber-Shot digital cameras increased when consumer's perception of brand equity increased. Moreover, among of Sony Cyber-Shot digital cameras brand equity, respondents awarded high mark to perceived quality that can impact to consumer's purchase intention.

Pattamaporn Jiraboonma and Siripak Siritho (2013) explained on their research that in the paper focused on study brand equity affect to consumer's decision making on purchasing Honda's car 400 respondents in Bangkok area and use One-Way ANOVA method. In the study, the researcher found that brand equity's components; brand awareness, perceived quality, brand association and brand loyalty have positive relationships with consumer's decision making especially brand awareness that Honda should emphasize creation brand awareness in order to respond consumer's decision making on purchasing Honda car.

The paper of Fouladivanda, Pashandi, Hooman and Khanmohammadi (2013) aimed to investigate the relationship between brand equity's components and consumer's buying behavior toward FMCG (Fast Moving Consumer Goods). Random sampling method was applied in this study, through 200 respondents in different locations of Tehran, Shiraz and Isfahan in Iran. 200 questionnaires were distributed, only 150 questionnaires were returned and 50 questionnaires were unclear. After measuring the impacts of brand equity elements, the highest impact refer to brand loyalty.

Conceptual framework

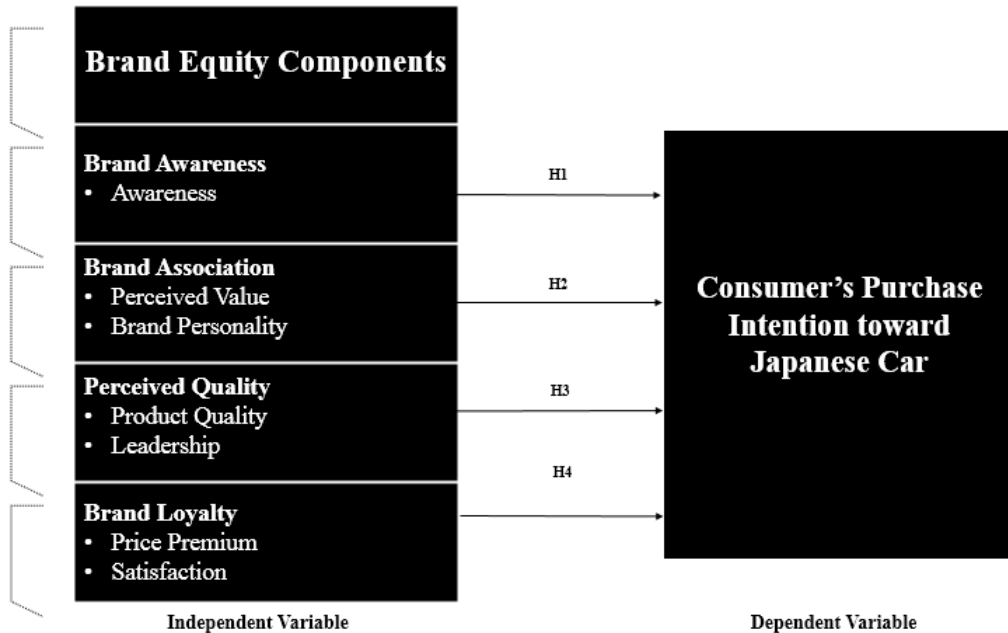


Figure 1 Conceptual framework

Research hypothesis

- H.1: Brand awareness affect to consumer's purchase intention.
- H.2: Brand association affect to consumer's purchase intention.
- H.3: Perceived quality affect to consumer's purchase intention.
- H.4: Brand loyalty affect to consumer's purchase intention.

such as brand awareness, brand association, perceived quality and brand loyalty which are independent variables. The consumer's purchase intention toward Japanese car in Bangkok was the dependent variable. This study will be used to identify and clarify the independent variable that affects to the dependent variable in explainable and quantitative method.

Methodology

Research design

Quantitative research will be used in this study. The questionnaire will be designed to examine brand equity components

Research tools

The survey research will be used in this study and using probability sampling to select the sampling in order to study brand equity components which consists of brand awareness, brand association, perceived quality and brand loyalty that

affects the consumer's purchase intention toward Japanese car in Bangkok. The set of questionnaire will be use as a tool. In this study the researcher focus population who use Japanese car in Bangkok area. Therefore, the researcher will investigate the number of people who use Japanese cars in Bangkok area to set the amount of sampling. Then, the researcher will separate Bangkok area to be zone for random choosing the districts and location to distribute the set of questionnaires.

Sample size

Regarding to researcher's focus on consumer who own/use Japanese car in Bangkok province. The researcher don't know the exact number. Therefore, the researcher will determine the simple size of consumer who own/use Japanese car in Bangkok that define the confidence level or risk level that is equal to 95 percent and the level of precision or sampling error is equal 5 percent as the formula of Cochran (1977).

Estimating sample size technique

$$n = \frac{Z^2}{4e^2}$$

Which:

n is the sample size

e is the level of precision = 0.05

Z is the statistic for a level of confidence
Z = 1.96

So:

$$n = \frac{(1.96)^2}{4(0.05)^2}$$

$$n = 384.16 \approx 400$$

The sample size is 400 of consumer who own/use Japanese car in Bangkok.

Sampling

To select the sampling for this study, the researcher will separate Bangkok area. The 6 zones are Bangkok central zone, Bangkok southern, Bangkok northern zone, Bangkok eastern, Bangkok-Thonburi northern zone and Bangkok-Thonburi southern zone. The researcher used simple random sampling technique to select 6 districts form 50 districts of 6 zones in Bangkok which are Din Daeng, Sathorn, Don Muang, Kannayao, Thonburi and Bang Khun Thian. According to these districts, they have a lot of populations. Moreover, there are business areas and have a heavy traffic. The researcher used quota sampling technique to weighted populations in each district in order to distribute questionnaire. The purpose of this sampling is to represent populations in Bangkok and the researcher distributed a set of questionnaires to amount of weighted population in each district.

Research survey

The set of questionnaire for thesis which is submitted to a graduate school in partial fulfillment of the requirement for the degree of master in Marketing

Management from The University of the Thai Chamber of Commerce (UTCC). There are three sections in the set of questionnaire.

Section 1: Personal Information sections from consumer who own/use Japanese car in Bangkok requires gender, age, education, monthly income and car brand ownership.

Section 2: Brand equity components which are brand awareness, brand association, perceived quality and brand loyalty

Section 3: Consumer's purchase intention toward Japanese car.

Data collection

The researcher will use survey methodology to collecting the primary data by distributed set of questionnaires for 400 set with respondents in the location of each district which are Din Daeng district will be True Tower, Sathorn district will be Empire Tower, Don Muang district will be Airports of Thailand Public Company Limited, Khan Na Yao will be Fashion Island Department Store, Thonburi district will be The Mall Shopping Center (The Mall Tha Pra) and Bang Khun Thian district will be Central Plaza Rama 2. The process of collecting the primary data will be started from 1 July to 31 July 2015 and use the complete set of questionnaire to evaluate by instant program. Then the researcher will

analysis the result and summarize in table format with describe.

Data measurement and analysis

Questionnaire can be distinguished in to three sections. Part 1 is personal data section will be close-end question which is using descriptive statistics (frequency and percentage) and crosstab analysis. Part 2 is brand equity's components which are brand awareness, brand association, perceived quality and brand loyalty. Part 3 is consumer's purchase intention toward Japanese car. For part 2 to 3 will be five levels Likert scales. The level of agreement in questionnaire ranked start from (1) strongly disagree to (5) strongly agree.

Regarding to this study, the use survey methodology to collect the primary data will be supported to analyze the study factors affecting consumer's purchase intention toward Japanese car in Bangkok. The primary data from questionnaires will be processed by instant program. From the questionnaire in part 1 is personal data, the descriptive statistics will be use to describe of the primary data gathered from survey. In part 2 and part 3 are brand equity components and consumer's purchase intention, the multiple regression method will use to test brand awareness, brand association, perceived quality and brand loyalty affect to consumer's purchase intentions toward Japanese car.

Result

The analysis of personal data by using descriptive statistic (Frequency and percentage)

Table 1 Gender of the respondents

Gender of the respondents		
Gender	Frequency	Percent
Male	216	54.00
Female	184	46.00
Total	400	100.00

Table 1 shows that the number of sample which is 216 male respondents or 54% and 184 female respondents or 46%.

Table 2 Age of the respondents

Age of the respondents		
Age	Frequency	Percent
20 – 30 years	184	46.00
31 – 40 years	107	26.75
41 – 50 years	77	19.25
51 or older	32	8.00
Total	400	100.00

Table 2 shows that the number of sample aged between 20 – 30 years old comprise of 184 or 46%, aged between 31 – 40 years old is 107 or 26.75%, aged between 41 – 50 years old is 77 or 19.25% and aged between 51 or older is 32 or 8%.

Table 3 Education of the respondents

Education of the respondents		
Education level	Frequency	Percent
Under graduate	107	26.75
Bachelor's degree	251	62.75
Higher than bachelor's degree	42	10.50
Total	400	100.00

Table 3 shows that the education level of the sample can be categorized as Under Graduate, Bachelor's degree and Higher than Bachelor's degree. The numbers of each category are 107 or 26.75%, 251 or 62.75% and 42 or 10.50% respectively.

Table 4 Monthly Income of the respondents

Monthly income of the respondents		
Monthly income	Frequency	Percent
Less than 30,000 THB	230	57.50
30,001 – 40,000 THB	77	19.25
40,001 – 50,000 THB	44	11.00
50,001 – 60,000 THB	17	4.25
Higher than 60,001 THB	32	8.00
Total	400	100.00

Table 4 shows that the Monthly Income of the sample can be categorized as Less than 30,000 THB, 30,001 – 40,000 THB, 40,001 – 50,000 THB, 50,001 – 60,000

THB and Higher than 60,001 THB. The numbers of each category are 230 or 57.50%, 77 or 19.25%, 44 or 11%, 17 or 4.25% and 32 or 8% respectively.

Table 5 Car Brand of the respondents

Car brand of the respondents		
Car brand	Responses	
	Number	Percent
Toyota	141	31.20
Honda	110	24.34
Nissan	57	12.61
Mazda	29	6.42
Mitsubishi	25	5.53
Suzuki	18	3.99
Subaru	8	1.77
Isuzu	64	14.16
Total	452	100.00

Table 5 shows that the Car Brand of the sample can be categorized as Toyota, Honda, Nissan, Mazda, Mitsubishi, Suzuki, Subaru and Isuzu. The numbers of each category are 141 or 31.20%, 110 or 24.34%, 57 or 12.61%, 29 or 6.42%, 25 or 5.53%, 18 or 3.99%, 8 or 1.77% and 64 or 14.16% respectively.

The analysis level agreement of the sample who own/use Japanese car on brand equity components

Table 6 The analysis level agreement of the sample who own/use Japanese car on brand equity components

Brand equity components	Mean	S.D.	Level of agreement
Brand awareness: Awareness			
I can recognize some characteristics of this brand.	3.87	0.92	Agree
I can differentiate this brand from others.	3.93	0.96	Agree
This brand comes up first in my mind when I want to purchase a car.	3.76	1.04	Agree
When I see an advertising about car, I always think about Japanese Car Brand at first.	3.75	1.03	Agree
When I think of Japanese Car I can recognize the brand name immediately.	4.05	1.01	Agree
Brand association: Perceived value			
This brand provides good value for the money.	3.92	0.84	Agree
The quality of this brand is reliable.	3.85	0.81	Agree
I am proud to own/ use a car of this brand.	3.79	0.91	Agree
What I get from this brand is worth the cost.	3.79	0.87	Agree
This brand is safe to use.	3.57	0.93	Agree
Brand association : Brand personality			
This brand matches my personality.	3.73	0.97	Agree
I can quickly recall the symbol or logo of this brand.	3.97	0.96	Agree
I have a clear image of the type of person who would use this brand.	3.68	1.00	Agree
I can remember advertising of this brand.	3.71	1.04	Agree
I believe that using this brand can reflect my image.	3.56	1.01	Agree
Perceived quality: Product quality			
I can expect superior performance from this brand.	3.70	0.88	Agree
The quality of this brand is very high quality.	3.66	0.91	Agree
In term of overall quality, I would rate this brand high value.	3.53	0.93	Agree
This brand is very durable.	3.56	0.96	Agree
The quality of a car is the most important criteria of purchasing a car.	4.04	0.94	Agree
Perceived quality: Leadership			
This brand is quality leader within its product category.	3.66	0.94	Agree
This brand is very reliable.	3.64	0.87	Agree
I don't have difficulties in finding the information that I need from this brand.	4.01	0.90	Agree
This brand is better as compared to other brands of the product in term of the color/designed/appearance.	3.65	1.02	Agree
This brand always develop for the new technology.	3.87	0.87	Agree
Brand loyalty: Price premium			
I will definitely purchase this brand although its price is higher than other brands that offer similar benefits.	3.41	1.05	Agree

I will not purchase other brands if this brand available.	3.25	1.08	Neutral
I intend to purchase this brand and anything from the product category the brand belong to.	3.49	1.06	Agree
This brand would be my first choice.	3.54	1.05	Agree
I would purchase this brand on the next opportunity.	3.61	1.06	Agree
Brand loyalty: Satisfaction			
I am very satisfied with my current car brand.	4.00	0.90	Agree
I am likely to select the same brand when I purchase a new car.	3.58	1.03	Agree
I would recommend this brand to others.	3.65	0.96	Agree
If this brand is out of stock, I can wait for it without switching to other brands.	3.39	1.08	Neutral
I am delighted with any of my experience with this brand.	3.67	0.97	Agree
Consumer's purchase intention toward Japanese car			
In term of ownership, I intend to purchase Japanese car than lease.	4.11	0.99	Agree
If I have an opportunity, I would suggest my relatives, friends or acquaintances purchase a Japanese car.	3.72	0.94	Agree
If I plan to purchase a car, I intend to repurchase a Japanese car again.	3.64	0.98	Agree
I intend to purchase a Japanese car again than others	3.57	1.08	Agree
I would like to have Japanese Car more than one.	3.70	1.18	Agree

Table 6 shows the result level agreement of consumer who own/use Japanese car. The researcher asked the consumers about Japanese car to give feedback in terms of all related factors that include brand awareness, brand association, perceived quality, brand loyalty and consumer's purchase intention by choosing the provided scale questions that scale the agreement toward each related factors from 1(Strongly disagree) to 5(Strongly agree). Since using 5-point rating scale, the means 3.41-4.20 reveal that agree level affect consumer's purchase intention and its related factors on Japanese car.

Brand awareness was constituted with awareness which consisted of 5 questions. The mean value of all questions are between 3.41- 4.20 that

shows the agree level of brand awareness on Japanese car. The highest agree level of this factor is question No.5 that shows mean value is equal to 4.05 and S.D. is equal to 1.01 and the lowest is question No.4 that shows mean value is equal to 3.75 and S.D. is equal to 1.03.

Brand association was constituted with two dimensions; The Perceived Value and Brand Personality in the questionnaire which consisted of 10 questions. The mean value of all questions are between 3.41- 4.20 that shows the agree level of brand association on Japanese car. The highest agree level of this factor is question No.1 of Perceived Value that shows mean value is equal to 3.92 and S.D. is equal to 0.84 and the lowest is question No.10 of

Brand Personality that shows mean value is equal to 3.56 and S.D. is equal to 1.01.

Perceived Quality was constituted with two dimensions; The Product Quality and Leadership in the questionnaire which consisted of 10 questions. The mean value of all questions are between 3.41- 4.20 that shows the agree level of perceived quality on Japanese car.

The highest agree level of this factor is question No.5 of Product Quality that shows mean value is equal to 4.04 and S.D. is equal to 0.94 and the lowest is question No.3 of Product Quality shows mean value equal to 3.53 and S.D. equal to 0.93.

Brand Loyalty was constituted with two dimensions; The Price Premium and Satisfaction in the questionnaire which consisted of 10 questions. The mean value of all questions are between 2.61- 3.40 and 3.41-4.20 that shows the agree level of brand loyalty on Japanese car. The highest agree level of this factor is question No.6 of Satisfaction that shows mean value is equal to 4.00 and S.D. is equal to 0.90 and the lowest is question

No.2 of Price Premium that shows mean value equal to 3.25 and S.D. is equal to 1.08.

Consumer's purchase intention toward Japanese car constituted with five questions in the questionnaire. The mean value of all questions are between 3.41- 4.20 show the agree level of consumer's purchase intention toward Japanese car. The highest agree level of this factor is question No.1 shows mean value equal to 4.11 and S.D. equal to 0.99 and the lowest of this factor is question No.4 shows mean value equal to 3.57 and S.D. equal to 1.08.

Hypothesis testing

H1: Brand awareness affect to consumer's purchase intention.

H2: Brand association affect to consumer's purchase intention.

H3: Perceived quality affect to consumer's purchase intention.

H4: Brand loyalty affect to consumer's purchase intention.

Table 7 Model Summary analysis

Model summary			
R	R Square	Adjusted R square	Std. Error of the estimate
.875 ^a	.766	.764	.42393

Table 8 ANOVA analysis

ANOVA ^a					
Model	Sum of squares	df	Mean square	F	Sig.
Regression	223.553	4	55.888	310.984	.000 ^b
Residual	68.112	379	.180		
Total	291.665	383			

Table 9 Coefficients analysis

Model	Coefficients ^a			t	Sig.
	Unstandardized coefficients		Standardized coefficients		
	B	Std. Error	Beta		
(Constant)	-.083	.126		-.659	.510
Brand Awareness	.104	.043	.091	2.413	.016
Brand Association	.210	.071	.170	2.952	.003
Perceived Quality	.154	.065	.126	2.385	.018
Brand Loyalty	.579	.046	.562	12.631	.000

Table 7 Model Summary table show R Square is 76.6% which means consumer's purchase intention toward Japanese car can be explained by brand awareness, brand association, perceived quality and brand loyalty. However Adjusted R Square is 76.4% that the value of R Square and Adjusted R Square are much closer due to the number of observation and it is very large compared to the number of predictors.

Table 8 ANOVA table shows that p-value is less than 0.05. All hypothesis which are H1, H2, H3 and H4 can be accepted. Thus, it affects on brand awareness, brand association, perceived quality and brand loyalty and consumer's purchase intention toward Japanese car.

Table 9 shows coefficient of brand awareness, brand association, perceived quality and brand loyalty affects to consumer's purchase intention toward Japanese car because the p-value is less than 0.05.

From the coefficient table, the standardized coefficient column, comparing all related factors. The level of brand loyalty is the highest which indicates that brand loyalty is the most important factors that affect to consumer's purchase intention toward Japanese car.

Consumer purchase intention = - 0.083 + 0.104 X Brand awareness + 0.210 X Brand association+ 0.154 X Perceived quality + 0.579 X Brand loyalty

The estimation tells us the amount of increase in consumer's purchase intention that would be predicted by 1 unit increase in brand awareness, brand association, perceived quality and brand loyalty.

Summary of hypothesis testing results

Table 10 Summary of hypothesis testing result

Hypothesis	Description	Sig (2tailed)	Result
1	Brand awareness affect to consumer's purchase intention.	0.016	Accept H1
2	Brand association affect to consumer's purchase intention.	0.003	Accept H2
3	Perceived quality affect to consumer's purchase intention.	0.018	Accept H3
4	Brand loyalty affect to consumer's purchase intention.	0.000	Accept H4

According to table 4.19 it shows all hypothesis which are H1, H2, H3 and H4 can be accepted because p-value is less than 0.05. It means brand awareness, brand association, perceived quality and brand loyalty affects on consumer's purchase intention.

Conclusion

The result was partially supported on previous study. In this study, brand equity components which are brand awareness, brand association, perceived quality and brand loyalty affects on consumer's purchase intention toward Japanese car in Bangkok that shown R Square which is 76.6%. It means consumer's purchase intention toward Japanese car can be explained by brand awareness, brand association, perceived quality and brand loyalty. However, Adjusted R Square is 76.4% that the value of R Square and Adjusted R Square are much closer due to the number of observations and it is very large compared to the number of predictor. The p-value is less than 0.05. All hypothesis which are H1, H2, H3 and H4 can be accepted. Thus, it affects on brand

awareness, brand association, perceived quality and brand loyalty and consumer's purchase intention toward Japanese car. The coefficient of brand awareness, brand association, perceived quality and brand loyalty affects on consumer's purchase intention toward Japanese car because the p-value is less than 0.05. The standardized coefficient column is being compare to all related factors. The level of brand loyalty is the highest which indicates that brand loyalty is the most important factors that affect to consumer's purchase intention toward Japanese car.

Discussion

In this study, the purpose was focus affecting between the brand equity's components and consumer's purchase intention toward Japanese car in Bangkok. All the brand equity components which are brand awareness, brand association, perceived quality and brand loyalty affects to consumer's purchase intention and the research result can be proved all the hypothesis of this study. According to hypothesis 1 the result of this study proved that brand

awareness affects on consumer's purchase intention which was similar with the existing research of Rossiter and Percy (1987). For hypothesis 2 the results indicate that brand association affects consumer's purchase intention. This result was similar with the study of Gurhan and Canli (2007). In the hypothesis 3 the result indicated that perceived quality association affect to consumer's purchase intention, which is related to the study of Zeithaml (1988). And the hypothesis 4 of this study proved that brand loyalty affects on consumer's purchase intention which was similar with the existing research of Vaazquez and Iglesias (2001).

Implication for business

Regarding to brand equity the marketer have to focus on its components which are brand awareness, brand association, perceived quality and brand loyalty.

From the results of brand awareness, the lowest agree level is advertising. It might be on advertising Japanese car brand rather than outstanding or capturing in consumer's mind. Therefore, it is necessary that marketer should to pay attention on advertising and create a modern advertising or creative advertising, such as marketer that can use interesting topic in the current situation and adapt an advertising to catch customer's attention.

In terms of brand association, the lowest agree level of the brand is safe to use. Hence, companies need to emphasize the value of car deliver to the consumers especially the safety parts. Companies

should add on security system with the reliable security system brand that market to gain consumer's trust.

For perceived quality, the product quality results the lowest agree level which overall quality they rate Japanese car brand with high value. Thus, companies have to concern about car quality that is the main point because it is an impact to brand value which deliver to consumer and consumer's reliance to the brand.

In terms of brand loyalty, from price premium results the lowest agree level is that they will not purchase others brands if Japanese car brand is available. As price premium part shows that consumer is quite sensitive with the price from the results which rate is in neutral level, so it is necessary that companies need to focus on pricing accord with car model that is comparable with others brand in the same model class. However, it does not help to increase the value of their brand if companies reduce the price but companies should add on more functions of the car to increase the value instead.

Finally, marketer in Japanese car companies or any related companies should research more about consumer's purchase intention and brand equity components that also use the research in order to develop their weaknesses or limitations with the brand which can impact to consumer's purchase intention.

Limitation and further research

Limitation

The first is the number of consumer who use Japanese car in Bangkok is not specific in number. Therefore, the researcher have to use random sampling in order to distribute the questionnaires. Some of the locations is company, so the researcher have limited time during weekdays such as lunch break time and after work of employees. Sometimes the respondent might hurry or busy, that's why the answer may not correspond to their feeling. And the last, the research set the brand equity components as the main factor which belongs to David Aaker's theory. There are less information and data from others in this theory so most of literature review are form David Aaker.

Further research

The first is in the research, the researcher focused on consumer in Bangkok area

only. Therefore, further research should investigate more about the big city such as Chiangmai, Udonthani and Phuket because the difference of environment influence might impact to the consumer's purchase intention in order to purchase a new car. In the research, the researcher focused only on consumer who use Japanese car so further should study other brands such as European car, Korea car or China car because the difference of car brand or car nationality might impact to the consumer's purchase of a new car. And the last, the research took about 1 month to distribute questionnaires that visit only 1 time in some location For the next research study, the researcher should take more time to distribute questionnaires and increase the frequency of location visits to gain more variety of responses from many groups of Japanese car consumer in different period of time which should provide more accuracy result.

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A STUDY OF FACTORS INFLUENCING CHINESE SPA SERVICE TOURISTS TO REVISIT BANGKOK, THAILAND

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Abstract

Tourism is one of the most crucial sectors for Thailand which accounts for 9-10% contribution to GDP. Before the year of 2015, Tourism Authority of Thailand (TAT) launched a strategy of wellness tourism to capture more tourists traveling to Thailand. Since Chinese tourists are the largest group who travel to Thailand, TAT wants to target those high-value Chinese tourists to generate more revenue for Thai economy PRNewsWire (2013). Therefore, it is essential to study the factors influencing Chinese tourists' revisit intention and how they perceive the pertinent elements which associated with revisit intention.

This research focused on the relationship among destination image, service quality, brand trust, destination satisfaction and destination revisit with respect to Chinese spa tourists. This study aimed to analyze the influencing factors which affect tourists' revisit to spa stores to provide some knowledge for further empirical studies with respect to their revisit intention. By knowing these critical factors would help TAT and wellness providers to promote novel marketing strategies and attract more Chinese customers travel Thailand for wellness services that would boost Thailand's economy to some extent.

The questionnaire data was collected from 400 Chinese tourists who get services from spas while traveling in Thailand. Data was analyzed using Structural Equation Model (SEM). The results of this study revealed that destination image, service quality, brand trust and destination satisfaction have relationships with revisit intention.

Introduction

With the rapid development of our world, health care providers have access to encounter people from different countries. Globalization narrows the countries' distance, making people have more channels to receive more information all over the world and also make it possible for people to have better health care and have health and wellness services swiftly.

Wellness tourism is a combination of all relationships and phenomena, attributing to travel and accommodation by people whose primary purposes are to maintain or improve their health (Mueller & Kaufmann, 2001). Based on The Global Wellness Tourism Economy, wellness tourism has the potential to grow by 9.9 % every single year in the next five years, which is almost two times of the whole industry (16% of total tourism incomes). This research also emphasizes that more than 50 % of growth in wellness tourism in the year of 2017 would come from the Asian, Latin American, Middle Eastern and North African markets. Thailand now is also promoting all sorts of health and wellness tourism. In 2014, Tourism Authority of Thailand (TAT) launched a marketing strategy by referring a study on tourism, which states that health and wellness will become a niche market to prove its market share in the next few years.

When it comes to Chinese wellness tourists, in 2015, TAT has demonstrated the results of an in-depth Chinese market study, which aims to better target marketing and promotional strategies towards Chinese tourists. The study showed that activities for Chinese tourists are mainly on shopping, and

enjoying a Thai massage, spa or a game of golf (TAT, 2015). This research confirmed that wellness tourism is popular among Chinese tourists and can be a promising market to promote Thai tourism. The President of the Thai Spa Association, Mr. Krod Rojanastien, also claims that wellness tourism is prevalent among the Chinese tourists who have high spending abilities. (TAT, 2013).

Moreover, China's economy has been rapidly growing not only in industrial production but also in social development. China ranks the second largest economy in the world (Gustin, 2010). It is also the second largest customer market according to Purchasing Power Parity (PPP), rising at a double-digit pace since the 1990s (Sun 2007, Fraser & Raynor, 1996). Furthermore, there is no doubt that Chinese tourists play the significant role in Thailand tourism. In 2014, Chinese ranks the top, exceeding far more than the tourists from other countries.

Xin (2013) pointed out that 70 % of Chinese are in sub-health condition and only 15 % of the total populations are considered as healthy people while another 15 % of Chinese people are unhealthy. In the meantime, Chinese people concern more about their health, and the increasing income enables them to pay for health care services. Hence, Thailand can expand its global wellness tourism market in China.

In the research on activities showed that Chinese tourists are interested in Thailand, Yoopetch and Shannon (2003) claimed that traditional Thai massage is one of the critical reasons for the Chinese to travel to Thailand. Xin (2013) also pointed out that Thailand is the "Spa center of Asia" showing the vital status

of spa in Thailand's wellness tourism. In an activity launched by TAT in 2015, Chinese tourists voted for their favorite Thai spa and showed that they are very interesting in spa (TAT, 2015). Therefore, according to the strategy implemented by TAT and the most important points the researcher mentioned above, Thai massage and spa are two crucial components for Thailand wellness tourism while China is a novel and untapped market for Thailand to promote spa services. In this research, the researcher would aim to Thai massage, and relevant factors such as destination image, service quality, brand trust, destination satisfaction and destination revisit to analyze the influencing factors that have impact on Chinese customers' retention.

Literature review and hypotheses

Wellness tourism

In recent years, wellness tourism is one of the fastest developing tourism service sectors, capturing the attention of consumers and investors. Global Spa Summit (GSS) (2010) defines wellness tourism as people going outside to join activities that involve the maintaining or improving their health and well-being as well as the seeking of distinctive, real experience or local experience or available therapies. Besides, wellness tourism targets travelers who seek for healthier lifestyles and want to improve health conditions (International Medical Travel Journal, 2014). Wellness tourism mainly focuses on the whole relationships and phenomena resulting from journey and accommodation by

whose primary motive is maintaining or improving health condition (Mueller & Kaufmann, 2001). Wellness tourism mainly focuses on the whole relationships and phenomena resulting from journey and accommodation by whose primary motive is maintaining or improving health condition (Mueller & Kaufmann, 2001). The reasons for the Asian countries ranks as the global leader in wellness tourism according to Laing and Weiler (2008) are because of various factors, such as natural resources, beautiful sights, and landscapes that harmonize with wellness tourism as well as the lower cost of healthcare package. Bangkok, Seoul, New Delhi, and Singapore are the most popular destinations for health and wellness tourism around the world (Connell, 2006). In Asia, spa providers primarily focus on conventional and spiritual massages and hot spring therapies (Puczkó & Bachvarov, 2006).

Destination image

In most cases, destination image is defined as the perception of individual or group toward a destination (Jenkins, 1999). Moreover, Tasci and Gartner (2007) pointed out that "destination image is a correlated system of notions, ideas, feelings, imagery, and intentions toward a destination" that suggests multiple dimensions (cognitive, affective, conative) of this framework but also their effects on the tourism destination decision making. A whole or complete image is formed by the interaction of those factors (Gartner, 1993). Gnoth (1997) proposed that perception reveals the image of the destination, affects tourist behavior intention, impacts on tourist travel

destination choice and also customers' decision-making process and willingness of choice (Tasci & Gartner, 2007).

When it comes to marketing perspective, Lee et al. (2005) and Chen and Tsai (2007) suggested that a positive destination image has impacts on customer's trip quality. Lai et al. (2009) found that customers' image of the firm has the influence on their value perception. A number of researches point out that destination image affects customers' perception of the value (Ryu et al., 2008). Besides, several types of research have investigated customers' behavior and pointed out that destination image is fundamental (Chon, 1990), and this image perception has an influence on travelers' satisfaction (Prayag and Ryan, 2012). Tourism image is beneficial towards customers' satisfaction (Bigne et al., 2001).

H1: Destination image has a positive relationship with destination satisfaction.

Service quality

Nowadays customers put more emphasis on the service quality. With the progress of globalization, competition has become more intensified, and the increasing demand to satisfied customers, the factors of quality control, service quality and effectiveness in wellness service are very significant (Friedenberg, 1997). Providing low-quality services and dissatisfying customers are the indicators of a variety of important actions (McDougall & Levesque, 1994) that would cause a switching behavior and also have impact on other people's quality perceptions (Bendall-Lyon & Powers, 2002). When it comes to health care credentials, customers prefer to look

for some hints that imply the quality of service they would like to get from a provider. Organizations' economic outcome may also be influenced by enhancing service quality because satisfaction from customer is closely associated with profitability. In health care market, the quality is measured by asking customers' experience. Enhancing customer's perception of service quality has been the main issue for health managers, policy makers and academics in these years (Otani & Harris, 2003). Also, service receiver's perceptions towards health care quality are crucial for health care organizations' revenue due to its impact on satisfaction and organization's profitability (Santouridis & Trivellas, 2010; Koska, 1990).

H2: Service quality has a positive relationship with destination satisfaction.

Brand trust

Sirdeshmukh et al. (2002) investigated that trust is regarded as customer's expectation which is embedded in service provider. Prior research had shown that trust consists of three factors. Barclay and Smith (1997) noted that customer viewpoint dependence on service providers' capacity is the first factor of trust. At the same time, they consider capacity to be the level of perception that partners assess one another skills, abilities and knowledge needed for good performance.

Furthermore, trust is necessary for a brand to be not only reliable and dependable but also honest and trustworthy (Wang, 2002). This is because customers incline to select products that they trust and rely on.

Mistrust can reduce customer commitment and the possibility to choose. Building brand trust is significant for customers to obtain and evaluate information from the product.

Therefore, in health care service market, trust means customer's assurance that service would reach their anticipation (Moliner, 2009). When customer holds high trust, it means that customer strongly believes that service would attain its expectations. On the contrary, low degree of trust means customers perceive that service would be lower than its anticipation. On the perspective of service provider, trust shows positive efforts to reduce cost. Thus brand trust is essential for providers to pay attention to manage.

H3: Brand trust has a positive relationship with destination satisfaction.

Destination satisfaction

Satisfaction in health care industry is usually associated with the quality of health care. In particular, satisfaction is a perception of care (psychological health) or contributes to other perceptions and aspects. For instance, customers with satisfaction are more willing to conform to providers suggestions and cooperate or remain to choose the same providers. Therefore, satisfaction is a very critical element to manage and enhance perceived qualities. On the other hand, it can also be regarded as an independent variable which forecasts consumer behaviors (with the assumption that different satisfactions influence people's behavior) (Ware et al., 1977). In particular, with the fierce competition in health care market at present days, satisfaction is not only an indicator to

manage service quality but also an important factor to capture customers.

Based on Kirsner and Federman (1997), customer satisfaction in wellness service is an interactive process which clients perceive the quality by experiencing health and wellness services. In previous research, satisfaction is suggested as a good indicator of repeat purchase intentions (Petrick, 2002). Satisfaction reveals the level which people consider that an experience results in positive perceptions (Rust and Oliver, 1994). Therefore, satisfaction is a comprehensive affective response by using product or service (Oliver, 1981). Besides, Fornell (1992) also proved that satisfaction is a premise of trust, revisit and repurchase intention.

H4: Destination satisfaction has a positive relationship with revisit intention.

Revisit intention

Revisit intention is a critical study topic in tourism destinations which has been mentioned as a significant factor of behavioral intention (Jani and Han, 2011). Tourists' behaviors compose of destination choice, post assessment and future behavioral intentions (Chen and Tsai, 2007). The subsequent evaluations are regarded as visitors' perceptions and satisfaction, however, the future behavioral intentions indicates the willingness to revisit the same destination and recommend it to others (Hume et al., 2007; Ryu et al., 2010).

In this study, behavioral intention refers to the phenomena of purchasing wellness services but not consider it as a frequency in the wellness tourism. In the previous

service-related marketing research, repurchase, revisit intention and willingness to recommend others are usually utilized as the measurements (Ramkissoon & Uysal, 2011; Som,

Marzuki, Yousefi, & AbuKhalifeh, 2012). Marinkovic et al. (2014) also pointed out that revisiting destination and positive word of mouth results to a crucial source of profitability.

Conceptual framework

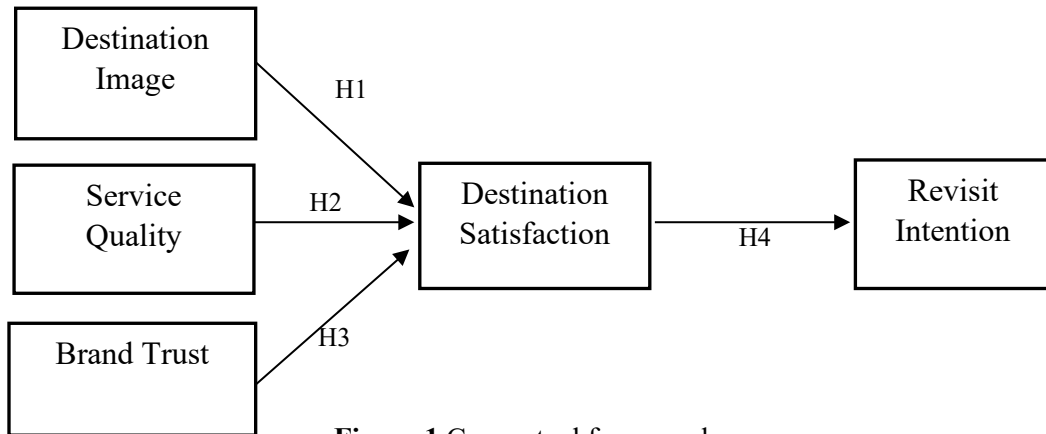


Figure 1 Conceptual framework

Population and sample

The target population of this study is Chinese tourists who seek wellness services in Thailand. According to Sing Sian Yee Pao Daily News (2014), 50 percent of Chinese tourists went to Thailand to seek for wellness service which is 2,312,000 out of the 4,624,000 total Chinese tourists.

The sample size for this study is based on the formula recommended by Yamane (1973) as below:

$$n = \frac{N}{(1 + N)e^2} \quad (1)$$

Therefore, with $e=5\%$, the sample size for this study is:

$$n = 2,312,000 / (1 + 2,312,000 * 0.05)$$

$$n = 399.93$$

$$n \approx 400$$

The sample size is about 400 tourists who travel to Thailand seeking for wellness services.

Data collection process

Since the target respondents are Chinese people, thus Chinese as the priority language was used in this questionnaire. The data was collected by the researcher waited outside the spa stores distributing questionnaire. However, 117 respondents refused to fill in the questionnaires and eventually got 400 samples of Chinese tourists who were traveling in Thailand for spa services in 2016. Before distributing the questionnaire, the researcher asked them whether they had experienced wellness service or not, and gave out questionnaires to respondents who had experienced before. The researcher selected five wellness service providers namely Health Land Spa and Massage; Let's Relax; Bhawa Spa; Lavana Bangkok Spa; Wat Pho Thai Traditional Massage School according to the recommendation to Chinese tourists from a famous Chinese website Sohu in 2016.

Questionnaire design

The questionnaire was divided into six parts.

In the first part, respondents were asked for their gender, age, level of education, income, and type of wellness care.

In the second part, the questionnaire was used to measure the destination image from respondent which include safety, climatic conditions, etc.

In the third part, the questionnaire was used to measure the service quality from respondent which include safety, climatic conditions, etc.

In the fourth part, the questionnaire was utilized to ask questions about brand trust, such as the honesty, customers' benefits, problem solving, etc.

In the fifth part, the questionnaire was utilized to measure tourist's satisfaction.

Lastly, in the sixth part, the respondents were asked about their revisit intention.

Data analysis

Part 1, nominal and ordinal scales were used to evaluate the demographic data which the researcher applied SPSS to measure the data.

Part 2-6 utilized the five-point Likert scale to assess the data which the researcher used AMOS to measure the data.

The researcher analyzed the statistics to illustrate general profile of demographic information and used descriptive statistics to show the impact of those factors by mean scores. Then the SEM was utilized to demonstrate the relationship between destination image, service quality, brand trust, destination satisfaction and tourist's revisit intention. The results would display as follows.

Results

Descriptive analysis

Table 1 Frequency and percentage of respondents of demographic factors (n=400)

Variables	Categories	Frequency	Percent (%)
Gender	Male	158	39.5
	Female	242	60.5
Age group	Less than 20 years old	10	2.5
	20-30 years old	177	44.3
	31-40 years old	97	24.3
	41-50 years old	91	22.8
	51-60years old	22	5.5
	Above 60 years old	3	.8
	Elementary school	6	1.5
	High school	103	25.8
Education level	Bachelor degree	227	56.8
	Master degree or higher	64	16.0
	less than 2,000 RMB	2	.5
	2,000 RMB– 3,999 RMB	35	8.8
Monthly income	4,000 RMB– 4,999 RMB	61	15.3
	5,000 RMB– 6,999 RMB	140	35.0
	7,000 RMB– 8,999 RMB	89	22.3
	9000 RMB or more	73	18.3
Marital status	Single	170	42.5
	Divorced	69	17.3
	Married	157	39.3
	Widowed	4	1.0
Travel time	The first time	253	63.3
	More than one time	147	36.7
Type of service	Aromatherapy body massage	130	15.0
	Traditional Thai massage	243	28.0
	Therapeutic massage	23	2.6
	Foot reflexology	104	12.0
	Body scrub	98	11.3
	Facial treatment	49	5.6
	Thai herbal compress	91	10.5
	Thai herbal stream sauna	9	1.0
	Hand reflexology	25	2.9
	Floral bath	22	2.5
	Body wrap	19	2.2
	Back and shoulder massage	6	.7
	Thai massage with herb	5	.6
	Warm herbal bath	45	5.2
	Qi	0	0

Table 1 illustrated that the main group of the respondents were single female who were mainly 20-30 years old, holding bachelor's degree, earning ¥7,000–

¥8,999 monthly. They were in Thailand for the first time, preferred to choose traditional Thai massage.

Table 2 Mean and standard deviation of variables (n=400)

Variable	Mean	Std.Deviation	Level of agreement
Brand image	3.66	1.26	Agree
Service quality	3.83	1.09	Agree
Brand trust	3.62	1.19	Agree
Destination satisfaction	3.8	1.25	Agree
Revisit intention	3.91	1.22	Agree

Table 2 showed that all the factors met the criterion of level of agreement. The result revealed that brand image (mean = 4.17), service quality (mean = 3.87), brand trust (mean = 3.65), destination satisfaction (mean = 4.02), and revisit intention (mean = 3.50). In addition, relationships between service quality and destination image, brand trust and destination satisfaction, and the relationship between destination satisfaction and revisit intention regarding the Chinese spa service tourists to revisit Bangkok, Thailand is interactive and active. In other word, all the variables are the pertinent elements influencing Chinese tourists' revisit, and they have impacts on each other.

Validity testing

The validity of this study was evaluated via convergent validity and discriminant validity. Hair et al. (1998) suggested that construct validity can be estimated by exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). EFA is a method to assess the unidimensionality of the research constructs to prove the items convey the same ideas. Moreover, CFA originated from structural equation modeling (SEM), which is a stricter measurement of unidimensionality (Garver & Mentzer, 1999). Therefore, CFA was applied to ensure and sometimes refined the results of unidimensionality that got from the EFA to check the validity of the constructs.

Table 3 Convergent validity of factors

	KMO measure of sampling	approx. Chi-square	BTS df	Sig.
Destination image	.918	1564.044	28	.000
Service quality	.950	3015.614	45	.000
Brand trust	.905	1671.326	10	.000
Destination satisfaction	.913	2049.845	10	.000
Revisit intention	.909	1783.428	10	.000

The valid constructs showed the degree of the variables that can explain the concept (Sekaran & Bougie, 2010). The validity construct is valid once the factors reach the standards of Kaiser Meyer Olkin (KMO) value ≥ 0.5 ; p-value of Bartlett Test of Sphericity (BTS) ≤ 0.05 ; factor loading value (for each

indicator) ≥ 0.5 (Hair et al., 2006; Lai & Chen, 2011; Malhotra, 2007). If all the variables can meet the indexes of construct validity, the construct is established. In this study, the convergent validity of all factors is qualified with the standards of convergent validity.

Table 4 Discriminant validity of factors

	RI	DS	BT	SQ	DI
RI	0.876				
DS	0.609	0.898			
BT	0.454	0.618	0.864		
SQ	0.632	0.687	0.628	0.786	
DI	0.574	0.731	0.531	0.686	0.720

The approach used to measure discriminant validity is to compare the shared variance within constructs from each construct in AVE. The discriminant validity is established between two constructs as long as the AVE of each construct is greater than the shared variance (Anderson & Gerbing, 1988). In this table, all the factors are acceptable with the assessment of discriminant validity. Therefore, the all the constructs are established.

Reliability analysis

The reliability of variables was evaluated basing on the value of the Cronbach α coefficient. The reliability of a variable illustrates the degrees to which the measurement scale of the variable corresponds to the concept of the variable (Sekaran & Bougie, 2010). The Cronbach α coefficient refers to the level of the internal integrated reliability. Normally, the Cronbach α is acceptable when the value is greater than 0.6 and regarded as good when it exceeds 0.8. The 0.6 are suggested as cut-off point by Hair et al., (2006) and Lai and Chen, (2011).

Table 5 Reliability for variables

Variables	Cronbach α
Destination image	0.893
Service quality	0.942
Brand trust	0.935
Destination satisfaction	0.954
Revisit intention	0.943

This table illustrates the reliability for each variable which shows all the variables are above 0.8 that are good-fit and high reliable of the research model.

The goodness of fit test

CFA utilizes the Maximum Likelihood (ML) estimation method to measure the constructs of destination image, service quality, brand trust, destination satisfaction and revisit intention respectively as well as the whole model (Bollen, 1989; Hair, Anderson, Tatham,

& Black, 1998). To evaluate the complete model, the researcher applied chi-square/df, GFI, AGFI, NFI, IFI, CFI, RMSEA to assess this research model in SEM.

In this research, the researcher also evaluated the reliability in CFA. The standard error, critical ratio, and p value were utilized to assess the significance of the estimate. If all these values are positive, this means the estimate is positive (Garson, 2007). Critical ratio is evaluated via regression weight divided by the standard error.

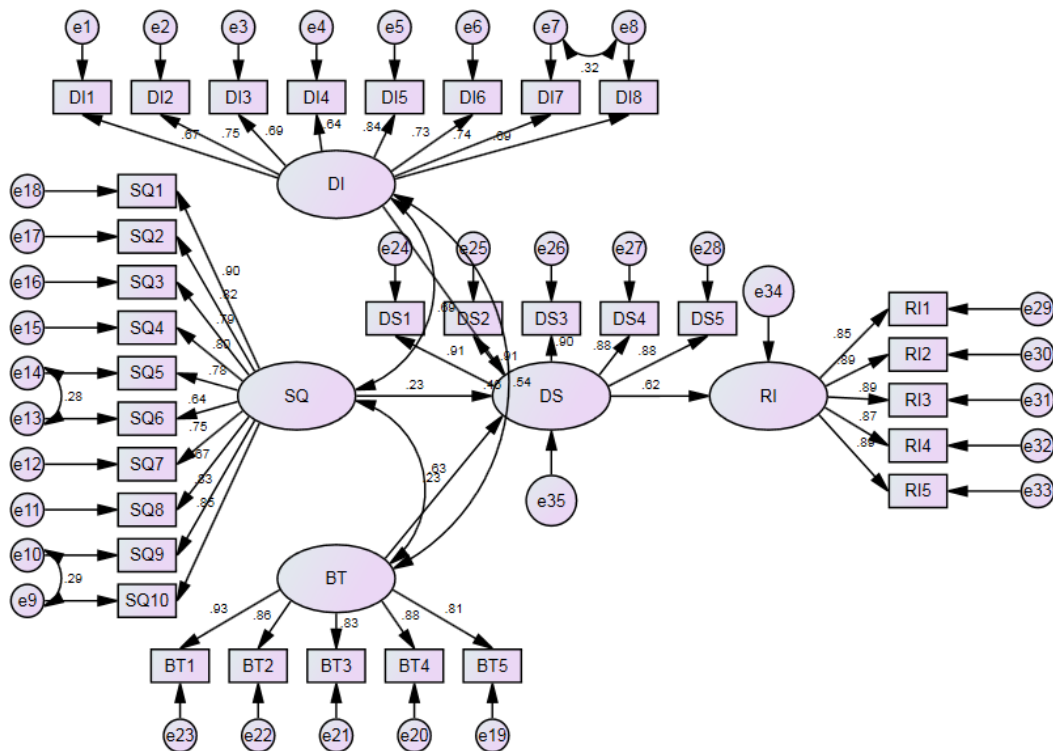


Figure 2 Result of structural model

Table 6 Goodness of fit test for variables

χ^2	DF	χ^2/df	GFI	AGFI	NFI	IFI	CFI	RMSEA
765.011	485	1.577	0.900	0.884	0.934	0.975	0.975	0.038

This table illustrates the CFA of the structural model. The χ^2 is 765.011 and df is 485. The χ^2/df is 1.577, which is no more than the criterion of 3, and the GFI is 0.900, NFI is 0.934, IFI is 0.975, CFI is 0.975 which all exceed the standard of

0.9, while, AGFI is 0.884 which is below 0.9, but it is also acceptable when the values at 0.8-0.9 (Teece, Pisano, Shuen, 1997). In addition, the RMSEA is 0.038, which is below 0.05 considered as good fit. Therefore, all the criteria meet the standard of acceptable.

Results of hypotheses testing

Table 7 Results of hypotheses testing

Hypothesized path			Standardize d estimate	Standard error	C.R.(t-value)	P	SMC (R ²)
DS	<---	DI	0.463	0.074	7.863	***	.647
DS	<---	SQ	0.233	0.066	4.186	***	
DS	<---	BT	0.227	0.05	4.874	***	
RI	<---	DS	0.623	0.047	12.91	***	.389

This table shows all the standardized estimate are positive which means the group whose latent means were not constrained to zero and had a higher mean on all the latent variables than the reference group. Furthermore, the results showed the critical ratios are all above 1.96 which are above the standard of 1.96. The P values also all exceeded 0.001 which are all above the value of 95%. The SMC are 0.647 and 0.389 of the observed variance revisit intention are explained by all the other factors.

From all the analyses above, the constructs are all meet the standards of acceptance, so this conceptual model is established.

Conclusion

According to the results, majority of the respondents were single females who are mainly on 20-30, holding bachelor's degree, earning ¥7,000–¥8,999 monthly. They visited Thailand for the first time and preferred to choose traditional Thai massage. In addition, relationships between service quality and destination image, brand trust and destination satisfaction, and the relationship between destination satisfaction and revisit intention concerning the Chinese spa service tourists to revisit Bangkok, Thailand is interactive and positive.

Discussion

In this study, the purpose is to analysis results of the relationships among service quality and destination image, brand trust, customer satisfaction and revisit intention regarding the Chinese spa service tourists to revisit Thailand. In hypothesis 1, this study has found that destination image is the most critical feature that influences Chinese spa service tourists to revisit. Destination image also has a relationship with destination satisfaction which is consistent with the previous studies of Mohamad et al. (2014), and Cretu and Brodie, (2007). In hypothesis 2, this research showed service quality has relationship with satisfaction which demonstrates the beta of 0.233 and the p-value is below 0.001. It is consistent with many empirical researches (Baker & Crompton, 2000; Brady & Robertson, 2001). In hypothesis 3, the result of this study has suggested that brand trust has a relationship with destination satisfaction. The empirical study of Hart and Johnson (1999) implied that brand trust has a positive relationship with satisfaction. In hypothesis 4, the result of the study has found that destination satisfaction has a relationship with revisit intention. Many academic researchers suggested that destination satisfaction has an impact on revisit intention (Chen, 2008; Petrick, 2002). Chen (2008) stated that satisfaction has an impact on customer's intention.

Implications

The destination image is the most crucial factor that can lead Chinese spa service tourists to be satisfied with the destination, which can eventually lead to the revisit intention of this group of people in this research. In this study, the trend of younger age is becoming more

apparent so that Thailand can build an energetic image. Moreover, this study revealed that Chinese spa service tourists concern Thai food as the most important feature when they evaluate destination image. For the spa services providers, they can also serve some Thai food that Chinese spa service tourists like most and fine tune the flavor that are closer to the habit of Chinese people. In addition, spa services providers not only can maintain the equipment but the outside environments of the stores regularly to build better destination image thoroughly. Therefore, the TAT can recommend some restaurant to customize the flavor of Thai food which can better enjoy and satisfy Thai food in Thailand. Besides, TAT can negotiate with the government to optimize the infrastructures that can bring better experiences in Thailand and also take effort to establish a relaxed and enjoyable impression to the tourists. For instance, it can cooperate with Chinese popular social media called "Weibo" to promote Thailand propaganda advertisements which concern with the idea of relaxation and the beautiful natural landscapes.

Service quality plays a significant role in various service industries that also include in spa services tourism. According to the results, it is the second strongest factor that influences satisfaction. In this study, women are the largest group to receive spa services, so Chinese women may be more inclining to have spa services. The most significant reason for Chinese spa service tourists to evaluate service quality is seeking customers' feedback constantly. The spa services providers may ask Chinese tourists to leave their emails for the spa to follow up after the service and get the suggestions from customers. The friendliness is the second vital reasons for Chinese spa service tourists. The spa

providers can take a regular course of the manners for their staff. It can enhance the service quality and the experiences of Chinese spa service tourists. They can also ask their customers to rate the therapists who provide the services for them. In accordance with the scores, the spa providers can set the reward and punishment system to evaluate their stuff, increasing the hourly rate of the good performance stuff while declining the service frequencies of the lower rated therapists. Therapists serve the same standard services are the third significant attributes arousing Chinese spa service tourists' concerns. The spa providers should train their staff on schedule and testify their performances after training. Moreover, they can also ask their stuff to supervise the performances of one another and report the bad performances stuff to get some rewards. On the other hand, for TAT, it can play the crucial role of supervision to track the service quality performance from customers or assign stuff to experience spa stores to get real experiences to provide standardized service quality instructions to this emerging industry.

Brand trust is of importance for the destination satisfaction which has impact on the ultimate revisit intention. In this study, it is the third greatest factor that affects satisfaction. In this study, the spa store can be trusted, considering as the first concern for Chinese spa service tourists. So, the spa providers can give some introductions to their stores and products so that the customers feel secured before they receive services. For some Chinese tourists who have experienced the services previously, they can rate and recommend spa stores in Chinese repetitious rating website Dazhongdianping, because many of the Chinese people nowadays are using this site as an essential reference to evaluate

service providers. In the same time, spa providers can encourage Chinese tourists to comment on that website in return for discounts and coupons. Also, when the therapists provide services, they can also explain some main points to the customers as well which would help to build the trustworthiness. The second important attribute is the therapists' concern about customers' benefits. Therefore, the therapists should ask the needs of customers and provide specific services for them. For TAT, it can recommend some better performances' spa stores which Chinese tourists favored and trusted most to Chinese tourists, thereby enhancing the service experiences and ask bad performances' spa stores to overhaul.

Destination satisfaction is a very crucial antecedent for Chinese spa service tourists' revisit intention which has been suggested in many academic researches. This study's result also showed that destination satisfaction has a relationship with revisit intention. The facilities are the strongest reasons that satisfy customers. Thus the spa providers should update their facilities from time to time and maintain the facilities appropriately. Furthermore, the TAT should form Thailand as an ideal destination, such as envoy a proper publicity ambassador for China region. The appropriate waiting time are also vital for Chinese spa service tourists, so spa providers should schedule adequate stuff to provide services and offer some entertainments while customers are waiting for the services. So the spa stores should hire sufficient stuff to serve customers. For those who wait over the committed time, the stores can give some discounts in case customers switch to other stores. For TAT, it have to supervise destination image, service quality and brand trust to reach customers' satisfaction ultimately. Thus

the researcher recommended that it can design an official application to put its propaganda advertisements and promoting activities in it, also TAT can invite well-performed spa providers to put their information in this application. After customers experienced, they can rate and comment according to the aspects of destination image, service quality, brand trust on that app which would more convenient for TAT to supervise and obtain feedback rapidly.

Revisit intention is an outcome that all the industries attempt to achieve including the spa services tourism. In this study, the Chinese spa service tourists showed the strongest intentions to revisit Thai spa services next time. Moreover, after experiencing the spa services in Thailand, a large amount of spa service tourists showed the intentions to experience again. Thus the spa providers can give discounts if customers receive the same services next time, and send the discount information to their emails regularly. On the other hand, by rewarding these returning customers, TAT can give some free journey chances for the loyal spa service tourists and cooperate with spa providers to offer free experience vouchers and spa products to active users and good commentators to encourage customers to revisit. In addition, Chinese spa service tourists also express the intention to revisit in the near future. Thereby, the researcher suggests that the TAT can suggest Ministry of Foreign Affairs to launch strategies to encourage spa service tourist's revisit such as apply a new VISA which is for tourists who can reentry Thailand several times in a short time which can make revisit more convenient.

Limitations & further research

This research attempted to illustrate how destination image, service quality, brand trust and destination satisfaction influence Chinese spa service tourists' revisit intention. However, it does not represent the universal phenomena that these factors can lead to tourists' revisit intention. Academics imply no efficient and general competitive model for all tourism destinations (Gomezelj& Mihalic, 2008). Therefore, it is evident that there are more factors influencing tourists to revisit intention. After analyzing more factors, the researcher can increase the generalization and representation.

However, this study only put emphasis on destination image, service quality, and brand trust and destination satisfaction influencing Chinese spa service tourists' revisit to Bangkok, Thailand. Therefore, the researcher recommends other factors like perceived price Korda and Snoj (2007), marketing mix, perceived value, and destination familiarity to be investigated to make the research more complete. In addition, the questionnaire respondents were only in five spas in Bangkok. Thus, to take consideration of the preciseness, further researches need to include samples from other cities and spa stores with the different rate. Furthermore, future research may also use a longitudinal approach to investigate how the destination image, service quality, brand trust and destination satisfaction affect revisit intention.

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FACTORS INFLUENCING CUSTOMER REPURCHASE INTENTION BY USING THIRD-PARTY PLATFORM BOOKING FLIGHT TICKET IN CHINA

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Abstract

This research mainly focuses on the study of how trust and perceived ease of use affect perceived usefulness and at the same time how trust, perceived ease of use, perceived usefulness and enjoyment influence customers' repurchase intention in booking flight tickets through online third-party platforms in China.

Relevant statistics indicate that more and more Chinese customers are becoming accustomed to booking airline tickets online which is a convenient and fast way to buy tickets and also a major trend in online shopping. In recent years, while the rapid development of online ticket purchases has brought convenience to customers, it has also been accompanied by some critical issues from time to time. The security, practicability, and operability of online ticket purchases have also raised issues that need to be discussed. There are several "HOWS" which the owners and managers of the websites providing online ticket purchasing services should consider, including: first of all, how to make the ticket booking website standout among numerous competitors; secondly, how to innovate the ticket booking service of the website; and thirdly, how to make the enterprise achieve a sustainable development. Therefore, the author explored and studied these questions along with the previous literature. This thesis mainly researched how trust, perceived ease of use, perceived usefulness and enjoyment influence customer repurchase intention when using third-party platforms to book flight tickets.

A questionnaire survey was used to collect data in this study. The surveyed population included customers who book tickets on the Internet through a third-party platform. The sample size of needed questionnaires to be collected in China was calculated to be 400. Questionnaires were distributed to respondents using an online questionnaire, followed by screening and data analysis. The results showed that trust, perceived ease of use, perceived usefulness and enjoyment have significant positive impacts on repurchase intention. In addition, trust and perceived ease of use both has significant positive impact on perceived usefulness; in the meantime, perceived usefulness as a partial mediator impacts trust, perceived ease of use concerning repurchase intention.

Introduction

With the continued popularity of China's internet, e-commerce has developed rapidly over the past 20 years since it arrived in China in 1997 (China E-Commerce Information Platform, 2018). E-commerce refers to the use of web-based means for communicating and conducting online trading activities. Information networks serve as a method of business activities and commodity trading as its core.

With the rapid development of e-commerce, there are more and more websites available where airline tickets can be purchased online. These websites provide customers with more choices and services. However, the growth in the industry has also brought more competition between websites. This growth has forced each site to enhance its service quality by providing more convenient, personalized and diversified services. Presently, websites used by Chinese consumers mostly include: Qunar, Ctrip, Fliggy, LY.com (analysis, 2018).

This paper is going to research Chinese customers' intentions of repurchasing online airline tickets booking. It will explore further the factors that effect customer's buying decisions in order to provide Chinese online tickets booking third-party platforms some useful suggestions that will, help them know what kind of services customers are looking for as well as what are they complaining about. It is hope that the results of this paper will help them enhance their service and keep their customers.

Literature review

Theoretical model

The Technology Acceptance Model (TAM) was first proposed by Davis (Davis, 1985) in his doctoral dissertation (Davis, 1989; Davis et al., 1989). Based on the theory of rational behavior, the model draws on the theories of self-efficacy theory, expectation theory, input-output theory, and change adoption to modify the original model and come

up with models suitable for information technology research (Davis, 1989).

When Davis et al. studied enterprise employees' acceptance of computers, combined with self-efficacy theory, cost-benefit paradigm and other relevant theories, they explained people's acceptance of technology very well, which was very much in line with the simplicity of the theory. Therefore, it has become a very suitable model as a

theoretical basis for extended us. In other research studies in rational behavioral beliefs on the acceptance of science and technology in the work place, users behavioral beliefs were divided into perceptual usefulness and perceptual ease of use. These two perceptual beliefs determined the user's intention to adopt an information system. This framework of research methodology is the mature, most widely used TAM model.

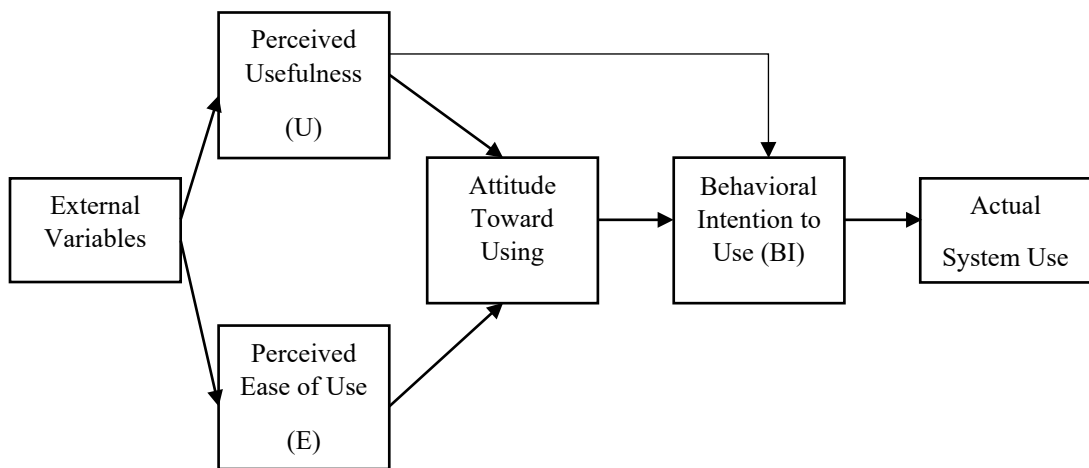


Figure 1 Technology acceptance model (Davis,1989)

Conceptual framework

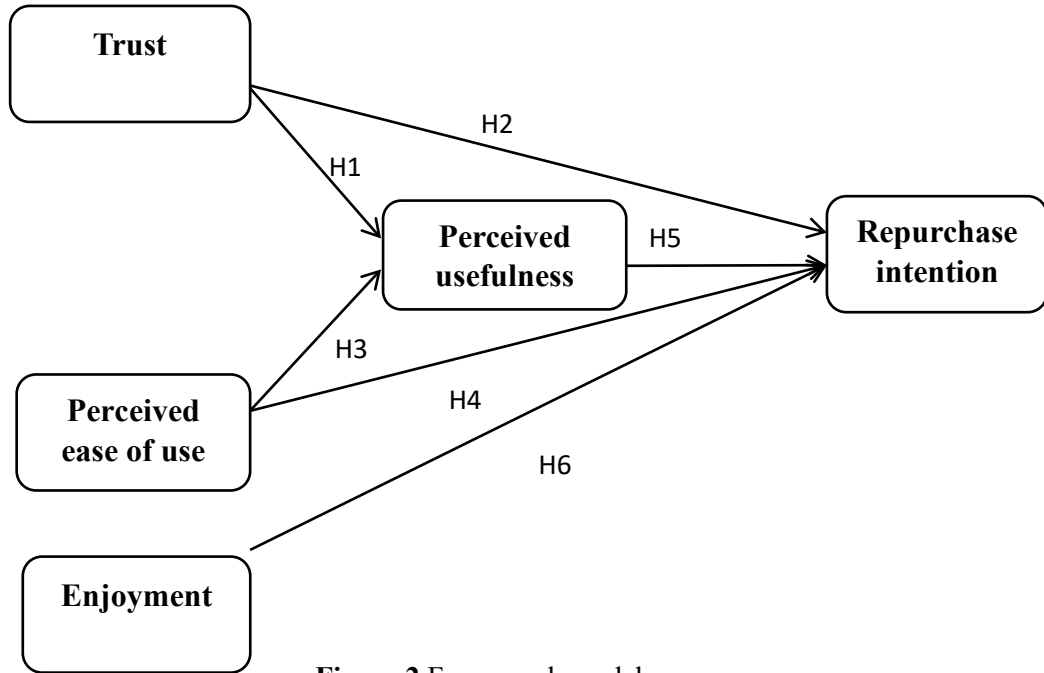


Figure 2 Framework model

Trust

In the field of psychology, Lewis (2000) believes that “trust does not occur spontaneously, but is a kind of interpersonal attitude generated through rational estimation and emotional connection based on a series of behaviors in interpersonal relationships”. Rousseau et al. (1998) proposed that “trust is a kind of psychological state because one side has positive expectations of the others intentions and actions and thus voluntarily undertakes possible harm”. Kim and Ferrin's (2008) definition of trust in research is the customer's belief that online merchants will perform their trading duties and obligations in accordance with their expectations.

Dahlberg et al. (2003) believed that perceived ease of use and perceived trust affect perceived usefulness, and perceived usefulness affects the use of attitudes and intentions. Mohr and Spekman (1998) found that trust is the basis for maintaining long-term relationships. Jarvenpaa and Tractinsky (2000) found that the customer's trust in a shopping site was affected by a sense of risk and attitude, thereby affecting the purchase intention. Chaudhuri (2001) also confirmed through empirical research that the customer's trust in the brand will positively affect the customer's repeated purchase intention.

To sum up, we can draw the following assumptions:

H1: Trust has a significant positive impact on perceived usefulness.

H2: Trust has a significant positive impact on repurchase intention.

Perceived ease of use

Davis (1989) defines perceived ease of use as the degree of effort that a user expects to have to fully master a technology. The perceived ease of use of online shopping activities is mainly reflected in the degree of customer perception of ease of use of the website. It generally includes the use of simple shopping procedures, whether the online transaction interface is easy to understand, and whether the operating mode is convenient (Yin et al .2017).

Davis (1989) pointed out that perceived usefulness and perceived ease of use are two very important factors in TAM, and that perceived ease of use is positively correlated with perceived usefulness. That is to say, an easy-to-use system will make users feel more useful and have a positive effect. Koufaris and Hamton (2004) believe that the difficulty of using web pages is one of the important reasons for consumers to abandon online shopping.

To sum up, we can draw the following assumptions:

H3: Perceived ease of use has a significant positive impact on perceived usefulness.

H4: Perceived ease of use has a significant positive impact on repurchase intention.

Perceived usefulness

Davis (1989) defines perceived usefulness as: In a certain organizational context, the subjective perception of the user that by using of a certain technology can improve his or her job performance. The technology acceptance model (TAM) has been applied and verified many times in the field of e-commerce, and perceived usefulness and perceived ease of use are its major determinants. Davis et al.(1989) believe that Perceived Usefulness (PU) is the key driver in the technology acceptance model, and it influences users' acceptance behaviour by improving the effectiveness of users' use of information technology.

Keat and Mohan (2004) analyzed relevant research and found that the perceived usefulness and perceived ease of use are influenced by consumer cultural beliefs, motivation, interface design, and shopping experience. Li et al. (2006) research was based on the technology acceptance model but combined with the actual situation in China. They constructed a conceptual model of the influencing factors of consumer online shopping motivation, and verified it with the structural equation model .The results show that the trust, transaction cost, perceived usefulness, and perceived ease of use all significantly affect the motives of consumers online shopping.

TAM believes that perceived usefulness will also affect users' repurchase intentions .Although the user may have negative feelings about a system, it may still become useful because the use of the system can improve his performance and the gaining of rewards. Although he originally disliked the system, the user

has overcome this dislike by how the system operated. The better the system's own performance, the more the perceived usefulness of the system to the consumer. The perceived usefulness of this study refers to how useful online shopping is perceived by customers for their shopping tasks.

To sum up, we can draw the following assumptions:

H5: Perceived usefulness has a significant positive impact on repurchase intention.

Enjoyment

Marketing scholars and information system adoption researchers believe that perceived enjoyment is an internal motivation for personal emotions and plays an important role in consumer experience (Babin et al., 1994). Enjoyment plays a key role not only in the offline environment (Blakney and Sekely, 1994), but also in the online environment (Jarvenpaa and Todd, 1997). In the study of information technology or systems, enjoyment refers to the degree to which an individual perceives pleasure in the use of computer activities. It may also be defined as the perception of pleasure and happiness brought by the performance of an activity or activities (Davis et al., 1989; Venkatesh, 2000).

The physical appearance of the travel website's interface design, overall style, and animation effects as emotional stimuli will directly affect the enjoyment of potential tourists (Kim, 2002). Menon and Kahn (2002) believe that enjoyment is a positive state of mind and refers to the extent to which a person feels happy

or satisfied with a specific situation. A good navigation system is a key factor in emotional stimulation and plays a positive effect on enjoyment (Kang, 2006). People's perceived enjoyment was found to be greatly reduced due to the excessive waiting time for the network response. Also, the emotional transmission factors such as download speed are important components for stimulating network users' perceived enjoyment (Palmer, 2002).

Venkatesh (1999) found that perceived usefulness and perceived enjoyment had the same effect on behavioral intention. To sum up, we can draw the following assumptions:

H6: Enjoyment has a significant positive impact on repurchase intention.

Repurchase intention

Jones et al. (1995) using repurchase intentions as a more reliable psychological predictor of repurchase behaviour is the willingness of consumers to re-consume a product or service based on their feelings when they consume and use a product (service). According to the research of Zeithaml (1996) and Shi et al. (2005), they define the repurchase intention as a type of product or service that customers continue to purchase in the future after fully considering their current status and other relevant conditions. Patterson and Smith (2003) also pointed out in the study that customers' repurchase intention is an indicator of their actual repeated purchase behavior. Scholar Chen (2002) believes that customers' repurchase intention refers to the desire or tendency of customers to continue

their trading relationship with existing suppliers.

Ajzen and Driver (1991) pointed out in the study that intentions occur before cognitive behaviors, and that behaviors must go through the intentional stage before they appear. Intention determines the performance of cognitive behaviors. Harrison (1995) believes that behavioral intention is the intensity of the individual's autonomous plan to engage in a specific behavior. Under the premise of excluding other influencing factors, the stronger the intention of an individual to engage in a specific behavior, the greater the possibility of actually engaging in that behavior. Schiffman and Kanuk (2000) believe that purchase intention is an indicator to measure the possibility of consumers purchasing a certain product or service. The customer's repurchase intention in the online shopping situation can be understood as that the customer intends to come back to the site for a period of time after having had a transaction with a shopping site, and can also be interpreted as the customer's continuous relationship with the site.

Research methodology

Research design

Questions relating to the variables examined by this study were chosen from leading scholastic literature, in order to ensure the validity and reliability of the questionnaire's design. The questionnaire includes three parts. The first section is screening questions, with the purpose of screening out the population who this research does not apply to, for example, the respondent

who is not shopping online. The second section of the questions is based on the framework of asking questions about each of the variables (trust, perceived ease of use, perceived usefulness, enjoyment, and repurchase intention). The third section of the questions is asking demographic questions, such as asking respondent about their personal information, such as gender, age, income, etc.

The second part of the questionnaire used to measure the independent and dependent variables. There were adapted from previous literature and measured on a 5-point Likert scale from strongly disagree to strongly agree. Perceived ease of use was measured by five items adapted from Chui et al. (2009); perceived usefulness was measured by five items adapted from Chui et al. (2009); trust was measured by five items adapted from Gefen et al. (2003); enjoyment was measured by three items adapted from Davis et al. (1992) Teo et al. (1999) Lin and Lu (2011); repurchase intention was measured by three items adapted from Chui et al. (2009).

Population and Sample

In determining the sample size needing to be collected (i.e. N) in order for the research to be valid, this study considered the total number of individuals using the Internet for travel bookings. According to the data from CNNIC (China internet network information center, 2017), as of December 2017, the number of the netizen who have booked air tickets, hotels, train tickets or holiday products online in China reached 375.78 million. This research project used this figure to

calculate N. This study used Taro Yamane's formula (1973) to calculate N with an error rate of 0.5.

The calculation process is shown below:

N: Total Population; e: Error Rate

$$n = \frac{N}{1+N \times (e)^2} \quad (1)$$

$N=375,780,000$, $e=0.05$

$$\begin{aligned} n &= \frac{375,780,000}{1+375,780,000 \times (0.05)^2} \\ &= 399.9995742 \\ &\approx 400 \text{ Persons} \end{aligned}$$

The result shows that the sampling size should be 400 persons, which means we will collect 400 valuable questionnaires.

Data collection

Since the producing of paper-based questionnaires costs a lot of time and labour, the study gave up the idea of issuing paper questionnaires and opted for online questionnaires. There were two main methods used in the production and dissemination of the questionnaires. The first one was to edit the survey by using wjx.cn, a well-known questionnaire network site in China. The questionnaires were then distributed through social networking sites commonly used by Chinese, such as WeChat, QQ, weibo. Advertising using friends and relatives was implored to spread the awareness of the questionnaire. The second method was directly posting the questionnaire on wjx.cn, for it to be delivered to the people who also needed to complete their questionnaire, this way we can help the individuals to fill out the questionnaire.

The second method allowed the collected data to be more geographical represented, thus breaking any geographical limitations, and insuring the scope of the date collection was more extensive.

The data collection occurred from June 24 to July 4 or a total of 11 days. This research totally collected 492 questionnaires, after screening out the questionnaires which answered booking airline tickets by using official website, or respondents who chose to use other website other than Ctrip, Qunar, Fliggy, there were 397 valid questionnaires left. Therefore, the validity rate was 80.7%.

Results and findings

Demographic characteristic

A total of 492 questionnaires were collected, of which 397 were considered valid questionnaires. Of the 397 valid questionnaires, 50 valid questionnaires were collected from the early pretest. Of the acceptable questionnaire, the proportion of male and female was balanced, with 200 male (50.4%) and 197 female (49.6%). Most respondents were between 21 and 30 years old, and most of them are unmarried (65.2%) with a bachelor's degree (70.8%), students (30.7%) or company staff (29.7%) with a monthly income level of between 1001 to 4000 RMB per month (27%) or between 4001 to 7000 RMB per month (32.7%). When respondents were asked the way they came to know about the ticket website and despite the questionnaire giving them a lot of options, most of them indicated that they followed a link from another website (35%), found it by a search engine

(47.6%), or was told of the URL by friends (43.1%). Most respondents bought tickets 1 to 2 times a year (44.1%). The average browsing time was about 15 to 30 minutes, and the purchase price of each ticket was mainly between 501 and 1000 Yuan (37%).

The level of agreement analysis

When asked about the reasons why respondents used this website they chose, the highest numbers of them indicated it was due to it being a “personal habit” (mean =3.88). Respondents were most likely to buy tickets (mean=3.73) on holiday. According to the questionnaire, based on the website that they chose, besides purchasing air ticket, the most frequent services that they use were making hotel reservations (mean=3.36) and purchasing train tickets (mean=3.42).

There were five questions that measured perceived ease of use. The average mean for all questions was 3.85. Of all the results, the question with the highest mean is "this website is easy to use", mean=3.91. There were two questions which tied for second highest mean=3.90. These were "my interaction with this website is understandable" and "it is easy to become skillful at using this Website". The lowest score of all the questions was "learning to operate this website is easy", mean=3.75. Perceived usefulness was measured by five questions, with an average mean=3.87. The highest mean value was "this website is useful for searching for and buying goods", mean=3.96. The lowest value of the five questions was "this website increases my productivity when

searching for and purchasing goods", mean=3.77. For the analysis of trust, the average value of the five questions is 3.83. The question, "based on my experience with this online ticket booking store in the past, I know it is trustworthy", had the highest mean of 3.9. The question of the lowest mean value is "based on my experience with this online ticket booking store in the past, I know it cares about its customers", mean=3.68. There were three questions measuring the customer's enjoyment. The average mean of these three questions is 3.64. The question with the highest value of the mean was "It is very comfortable to use this website to purchase airline tickets", mean=3.73. However, the lowest value of the mean was the question "I have fun when interacting with this website", mean=3.56. There are three questions to measure the final variable of repurchase intention, the average mean=3.94. The questions with the highest mean was "If I could, I would like to continue using this web site to purchase products", mean=3.97. "Maybe that I will continue to purchase air tickets from this website in the future" had the lowest mean value, mean=3.9.

Hypothesis testing

H1: Trust has a significant positive impact on perceived usefulness

H3: Perceived ease of use has a significant positive impact on perceived usefulness.

Based on the hypothesis that we proposed, the author assumed perceived ease of use and trust would have the most significant positive effect on perceived usefulness. In this chapter, IBM SPSS

Statistics 19 was used to prove if this hypothesis was established. If significance < 0.05 was found, that meant the variables that we measured had a significant positive relation. For the Linear Equation ($Y' = a + bx$), $Y' = b_0 +$

$b_1 X_1 + b_2 X_2$. “Y” in this formula stands for the dependent variable “perceived usefulness”. “X 1” represents “trust”, and “X 2” as “perceived ease of use”.

Table 1 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.843 ^a	.710	.709	.34646

a. Predictors: (Constant), Trust, PEU

Table 1 shown that R square=0.710, which means trust and perceived ease of use are able to predict 71% of perceived

usefulness. It indicates that this multiple linear regression is usable.

Table 2 ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	116.012	2	58.006	483.243	.000 ^a
	Residual	47.294	394	.120		
	Total	163.305	396			

a. Predictors: (Constant), Trust, PEU

b. Dependent Variable: PU

Sig nificancein Table 2 is equal to 0.000 with this result < 0.05 . Therefore, it can be said that trust and perceived ease of

use can predict perceived usefulness. The hypothesis in this part is accepted.

Table 3 Coefficients a

		Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics	
Model		B	Std. Error	Beta	t	Sig.	Tolerance
1	(Constant)	.325	.116		2.807	.005	
	PEU	.491	.039	.495	12.707	.000	.485
	Trust	.431	.041	.414	10.633	.000	.485

a. Dependent Variable: PU

With perceived usefulness' linear equation, two independent variables were included, perceived ease of use (Sig=.0.000) and trust (Sig=.0.000), and the dependent variable perceived usefulness. The equation of perceived usefulness is written as $PU = 0.325 + 0.495PEU + 0.414Trust$.

H2: Trust has a significant positive impact on repurchase intention.

H4: Perceived ease of use has a significant positive impact on repurchase intention.

H5: perceived usefulness has a significant positive impact on repurchase intention.

H6: Enjoyment has a significant positive impact on repurchase intention.

There are four variables that the author assumed would have an impact on the dependent variable repurchase intention. They were enjoyment, perceived ease of use, trust, and perceived usefulness. For linear equation $Y' = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4$, "X1" with "perceived ease of use", "X2" as "perceived usefulness", "X3" as "trust", and "X4" as "enjoyment", "Y" as "repurchase intention". All collected data was put into SPSS and the output results are shown below.

Table 4 Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.798 ^a	.637	.633	.40590

a. Predictors: (Constant), Enjoyment, PEU, Trust, PU

The output results in table 4 shown R squared for these four predictors (enjoyment, perceived ease of use, trust, and perceived usefulness) equals 0.637.

These four variables are able to predict repurchase intention at 63.7%. It was usable.

Table 5 ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	113.305	4	28.326	171.929	.000 ^a
	Residual	64.584	392	.165		
	Total	177.890	396			

a. Predictors: (Constant), Enjoyment, PEU, Trust, PU

b. Dependent Variable: RI

In table 5, Sig=.0.000, the result is smaller than 0.05, which means at least one variables X (enjoyment, perceived ease of use, trust, or perceived usefulness (can predict Y)repurchase

intention). This means these four independent variables “Xs” have the significant positive impact on dependent variable “Y”.

Table 6 Coefficients a

Model		Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance VIF
1	(Constant)	.376	.138		2.730	.007	
	PEU	.176	.054	.170	3.262	.001	.342 2.927
	PU	.268	.060	.256	4.433	.000	.277 3.610
	Trust	.350	.057	.322	6.092	.000	.331 3.023
	Enjoyment	.140	.043	.144	3.245	.001	.472 2.118

a. Dependent Variable: RI

The results of the four independent variables shown in table 4.9 are: perceived ease of use (Sig=0.001), perceived usefulness (Sig.=0.000), trust (Sig.=0.000) and enjoyment (Sig.=0.001) ; and one dependent variable: repurchase intention. In the linear equation, “Y” as “RI ”(repurchase intention); “X1” as “PEU ”(perceived ease of use); “X2” as “PU ”(perceived usefulness); “X3” as “trust”; “X4” as “enjoyment”. The equation for repurchase intention was: $RI = 0.376 + 0.17PEU + 0.256PU + 0.322Trust + 0.144enjoyment$.

Hypothesis testing for mediator perceived usefulness

Based on the framework, it can be seen that perceived usefulness is not only the dependent variable, but also the mediator for perceived ease of use and trust. This is to say, assume perceived usefulness was the mediator for the dependent variables: perceived ease of use and trust and impacted the independent variable repurchase intention.

Test for: 1. Perceived ease of use, perceived usefulness and repurchase intention; 2: Trust, perceived usefulness and repurchase intention.

Table 7 Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.692 ^a	.478	.477	.48463
2	.756 ^b	.572	.570	.43952

a. Predictors: (Constant), PEU

b. Predictors: (Constant), PEU, PU

In table 7, without the perceived usefulness, R square=0.549. Perceived ease of use (X) can just predict 47.8% of repurchase intention (Y). After adding

the perceived usefulness (M)), R square=0.572, perceived ease of use (X) can predict 57.2% of repurchase intention (Y).

Table 8 Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.741 ^a	.549	.548	.45054
2	.785 ^b	.616	.614	.41658

a. Predictors: (Constant), Trust

b. Predictors: (Constant), Trust, PU

For the same reason, in table 8, without perceived usefulness (M), R square=0.548. Trust (X) can just predict 54.8% of repurchase intention (Y), but

after adding the mediator (perceived usefulness), R square=0.616, trust (X) can predict 61.6% of repurchase intention (Y).

Table 9 ANOVAb

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	85.119	1	85.119	362.424	.000 ^a
	Residual	92.770	395	.235		
	Total	177.890	396			
2	Regression	101.779	2	50.889	263.436	.000 ^b
	Residual	76.111	394	.193		
	Total	177.890	396			

a. Predictors: (Constant), PEU

b. Predictors: (Constant), PEU, PU

c. Dependent Variable: RI

Table 10 ANOVAb

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	97.710	1	97.710	481.366	.000 ^a
	Residual	80.179	395	.203		
	Total	177.890	396			
2	Regression	109.514	2	54.757	315.527	.000 ^b
	Residual	68.376	394	.174		
	Total	177.890	396			

a. Predictors: (Constant), Trust

b. Predictors: (Constant), Trust, PU

c. Dependent Variable: RI

From table 9 and table 10, for perceived ease of use; perceived ease of use and perceived usefulness; trust; trust and perceived usefulness, they all had Sig=.0.000. All of them are less than 0.05. This means Xs (perceived usefulness, trust, perceived usefulness) can predict Y (repurchase intention), the result are usable.

According to Baron and Kenny (1986), there are three basic principles for the mediation variable test: 1. Independent variable (X) significantly affects the intermediary variable (M), that is, the path “a” is significant; 2. Independent variable and the intermediary variable separately significantly affect the

dependent variable (Y), namely, path “b” and “c” significant; 3. When the path “a” and the path “b” test is established, and the existence of the intermediate variables will make the relationship between the original independent variable and the dependent variable (path) significantly less significant, especially when the influence coefficient of the path “c” becomes 0, it proves the existence of the mediator effect. If the indirect path is significant and direct path still significant, it shows that there is a partial mediator effect. If the indirect path is significant and the direct path is not significant, it shows that there is a complete mediator effect.

Table 11 Coefficients a

Model		Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics		
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	1.183	.147		8.048	.000		
	PEU	.717	.038	.692	19.037	.000	1.000	1.000
2	(Constant)	.742	.142		5.240	.000		
	PEU	.306	.056	.295	5.460	.000	.373	2.683
	PU	.523	.056	.501	9.287	.000	.373	2.683

a. Dependent Variable: RI

In table 11, when do the linear regression, model 1 just inputted PEU (perceived ease of use), got PEU beta of 0.692. But after put PEU and PU (perceived usefulness) at the same time into model 2, got PEU beta only 0.295. This result indicates that PU (perceived usefulness) meets the first requirement as the mediator of PEU (perceived ease of use) and RI (repurchase intention), because after put the mediator perceived

usefulness into the linear regression, the relationship between perceived ease of use and repurchase intention became weaker. But this result did not meet the second requirement of being a mediator. After put perceived usefulness into the analysis, significant value of perceived ease of use still less than 0.05, which means perceived ease of use still has significant positive impact on repurchase intention, this result is not meet the

condition for perceived usefulness to be mediator.

Generally speaking, perceived usefulness just can be regarded as a partial mediator for perceived ease of use to repurchase retention.

Table 12 Coefficients a

Model		Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics		
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.852	.143		5.969	.000		
	Trust	.805	.037	.741	21.940	.000	1.000	1.000
2	(Constant)	.516	.138		3.739	.000		
	Trust	.468	.053	.431	8.818	.000	.408	2.449
	PU	.421	.051	.403	8.247	.000	.408	2.449

a. Dependent Variable: RI

For the same reason with table 11, can analysis table 12. Before put the PU into linear regression, the beta of trust is 0.741. But after putting the PU into the linear regression, the beta of trust decreased to 0.431. The significant value

of trust after added perceived usefulness still less than 0.05, trust still has an impact on repurchase intention. It can say that PU is regarded as the partial mediator of PEU and PI.

Conclusion

Table 13 The summary for all hypothesis

No.	Hypothesis	Sig.(<0.05)	Conclusion	Result
H1	Trust has a significant positive impact on perceived usefulness	0.000	Positive related significantly	Accept
H2	Trust has a significant positive impact on repurchase intention	0.000	Positive related significantly	Accept
H3	Perceived ease of use has a significant positive impact on perceived usefulness	0.000	Positive related significantly	Accept
H4	Perceived ease of use has a significant positive impact on repurchase intention	0.001	Positive related significantly	Accept
H5	Perceived usefulness has a significant positive impact on repurchase intention	0.000	Positive related significantly	Accept
H6	Enjoyment has a significant positive impact on repurchase intention	0.001	Positive related significantly	Accept

Table 13 summarized the result of all hypotheses. If the judgment method has a significant value less than 0.05, it can say that X can predict Y, which we can say that X is significantly positively related to Y. For hypothesis “H1: trust has a significant positive impact on perceived usefulness”, Sig= .0.000, the result means this hypothesis should be accepted; “H2: trust has a significant positive impact on repurchase intention”, Sig. value is less than 0.05 (Sig=0.000) it can be said H2 is accepted; as for “H3: perceived ease of use has a significant positive impact on perceived usefulness”, the Sig. value is 0.000, also less than 0.05, so this hypothesis is accepted; “H4: perceived ease of use has a significant positive impact on repurchase intention”, Sig. value is 0.001, this hypothesis is accepted also; “H5: perceived usefulness has a significant positive impact on repurchase intention”, Sig. value is less than 0.05 (Sig.=0.000) the hypothesis is accepted; for the last hypothesis “H6: enjoyment has a significant positive impact on repurchase intention”, with the Sig. value of 0.001, also less than 0.05, this result shown this hypothesis is accepted.

Discussion

Trust and perceived usefulness

From analyzing the results of this study it can be said that trust has a significant positive impact on perceived usefulness. Applying this conclusion of the study means that once customers trust a website where they usually book airline tickets, they tend to believe all the information provided to them by this website and they will think that this

website is helpful. And once customers believe the transaction will be successful as compared with more traditional ways to book tickets, they may feel purchasing online is more useful. Dahlberg, Mallat, and Oorni (2003) believed trust is also an important factor and should also be introduced into the TAM model. They think both trust and perceived ease of use impact perceived usefulness and therefore, perceived usefulness effects customer's attitudes and intentions.

Trust and repurchase intention

When asking the question why customers chose the website that they are now using (i.e. the variable “trust”), the highest scored answer was because this website is trustworthy. Only when the information on the ticket booking website proves to be trustworthy, meaning the transaction is trustable, does the customer feel reassured and will purchase the next time. If the flight information the website provides is wrong, such as the information has irregularities, user's experience is poor and they may not trust this company anymore. For sure, they will not be willing to continue using this service anymore. If customers do not trust this website, there is no point in them continuing to use this service. Moorman and Zaltman (1992) proved that trust is an important factor in the continuity of partnership. That is to say, that trust has an impact on customer repurchase intention. Morgan et al. (1994) believed that the stronger the trust relationship with partners, the stronger the willingness to continue this relationship and only when the customer trusts the

trading relationship and then willing to continue to maintain this relationship.

Perceived ease of use and perceived usefulness

Only when customers have the capability of booking airline tickets online do they gain a feeling of a website's usefulness. If customers cannot use the Internet to book flights, they will not know if the design of a website is easy to use or not. Therefore, the customer will not perceive the usefulness of a website even if the service provided is really persuasive and useful. Davies (1989) already points out that perceived usefulness and perceived ease of use are two very important factors of TAM and have a positive impact on consumers. Perceived ease of use is positively correlated with perceived usefulness. That is to say, an easy-to-use system will make users feel more useful. Based on this well-know attested to fact, it can be said that these two factors do have a positive relationship.

Perceived ease of use and repurchase intention

Some people feel they don't have the ability to booking tickets online because they have never become a proficient computer user. Therefore, if customers have a low amount of experience in using online booking sites, it could be said, they do not find it easy to use online booking and this group of people have a very low chance of purchasing again. Only when customers feel this system is easy to use will it be likely that they continue use it. Koufaris & Hamton-Sosa (2004) believe that the difficulty of using web pages is one of the important reasons

for consumers to abandon online shopping.

Perceived usefulness and repurchase intention

When customers feel one website can help them solve their problems with ticket bookings and find that the service this website's provides can help make their booking more convenience, that is to say, useful or helpful, then they are more likely to return to the site for possible future repurchase of tickets. Sun et al. (2014) pointed out that perceived usefulness significantly, positively affects users' willingness to reuse social networks. Loiacono et al. (2002). Almaghrabiè et al. (2001) and Zhang et al. (2010) uphold the point that perceived usefulness is one of the important factors that impact customer's repurchase intention.

Enjoyment and repurchase intention

The purpose of this research paper was to research customers' willingness to buy and repurchase airline tickets online by using third-party platforms in China. The study results showed that enjoyment can also impact customers' repurchase intention even for online tickets booking. Venkatesh (1999) believed perceived enjoyment and perceived usefulness have the same impact on customer's behaviour intention. Davis et al. (1992) also believe that both perceived usefulness and enjoyment are very important factors that impact customers' behavioral intentions, but the degree of importance depends upon the situation they find themselves in.

Recommendation

Trust

The variable “trust” is the most important factor for customer repurchase intention and it can be said that trust plays a very important role in a company’s ability to keep its customers. And if a company keeps its promises and is honest in the way it operates, these factors are powerful determinants as to whether customers will choose to buy airlines tickets again from the company. The lowest score on the “trust” section of the questionnaire was found to be the lack of care by the ticket booking website about its customers. This means that booking websites’ administrations are short-sighted when it comes to meeting their customers’ needs. Tickets booking websites should seriously consider improving this area, thus establishing long-term relationships with their customers.

Perceived ease of use

Customer perceived ease of use is the third most important variable when considering customers’ repurchase intention. It is not so easy for everyone to learn to use booking website at the beginning, but after customers get used to the site, they will feel using booking websites is both easy and convenient. “the website is easy to use”, received the highest mean score with regards to the measure variable perceived ease of use. Only when the customer feels the operation of this website is easy and convenient and the booking steps are simple, will they likely choose this website again to book their tickets.

Perceived usefulness

The chosen option that received the highest mean score option in this category of questions was “the website is useful for searching for and buying tickets”. If customers use the official airline websites to book a ticket, then when they go to book a hotel, they must visit another website. If customers can use a third-party platform to book every element of their travel needs, it is by far a greater convenience, and they will tend to choose to use such a service more often. Third-party platform websites should keep this advantage while improving their service quality. They can do this by making their service characteristics and advantages more distinct and more accommodating.

Enjoyment

The option “comfortable to use this website to buy tickets”, received the highest mean value score in our study. This news should also remind the managers of enterprises that in the design process of ticketing websites, comfortableness of use cannot be ignored. This is also an important breakthrough, which can help enterprises find innovative directions and make website services stand out from others.

Limitation & research prospects

Research limitations

There are two ways to collect questionnaires, one is the snowball sampling, and the other is by random sampling. Snowball sampling sends

questionnaires to relatives, friends and asks them to help by sending the questionnaire to other friends and so forth. As a result, the geographical distribution of the respondents was expected to be all over the country, but the questionnaires collected through relatives and friends were concentrated in one province, Yunnan. This result did not achieve the desired even and uniform nationwide sampling.

The purpose of this study is to explore the effect of perceived usefulness as a mediating variable on customer repurchase intention. It turns out that perceived usefulness is indeed a partial mediator variable for customer repurchase intention. However, in the process of reading the literature, we found that there are other variables that can be used as intermediary values to study customer repurchase intentions,

such as customer satisfaction. Due to the limitations of time and energy, this study did not attempt to research these areas.

Future research

Based on the limitations above, this researcher puts forward two proposals for the future study:

1. To ensure the rigour of the sample. In future research, it is necessary to ensure that the dissemination of the questionnaire be evenly distributive to avoid the problem of too many people being sampled in one area.
2. To do a exact study, in the future, that examines the question as to the effects that other mediator variables which related to customer repurchase intention are studied so to enrich the conceptual study framework.

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