Usability of Mobile Banking Application toward Thai Banking Customer Loyalty
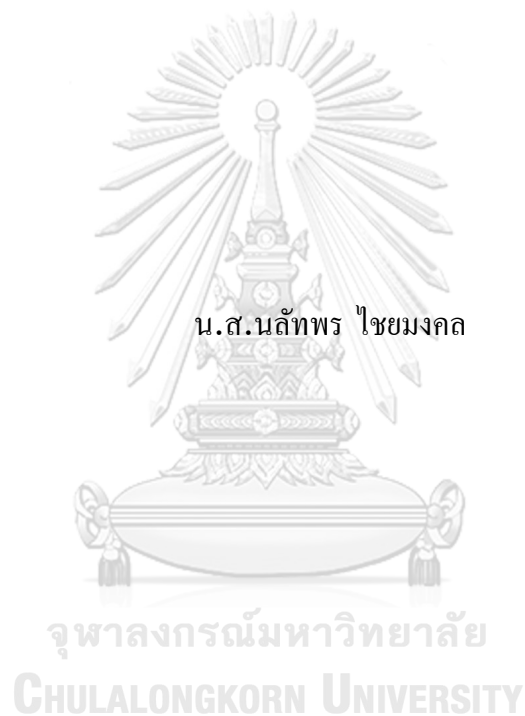
Miss Nalatporn Chaimongkol

ปัจจัยด้านการใช้งานของแอพพลิเคชั่นบนมือถือที่ส่งผลต่อความภักดีของลูกค้าธนาคารไทย

น.ส.นลัทพร ไชยมงคล

Independent Study Title Usability of Mobile Banking Application toward
                         Thai Banking Customer Loyalty
By   Miss Nalatporn Chaimongkol
Field of Study   Business and Managerial Economics
Thesis Advisor   Assistant Professor PANUTAT
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Nalatporn Chaimongkol : Usability of Mobile Banking Application toward Thai Banking Customer Loyalty. Advisor: Asst. Prof. PANUTAT SATCHACHAI, Ph.D.

Mobile banking has become increase in its popularity and become more important for Thai people. Traditional banking seems to be fading out and Mobile banking application is widely used. This study consider how service usability, relationship quality, and banking image could impact banking customer loyalty. The online survey from 304 respondents was collected to investigate and explain the relationship of each factors toward Thai banking customer loyalty. The result from multiple regression analysis indicates that service usability, relationship quality, and banking image have significant effect on building customer loyalty. While other control variables such as gender, education, age, occupation, frequency, duration, and income have no significant effect on customer loyalty. Therefore, banks need to focus on usability of mobile banking application. It could assist bank to keep potential online customers and turn to be loyal customers. Moreover, relationship quality (satisfaction, trust, commitment) plays important role in mobile banking because it could create long term relationship between bank and customer even though the interaction is an online service. Once customers are satisfied with mobile banking services, customer would have intention to continue using. Bank image is another important factor that affect customer loyalty. This is because bank image performs the success of the bank which affect customer's evaluation before deciding to use.

Field of Study:	Business and Managerial Economics	Student's Signature ....
Academic Year:	2020	Advisor's Signature ....

ACKNOWLEDGEMENTS

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Chapter 1

Introduction

Over decades, banking industry in Thailand had played an important role in financial sector by providing financial services to all type of customers. Traditionally banking industry provides physically services between banks and customers, in which customers familiar with their first bank who serve and keep long term relationships. These commercial banks have been encouraging their customers to use their services repeatedly until them become their loyal customers. In return bank can earn higher profit from these potential customers. However more competitive environment in banking industry and the internet of things, the traditional bank has to change and adopt digital banking services, which directly affect their customer's behaviors. If banks want to keep their potential customers, they need improving service's quality and building customer's loyalty. But it is not easy to compete with other banks in this digital era.
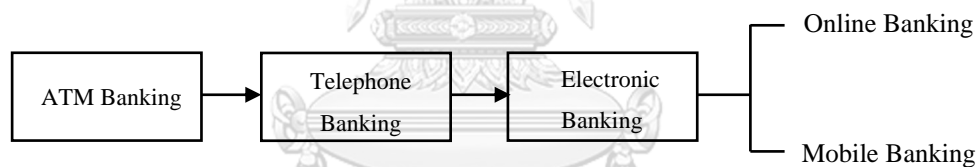
Figure 1: Revolution of Mobile banking (Nourallah, 2020)

Nourallah, (2020) had explained the revolution of mobile banking after banking industries had introduced technology innovation into banking system. Starting from ATM banking which is an automatic machine that customer can withdrawal, deposit, and transfer money by themselves without interact with tellers at bank branch. Next is telephone banking which mostly know as SMS banking that bank offer this transaction to customer with a bank fee. Next is electronic banking. Because of advancement of technology innovation, bank can facilitate services from electronic devices that people use in daily life. Both online banking and mobile banking can provide the convenience banking services to customers who already adopted mobile banking services.

Mobile banking application in Thailand has become necessary. Thus, banks try to promote their mobile banking services with user-friendly interface to their customers. These services quite differ when comparing to traditional banking. The traditional services involve a physical service between banks and customers in which bank can observe customer's reaction and recognize customers loyalty to the bank. With Mobile Banking, customers can process transactions as traditional banking, and save time. But it is a difficult for bank to see customer's reaction. Besides, it is hard to offering additional services to meet customer's need.

1.1 Background of Mobile banking transaction in Thailand

The world has been driven by technology innovation which lead to growth economic. But there is limitation in each country such as difference in demographics characteristics and level of technology usability and adoption in each country. Mobile banking is one part of the electronic payment(e-payment) that Thai government focused in National e-payment master plan. The goal at the plan is to enhance Thai payment system to comply with digital economy policy within 2016 onward as following details.
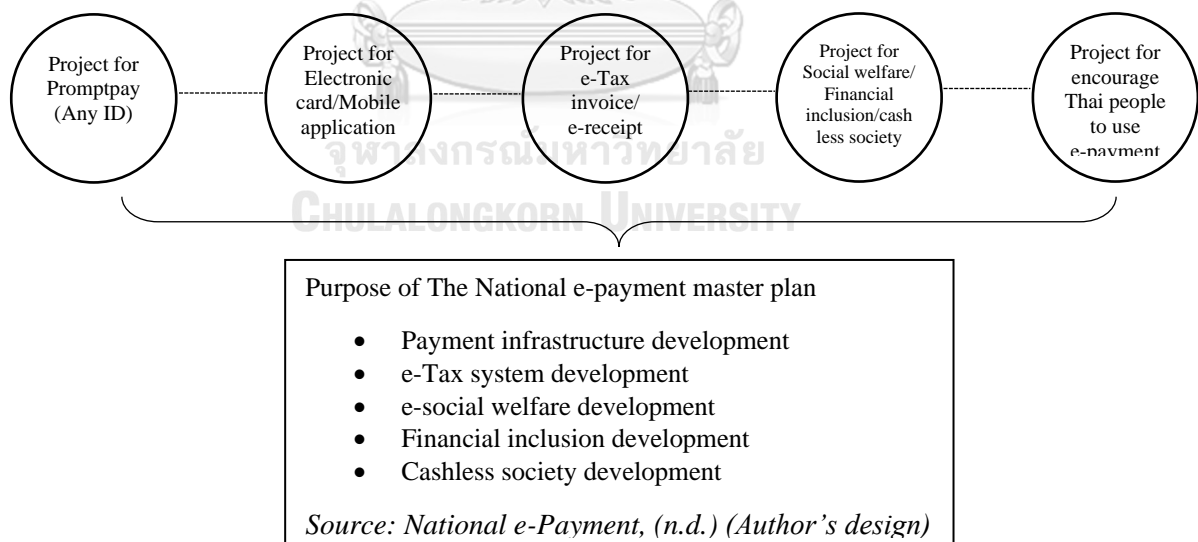
Figure 2: The National e-payment master plan

According to National e-payment master plan development, the main purpose is to develop Thai payment system. Thai government encourages payment system by cooperate with financial sector and business sector to provide electronic commerce. Once all sectors start using mobile banking that is easy, providing secure transaction, and offering other services such as paying bills or transferring fund to other business partners. This extremely persuade Thai people to adopt mobile banking and would lead Thai economy to become cashless society as expected.

Figure 3 shows the comparison between Internet banking adoption and Mobile banking adoption from 2010 to 2019. We can see that in terms of number of agreements, volume of transactions and value of transactions. Thai people have used more mobile banking overtime.
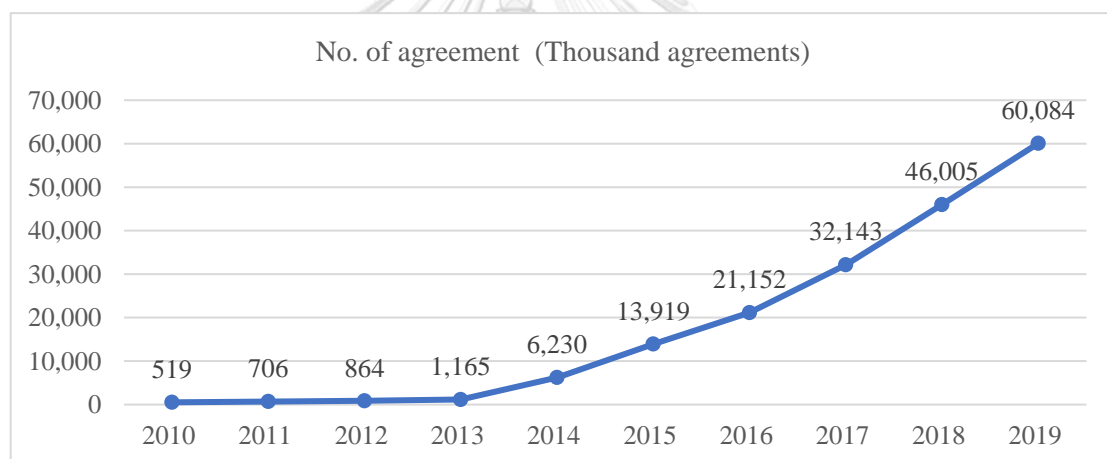
Source: Bank of Thailand Last Updated: 30 Sep 2020 17:05 (Author's design)

Figure 3: No. of Agreement

This graph shows the actual number of agreements that customer used mobile banking applications 2010 to 2019. Focusing on 2015 to 2019, we can see the exponential growth in mobile banking activity. During 2015 there were only 13 million agreements adopted and the number of agreements increased to 21 million, 32 million, 46 million, and 60 million, respectively from 2016 to 2019. We might assume that with the encouragement from the government and better technology introduced in banking industry cause such a drastic change. People change their behavior to proceed more online comparing to prior years.

Figure 4: Volume of transactions

Figure 4 shows volume of transactions which indicate that the increase usage in mobile banking of Thai people. From 2015 to 2019, we can see the exponential growth in volume of transactions, from only 0.26 million transactions to 4.92 million transactions at the end of 2019.

Figure 5: Volume of transactions

Figure 5 shows the exponential growth in value of transactions in value of transactions which represents the customer confidence in using mobile baking. In 2015, there were only 2,800 Billion transactions proceeded via mobile banking, but after implementing National e-payment master plan value increased to 5,849 billion, 9,539 billion, 17,501 million, and 24,408 billion, in 2016, 2017, 2018 and 2019 respectively.

Sitorus, Govindaraju, Wiratmadja, & Sudirman, (2019) that Banks earn benefit from the customer who use banking services repeatedly. It is possible that banking industry can earn benefit from these customers. The similar increases in the trend might imply that the transactions might be proceeding from the same user due to repurchase or repatronize.

The above show that Thai people make transactions via mobile banking more and more over time. This research paper aims to examine how using mobile banking affects customer loyalty. We are going to control other related factors such as relationship quality (satisfaction, trust, commitment) and banking image. We believe that results from this study would assist banking industries to improve mobile banking services and to create strategies to increase potential customer and building customer's loyalty.

1.2 Research Question

Does usability on mobile banking application impact on Thai banking customer loyalty?

Chapter 2

Literature review

In this sector, I will first look at the definition of loyalty and how to measure it. Then I will review the factors that affect loyalty in the context of banking services.

2.1 Customer loyalty

Customer loyalty is described as "a deeply held commitment to rebuy or repatronize a preferred product/service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behavior" by Oliver (1999). Oliver (1999) proposes that there are four stage of loyalty starting from cognitive stage, affective stage, conative stage, and action stage. Once customers are in action stage, it means that customers become loyalty. However, each customer in each stage has the different behavior that can move from one stage to other stage.
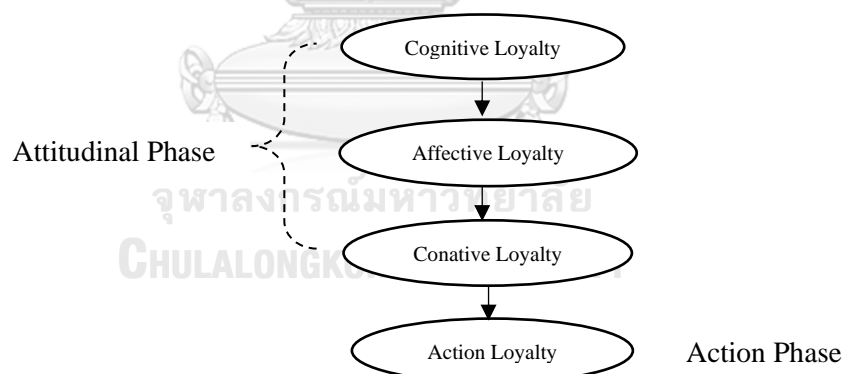
Figure 6: Four Stage Loyalty Model (Oliver, 1999)

First stage is *Cognitive Loyalty*. It is directed toward the brand due to "information". In this stage, customer's loyalty comes from comparing between preferable product/service from many choices. The decision depends on customer's experience with the recent information (Back & Parks, 2003; Oliver, 1999).

The second level is *Affective Loyalty* which related to pleasurable fulfillment or favorable attitude toward product/service. But it is still not enough to become actual customer loyalty. This stage means that customer has room to switch to others.

Third stage is *Conative Loyalty*. This stage shows a strong commitment to purchasing which depends on good experiences. The duplicated negative effect from failure can reduce conative loyalty and form customer's intention to try the competitive alternative.

Action Loyalty is the last stage that many firms need their customer to move from attitudinal phase to action phase of loyalty. Many researchers have agreed that the loyalty framework will be completed by action that drive motivational intention into action.

Han & Hyun, (2012) have showed that attitudinal loyalty (cognitive, affective, conative) is the important stage directly and indirectly stimulate action loyalty. Thus, this model can explain the concept of customer loyalty and clarify the loyalty stage which firm can use to understand and retain their potential customers.

There are many studies on customer loyalty and their challenges to retain their customers in banking industry. Thakur R. (2014) find that customer's loyalty is directly affected by usability and satisfaction from mobile banking service., but the result does not find significant impact between customer loyalty and trust. Moreover, Thakur R. (2014) concluded that to create the future mobile banking interaction with customer banks need to improve satisfaction, usability, and customer service toward mobile banking services since they affect customer behavior directly. A recent study on customer satisfaction towards online banking services by Raza, Umer, Qureshi, & Dahri (2020) find that customers can dedicate themself to be online banking customer once customer has deep relationship with online banking services and finally, becomes loyal customers. Flavián, Guinalíu, & Gurrea (2006) find that loyalty has been an important factor for success of company and its sustainability.

2.2 Usability

Davis (1985) had explained a concept of Technology acceptance model (TAM) that explains factor that influence computer and information system acceptance. This model is widely used on the study of technology usage. The theory mentioned that perceived ease of use and perceived usefulness could impact customer's intention.

Several studies confirm that usability affect customer's behavior intention to use. For example, Casaló, Flavián, & Guinalíu (2008) find that satisfaction and usability directly affect customer's intention for the future usage and spreading recommendation from one to others. Consequently, these behaviors support company to generate company's profitability.

Sitorus, Govindaraju, Wiratmadja, & Sudirman, (2017) found that satisfaction and compatibility affect perceived usefulness and customer's intention to use continuously. Moreover, the result explains that when customer feels mobile banking application is useful, they are satisfied. However, ease of use and satisfaction are different things when customers feel mobile banking is easy to use, the customer can feel mobile banking is usefulness. But it does not mean that the customers are satisfied.

Further study by Sitorus, Govindaraju, Wiratmadja, & Sudirman (2019) which studied usability in mobile banking adoption in Indonesia, find that perceived ease of use and perceive usefulness determine customers satisfaction. They suggested that banking industry should improve their mobile banking to be user-friendly, easy to use and be beneficial to customers in order to develop customer satisfaction.

Li & Bai (2010) which study the impact of perceived risk and usability on mobile banking find that usability of mobile banking is the root cause of customer's perceive risk. Both factors are important determinant whether customer willing to adopt mobile banking.

Similarly Veríssimo (2016) find that perceived risk, perceived ease of use, perceived usefulness, and compatibility are important factors that affect Mobile banking adoption. This indicates that perceived risk and incompatibility with customers' lifestyle could lead to no adoption.

2.3 Relationship Quality

Grönroos (2004) defined relationship quality as "long term quality formation" that construct based on interaction from many channels which are offline, online, and mobile. Palmatier (2008) and Vesel & Zabkar (2010) confirmed that building relationship quality is based on three dimensions which construct from satisfaction,

trust, and commitment. Therefore, this paper uses relationship quality concept to investigate relationship of satisfaction, trust, and commitment that contributed customer loyalty.

2.3.1 Satisfaction

There are two definition of satisfaction are related to loyalty. Dick & Basu (1994) defined it as "A consumer's postpurchase response to a brand is believed to occur through a matching of expectations and perceived performance". Bitner (1990), cited in Dick & Basu, (1994), defined it as "the resulting satisfaction/dissatisfaction is considered to act as an antecedent to loyalty".

There are several researches that studied relationship between customer satisfaction and customer loyalty. Thakur R. (2014) find that building customer satisfaction help building customer loyalty. However, this study indicates that only usability and customer service are positively related to customer satisfaction. Similarly, Selnes (1998) finds that satisfaction has strong effects that motivate customer to continue relationship and enhance buyer-supplier relationship. Hennig-Thurau, Gwinner, & Gremler, (2002) which studied the influencing on marketing outcomes such as customer loyalty and word of mouth. They find that building customer satisfaction, commitment, and trust have strong direct impact on customer loyalty.

Moreover, Back & Parks (2003) which studied about brand loyalty and the four-stage loyalty, mentioned by Oliver (1999), find that customer satisfaction has less impact on behavioral brand loyalty. However, this study finds that customer satisfaction has impact on customer loyalty at each stage. In other words, even though customer has positive information, but it does not the repurchase decision.

2.3.2 Trust

Hennig-Thurau, Gwinner, & Gremler (2002) finds that trust is important factor determining relationship quality. Arcand, PromTep, Brun, & Rajaobelin (2017) investigate relationship between service quality and relationship quality, which includes trust, commitment and satisfaction. They found that trust has strong impact on commitment and satisfaction in financial industry. They also explain that trust can

be built from service quality such as security, privacy, perceive ease of use and usefulness. Thus, trust can be considered as intermediate factor. This is because trust affects satisfaction and satisfaction builds loyalty. Moreover, this study confirms that commitment and satisfaction are built from enjoyment and sociality. They suggest that bank need to realize enjoyment and social benefits that customer gains from using mobile banking.

Selnes (1998) finds strong effect of customer satisfaction and customer trust. These factors motivate the relationship between company and customer. This study explains that trust is not necessary once the relationship between buyer and supplier exist and continuing.

Contrary to Thakur R. (2014) finds that trust has no significant effect on developing mobile banking loyalty.

2.3.3 Commitment

Arcand, PromTep, Brun, & Rajaobelin (2017) explain that commitment can be explained by three dimensions which are affective commitment, normative commitment, and calculative commitment. Allen & Meyer, (1990) explain that the affective commitment is the attachment with positive emotional. The calculative commitment is the way that customer calculate with rational for benefits. And the normative commitment is an obligation between customer and company. Arcand, PromTep, Brun, & Rajaobelin (2017) conclude that there is only the affective commitment which relates to the mobile banking context. The affective commitment affects customer need which lead customer to commit or keep relationship with their existing mobile banking, while the calculative commitment and normative commitment which make customers feel like they have to use it.

Moreover, Cater & Zabkar (2009) studied whether commitment had impact on customer loyalty in service sector. They finds that there is only affective commitment which is explained by trust, social bonds and satisfaction significantly influences customer loyalty.

2.4 Banking image or Banking positioning

Some literatures have mentioned about relationship between image and loyalty. Granbois (1981) and Korgaonkar et al. (1985) cited in Bloemer, Ruyter, & Peeters (1998) found that image can reflect the company's performance and good position in the market. This image directly related to the success of company which customers keep patronaging. Previous studies found that the relationship between image and loyalty exists, but it shows as mediating factor that affects by customer's evaluation. Hildebrandt (1988); Mazursky and Jacoby (1986) cited in Suhartanto, Farhani, Muflih, & Setiawan (2018) find that customer perception such as satisfaction and quality reflect in customer expectation and image influences customer expectation and customer evaluation. Sirgy & Samli (1985) also find the direct positive relationship between image and loyalty. But Han & Hyun (2012) which use an extension of the four-stage loyalty model, find that image has significant indirect impact on action loyalty.

Contrarily, Bloemer, Ruyter, & Peeters (1998) find that image has insignificant influence on loyalty, but positioning has direct effect on customer loyalty. Moreover, Suhartanto, Farhani, Muflih, & Setiawan, (2018) investigate how religiosity, image, and trust affect customer loyalty in Islamic bank. They found that strong trust in religious affect loyalty but find insignificant effect of image on loyalty. They suggested that even though relationship between banking image and customer loyalty does not exist, the future research should consider image as a factor when investigate banking customer loyalty.

2.5 Demographic characteristics

Many literatures have mentioned about effects of age, gender, occupation, and income on customer loyalty. Thamrin, Dewayani, & Fidyah (2020) find that the education level can influence how customer uses mobile phone in digital banking service. They find that people with higher level of education tend to use SMS-Banking. However, gender has no effect.

Similarly, Trabelsi-Zoghlami, Berraies, & Ben Yahia, (2020) which studied how age and gender affect service quality in mobile banking application, find the

difference between gender and generation in mobile banking evaluation. They conclude that baby-boomers are economic users and prefer face to face services rather than online, and only security matters for baby-boomers. Generation X likes the functional services, but generation Y has ability to handle online services. Moreover, people in generation Y expect design, quick and reliability of services. Regarding gender, results reveal that both women and men appreciate security, but women expect quality of information and design, while men expect reliability and ease of use in mobile banking application. However, no significant differences exist in both of gender and age.

Afsar, Nasiri, & Zadeh, (2013), which studied electronic loyalty model in electronic commerce, find that demographic characteristics of customer shows a positive effect on website and technology. That is the more experience customer has, the more chance that customer is attracted to online services.
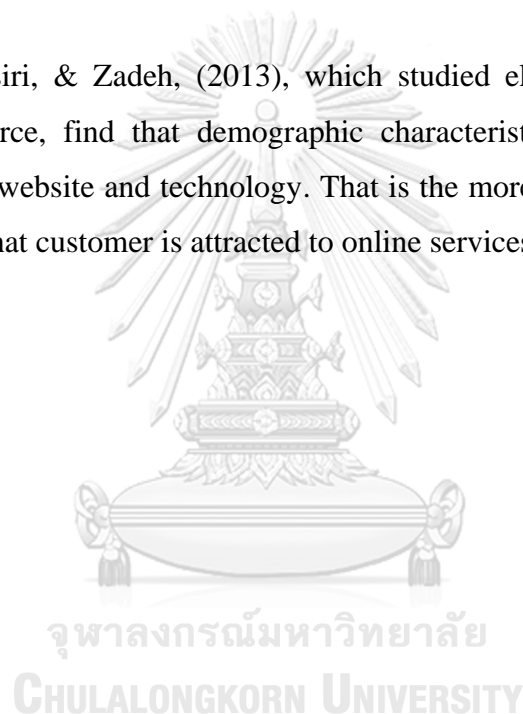
Chapter 3

Data and Methodology

3.1 Conceptual Framework

From all mentioned literatures, I set customer loyalty as a dependent variable and loyalty is determined by proposed factors based on literature review.
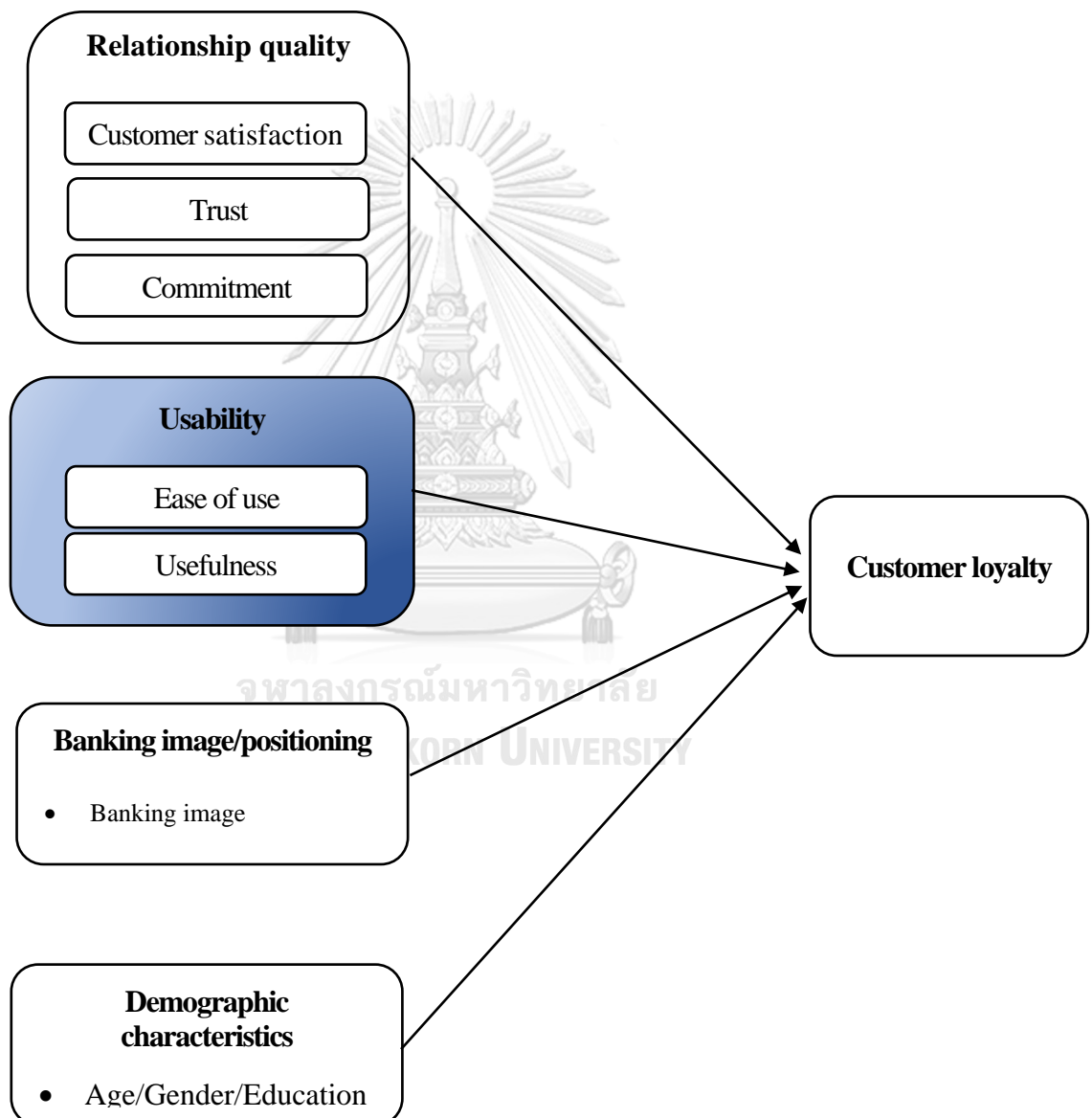
The conceptual framework used in this paper consider how usability, relationship quality (satisfaction, trust, commitment), banking image/positioning, and demographic characteristics affect customer loyalty.

There are many factors that encourage customers to continue using mobile banking application. But this paper would like to see usability impact whether it can reflect relationship between usability and customer loyalty since usability play a key role in technology acceptance model (TAM). Many studies on mobile banking adoption or online banking usually refer to TAM as empirical approach to see customer behavior on the technology acceptance.

For antecedent of loyalty, this paper would like to see relationship between relationship quality and customer loyalty since there are several researches found significant relationship from satisfaction/trust/commitment, but in some research did not found the relationship.

Last factor is banking image or banking positioning, this paper would like to investigate the relationship between baking image and customer loyalty when banking service become more digital. Moreover, banking characteristics influence on customer whether they have payroll or have credit card with the bank. These factors might force customers stuck with their first bank only due to conditions of their work or their debt. Therefore, these factors might cause customers to continue using mobile banking application from first bank or having intention to switch to other applications from other banks.

3.2 Hypothesis

H1: Usability have significant effect on building customer loyalty.

H2: Relationship quality have significant effect on building customer loyalty.

H3: Banking image have significant effect on building customer loyalty.

3.3 Methodology

First, descriptive statistic was conducted. Second, multiple regression analysis was applied to explain the result of two model as proposed base on literature review.

Model 1:

$$Custoemr\ Loyalty = \ \beta0 + \ \beta1X1 + \beta2X2 + \beta3X3 + \ \beta4X4 + \beta5X5 + \beta6X6 +$$

$$\beta7X7 + \beta8X8 + \beta9X9 + \beta10X10 + \varepsilon$$

Model 2:

$$Loyalty\ stage = \ \beta0 + \ \beta1X1 + \beta2X2 + \ \beta3X3 + \ \beta4X4 + \beta5X5 + \beta6X6 +$$

$$\beta7X7 + \beta8X8 + \beta9X9 + \beta10X10 + \varepsilon$$

Table 1: Variables and Measurement

Type	Variables		Measure
Dependent variable (Model 1)	Y	Customer Loyalty	Likert Scale (1 – 5)
Dependent variable (Model 2)	Y	Loyalty stage	Rank scale (1 – 4)
Independent variable	X_1	Usability	Scale
	X_2	Satisfaction	Scale
	X_3	Banking image	Scale
Control variable	X_4	Gender	Nominal
	X_5	Age	Ordinal
	X_6	Education	Ordinal
	X_7	Occupation	Ordinal
	X_8	Income	Ordinal
	X_9	Frequency of usage	Ordinal
	X_{10}	Duration of usage	Ordinal
	X_{11}	Application	Ordinal

3.4 Data collection

Conducting survey based on convenience technique. To collect demographic characteristics. Applying measurement by using Likert scale (1-5) to evaluate rating of customer opinion from strongly disagree to strongly agree.

Table 2: Variables and adaptation

Variables	Adapted from
Demographic characteristics	• Phonthanukitithaworn, C., Sellitto, C., & Fong, M. W. L. (2015)
Usability	• Davis (1989) • Phonthanukitithaworn, C., Sellitto, C., & Fong, M. W. L. (2015) • Bondeson, F., & Lindbom, I. (2018)
Relationship quality	• Phonthanukitithaworn, C., Sellitto, C., & Fong, M. W. L. (2015) • Bondeson, F., & Lindbom, I. (2018)
Loyalty	• Bondeson, F., & Lindbom, I. (2018)

Chapter 4

Data Analysis

Based on literatures of mobile banking that related to banking customers' behavior which sample size is an actual user who has experiences with mobile banking application with Thai banks. The survey questions were adapted to fit in the variables based on literature review. The dataset was collected and was generated by SPSS Statistics 22.

4.1 Descriptive statistics

After conducting survey, the respondents are 304 respondents which were screened by the question of "Use or Not use", 300 respondents are using mobile banking application and 4 respondents are "Not use". The reason of "Not use" respondents concern are privacy, security, and difficulty to use. Thus, the sample size for this examination is 300 users. For part1, dataset was clarified by descriptive statistics to see demographic characteristics of the respondents as following:
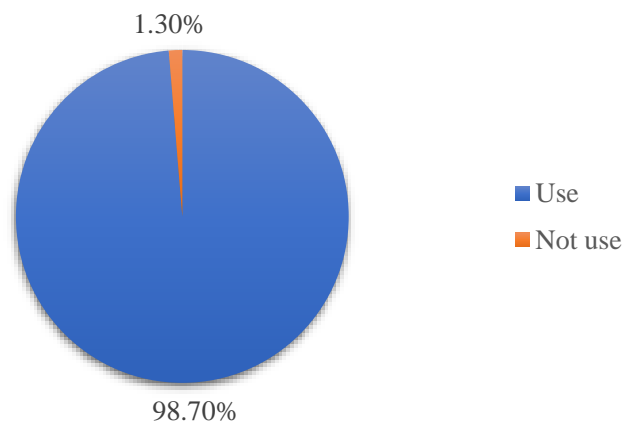
Figure 7: Use and Not use

Table 3: Ranking of reason for using

Ranking	Reason	Mean
1	Convenience	4.19
2	Free of charge	3.05
3	Easy to use	2.75
4	Quick and Reliability	2.64
5	Usefulness	2.36

0.30%

34.40%

■ Male
■ Female
■ Alternative
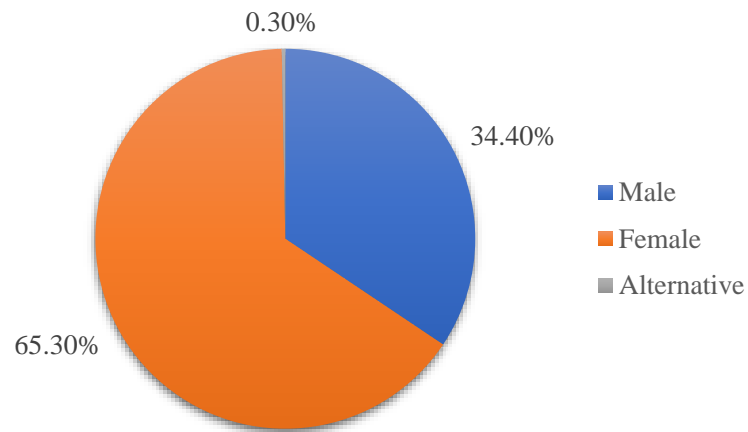
65.30%

Figure 8: Gender

Most of the respondents are female at 65.30 percent (194 respondents), male are 34.40 percent (106 respondents).

0.30% 7%

14.30%

■ 15-20
■ 21-25
■ 26-50
■ More than 50
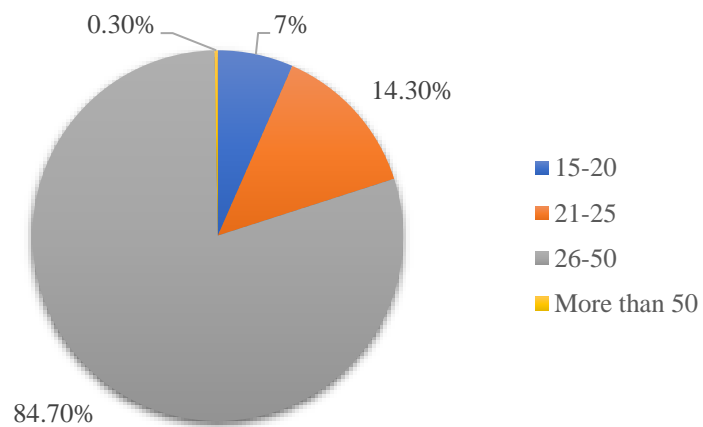
84.70%

Figure 9: Age (year)

The result shows that 84.70 percent or most of the respondents are 26 – 50 years old, 14.30 percent are 21 – 25 years old, 7 percent of respondents are 15 – 20 years old, and the only one respondent is 66 years old.
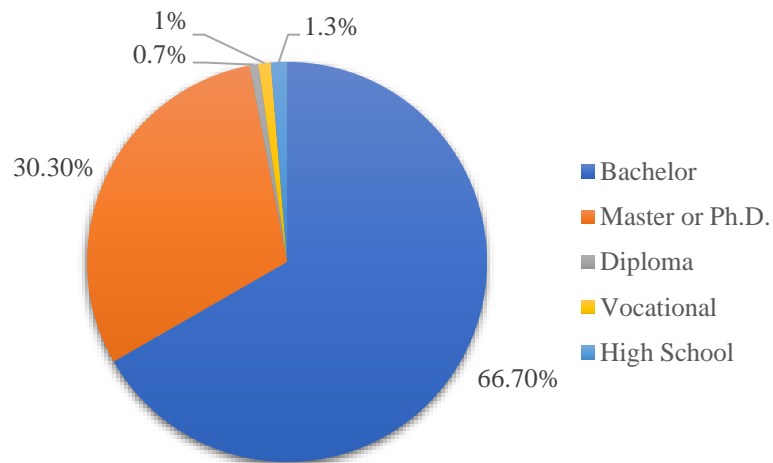
Figure 10: Education Level

Most of respondents have the education level in Bachelor degree at 66.70 percent, Master degree or Ph.D. at 30.30 percent, and less than 1.5 Percent have education level in High school, Vocational school and Diploma.
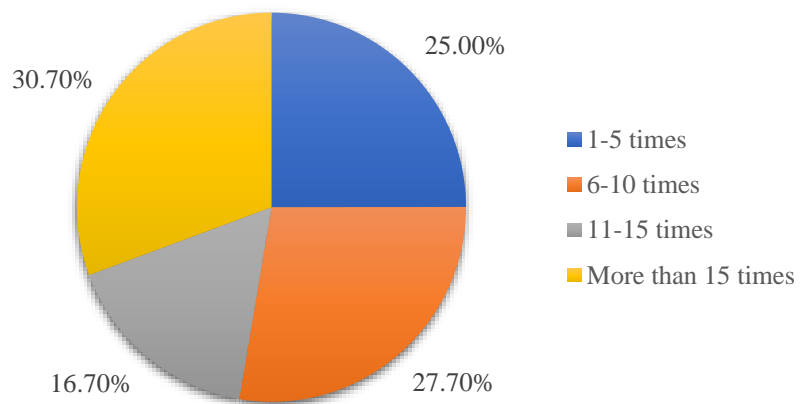
Figure 11: Frequency (times/week)

Seeking the frequency of usage, we found that 30 percent of respondents use mobile banking application more than 15 times/week on the average, 27.70 percent use 6 – 10 times/week.
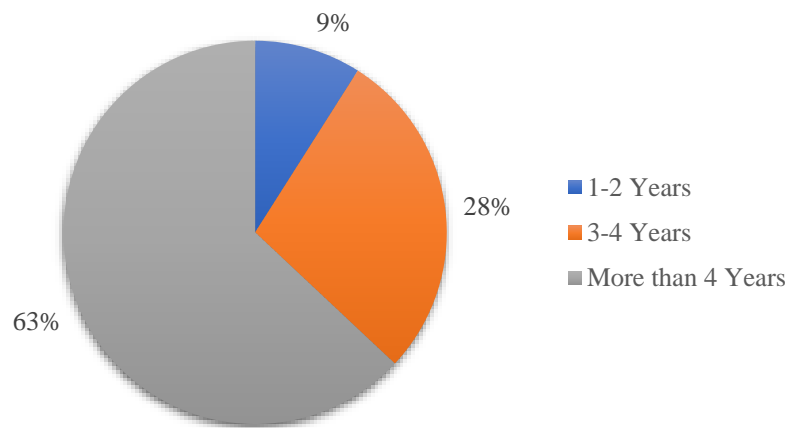
Figure 12: Duration of usage (Year)

Moreover, we found that most of the respondents have used mobile banking application more than 4 years which is 63 percent, for people used within 3 – 4 years are 28 percent, and the rest 9 percent are the people have experiences within 1 – 2 years.
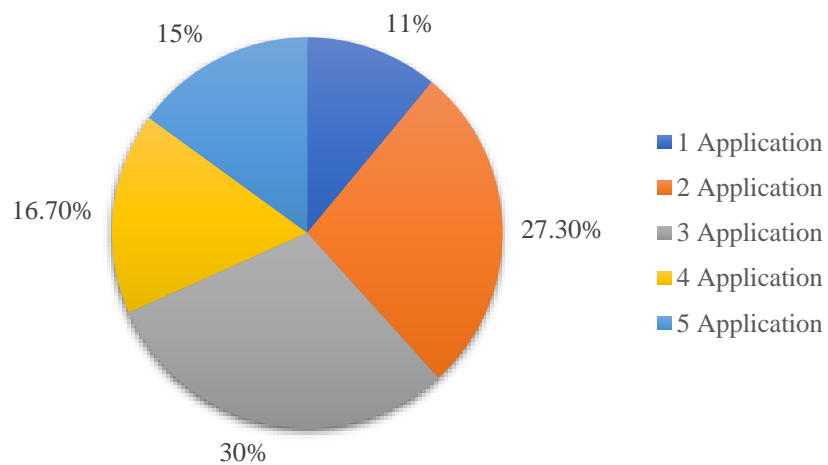
Figure 13: Application

From the check list survey, we found that 30 percent of respondents use 3 applications, 27.3 percent use 2 applications, 16.70 percent use 4 applications, 15 percent use 5 application, and the rest 11 percent use only 1 application.

4.2 Cross Tabulation

This part represents a descriptive statistic that show dimension of two factors. The first factor is gender and second is Loyalty stage. Figure 14 show dimension by cross tabulation technique derived from SPSS.

	Cognitive loyalty	Affective loyalty	Conative loyalty	Action loyalty
Male	7	10.7	6.3	10.3
Female	15.7	18.3	7	24.3
Alternative	0	0.3	0	0
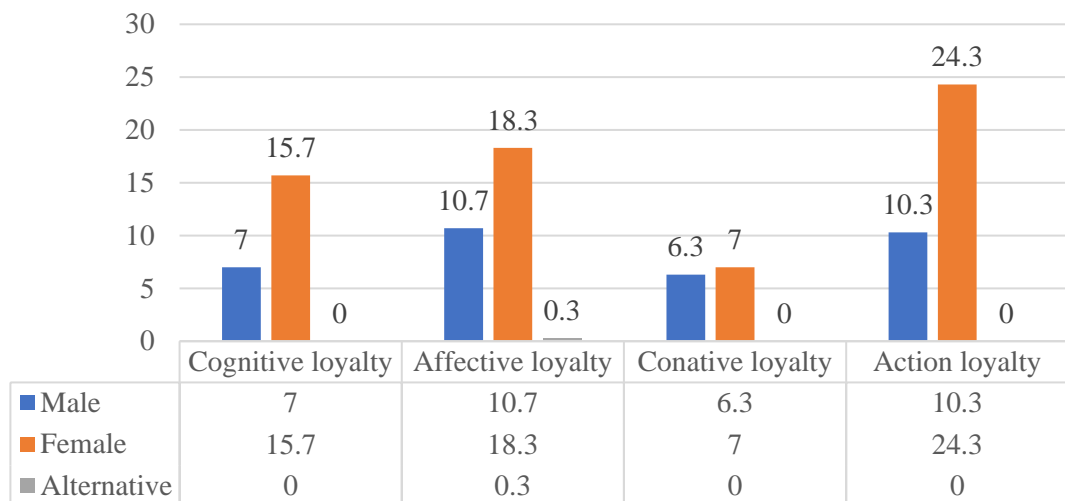
Figure 14: Cross Tabulation between Gender and Loyalty Stage

- 34.6 percent of total respondents evaluated themselves are in action loyalty stage or actual loyalty customer. In ction loyalty stage, we found Female at 24.3 percent, and 10.3 percent are Male.
- 29 percent of total respondents evaluated themselves in affective loyalty stage or the second loyalty stage. Customers have deep loyalty, but they can switch their intention based on their preferable. In Affective loyalty stage, we found Female at 18.3 percent, and 10.7 percent are Male.
- 22.7 percent of total respondents evaluated themselves in cognitive loyalty stage or first loyalty stage. In Cognitive loyalty stage, we found Female at 15.7 percent, and 7 percent are Male.
- 13.3 percent of total respondents evaluated themselves in conative loyalty stage or the third loyalty stage. In Conative loyalty, we found Female 7 percent, and 6.3 percent are Male.

4.3 Multiple regression analysis

This part presents the result based on multiple regression analysis which variables rely on our literature review, research question, and research model.

4.3.1 Testing Reliability

Referring to our model that construct to be survey which arranged by related factors in research model. Testing reliability of independent variables in survey by using Cronbach's alpha to investigate reliability of variables.

Table 4: Cronbach's alpha

Variables	Cronbach's Alpha
Research Model	0.934
Usability	0.841
Relationship Quality	0.900
Bank Image	0.805

The Cronbach's Alpha show that value of research model is 0.934. The alpha coefficient of usability is 0.841, relationship quality is 0.900, and banking image is 0.805. There is relatively high level for research model and the independent variables. This concluded that research model and variables are reliability. Therefore, we do not have a problem to continue by using this survey as the instrument to find the result.

4.3.2 Testing the Assumption

This part tests the assumption of linear relationship between dependent variable and independent variables. Firstly, we checked linearity between independents variables and dependent variables.
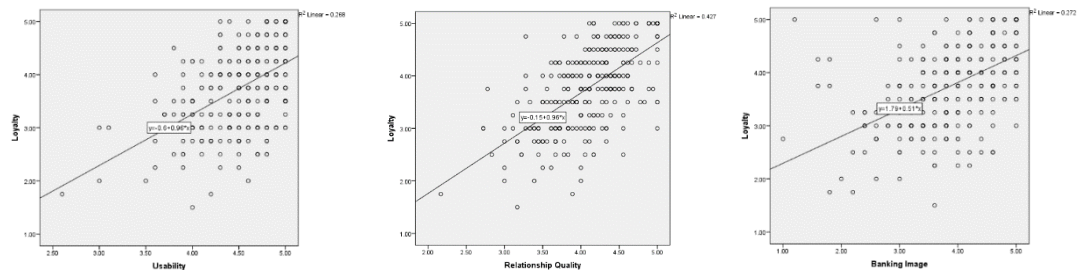
Figure 15: Testing Linearity between Independent and Dependent variable

Secondly, we checked homoscedasticity to confirm that residuals in regression were distributed. This part we use Scatter plot to show direction of standardized residual and standardized predicted value. From the Figure: Scatter plot, it shows the random plot which means that there is homoscedasticity among the dataset in the model.

Scatterplot
Dependent Variable: Loyalty
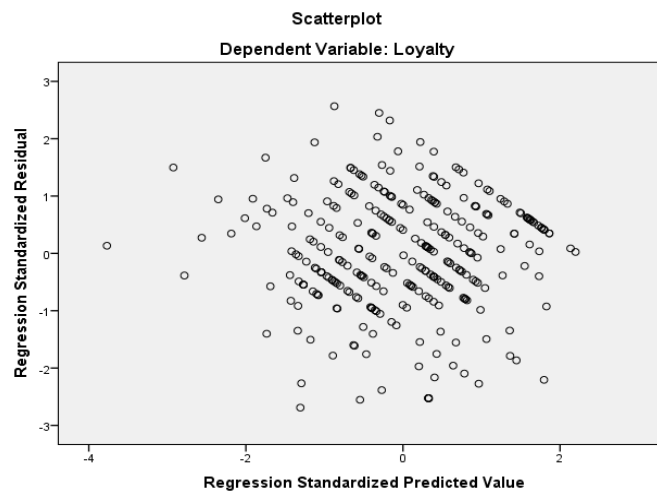
Figure 16: Testing Homoscedasticity

Thirdly, we checked the normal distribution to comply with the assumption that the residuals of regression must be normally distributed. From the Figure: P-P plot, the result shows that the residuals of regression follow the normal linear line. This confirmed that there is no problem in terms of normal distributed error.

Normal P-P Plot of Regression Standardized Residual
Dependent Variable: Loyalty
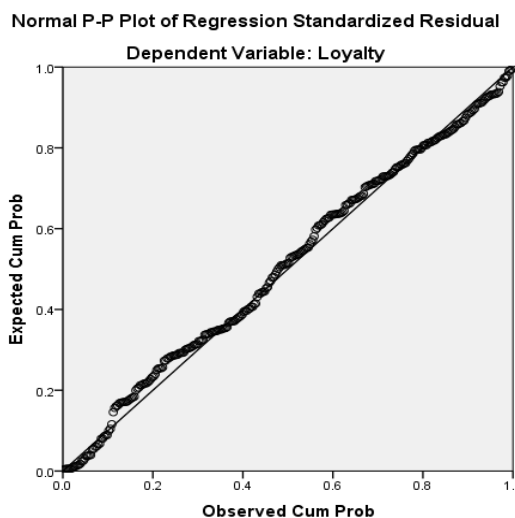
Figure 17: Testing Normal Distribution

Fourthly, we checked multicollinearity and the result show that there is positive linear relationship between independent variables. From the correlation matrix table, the result shows that usability, relationship quality, and banking image has positive coefficient correlation at 0.674 with significant at 0.01 level. Moreover, we checked collinearity statistic and found that the value of variance inflation factor (VIF) is lower than 10 and Tolerance values are greater than 0.20. Therefore, there is no multicollinearity problem in our research model.

Table 5: Correlation

Correlations

		Usability	Relationship Quality	Banking Image	Loyalty
Usability	Pearson Correlation	1	.674**	.392**	.517**
	Sig. (2-tailed)		.000	.000	.000
	N	300	300	300	300
Relationship Quality	Pearson Correlation	.674**	1	.510**	.654**
	Sig. (2-tailed)	.000		.000	.000
	N	300	300	300	300
Banking Image	Pearson Correlation	.392**	.510**	1	.522**
	Sig. (2-tailed)	.000	.000		.000
	N	300	300	300	300
Loyalty	Pearson Correlation	.517**	.654**	.522**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	300	300	300	300

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

Fifthly, we checked assumption of the existence of autocorrelation to confirm the residuals of regression are independent. The value of Durbin-Watson was checked and found that the value is 2.066 which is nearly 2. In which the statistic defined that value of Durbin-Watson should be in between 1.5 – 2.5 to conclude that there is no autocorrelation problem. Thus, the result confirmed there is no violation.

4.3.3 Model 1

Consider using customer loyalty as dependent variables. This model is the basic model which defined independents variables are usability, relationship quality, and banking image. Including to control variables are gender, education, age, occupation, frequency of usage, duration of usage, income, and application.

Table 6: Multiple Regression Analysis Model 1

Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity statistic	
	β	Std. Error	Beta			Tolerance	VIF
(Constant)	-.538	.517		-1.042	.298		
Usability	.2391**	.108	.128	2.211	**.028**	.521	1.919
Relationship Quality	.635**	.091	.434	7.008	**.000**	.459	2.180
Banking Image	.243**	.049	.250	5.000	**.000**	.701	1.427
Gender	-.050	.074	-.031	-.682	.496	.866	1.155
Education	.134	.100	.066	1.340	.181	.735	1.361
Age	-.094	.053	-.077	-1.774	.077	.941	1.062
Occupation	-.019	.042	-.020	-.452	.652	.864	1.157
Frequency	-.017	.027	-.030	-.607	.544	.732	1.366
Duration	-.004	.053	-.003	-.077	.939	.900	1.111
Income	.011	.030	.016	.362	.718	.924	1.082
Application	-.011	.028	-.017	-.392	.695	.920	1.087
R	0.702[a]						
R Square	0.493						
Adjusted R Square	0.474						

*Note: **Significant at P < 0.05*

Interpretation

After ran the regression, we found that R Square is 0.493 which show that the dependents variables in Model 1 was explained by independents variables at 49.3 percent of the variance. In addition, the model obtained Adjusted R Square value of 0.474 which is not different from R Square value of the model.

Testing Hypotheses in Model 1

Main-Hypotheses

H1 = Usability has significant effect on building customer's loyalty.

According to regression analysis, we found that there is statistically significant effect between usability and customer loyalty represents by $\beta = 0.238$ and $p = 0.028$ at 95 percent confidence level. This indicates that result from testing H1 is acceptable. The result concluded that usability affect customer loyalty around 23 percent toward customer loyalty on mobile banking application.

Sub-Hypotheses

H2 = Relationship Quality has significant effect on building customer's loyalty.

Considering on significant effect between relationship quality and customer loyalty, the result from regression analysis is not surprisingly that relationship quality is statistically significant effect on customer loyalty. The value represents by $\beta = 0.638$ and $p = 0.000$ at 95 percent confidence level. Thus, testing H2 is acceptable and explain that relationship quality develops customer loyalty almost 64 percent toward the customer loyalty on mobile banking application.

H3: Banking image has significant effect on building customer's loyalty.

Considering on significant effect between banking image and customer loyalty, the result is surprising that Banking Image has significant effect on customer loyalty. The value represents by $\beta = 0.244$ and $p = 0.000$ at 95 percent confidence level. Thus, testing H2 is unacceptable. This concluded that Banking Image develop 24 percent toward customer loyalty on mobile banking application.

Therefore, from the multiple regression analysis in Model 1, we found that Main-Hypotheses (H1) and Sub-Hypotheses (H2 and H3) are acceptable.

Table 7: Hypotheses for Model 1

Hypotheses	Variables	Result
Main-Hypothesis • H1	Usability	Accept
Sub-Hypotheses • H2	Relationship Quality	Accept
• H3	Banking Image	Accept

To conclude the result of research model, we found that usability, relationship quality, and banking image have positively significant effect on building customer loyalty. While the other control variables (gender, education, age, occupation, frequency of usage, duration of usage, income, and application) have no significant effect on building customer loyalty.

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4.3.4 Model 2

Consider using customer's loyalty stage as dependent variables. This model is the basic model. To study in another aspect of customer loyalty, this paper tried to examine another dependent variable which related to our literature review. The loyalty stage is an additional variable that we will test in the same methodology of Model 1. Thus, model 2 defined the same set of independent variables are usability, relationship quality, and banking image. Including to control variables are gender, education, age, occupation, frequency of usage, duration of usage, income, and application.

Table 8: Multiple Regression Analysis Model 2

Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity statistic	
	β	Std. Error	Beta			Tolerance	VIF
(Constant)	2.219	1.061		2.091	.037		
Usability	-.082	.222	-.030	-.370	.712	.521	1.919
Relationship Quality	.207	.186	.095	1.113	.267	.459	2.180
Banking Image	-.081	.100	-.056	-.810	.419	.701	1.427
Gender	.062	.152	.025	.409	.683	.866	1.155
Education	.206	.205	.068	1.005	.316	.735	1.361
Age	-.189	.109	-.103	-1.732	.084	.941	1.062
Occupation	.113	.087	.080	1.293	.197	.864	1.157
Frequency	-.065	.056	-.078	-1.160	.247	.732	1.366
Duration	.033	.110	.018	.298	.766	.900	1.111
Income	.059	.061	.059	.977	.330	.924	1.082
Application	.052	.058	.054	.900	.369	.920	1.087

R	0.198[a]
R Square	0.039
Adjusted R Square	0.002

Interpretation

After ran the regression, we found that R Square is 0.039 which indicate that the dependents variables in Model 1 was explained by independents variables at 3.9 percent of the variance. In addition, the model obtained Adjusted R Square value of 0.002 which is lower than R Square in Model 2.

Testing Hypotheses in Model 2

Main-Hypotheses

H1 = Usability has significant effect on Customer's Loyalty stage.

From model 2, we found that there is no statistically significant effect between usability and loyalty stage represents. This indicates that result from testing H1 is unacceptable. The result concluded that usability do not affect customer's loyalty stage of Thai banking customer.

Sub-Hypotheses

H2 = Relationship Quality has significant effect on Customer's Loyalty stage.

While considering on significant effect between relationship quality and customer's loyalty stage, finding that there is no statistically significant effect between relationship quality and customer's loyalty stage. Thus, testing H2 is unacceptable. Model 2 cannot explain linear relationship of relationship quality on customer's loyalty stage of Thai banking customer.

H3: Banking image has significant effect on Customer's Loyalty stage.

Considering on significant effect between banking image and customer loyalty, the result is not surprising that there is no significant effect on customer's loyalty stage. Thus, testing H3 is unacceptable. This concluded that banking image do not affect customer's loyalty stage of Thai banking customer.

Therefore, from the multiple regression analysis in Model 2, we found that Main-Hypotheses (H1) and Sub-Hypotheses (H2 and H3) are unacceptable.

Table 9: Hypotheses for Model 2

Hypotheses	Variables	Result
Main-Hypothesis • H1	Usability	Reject
Sub-Hypotheses • H2	Relationship Quality	Reject
• H3	Banking Image	Reject

To conclude the result of research model, we found that usability, relationship quality, and banking image have no significant effect on building customer loyalty. Meanwhile the other control variables (gender, education, age, occupation, frequency of usage, duration of usage, income, and application) also have no significant effect on customer's loyalty stage in mobile banking application.

Chapter 5

Conclusion and Implication

Based on survey which conducted to collect the dataset to investigate demographic characteristics of Thai people who use mobile banking application. We found that total respondents are 304 respondents. There are 4 respondents do not use mobile banking application because they concerned about privacy, security, and difficulty. While almost 63 percent of respondents have been using Mobile banking application longer than 4 years which imply with timing since National e-payment master plan has implemented. Most of respondents are in aging between 26-50 years old. usually use mobile banking application 6 -15 times/week or more than 15 times per week. The result also concludes that most of respondents have registered with 2-3 Banking applications. The main reasons of using mobile banking application have been ranked by the respondents which are convenience to use, free of charge, easy to use, quick and reliability, and usefulness, respectively. This concludes that Thai people are looking for the convenience services without paying cost. Therefore, Thai bank shall develop their services to meet these demands of Thai customers and turn these potential customers to be loyal customers.

5.1 Usability towards Customer Loyalty

Research question: Does usability on mobile banking application impact on Thai banking customer loyalty?

Regarding to TAM concept by Davis (1985), there are two concept behind usability which are perceived ease of use and perceived usefuleness. This studay have grouped two concepts to be one variables named "Usability" to investigate impact of usability on building Thai banking customer loyalty. The result confirms that usability has positively significant effect on customer loyalty in terms of repatronize. The result demonstrates similarly to Thakur R. (2014) that confirmed significant effect of usability toward customer loyalty. Moreover, the result also implied that once mobile banking application is easy or useful. It can impact on building customers to be loyal customers. This study suggested that Thai bank could develop mobile banking

application to match with customer requirement as finding from the most respondents that the main reason for continuously use is convenience. However, there is an obstacle when bank want to provide banking information through mobile banking application because screen is quite small. Thus, there is opportunity that customers feel inconvenience to use and customers might switch to use banking application with other competitive banks. By this reason, Banks have to ensure that mobile banking application can deliver banking infomation ditrectly to their customers with a convenience function and without failure of the system.

5.2 Relationship Quality towards Customer Loyalty

This paper has grouped three dimension of satisfaction, trust, and commitment into one variable which confirmed by Palmatier, (2008) and Vesel & Zabkar, (2010). The result demonstrates significant effect of relationship quality towards customer loyalty as expectation. Our finding also be confirmed by Selnes (1998); Hennig-Thurau, Gwinner, & Gremler, (2002) and Thakur R. , (2014). The result of Relationship Quality is not surprising that three dimension play importance role in terms of contribution customer loyalty. According to Grönroos (2004) mentioned about relationship quality that construct based on interaction from many channels. Therefore, we may suggest banks need to develop three dimensions of satisfaction, trust, and commitment in order to form long term relationship between banks and customers for sustainability onward.

5.3 Banking Image towards Customer Loyalty

Finding that banking image positively effect on building customer loyalty. Our result implies that banking image is another key role in terms of develop customer loyalty. Commercial banks need to present good image and good performance to convince their customer for continuously using among aggressive competitors in banking industry. We may conclude that once customers have alternative choices, customer might compare or evaluate from banking image before obtaining products/services from banks. Banking image is an importance thing to influence customer expectation confirmed by Farhani, Muflih, & Setiawan, (2018). Therefore, in order to persuade new potential customers or retain existing customers. Thai banks

need to retain banking image because image reflects on customer loyalty which confirmed by Granbois, (1981) and Korgaonkar et al., (1985) cited in Bloemer, Ruyter, & Peeters, (1998).

5.4 Customer's loyalty stage

Based on survey instrument, the dataset was concluded into two main stages that most of respondents have evaluated themself. First, most of respondent evaluated themselves into Action loyalty stage. The action loyalty stage is the last stage. Its conclusion is that our respondents are the actual loyal customer of the Bank. Customers in this stage have strong intention to dedicate themselves to support bank's products. They will not compare products/services with other competitive banks.

Second is Affective loyalty which are the second loyalty stage. In this stage customer has a deeper loyalty based on their preferable on products/services or the fulfillment from their current experiences. Customer in this stage still have room to switch to alternative choices. Therefore, Thai bank should realize that even though most of customers seem to be actual loyal customer, but there are more than 50 percent evaluated themselves to be in cognitive loyalty, affective loyalty, and conative loyalty which explained by Oliver (1999) and Han & Hyun, (2012). This means that there are opportunities for Thai banks to shift these customers into actual loyal customer. In other words, with the products/services of Thai banks can switch customer intention to have a deeper loyalty. On the other hand, some of them will exit from banking relationship. Therefore, in order to retain potential customers, Thai bank needs to segment customer's pain point and fulfill its pain point with capability of bank.

5.5 Limitation

First limitation is the way to conduct survey since we conducted survey within short span of time base on convenience technique. Thus, dataset and result cannot represent the whole population and results represent based on our sample size only. Second limitation is about methodology to investigate in our research model. Since our models were constructed based on basic research model. Therefore, it might not be suitable in terms of interpretation the result of Model 2.

5.6 Recommendation

First recommendation is collecting the entire population. To see the whole results which can be benefits to banking Industry to improving their mobile banking system or to improve service quality. Second is about methodology. Since our model is a basic research model. Thus, we may recommend for applying difference model to investigate the relationship between independent variables. Third recommendation is expanding research model to investigate profitability to the bank. This seem to be more attractive and benefit to Thai banks. Fourth recommendation is investigating the impact of word of mouth on developing customer loyalty. Fifth recommendation is that even though the number of users is increasing but the people behavior has been changing over time. Therefore, recommend updating technology innovation related to banks because banking platform can change over time depends on advancement of technology and customer behavior.
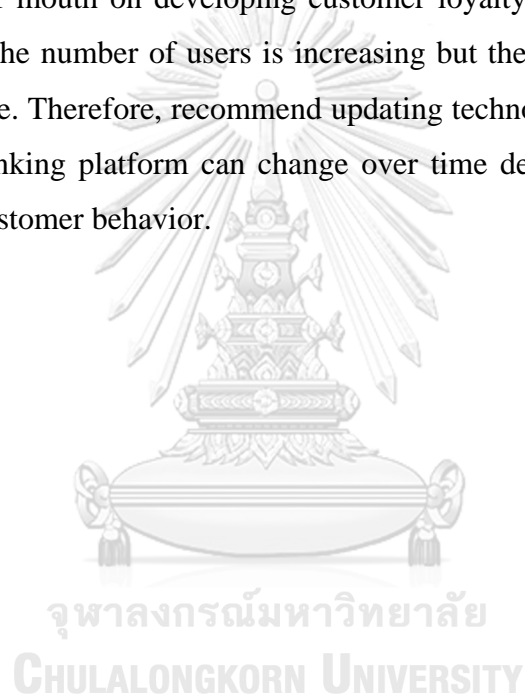
Apendix

Survey question

Part 1 Demographic characteristics of respondents

1. Gender (*เพศ*)
- ☐ Male (*ชาย*)
- ☐ Female (*หญิง*)
- ☐ Others (*อื่นๆ*)

2. Age (*อายุ*)

…...............

3. Education (*ระดับการศึกษา*)
- ☐ High school or less
- ☐ Vocational school
- ☐ College
- ☐ University
- ☐ Master/Ph.D.

4. Occupation (*อาชีพ*)
- ☐ Student (*นักเรียน/นิสิต/นักศึกษา*)
- ☐ Self-employed/Business owner (*เจ้าของธุรกิจส่วนตัว*)
- ☐ Private company employee (*พนักงานบริษัทเอกชน*)
- ☐ Government employee (*พนักงานรัฐ/ข้าราชการรัฐ*)
- ☐ Others (*อื่นๆ*)

5. Monthly income(THB) (*รายได้ต่อเดือน*)
- ☐ 10,000 or less
- ☐ 10,001 - 25,000
- ☐ 25,001 - 40,000
- ☐ 40,001 - 65,000
- ☐ 65,001 - 85,000
- ☐ 85,001 - 100,000
- ☐ More than 100,000

6. Do you use Mobile Banking Application?
ปัจจุบันท่านใช้บริการแอพพลิเคชั่น Mobile Banking หรือไม่
- ☐ Yes, I do. (*ใช้งาน*)
- ☐ No, I don't (*ไม่ใช้งาน*)

7. What is the reason of "Noy use"?
เหตุผลที่ไม่ใช้บริการ (เลือกได้มากกว่า 1 ข้อ)
- ☐ Security
- ☐ Privacy
- ☐ Highier risk than bank branch
- ☐ Difficult to use
- ☐ Not use mobile phone
- ☐ Others …......

8. How long have you used Mobile Banking Application?
ท่านใช้บริการ Mobile banking application มานานเท่าใด?
- ☐ Less than 1 year (*น้อยกว่า ปี*)
- ☐ 1 - 2 years (*1-2 ปี*)
- ☐ 3 - 4 years (*3-4 ปี*)
- ☐ 4 years or more (*มากกว่า 4 ปี*)

9. Mobile banking usage frequency ?
ความถี่ในการใช้บริการ Mobile banking
- ☐ 1 - 5 times a week (1-5 ครั้งต่อสัปดาห์)
- ☐ 6 - 10 times a week (6 - 10 ครั้งต่อสัปดาห์)
- ☐ 11 - 15 times a week (11 - 15 ครั้งต่อสัปดาห์)
- ☐ More than 15 times a week (มากกว่า 15 ครั้งต่อสัปดาห์)

10. Transaction type ? (Rank 3 levels)
ประเภทของธุรกรรมที่ใช้บริการ (เรียงลำดับ 3 ข้อ)

	บ่อยที่สุด	ปานกลาง	น้อยที่สุด
Check balance (เช็คยอดเงินคงเหลือ)			
Cardless (กด ATM ไม่ใช้บัตร)			
Fund transfer (โอนเงินระหว่างบัญชี)			
Promptpay (โอนเงินผ่านพร้อมเพย์)			
Bill/Credit card payment (ชำระบิลค่าใช้จ่าย/ชำระบัตรเครดิต)			
QR code payment (ชำระเงินผ่านระบบ QR code)			

11. โปรดเรียงลำดับเหตุผลที่ท่านเลือกใช้บริการ Mobile Banking Application (เรียงได้ข้อละ 1 ลำดับ จากน้อยสุดไปมากสุด)

	Strongly Disagree (น้อยที่สุด)	Disagree (น้อย)	Neutral (ปานกลาง)	Agree (มาก)	Strongly Agree (มากที่สุด)
สะดวกต่อการใช้งาน (Convenience)					
ใช้งานง่าย ไม่ซับซ้อน (Easy to use)					
มีประโยชน์ (Usefulness)					
ไม่มีค่าธรรมเนียม (Fee of charge)					
รวดเร็วและเชื่อถือได้ (Quick and reliability)					

12. Mobile Banking Application จากธนาคารใดที่ท่านใช้บริการบ่อยที่สุด
ธนาคารหลักที่ท่านใช้บริการคือธนาคารใด (เลือกได้มากกว่า 1 ข้อ)

- ☐ Bangkok Bank
- ☐ Siam Commercial Bank
- ☐ Kasikorn Bank
- ☐ Krung Thai Bank
- ☐ Bank of Ayudhya
- ☐ TMB Bank
- ☐ Others …….

13. ปัจจุบันท่านใช้ Mobile Banking Application กี่แอพพลิเคชั่น
….............. Aplications

Part 2   Measurement scales and Items

Usability	Rate opinions (ระดับความคิดเห็น)				
	1 Strongly disagree (ไม่เห็นด้วยอย่างยิ่ง)	2 Disagree (ไม่เห็นด้วย)	3 Neutral (ปานกลาง)	4 Agree (เห็นด้วย)	5 Agree (เห็นด้วยอย่างยิ่ง)
Perceived ease of use					
14. ขั้นตอนการใช้งาน Mobile Banking Application มีความชัดเจน สามารถเข้าใจได้ ไม่ซับซ้อน *Process for using Mobile banking application is clear and understandable.*					
15. การทำธุรกรรมผ่าน Mobile banking application ถือเป็นเรื่องง่ายเมื่อฉันต้องการใช้งานในแต่ละครั้ง *Mobile banking application is easy to use.*					
16. ฉันมีทักษะการใช้งาน Mobile banking application เป็นอย่างดี สามารถเรียนรู้วิธีการใช้งานได้ด้วยตัวเอง *I have a good skill at Mobile banking application since I can learn my myself.*					
17. การทำธุรกรรม โอน-จ่ายชำระ ผ่าน Mobile banking application ไม่ทำให้ฉันรู้สึกลำบากและไม่ต้องใช้ความพยายามใดๆ *I do not need to take any effort to use Mobile Banking Application.*					
18. โดยรวมแล้วคิดว่าขั้นตอนการใช้งานที่ง่ายเป็นปัจจัยสำคัญ ที่คนทั่วไปเลือกใช้ Mobile Banking Application *In overall, I think perceive ease of use is the important factor that Thai people have been adopting Mobile Banking Application.*					
Perceived usefulness					
19. การทำธุรกรรมผ่าน Mobile banking application ทำให้การโอน-จ่ายชำระค่าใช้จ่ายของฉันรวดเร็วขึ้น *ฉันเชื่อว่า Mobile banking application ทำให้การใช้จ่ายรวดเร็วขึ้น*					
20. การทำธุรกรรมผ่าน Mobile banking application ช่วยให้การทำธุรกรรมของฉันกับธนาคารมีประสิทธิภาพมากขึ้น *Mobile banking application enhances my effective on proceeding banking activities.*					
21. การทำธุรกรรมผ่าน Mobile banking application อำนวยความสะดวกให้ฉันได้มากกว่าการไปทำธุรกรรมด้วยตัวเองที่สาขา เพราะสามารถใช้งานได้ทุกที่ ทุกเวลา *Mobile banking application facilitate me more than going to do banking activities at bank*					
22. การใช้งาน Mobile Banking Application ช่วยให้ฉันมองเห็นผลิตภัณฑ์ของธนาคารได้หลากหลายมากขึ้น *I can find other banking product from Mobile Banking Application.*					
23. ในปัจจุบันการใช้งานผ่าน Mobile banking application ถือเป็นแอพพลิเคชั่นที่สำคัญและมีประโยชน์ต่อคนไทย *At present, Mobile banking application is an important application and very useful.*					

Banking image or Banking positioning	Rate opinions (ระดับความคิดเห็น)				
	1 **Strongly disagree** (ไม่เห็นด้วยอย่างยิ่ง)	**2** **Disagree** (ไม่เห็นด้วย)	**3** **Neutral** (ปานกลาง)	**4** **Agree** (เห็นด้วย)	**5** **Agree** (เห็นด้วยอย่างยิ่ง)
42. ฉันเลือกใช้ Mobile banking application จากธนาคาร 5 อันดับ ของประเทศไทย *I choose Mobile banking application from top 5 banks in Thailand.*					
43. ฉันเลือกใช้ Mobile banking application กับธนาคารที่มีภาพลักษณ์ที่ดี หรือเป็นที่รู้จักในตลาด *I choose Mobile banking application from banking image or positioning*					
44. ฉันเลือกใช้ Mobile Banking Application กับธนาคารที่ให้สิทธิประโยชน์ที่หลากหลาย *I choose Mobile Banking Application from the bank that offer various benefits.*					
45. ฉันเลือกใช้ Mobile banking application กับธนาคารที่ฉันเห็นตามสื่อโฆษณาทั่วไป *I choose Mobile Banking Application from public advertisement.*					
46. ฉันเลือกใช้ Mobile Banking Application กับธนาคารตามคำแนะนำจากคนรอบข้าง (ครอบครัว, เพื่อนสนิท, คนใกล้ชิด) *I choose Mobile Banking Application by recommendation from those who are*					

47. สำหรับ Mobile Banking Application ที่ใช้เป็นประจำ คุณคิดว่าคุณเลือกที่จะใช้บริการบ่อยที่สุด เนื่องจากเหตุลข้อใดมากที่สุด (เลือกได้ 1 ข้อ)

ฉันเลือกใช้ Mobile banking application กับธนาคารปัจจุบันจากประสบการณ์ส่วนตัวและการรับรู้ได้ถึงข้อมูลที่เพียงต่อการตัดสินใจแต่ยังเปรียบเทียบกับตัวเลือกอื่นเพิ่มเติม

ฉันเลือกใช้ Mobile banking application กับธนาคารปัจจุบันเพราะตอบสนองด้านความชอบในด้านบริการ และผลิตภัณฑ์ของธนาคาร ซึ่งยังเปิดโอกาสที่จะมองหาตัวเลือกอื่นเพิ่มเติม

ฉันเลือกใช้ Mobile banking application กับธนาคารปัจจุบันจากประสบการณ์ส่วนตัวที่ได้รับ ซึ่งเป็นประสบการณ์ที่ดีทุกครั้งที่ใช้งานหรือใช้บริการ แทบจะไม่สนใจข้อผิดพลาดที่เคยเกิดขึ้นจากการใช้ Mobile banking application

ฉันเลือกใช้ Mobile banking application กับธนาคารปัจจุบันเพราะการใช้งานผ่านแอพพลิเคชั่นที่ตอบสนองความต้องการด้านข้อมูล ความชอบ ด้านการใช้งาน ด้านบริการ และด้านผลิตภัณฑ์ แทบจะไม่มองหาตัวเลือกอื่นเพิ่มเติม

Loyalty	Rate opinions (ระดับความคิดเห็น)				
	1 **Strongly disagree** (ไม่เห็นด้วยอย่างยิ่ง)	**2** **Disagree** (ไม่เห็นด้วย)	**3** **Neutral** (ปานกลาง)	**4** **Agree** (เห็นด้วย)	**5** **Agree** (เห็นด้วยอย่างยิ่ง)
48. ฉันทำธุรกรรมที่เกี่ยวข้องกับธนาคารทุกอย่างผ่าน Mobile banking application *I proceed my banking transactions via Mobile banking application.*					
49. ฉันคิดว่าโอกาสที่ฉันจะเปลี่ยนการใช้ Mobile banking Application ของธนาคารปัจจุบันไปเป็นธนาคารอื่นนั้นมีน้อย *Less opportunity to switch to use Mobile banking application with other banks.*					
50. ฉันมีความภักดีต่อธนาคาร ปัจจุบันที่ใช้ Mobile banking application อยู่ *I am a loyal customer for the bank that I am using mobile banking application.*					

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