THE STUDY OF PERCEPTION AND ADOPTION OF THAI CONSUMERS TOWARD MOBILE PAYMENT APPLICATION
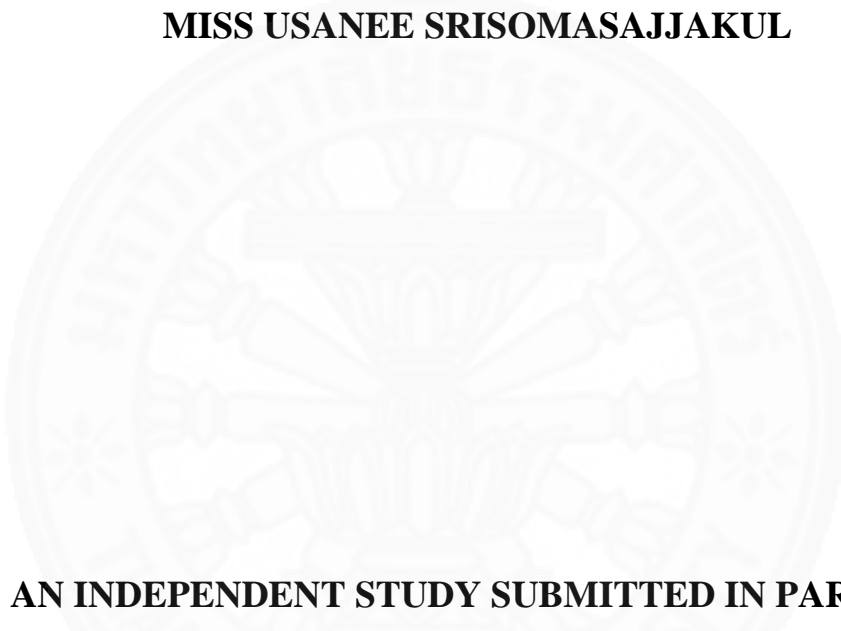
BY

MISS USANEE SRISOMASAJJAKUL

AN INDEPENDENT STUDY SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF SCIENCE PROGRAM IN MARKETING
(INTERNATIONAL PROGRAM)
FACULTY OF COMMERCE AND ACCOUNTANCY
THAMMASAT UNIVERSITY
ACADEMIC YEAR 2016
COPYRIGHT OF THAMMASAT UNIVERSITY

THE STUDY OF PERCEPTION AND ADOPTION OF THAI CONSUMERS TOWARD MOBILE PAYMENT APPLICATION

BY

MISS USANEE SRISOMASAJJAKUL

AN INDEPENDENT STUDY SUBMITTED IN PARTIAL
FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE
OF MASTER OF SCIENCE PROGRAM IN MARKETING
(INTERNATIONAL PROGRAM)
FACULTY OF COMMERCE AND ACCOUNTANCY
THAMMASAT UNIVERSITY
ACADEMIC YEAR 2016
COPYRIGHT OF THAMMASAT UNIVERSITY

THAMMASAT UNIVERSITY

FACULTY OF COMMERCE AND ACCOUNTANCY

INDEPENDENT STUDY

BY

MISS USANEE SRISOMASAJJAKUL

ENTITLED

THE STUDY OF PERCEPTION AND ADOPTION OF THAI CONSUMERS
TOWARD MOBILE PAYMENT APPLICATION

was approved as partial fulfillment of the requirements for

the degree of Master of Science Program in Marketing (International Program)

on......8 MAY 2017..................

Chairman _____

(Professor Paul G. Patterson, Ph.D.)

Member and Advisor _____

(Professor K. Douglas Hoffman, Ph.D.)

Dean _____

(Associate Professor Pipop Udorn, Ph.D.)

Independent Study Title	THE STUDY OF PERCEPTION AND ADOPTION OF THAI CONSUMERS TOWARD MOBILE PAYMENT APPLICATION
Author	MISS USANEE SRISOMASAJJAKUL
Degree	Master of Science Program in Marketing (International Program)
Major Field/Faculty/University	Faculty of Commerce and Accountancy Thammasat University
Independent Study Advisor	Professor K. Douglas Hoffman, Ph.D.
Academic Year	2016

ABSTRACT

In recent year smartphone penetration had increased rapidly. Technology in smartphone enable many new function of using phone beside calling including bill payment. Moreover, alternative payment was expanding. The extension of technology in smartphone combining with the growth in alternative payment also enhanced the growth of mobile payment application.

Mobile payment application in this study was focus on the application on smartphone that allowed user do payment transaction with merchant. Many mobile payment applications had successfully launched in Thailand. But active users for the application contributed only few proportion to Thai smartphone user. The objective of this study was to investigate the perception of Thai consumers toward mobile payment application and also examined the key success factors affected the adoption of mobile payment application.

From a managerial perspective, this study could help businesses to better understand Thai consumer perception toward mobile payment application and recognized what critical factors affected to the adoption of mobile payment application. The result of this study could be utilized to improve a consumer's payment experience

in order to expand mobile payment applications user base and stimulated spending at retail.

Keywords: Mobile payment application, Alternative payment, Adoption, Perception

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATION

Symbol/Abbreviation	Term
MPA	Mobile Payment Application

CHAPTER 1
INTRODUCTION

1.1 Introduction to the study

In the past few year, smartphone penetration had increased rapidly, as well as Thailand. The syndicate research reports showed that the number of smartphone subscriptions in Thailand would reach 100% penetration by 2021 (ERICSSON, 2016). Moreover, technology in smartphone also endorsed new function of using phone beside calling and texting such as social media, entertainment, including bill payment. Therefore, smartphone became an essential part of routine life for smartphone users. Furthermore, alternative payment was expanding with an average growth of 20% over the past five year. Thailand was the 4th fastest growth market in Asia after China, India, and Indonesia (Yozzo, 2016). The extension of technology in smartphone including with the growth of alternative payment, also enhanced the growth of mobile payment application which is one type of alternative payment.

Many mobile payment applications had successfully launched in Thailand. But active users for the application were only accounted for 8.2% to total Thailand population (Yozzo, 2016). Hence, the objectives of this study were to investigate the perception of Thai consumers toward mobile payment application and also find the key success factors affect the adoption of mobile payment application.

From a managerial perspective, this study could help businesses to better understand Thai consumer perception toward mobile payment application and recognized what critical factors affect to the adoption of mobile payment application. The result of this study could be utilized to improve a consumer's payment experience in order to expand customer's base and stimulated spending at retail.

1.2 Objectives

This research had been conducted to understand Thai consumer insight about perception toward current mobile payment application. In order to provide useful finding for marketing manager to better understand the critical factors that affect to the adoption of mobile payment application and be able to develop new payment experience for their customers. The study of perception and adoption of Thai consumers toward mobile payment application was relevant to the subject area of technology. The research type investigated a contemporary topic in applied marketing. Three objectives were set as follows:

1) To understand consumer perception toward mobile payment application.
   a. To identify the perception on the usefulness of mobile payment application
   b. To identify the perception on the ease of use of mobile payment application
   c. To identify the perception on the security of mobile payment application
   d. To identify the perception on the compatibility of mobile payment application
   e. To identify the perception on the incentive of mobile payment application
2) To identify the key factors that influence adoption process of using mobile payment application as a regularly payment method.
3) To identify the characteristics of potential mobile payment application users that tend to use mobile payment application.

1.3 Project scope

Mobile payment application in this study was focus on the application on smartphone that allowed user do payment transaction with merchant. Data sources in this study would come from both qualitative and quantitative research. For qualitative was conducted by using in-depth interview technique. While quantitative was collected through questionnaires with 245 respondents. The key variables of this study are 1) demographics: age, gender, level of income, and occupation 2) behavioral: perception and adoption toward mobile payment application 3) psychographic: current payment behavior. The questions that result from this study would answer 1) What were the consumer perception toward mobile payment application? 2) What were the factors that stimulate consumer adoption of mobile payment application? And 3) What were the characteristics of mobile payment application users?

CHAPTER 2
REVIEW OF LITERATURE

The purpose of literature review is to understand the relevant idea and concept in order to design the research methodology.

2.1 Review of mobile payment trend

At this time, there was various type of payments other than cash. According to global payment report (WorldPay, 2015), alternative payments were all payments excluded credit cards. E-commerce market would expect to be worth $2.4 trillion by 2019, 23% of this would come from mobile device. Currently, mobile payment accounted for 44% retail transaction worldwide (World Bank, 2016). Moreover, the article on Digital Marketing Asia website also stated that mobile payment application would become a new marketing channel where marketers could merge both offline and online marketing efforts. As the result shown that major telecom operators, tech companies, and retailers were developing and launching their own mobile payment application in an attempt to make a new payment experience for their customers (Puri, 2016).

2.2 Review of relevant concept

According to (Hoyer, Maclnnis, & Pieters, 2013), the success of new product depends on how many people within market adopt it, there are three main characteristics of the innovation that effect the adoption process which are; Perceived value: products or service with high perceive value may be more rapidly adopted than those with low perceive. Perceive benefits: the value to consumers if affected by its perceived advantage. Perceive cost: all type of cost, including the money, time and effort required to adopt the product.

To reach the final adoption of new product, understanding the stage in the adoption process is required (Kotler and Keller, 2012). The adoption process consists of; (1) Awareness: This stage is about creating awareness of the product in the market. (2) Interest: This stage is providing more information to the consumers. In order to learn more about products or services. (3) Evaluation: This is a consider stage that lead to trial. It necessary to provide enough information to consumers for considering the product's benefit in order to decide whether to try a product. (4) Trial: This stage is about try a product and determine if the product meet need. (5) Adoption: This stage is expected consumer to make a regular use of product.
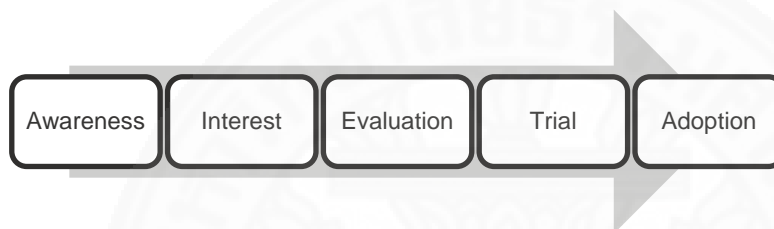
Figure 1 Product Adoption Process

2.3 Review of research framework

According to (Kristensen, 2016), this research used TAM (Technology Acceptance Model) which been proposed by Fred D. Davis in 1989 to explain the acceptance and use of mobile payment at the point-of-sale in Denmark. TAM was explained by perceived usefulness, and perceived ease of use. Rather than used only TAM, (Aydin, 2016) also used other factors which were (1) Personal Innovativeness: willingness of an individual to try out any new information technology (Dowling&Midgley, 1978), (2) Perceived Ease of Use: perception toward the easiness of using the system, (3) Perceived Compatibility: the degree to which a system is consistent with existing values, beliefs, experience, and needs, (4) Perceived Usefulness: the benefit of using the system, (5) Perceived Security: privacy and security in using the system, (6)Reward: incentive to motivate the usage, (7) Social influence: people who influence the decision to use the system.

2.3 Summary of the literature

As summary of the literature: customer perceive value, TAM, and product adoption process were applied as a framework to understand the perception toward mobile payment application and used as guideline for defining the factors that lead to the adoption of mobile payment application.

The literature review provided an overview of the mobile payment application and different framework that had been used to study the mobile payment adoption, which used to develop the research methodology for this study.
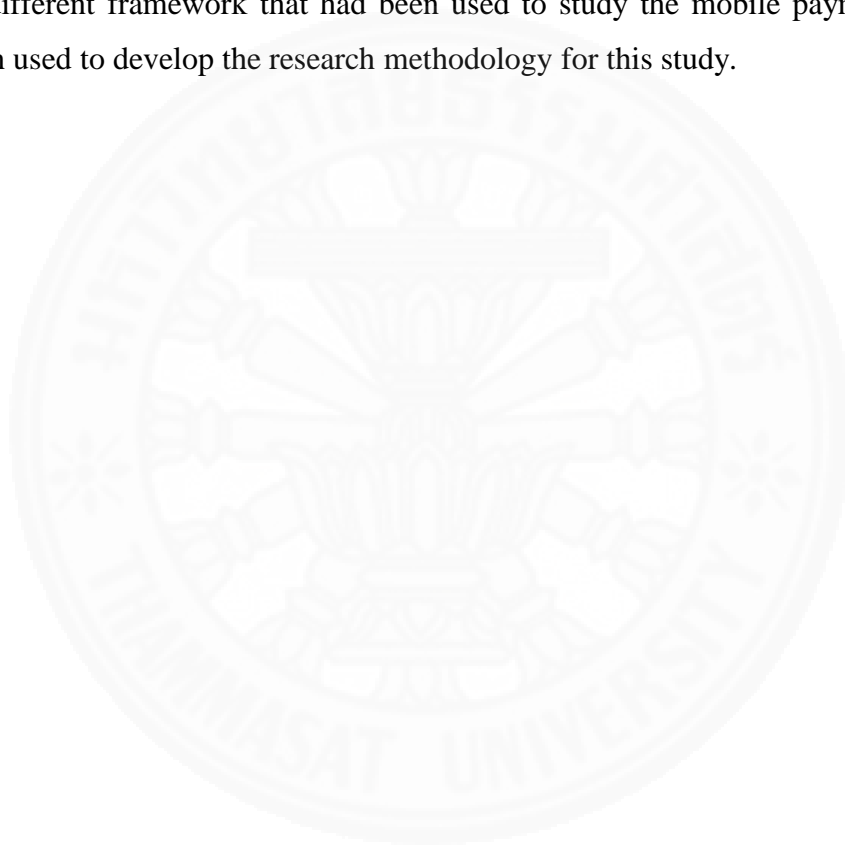
CHAPTER 3
RESEARCH METHODOLOGY

3.1 Research design

In order to collect data for this study, both exploratory research and descriptive research methods were applied to obtain all needed information. Each of the research method will have a difference proposes.

The exploratory research consists of secondary data and qualitative through in-depth interview. Secondary data was conducted to provide the generic information about mobile payment application in Thailand. In-depth interview has been utilized to acquire the insight of current perception of Thai consumers toward mobile payment application and also the key factors that influence the adoption of spending through mobile payment application. Furthermore, descriptive research was conducted through quantitative method with online survey to have comprehensive understanding of Thai consumer's perception and adoption toward mobile payment application. The questionnaire was developed based on the insight from in-depth interview. The research framework of this study has shown in figure 3.

Exploratory Research • Secondary Data	→	Qualitative method • In-depth interview	→	Quantitative method • Online Survey
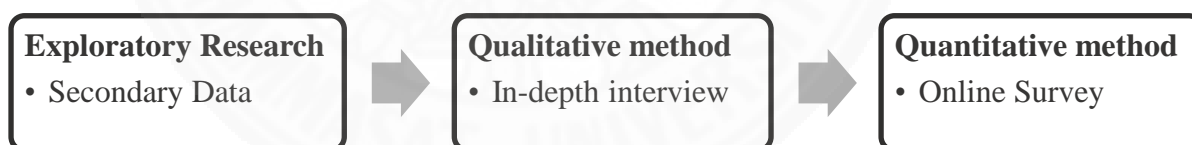
Figure 2 The research framework

3.1.1 Secondary research

Secondary data was collected through published sources, syndicated database and websites. For example, Euromonitor, Worldpay annual report, and online news. The research provides general information of mobile payment application, global trend of using mobile payment application, and an overview of mobile payment applications that commonly use in Thailand.

3.1.2 In-depth interview

The qualitative method was applied in this study through In-depth interview. The target respondent were males and females own and used smartphone, lived in Thailand, and aware of mobile payment application. The qualitative data was conducted to explore the perceptions toward mobile payment application and to identify the key factors influencing their adoption of mobile payment application. All of the insight data were used for designing questionnaire survey.

3.2 Descriptive research methodology

In order to have further understanding of Thai consumer's perception and adoption toward mobile payment application, data was gathered through quantitative research with online questionnaire technique. The set of questions were generated from qualitative research finding, comprised of 5 parts which were introduction, screening, perception, adoption, and demographic. A Pre-test questionnaire had been tested with 10 respondents to adjust the questions before publicly released. After a questionnaire had been finalized, it was distributed to public using online channels to collect a total number of 245 respondents. The result from questionnaire had been used to quantify the finding from qualitative research and had been used as support for recommendation.

3.3 Identification of key research variables

In order to achieve the research objectives, the group of variables had been created. The dependent variables for perception study mainly generated from identified factors in qualitative research and some of the factors in previous studies (Aydin, 2016) (Kristensen, 2016) also included. The dependent variables in research model consisted of usefulness, ease of use, security, compatibility and incentive. These variables also used to determine the key factors that influence on adoption of mobile payment application. The independent variables were included current payment method, demographic and smartphone usage.

The dependent varibles	The independent varibles
• Usefulness • Ease of use • Security • Compatibility • Incentive	• Current payment method • Demographic • Smartphone usage
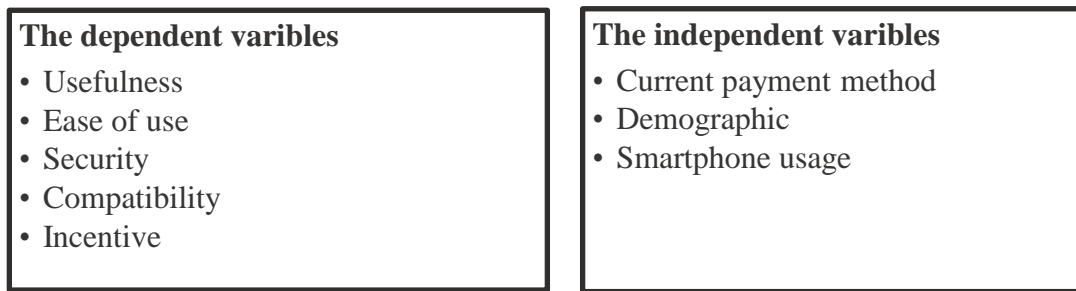
Figure 3 The key variables

3.4 Sampling procedure

3.4.1 Recruiting plan

In-depth interview

Convenience sampling technique had been applied. The target respondents of in-depth interview had been recruited by using personal contact.

Survey

Convenience sampling technique had been applied. The questionnaire was distributed through online. To obtain a snowball effect, friends and family were encouraged to share the link to the questionnaire on Line chat and Facebook. Total number of 245 respondents were collected during March 2017. Core aspect criteria of sampling selections were Thai males and females who own smartphone and aware of mobile payment application.

3.4.2 Sample size

In-depth interview

4 respondent had been interviewed during October,2016 to November,2016 in order to acquire the finding to develop the questionnaire in quantitative research.

Survey

245 respondents were collected during March 2017. Core aspect criteria of sampling selections were Thai males and females who own smartphone and aware of mobile payment application.

3.5 Data collection

3.5.1 In-depth interview

4 respondent had been interviewed during October,2016 to November,2016. Both open-end and close-end questions were asked to interviewees in order to acquire the finding to develop the questionnaire in quantitative research.

3.5.2 Survey

Questionnaire was created by survey monkey and distributed through Line chat and Facebook during March 2017. Convenience sampling technique was applied. The total of 369 respondents have been collected, 324 respondents finished the questionnaire, and 245 respondents were qualified as target respondents. Questionnaire required 5 to 10 minute to complete, consist of five part which were;

Part I: Introduction

The respondents were informed about the definition of mobile payment application. The purpose of introduction was to ensure that respondents understand what type mobile payment application had been used in this research.

Part II: Screening

This part was designed to screen respondents who did not meet the qualifications for the target sampling. The respondents must be smartphone users and aware of mobile payment application.

Part III: Perception toward mobile payment application

This part focused on find out the respondent's perception toward mobile payment application. Respondents were asked to indicate the level of agreement on five-point Likert scale (1 = "strongly disagree" and 5= "strongly agree") in term of usefulness, ease of use, security, compatibility and incentive.

Part IV: Factors that influence the usage of mobile payment application

The purpose of this part was to investigate the factors that influence the decision in using mobile payment application. The respondents had been asked to indicate the level of important with the set of statements on a five-point Likert scale (1 = "Not important" and 5= "Extremely important")

Part V: Demographic information

The last part was designed to collect demographic information such as, current payment behavior, gender, age, education, occupation and income. Finding from this part combined with previous part enabled the characteristics of potential mobile payment application users.

3.6 Data analysis

The Statistical Package for the Social Sciences (SPSS) and Microsoft Excel was the main program for data analysis.

Exploratory Research

Data from in-depth interview was utilized to identify the key aspects of perception and factors for MPA adoption which were; usefulness, ease of use, security, compatibility, and incentive. The questionnaire had been developed base on these aspect in order to quantify the finding from exploratory research.

Descriptive Research

All respondent's data was downloaded from survey monkey and imported to Microsoft Excel to eliminate unnecessary data. The respondents were classified into 3 groups by the stage of MPA adoption which were;

1) **'Not install'**: respondents who only aware of mobile payment application but did not install the application on their smartphones.
2) **'Install and Not use'**: respondents who installed mobile payment application on their smartphones and did not use the application.
3) **'Install and Use'**: respondents who installed mobile payment application on their smartphones and used the application.

The qualified data from the survey was analyzed by using the Statistical Package for the Social Sciences (SPSS). The frequency analysis was applied to measure the frequency of respondent's demographic (gender, age, education, occupation and income). Cross tabulation was applied to understand how variables was inter-related. One-way ANOVA was applied to indicate the statistical difference among variables.

CHAPTER 4
RESULT AND DISCUSSION

4.1 Result from exploratory research

4.1.1 Secondary research result

Mobile payment in Thailand

The usage of alternative payment in Thailand was increasing continuously with an average growth of 20% over the past five years (Yozzo, 2016). According to (Leesa-ngunansuk, 2016), many people use electronic money, especially through mobile payment applications on their daily spending, such as purchasing products, services, transportation, and bills. There are several keys driven the adoption of mobile payment applications which were the penetration of smartphones, the substantial telecommunication infrastructure, the growing of a digital lifestyle, and the variety of service providers, as well as the regulation to support mobile payment applications. Moreover, the article in (MarketingOops, 2016) showed that leading telecommunication operators in Thailand had launched their own mobile applications into the market such as mPay service of AIS, PaysBuy of DTAC, and TrueMoney of Truemove. The rising number of applications in the market reflected the potential of mobile payment application in Thailand.

Barrier for Mobile payment adoption

According to (Euromonitor, 2014), several reasons that slow the adoption in mobile payment applications were (1) privacy and security fear, (2) uniformed user base, (3) an absence of the required infrastructure to execute the purchasing through mobile payment applications, (4) the convenience of current payment methods. Therefore, to stimulate the adoption of mobile payment applications, this payment method required more value and benefit than traditional payment method. The motivation in using mobile payment application could be both monetary or time saving.

4.1.2 In-depth interview result

Data from in-depth interview was conducted through phone call. Total four respondents were recruited, gender of the respondents was equally male and female, age between 25 to 30 years old. All respondents owned a smartphone and aware of mobile payment application, three of respondents installed mobile payment application on their smartphone and were classified as users. Another did not install any of mobile payment application on his smartphone and was classified as non-user.

The key finding from in-depth interview were following;

- Most of restaurant and cafe had payment platform which supported mobile payment application. The merchants also provided discount or special promotion if customers purchased via mobile payment application. The benefit from discount and promotion encouraged the respondents to use mobile payment application.
- The respondents who installed and used mobile payment application shared their experience at the point of sale. Purchasing via mobile application was more convenience than using cash and could track all of purchase transaction in order to control their own spending.
- Most of mobile payment application was well design and easy for learning to use. The application was simple to use.
- The respondent who did not install mobile payment application was not comfortable to provide personal financial information when the application required on registration process.

4.2 Result from descriptive research

4.2.1 Respondents demographic profile

Total number of 245 respondents met the qualifications of being the smartphone users and aware of mobile payment application. Gender of total respondents were well distributed, 49% for male and 51% for female. All respondents, 48% aged between 25 to 30 years old. A large proportion of the respondents had monthly personal income higher than 24,000 THB, which classified into SES class C and upper. For highest education level, 49% graduated bachelor's degree following by 38% for master's degree. The majority of respondent, 94% lived in Bangkok and vicinity area. All respondents used smartphone regularly, 42% of them used smartphone 3 to 6 hours per day, and 44% used smartphone more than 6 hours per day (See Table 1).

4.2.2 Result of respondent by stage on MPA adoption

By using the stage of MPA adoption, all qualified respondents were separated into 3 groups; (1) '**Not install**': respondents who only aware of mobile payment application but did not install, (2) '**Install and Not use**': respondents who installed mobile payment application and did not use, (3) '**Install and Use**': respondents who installed mobile payment application and continued to use. The total of 245 qualified respondents were divided into 3 groups as shown in the table 2, (1) Not install: 59 respondents were only aware of mobile payment application but did not install, (2) Install and Not use: 44 respondents installed mobile payment application but did not use, and (3) Install and Use:142 respondents installed mobile payment application and continued to use. These 3 groups of respondents were used for further analysis.

Table 1 Summary of total respondent's demographic (n = 245)

Respondent's Demographic		Total (n = 245)	Percentage %
Gender	Male	120	49%
	Female	125	51%
Age	Less than 25	32	13%
	25 - 30	118	48%
	31 - 40	57	23%
	41 - 50	7	3%
	More than 50	31	13%
Monthly Personal Income	Less than 15,000 THB	16	7%
	15,000-24,000 THB	37	15%
	24,001-50,000 THB	92	38%
	50,001-85,000 THB	40	16%
	More than 85,001 THB	60	24%
Education	Lower than Bachelor's Degree	5	2%
	Bachelor's Degree	144	59%
	Master's Degree	92	38%
	Higher than Master's Degree	4	2%
Occupation	Employee	159	65%
	Student	16	7%
	Entrepreneur	45	18%
	Government Officer	10	4%
	Others	6	2%
	Unemployed	9	4%
Address	Bangkok and Vicinity	230	94%
	Other Province	15	6%
Smartphone Usage	Less than 3 hours	32	13%
	3 - 6 hours	104	42%
	More than 6 hours	109	44%

Table 2 Summary of respondent by stage on MPA adoption

Group	N	%
Not install	59	24%
Install and Not use	44	18%
Install and Use	142	58%
Total	245	100%

4.2.3 Result of perception toward mobile payment application

In order to investigate the perception toward mobile payment application, all respondents were asked to rate the level of agreement in five aspects of perception which were; usefulness, ease of use, security, compatibility, and incentive. As overall respondents had strongly perceived in the usefulness of mobile payment application at mean of 4.28 and lowest perceive in the security at mean of 3.33 as shown in table 3.

Table 3 Perception toward MPA of total respondents (n = 245)

Perception	Mean	Sd	Total n = 245				
			Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
USEFULNESS	4.28	0.67	0	2	24	123	96
EASE OF USE	4.06	0.77	0	10	36	128	71
SECURITY	3.33	0.79	5	22	118	88	12
COMPATIBILITY	3.49	0.96	7	25	91	86	36
INCENTIVE	3.63	0.92	4	16	92	87	46

By using the descriptive analysis, the differences of means could be founded among groups of respondents who had difference stage of MPA adoption as the means of perception rating within 'Install and Use' group was higher than other two groups in all aspects of perception as shown in table 4.

The One-way ANOVA was applied to compare the perception among group of respondents which divided by stage of MPA adoption. The assumption was 'There are no difference among group of respondents in each aspect of perception toward mobile payment application. The result showed that all aspects of perception had been perceived significantly different across 3 groups of respondents at $p < .05$.

Table 4 Perception among groups by stage of MPA adoption

Perception	Group	N	Mean	Std. Deviation
USEFULNESS	Not Install	59	3.90	0.69
	Install and Not use	44	4.11	0.65
	Install and Use	142	4.49	0.58
EASE OF USE	Not Install	59	3.61	0.81
	Install and Not use	44	3.84	0.81
	Install and Use	142	4.32	0.63
SECURITY	Not Install	59	3.07	0.83
	Install and Not use	44	3.20	0.79
	Install and Use	142	3.47	0.74
COMPATIBILITY	Not Install	59	2.76	0.77
	Install and Not use	44	3.27	0.85
	Install and Use	142	3.85	0.87
INCENTIVE	Not Install	59	3.32	0.78
	Install and Not use	44	3.68	0.86
	Install and Use	142	3.75	0.96

Table 5 The difference of perception among group by stage of MPA adoption

Perception		Sum of Squares	df	Mean Square	F	Sig.
USEFULNESS	Between Groups	15.83	2	7.92	20.54	0.00
	Within Groups	93.29	242	0.39		
	Total	109.13	244			
EASE OF USE	Between Groups	23.42	2	11.71	23.11	0.00
	Within Groups	122.66	242	0.51		
	Total	146.08	244			
SECURITY	Between Groups	7.60	2	3.80	6.38	0.00
	Within Groups	144.28	242	0.60		
	Total	151.88	244			
COMPATIBILITY	Between Groups	51.90	2	25.95	36.24	0.00
	Within Groups	173.30	242	0.72		
	Total	225.20	244			
INCENTIVE	Between Groups	7.64	2	3.82	4.68	0.01
	Within Groups	197.30	242	0.82		
	Total	204.94	244			

4.2.4 Result of key factors influence MPA adoption

In order to identify the key factors that influence the adoption toward mobile payment application. The respondents were asked to rate the level of important for five factors which are; usefulness, ease of use, security, compatibility, and incentive. The top 3 of important factors for overall respondents, firstly was the security of the mobile payment application at mean of 4.11, secondly was the usefulness at mean of 4.03, and following by incentive at the mean of 3.97 as shown in table 6.

Table 6 Influence factors toward MPA adoption of total respondents (n = 245)

Factor	Mean	Sd	Total n = 245				
			Not important	Somewhat important	Quite important	Very important	Extremely important
USEFULNESS	4.03	0.91	1	16	43	100	85
EASE OF USE	3.91	0.91	5	9	57	106	68
SECURITY	4.11	0.88	3	6	47	93	96
COMPATIBILITY	3.92	0.93	2	14	61	92	76
INCENTIVE	3.97	0.86	0	13	55	104	73

For further analysis, the differences of means could be founded among groups of respondents who had difference stage of MPA adoption. The 'Install and Use' group prioritized the usefulness as the most important factor at mean of 4.37 which was the highest among other factors. On the other hand, the security was the most important factor for 'Install and Not use' and 'Not Install' group as shown in table 7.

Table 7 Influence factors among group by stage of MPA adoption

Factor	Group	N	Mean	Std. Deviation
USEFULNESS	Not Install	59	3.49	0.92
	Install and Not use	44	3.66	0.99
	Install and Use	142	4.37	0.71
EASE OF USE	Not Install	59	3.58	0.97
	Install and Not use	44	3.55	1.00
	Install and Use	142	4.16	0.78
SECURITY	Not Install	59	3.97	0.87
	Install and Not use	44	3.84	1.14
	Install and Use	142	4.26	0.77
COMPATIILITY	Not Install	59	3.78	0.95
	Install and Not use	44	3.68	0.98
	Install and Use	142	4.06	0.88
INCENTIVE	Not Install	59	3.86	0.88
	Install and Not use	44	3.82	0.90
	Install and Use	142	4.06	0.83

The One-way ANOVA was applied to compare the level of important for each factor among group of respondents. The assumption was 'There are no difference on important level among group of respondents in each factor that affect MPA adoption. The result show that the important level of factors that affect MPA adoption were different among group of respondents, usefulness, ease of use, security, and compatibility had statically significant at $p<.05$. On the other hand, the incentive factor had no different on affecting MPA adoption across group at significant level at $p=.16$ (see table 8).

Table 8 The difference of important level among group by stage of MPA adoption

Factor		Sum of Squares	df	Mean Square	F	Sig.
USEFULNESS	Between Groups	39.21	2	19.61	29.36	0.00
	Within Groups	161.59	242	0.67		
	Total	200.80	244			
EASE OF USE	Between Groups	21.43	2	10.72	14.20	0.00
	Within Groups	182.59	242	0.75		
	Total	204.02	244			
SECURITY	Between Groups	7.62	2	3.81	5.03	0.01
	Within Groups	183.18	242	0.76		
	Total	190.80	244			
COMPATIBILITY	Between Groups	6.30	2	3.15	3.75	0.02
	Within Groups	203.23	242	0.84		
	Total	209.53	244			
INCENTIVE	Between Groups	2.73	2	1.36	1.87	0.16
	Within Groups	177.01	242	0.73		
	Total	179.74	244			

According to the criteria in assigning group of respondents by stage of MPA adoption, the data could indicate the journey through MPA adoption process for each respondent. As 245 of total respondents aware of mobile payment application which identify as 100% awareness. The trial stage account only 186 respondents who installed the mobile payment application. Lastly, 142 of respondents who used mobile payment application as current payment method was on the adoption stage. (see figure 4)

Figure 4 MPA adoption process

4.2.5 Characteristics of potential mobile payment application users

The 'Install and Use' group was identified as potential mobile payment application users. 74% of the group aged between 25 to 40 years old, 78% had monthly personal income more than 24,000 THB, Education level of this group was bachelor's degree and higher, 66% worked as employee and 16% was an entrepreneur.

Table 9 Characteristics of potential mobile payment application users

Respondent's Demographic		Install and Use (n = 142)	Percentage %
Gender	Male	71	50%
	Female	71	50%
Age	Less than 25	19	13%
	25 - 30	76	54%
	31 - 40	31	22%
	41 - 50	4	3%
	More than 50	12	8%
Monthly Personal Income	Less than 15,000 THB	8	6%
	15,000-24,000 THB	24	17%
	24,001-50,000 THB	52	37%
	50,001-85,000 THB	25	18%
	More than 85,001 THB	33	23%
Education	Lower than Bachelor's Degree	3	2%
	Bachelor's Degree	81	57%
	Master's Degree	55	39%
	Higher than Master's Degree	3	2%
Occupation	Employee	94	66%
	Student	11	8%
	Entrepreneur	26	18%
	Government Officer	5	4%
	Others	4	3%
	Unemployed	2	1%

CHAPTER 5
CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

5.1.1 Perception toward mobile payment application

As overall respondents had strongly perceived in the usefulness of mobile payment application at mean of 4.28 and lowest perceive in the security at mean of 3.33. The differences of means could be founded among groups of respondents as the means of perception indicated by 'Install and Use' group was higher than other two groups in all aspects of perception. Lastly, all aspects of perception had been perceived significantly different across 3 groups of respondents at $p<.05$.

5.1.2 The key factors effecting adoption of mobile payment application

The top 3 of important factors for overall respondents, firstly was the security of the mobile payment application at mean of 4.11, secondly was the usefulness at mean of 4.03, and following by incentive at the mean of 3.97. The differences of means could be founded among groups of respondents who had difference stage of MPA adoption. The 'Install and Use' group prioritized the usefulness as the most important factor at mean of 4.37 which was the highest among other factors. On the other hand, the security was the most important factor for 'Install and Not use' and 'Not Install' group. The important level of factors that affected MPA adoption were different among group of respondents, usefulness, ease of use, security, and compatibility had statically significant at $p<.05$. On the other hand, the incentive factor had no different on affecting MPA adoption across group at significant level at $p=.16$.

5.1.2 The characteristics of potential mobile payment application users

- Age: 25 to 40 years old

- Monthly personal income: more than 24,000 THB

- Education level: bachelor's degree and higher

- Occupation: employee and entrepreneur

5.2 Recommendations

5.2.1 Strategy planning for retailers to match with MPA's profiles

The result from this study show the result of MPA users' demographic. Retailers can plan or adjust their strategy accordingly to match with MPA users' profile. This will provide benefits to retailers in terms of precisely target people with clear demographic profile with low competition level.

5.2.2 Improve consumer perception towards MPA

The result from this study show the positive perception in usefulness as the mean across customer groups are the highest. So, consumers perceived MPA as a usefulness tool. On the other hand, compatibility has the lowest mean of all factor. This result provides a strategic direction for MPA's brand managers to improve MPA perception towards consumers. Which will translate to more positive perception and create more awareness for MPA in Thailand.

5.2.3 Identify key factors to improve Thailand's MPA adoption process

Current MPA service providers used strategy which do not directly match with consumers. For example, some are providing free movie tickets (incentive) to gain more trialist. The result from this study show that, in order to gain trialist (trial stage), usefulness must be improved. And in order to gain more repeaters (adoption stage), MPA service providers need to improve ease of use, security, compatibility, and incentives. With the right strategy implemented, Thailand can expect an incremental of MPA penetration rate overall.

5.3 Limitation of the study

Limitations

Data in this research was collected by convenience sampling method and survey questionnaire was distributed only through online social platform (Line chat and Facebook) in Thailand. In addition, due to time constraint and small sample size, the finding of this research would not be generalized to Thai population.

Delimitations

This research focused only on Thai consumer who owned smartphone and aware of mobile payment application. The reason for these delimitations were (1) The convenience of recruiting the respondents. (2) The finding that generated from Thai respondents would be more specific for developing recommendation.

REFERENCES

Aydin, B. (2016). Adoption of mobile payment systems: a study on mobile wallets. *Journal of Business,Economics and Finance*, 72-92.

Dowling, G. R., & Midgley, D. F. (1978). Innovativeness: The Concept and its Measurement. *Journal of Consumer Research, Vol.4, no.4*, 229.

ERICSSON. (2016, June). *ERICSSON MOBILITY REPORT SOUTH EAST ASIA AND OCEANIA*. Retrieved from http://www.ericsson.com/res/docs/2016/mobility-report/emr-raso-june-2016.pdf

Euromonitor. (2014, Febuary). THE MOBILE WALLET: HOW LOYALTY COULD SPUR CONSUMER ADOPTION OF MOBILE PAYMENTS. Euromonitor International.

Hoyer, W. D., Maclnnis, D. J., & Pieters, R. (2013). *Consumer Behavior.* Singapore: South-Western.

Kotler, P., & Keller, K. L. (2012). *Maketing Management.* Kendallville: Pearson.

Kristensen, S. M. (2016). *Understanding factors influencing Danish consumers'.* Department of management, Aarhus University.

Leesa-nguansuk, S. (2016, January 11). *A cashless society*. Retrieved from Bangkokpost: http://www.bangkokpost.com/print/822580

MarketingOops. (2016, April 2). Retrieved from MarketingOops: https://www.marketingoops.com/news/tech-update/e-wallet-thailand-and-asean-by-truemoney/

Puri, S. (2016, January 11). *Digital Market Asia*. Retrieved from http://www.digitalmarket.asia/2016/01/apps-mobile-wallets-2016-trends-to-lookout-for/

Tavilla, E. (2015, October 1). *Federal Reserve Bank of Boston.* Retrieved from Bostonfed: https://www.bostonfed.org/publications/consumer-mobile-payments/a-case-study-in-mobile-paving-the-way-for-mobile-

Venketesh, V., & Davis, D. F. (2000, Febuary). A theoretical extension of the technology acceptance model. *Management Science*, 189-204.

WorldPay. (2015). Global payment report.

APPENDICES

APPENDIX A

IN-DEPTH INTERVIEW: QUESTION GUIDE

Screening questions

1. Do you use a smartphone?
2. Do you aware of mobile payment application?

Main questions

1. Which mobile payment application do you know?
2. What do you think about mobile payment application?
3. Have you ever used mobile payment application?
4. What do you like/dislike about mobile payment application?
5. What is the important factor to choose payment method?
6. What is the important factor in decision to use mobile payment application?

Demographic questions

1. Age
2. Current payment method

APPENDIX B
QUESTIONNAIRE

Part I: Introduction

Mobile payment application in this study is focus on the application on smartphone that allow user do payment transaction with merchant. For example, mPay, Truemoney, or StarbuckApp. In this questionnaire, mobile payment application will be referred as MPA.

Part II: Screening

SCR1) Do you use smartphone?

- Yes   (Continue to SCR2)
- No   (Terminate)

SCR2) Do you know mobile payment application?

- Yes   (Continue to SCR3)
- No   (Terminate)

SCR3) How many hours do you use a smartphone on a daily basis?

- Less than 3 hours   (Light user)
- 3 to 6 hours   (Normal user)
- More than 6 hours   (Heavy user)

Part III: Perception toward mobile payment application

PER) According to these statements, please rate level of agreement in perception toward mobile payment application (1 = "strongly disagree" and 5= "strongly agree")

Perception	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
	1	2	3	4	5
PER1) Using MPA is more convinience for me to buy products or services.					
PER2) Learning to use MPA and become skillful is take a short time for me					
PER3) MPA has security platform for protect usage information.					
PER4) Using MPA is compatible with my spending behavior.					
PER4) Using MPA benefit me on products or services discount.					

Part IV: Factors that influence the usage of mobile payment application

FAC) According to these statements, please rate level of important to adopt mobile payment application (1 = "Not important" and 5= "Extremely important")

Perception	Not important	Somewhat important	Quite important	Very important	Extremely important
	1	2	3	4	5
FAC1) The convienience on buying products or services.					
FAC2) MPA is simple to use.					
FAC3) The reliability of MPA Service provider.					
FAC4) Many retailer support MPA.					
FAC5) Many retailer support MPA.					

Part V: Demographic information

DEM1) What are the payment method that you normally use?

- Cash
- Credit card
- Debit card
- MPA

DEM2) Gender

- Female
- Male

DEM3) Age

- Less than 25
- 25 - 30
- 31 - 40
- 41 - 50
- More than 50

DEM4) Monthly personal income

- Less than 15,000 THB
- 15,000-24,000 THB
- 24,001-50,000 THB
- 50,001-85,000 THB
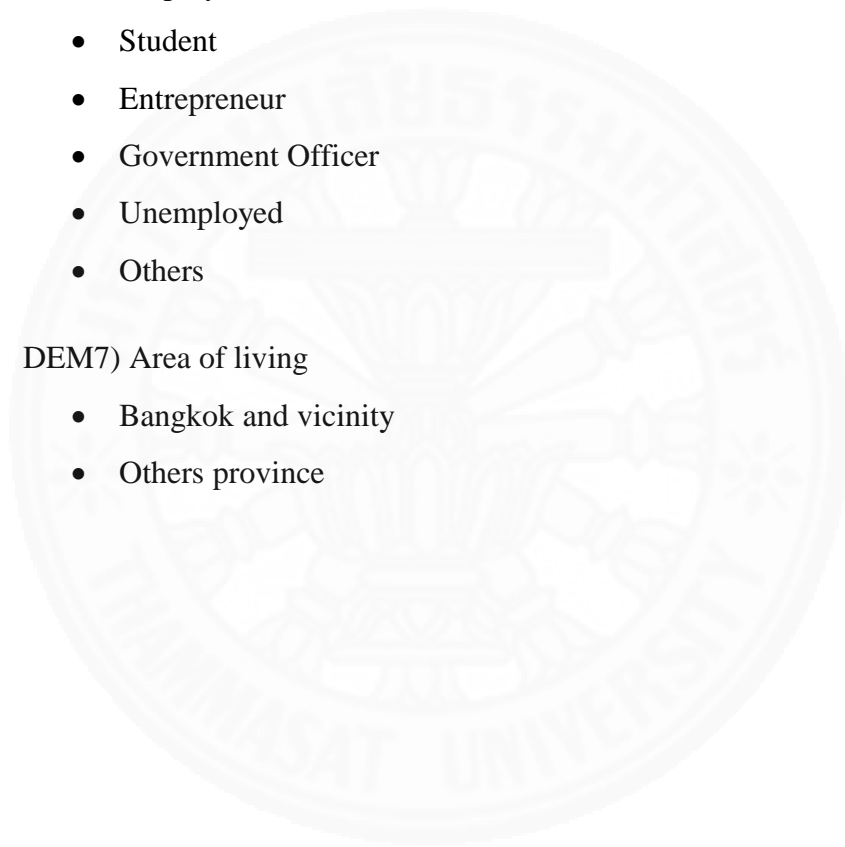- More than 85,001 THB

DEM5) Education

- Lower than Bachelor's Degree
- Bachelor's Degree
- Master's Degree
- Higher than Master's

DEM6) Occupation

- Employee
- Student
- Entrepreneur
- Government Officer
- Unemployed
- Others

DEM7) Area of living

- Bangkok and vicinity
- Others province

BIOGRAPHY

Name   Miss Usanee Sriomasajjakul

Date of Birth   July 11, 1991

Education Attainment   2012: Bachelor of Engineering

                              Chulalongkorn University

Work Position   Sale analyst

                              NEO Corporate Co.,Ltd