

**INTENTION TO USE IN MOBILE HOMECARE SERVICE
APPLICATION**



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entitled
**INTENTION TO USE IN MOBILE HOMECARE SERVICE
APPLICATION**

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April 29, 2017



.....
Sichai Khamtham,

.....
Mr. Sanchai Khammaha
Candidate

.....
Asst. Prof. Prattana Punnakitikashem,
Ph.D.
Advisor

.....
Asst. Prof. Pornkasem Kantamara,
Ed.D.
Chairperson

.....
Duangporn Arbhasil,
Ph.D.
Dean, College of Management
Mahidol University

.....
Sirisuhk Rakthin,
Ph.D.
Committee member

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Sanchai Khammaha

INTENTION TO USE IN MOBILE HOMECARE SERVICE APPLICATION

SANCHAI KHAMMAHA 5849102

M.M. (HEALTHCARE AND WELLNESS MANAGEMENT)

THEMATIC PAPER ADVISORY COMMITTEE: ASST. PROF. PRATTANA PUNNAKITIKASHEM, Ph.D., ASST. PROF. PORNKASEM KANTAMARA, Ed.D., SIRISUHK RAKTHIN, Ph.D.

ABSTRACT

Thailand is an aging society, the number of older people in Thailand is increasing. In contrast, the working and youth population are declining. Therefore, the demand of homecare service will be increased rapidly in the near future. Mobile homecare service application can offer healthcare services to the market. This research will help to understand the current situation and find factors that can influence the intention to use of the application. The mobile home care service application can provide the home care services by sending staffs (caregiver) to the customer's home to assist the patient or elderly in daily living activities such as eating, shower and exercise.

The research objectives are to study what are main factors that related to customer's intention to use and to study the relationship between factors and intention to use mobile healthcare service. Therefore, we can develop the mobile homecare service application by adapt the knowledge and findings from this research. This research uses quantitative method to examine relationship between factors and intention to use of the mobile homecare service application. In this research, we collected data via both offline and online because the research need variety of respondents and width length of age. For the offline we distributed the questionnaire in Bangkok, Nonthaburi and Pathumthani. The research results indicate that the main factor that can influence the intention to use is perceived value which has positive relationship with the intention to use. The other factors that also have positive relationship with the intention to use of the application are perceived usefulness, perceived ease of use. On the other hand, the perceived risk has negative relationship with the intention to use of the application. Moreover, some demographic data which are age, marriage status, occupation, and income level also have statistically relationship with the intention to use. This research will benefit anyone who interested in the mobile homecare service application or any healthcare technologies for elderly in Thailand. The research findings will help them to increase the chance to be success in the business.

KEY WORDS: Intention to Use / Health Care / Homecare / Mobile Application

75 pages

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CHAPTER I

INTRODUCTION

1.1 Introduction

The world is aging dramatically, people worldwide are living longer for various reasons for example of the improvement medical advances, on the other hand people are not getting married as young as they used to and they are also having a fewer children.

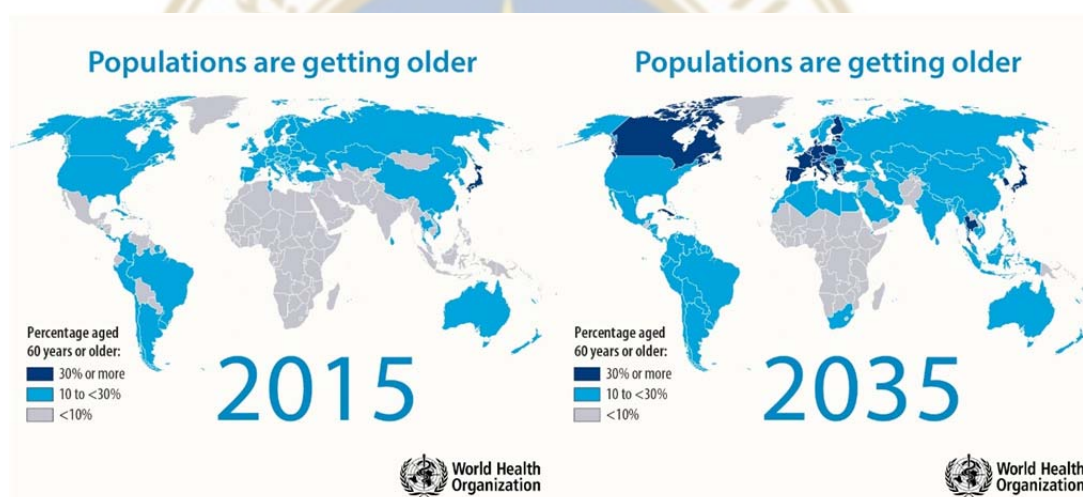


Figure 2.1 The estimate of world population map of 2015 and the projection of 2035

Source: World Health Organization (2015)

According to the Figure 1.1, World Health Organization's projection, the world population of 2015 and the prediction in 2035, the pictures demonstrate the aging population globally. In 2015 about 50% of the world is in ageing society already including Thailand and the estimation of WHO, the situation will be worse and there will be some countries that will be super-aged society which mean more than 30% of the population in the counties will be at 60s or older, including Thailand.

Currently, Thailand was ranked the third most rapidly aging population in the world (Bloomberg, 2012). The number of the people aged 60 and over is about 13% of the total population. The population age structure in Thailand can be categorized into 3 major groups, firstly the Youth (aged under 15), secondly the Working Age (aged 15-59), and last group Elderly (aged 60 and over). The percentage of Thai elderly will increase significantly; conversely the percentage of Thai Youth and Working Age will continuously decline.

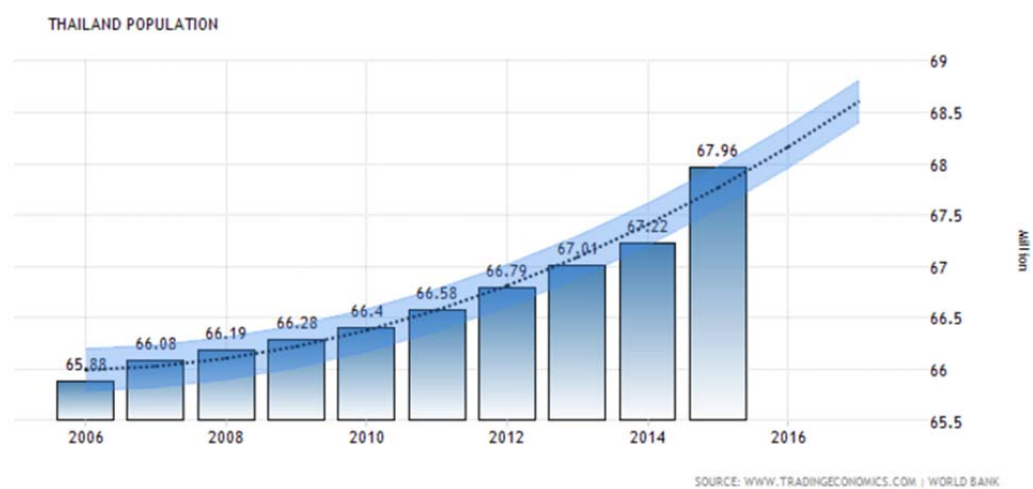


Figure 1.2 Thailand population projection

Source: Trading Economics (2016)

The figure 1.2 demonstrates the trend of population in Thailand. According to the graph, it shows that the population in Thailand will growth continuously in the future. On the other hand, the figure1.3 illustrates the projection of Thailand population that separated into 3 groups the first group is youth (0-14 years), the second group is working-age (15-59 years) and the last group is elderly (60 years and over).

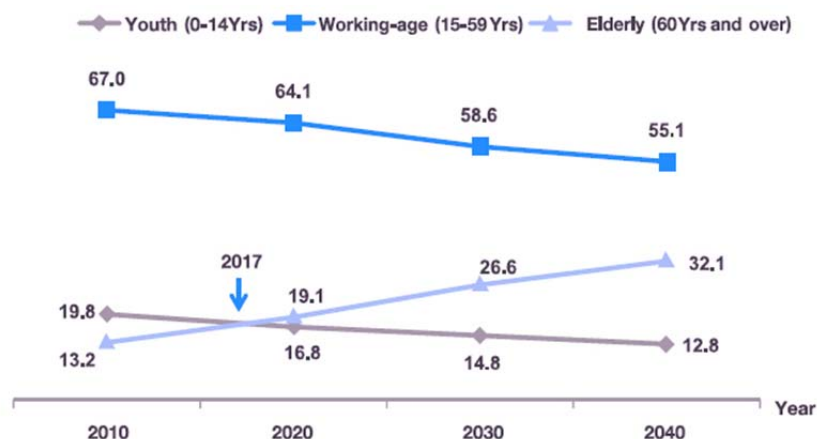


Figure 1.3 Percentage of Youth, Working Age and Elderly Population Projection (2010-2040)

Source: NESDB (2010)

In Thailand, the one who normally give the care to the elderly is the family member especially daughter, but according to the Figure 1.3, the elderly people in Thailand increases dramatically, in contrast the youth and working-age are decline. This can apply that the demand for the homecare service will be increased rapidly.

1.1.1 Type of institutional long-term care

Form the research long-term care could be classified into 5 categories by the objectives as follows (Siriphan, 2013)

1. Residential home or the independent living communities or the retirement communities can be referred to the place that provide accommodations for elderly people who be able to do activities of daily living (ADL) such as walking, eating, bathing, dressing, etc. by themselves.

2. Assisted living setting is the residence for elderly persons or the ones who have physical limitation and need assistance in some ADL. They cannot live safely at homes but they do not skilled professional such as nurse or doctor to monitoring.

3. Nursing home refers to the places that provide care for people who cannot stay at home but they are not very ill and do not need hospital-based care. This place must provide 24 hours of skilled nursing care or assistants for some ADL.

4. Long-term care hospital refers to a hospital that provides care for dependent people continuously more than three months.

5. Hospice care refers to a place that provide end of life care which focus on patients' happiness, reduce pain, and being with the family and friend. The purpose of the care is to enhanced quality of life of patient and pass away peacefully. This service requires high skilled healthcare professions.

The institutional long-term care could be classified according to their level of care as follows (Siriphan, 2013)

1. Low Care or Basic care; the services are focused on welfare for older persons such as assisting in ADL and not focus on clinical care.

2. High care or Intensive care; the services are for older people with chronic diseases which need clinical care such as follow up and treatment by doctors.

1.1.2 Mobile Home Care Service Application

According to the type of institutional long-term care, home care service can be referred as the low care or basic care which provide ADL assisting, basic routine checkup both physical and mentally, rehabilitation, but not include the clinical activities which needed to be provided at hospital only.

Nowadays there are mobile applications that provide many kind of services, the advantage of the business model is low initial cost and fixed cost. Home care service is one of the potential business that definitely can be one of them.

The mobile home care service application can provide the home care services by send the staff (caregiver) at the customer's home to assist the patient or elderly.

The homecare mobile application service should provide the services as follows,

1. ADL assisting
2. Light Housekeeping
3. Meal Preparation
4. Medication Reminders
5. Companionship
6. Transportation

The customer can book and pay fee for these services via the application which is very quick and convenient.

In Thailand, there are many providers that provide caregivers or healthcare service at home such as “Health at Home” and “Premiere Home Health Care”. But, there is only one provider which is “Health at Home” that provide mobile applications services for the moment. However, they have two mobile applications which are “Health at Home Care Tool” for monitoring the patient’s status and records. The another one is “Heal at Home PARTNER”; this application is for the caregiver who looking for a job.

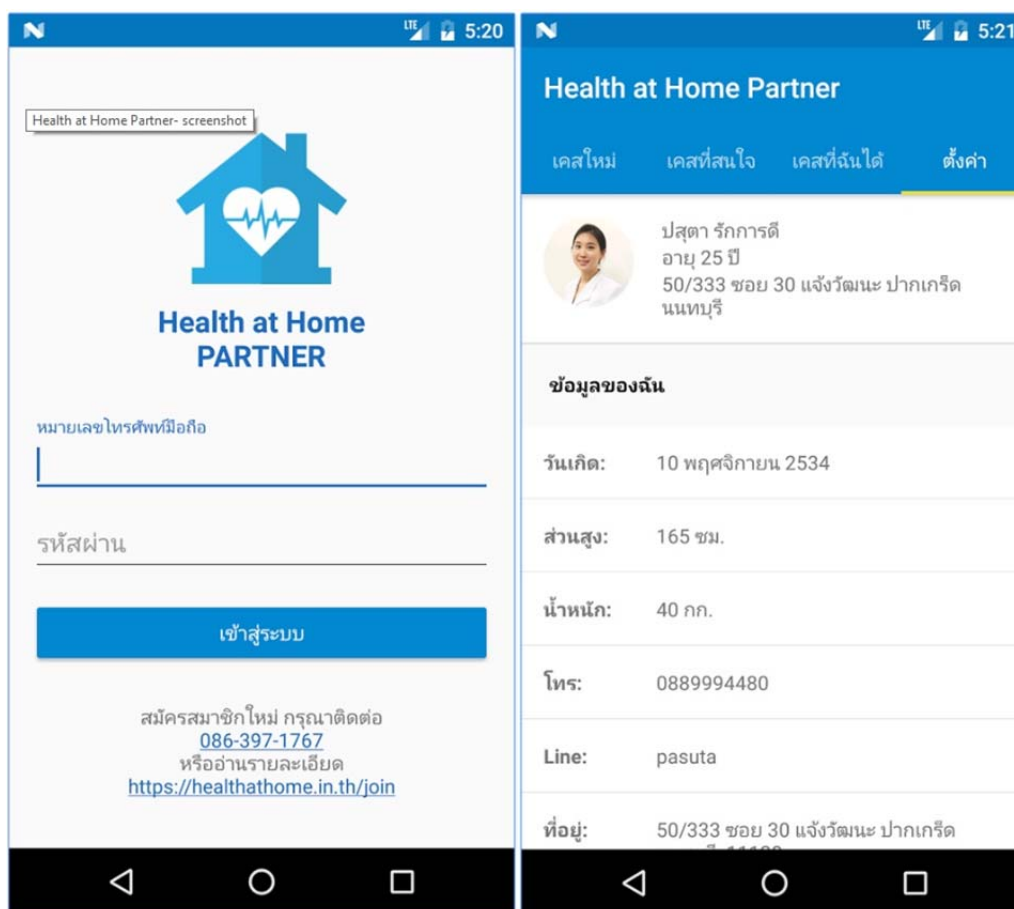


Figure 1.4 Sample Screenshots of Health at Home Application

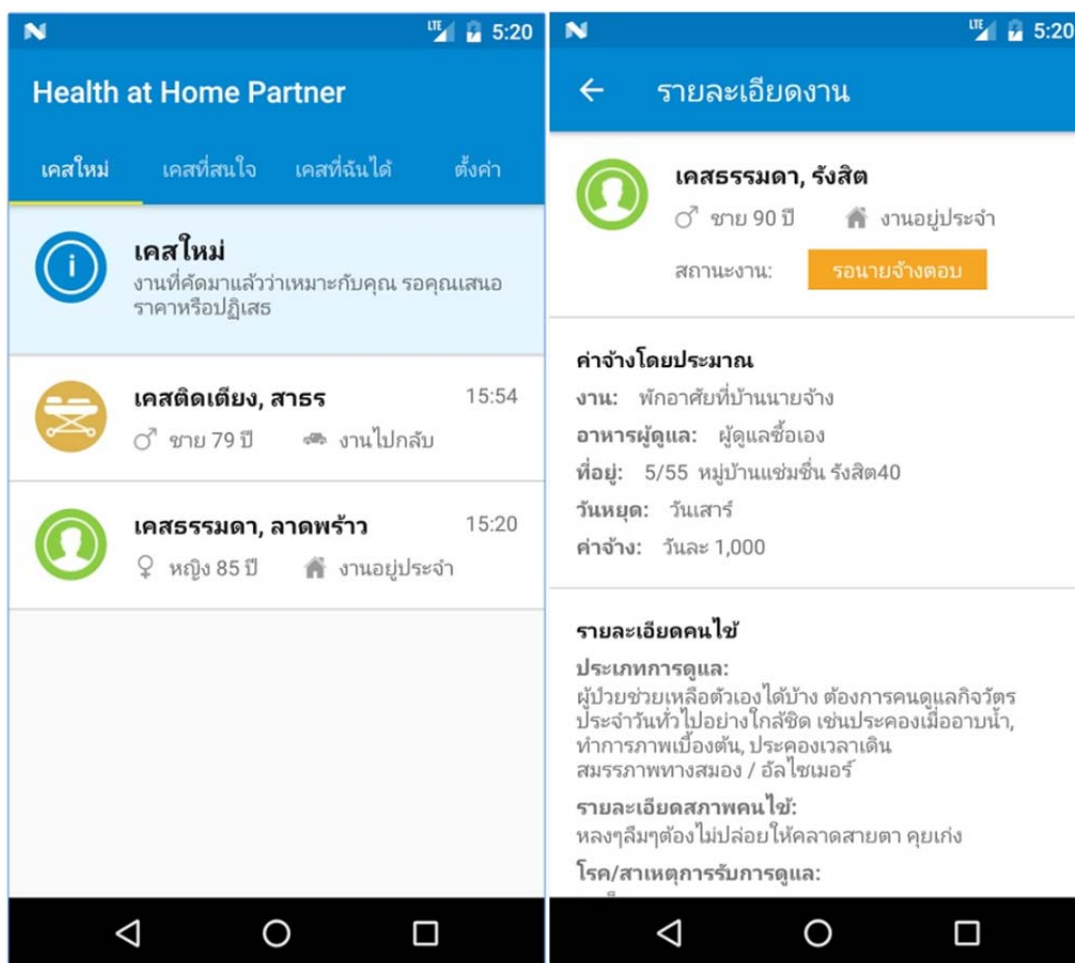


Figure 1.4 Sample Screenshots of Health at Home Application (cont.)

Source: Google Play (2017)

Currently, the mobile application for the customer to get the caregiver services in Thailand is not available. However, there are many promising providers that might launch the application in the near future.

On the other hand, there are some providers in USA that provide homecare mobile application services as the pictures below,

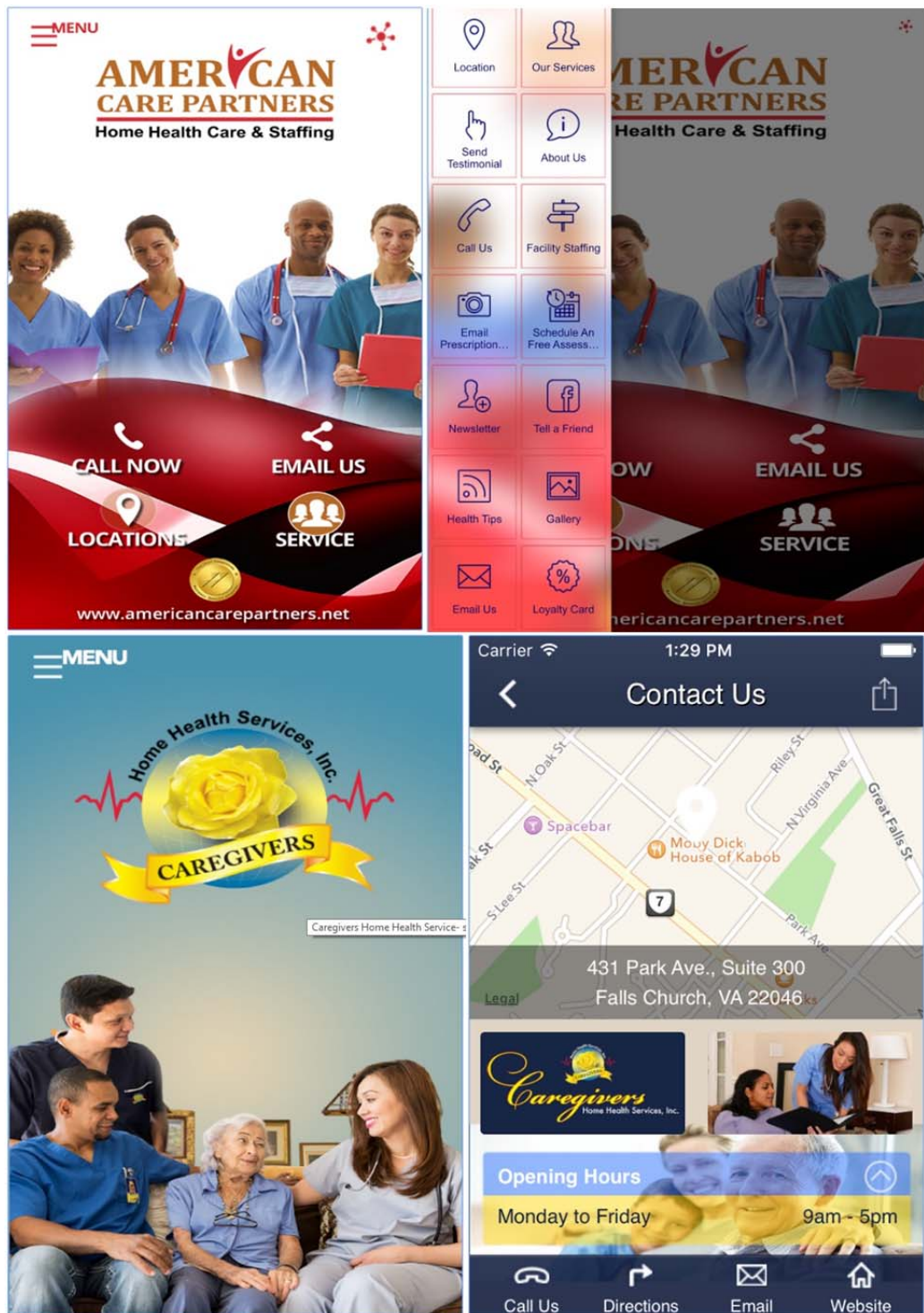


Figure 1.5 Sample Screenshots of Mobile Homecare Service Application

Source: Google Play (2017)

1.2 Problem Statement

Since the mobile application for the homecare service is a new service in Thailand which could make the customer feel hesitate to purchase the service therefore we need to study what are the main factors that influence to customer intention to use.

1.3 Research Questions

To study the relationship of perceived ease of use (PEOU), perceived usefulness (PU), perceived Trustworthiness (PT), perceived value (PV), perceived risk (PR), social influence (SI), and demographic variables (age, gender, marriage status, education level, occupation and income level) to the intention to use on mobile homecare service application.

1.4 Research Objectives

1. To study what are main factors that related to customer's intention to use.
2. To study the relationship between factors and intention to use mobile healthcare service.

1.5 Scope of the Study

The data will be collected from the target and potential target groups of the mobile homecare service application which are the working age 20-70 years old both male and female who assume to have elderly parent that live-in Bangkok and metropolitan areas. The research uses primary quantitative data by conduct question survey.

1.6 Expected Benefits

To study the relationship between the factors to the intention to use in mobile home care service application and use this knowledge to increase the chance to success in developing mobile application of homecare service to gain more acquisition.

CHAPTER II

LITERATURE REVIEW

2.1 Mobile Application Overview

From literature review shows that the trend of using mobile applications are increasing rapidly since Apple introduced iPhone in 2007 and Apple's App Store in 2008, there were 500 native applications available on the App Store at that time. The data from the company shown there are more than 2 million applications on the App Store and there are more than 40,000 million downloads (Santiago & Daniel, 2013). Moreover, there are also e-commerce store from other big players in the technology industry such as Google, Amazon, etc. as well.

Form the market trend there are many businesses provides services on mobile application more and more. From the research, there is no mobile application for homecare service at the moment but there is one organization called "Health at Home" that have a solid plan to release the application on App Store and Google Play Store in nearly future.

2.2 Technology Acceptance Model (TAM)

Technology Acceptance Model or TAM is one of the most popular model developed by Davis in 1989. At that time of the research, many industry use new technology to improve the efficiency of the organization such as increase productivity, reduce the time, cost and error. Therefore, the employee need to adapt themselves to the new technology such as using email instead of the conservative writing mail which is high cost and need a lot longer time to send and receive the message. The research objective was to find a better way to measurement and evaluation the intention to use the technology. The study found that there are two main factors which are perception usefulness (PU) and perception ease of use (PEOU) that significantly have positive relationship with intention to use in the new technology. In TAM model, it uses the

word “perceive” because the ease of use and the usefulness are depending on individual perception rather the technology itself because the same technology may ease to use for someone but for some people might have a hard time using the technology even they have the potential to use the technology but if they believe it is hard for them to use it then it will affect their intention to use. In the same way, the same technology can be more useful for someone than another depends on their perception such as the opportunity to use it to improve their performance.

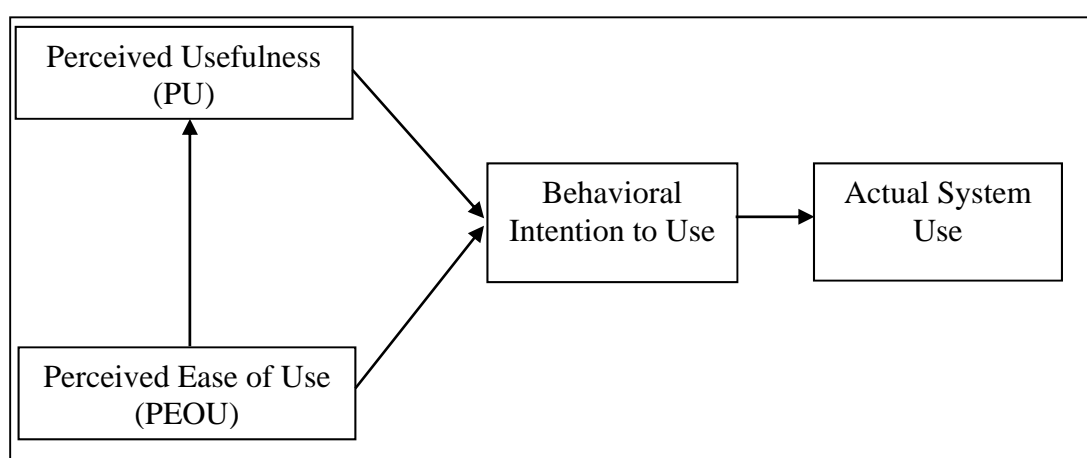


Figure 2.1 Technology Acceptance Model (TAM)

Source: Davis (1989)

The figure 2.1 demonstrates the relationship between the two independent factors which are perceived usefulness and the perceived ease of use to intention to use and the actual system use (Davis, 1989).

2.3 Perceived Ease of Use (PEOU)

The definition of “ease” is “freedom from difficulty of great effort” and the effort can be referred as a resource that allocated by the person in order to accomplish the task. (Davis, 1989). Therefore, the perceived ease of use or PEOU can be refers to the degree of effort in user’s perception to use a particular technology. In the TAM model PEOU is considered to be one of the two main factors that success to predict the satisfaction in the mobile application (Muslim, 2014). The ease of use in a technology

can reduce time and effort to use the technology. The user can adapt in their behavior to the new technology easier if they perceive that it is easy to use (Muslim, 2014). In the technology business, especially in the mobile industry there is a trend to develop the technology by concern more about the user-friendly and shorten the learning curve of the user as much as possible. Moreover, they also see the value of the user-experience which focus on the feeling of using the technology or application. The both user-friendly and the user-experience are for encourage the user's perception that the technology is easy to use (Muslim, 2014).

2.4 Perceived Usefulness (PU)

The perceived usefulness (PU) can be referred to the degree of the people believe that the use of the technology can improve the performance or value of their work significantly (Davis, 1989). People trends to put more afford or intention to use the technology if they believe that it can improve their performance because they can gain benefits such as the higher occupation advancement or the chance to be promoted or get raise or bonuses. According to the research, it also mentions that the perceive usefulness can be also explained by the cost-benefit paradigm that involve the decision-making strategy that the people considers the tradeoff between the cost which mean the afford that required and the potential benefits in the decision making (Davis, 1989). Moreover, one of the significant finding in the is to know the relative strength between perceived usefulness (PU) and perceived ease of use (PEOU) to the user's intention to use. The study found that the perceived usefulness (PU) is more strongly linked to the intention to use than the ease of use (PEOU) significantly (Davis, 1989).

Even though the technology acceptance model (TAM) was created long time ago, however it still popular model for predict the intention to use of the new technology. In this study, we interested in the intention to use in mobile homecare service application in Thailand which can be considered as the new technology for Thai people as well therefore the TAM model can be adapted to predict the intention to use for the mobile homecare service application. However, since the application provide service that high involve to the service receiver's healthiness and safety so we

believe that there should be one more independent factor that impact to the intention to use of mobile homecare service application which is perceive Trustworthiness (PT).

2.5 Intention to Use

Intention to use correlates to the behavior of the person's plan to do something in order to achieve their objective (Davis, Bagozzi, & Warshaw, 1989). Even though, the intention does not always predict the actual behavior perfectly, but from many influencing factors that have been identified, the intention is a better predictor for behavior (Fishbein et al., 1992). From the research, the intention to use are influenced by the main two factors which are the perceived usefulness (PU) and the perceived ease of use (PEOU) (Davis, 1989). However according to literature review there are one more factor that can be influenced the intention to use significantly especially the server in the healthcare business the third factor is perceived trustworthiness (PT) (Muslim, 2014).

2.6 Perceived Trustworthiness and TAM model

According to the literature review, I found researches that modified the TAM model and focus on Trust factor. In the research, "The User satisfaction with mobile websites: the impact of perceived usefulness (PU), perceived ease of use (PEOU) and trust", (Muslim, 2014).

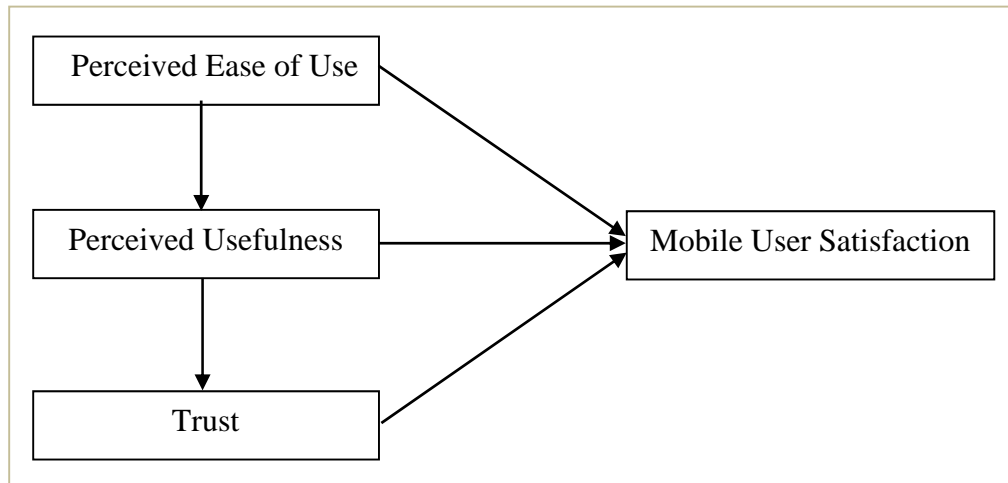


Figure 2.2 The Model of “The User satisfaction with mobile websites: the impact of perceived usefulness (PU), perceived ease of use (PEOU) and trust”

Source: Muslim (2014)

The figure 2.2 demonstrates the relationship of perceived ease of use, perceived usefulness and trust to the mobile user satisfaction.

The research is one of the first few attempts that integrate the trust factor to the TAM model. The study finds that there is positive relationship between trust and mobile user satisfaction. The study shows that there is relationship between the mobile user satisfaction and the purchase intention in the mobile business (Muslim, 2014).

From the research, “A comprehensive model of the effects of online store image on purchase intention in an e-commerce environment”, (Ming-Yi, 2013). The study has identified the structural of the relationship between the purchase intension and trust in online store image as it shows in the research conceptual framework.

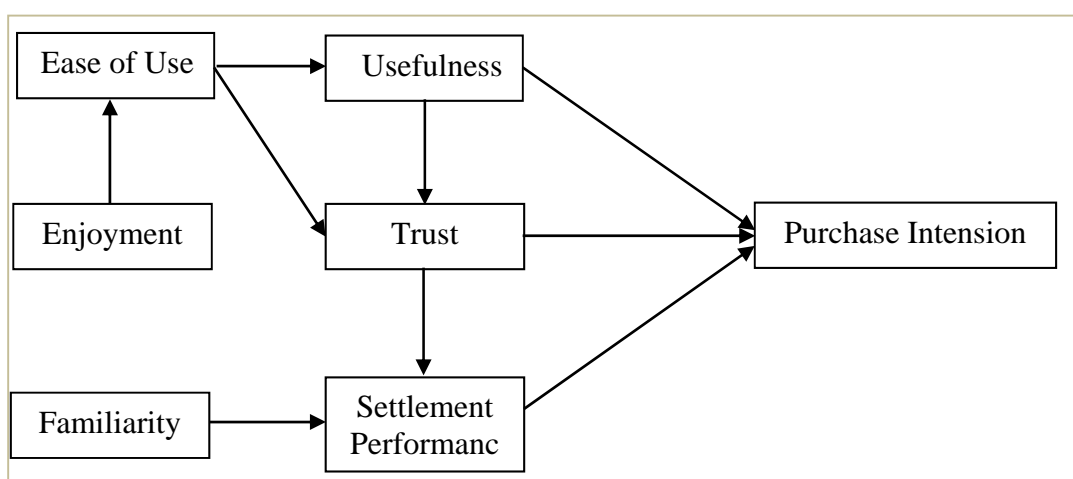


Figure 23 The research conceptual framework of “A comprehensive model of the effects of online store image on purchase intention in an e-commerce environment”

Source: Ming-Yi (2013)

The figure 2.3 demonstrates the factors that influence the purchase intension in online store image in an e-commerce environment; the research found that there is positive relationship between trust and purchase intension.

2.7 Perceived Trustworthiness (PT)

Perceived Trustworthiness refers to the trustworthiness in the technology that the user perceived (Muslim, 2014). Trustworthiness is an important factor for mobile commerce, especially in healthcare service which have a greater effect to the health of the user or the one who receive the service. From the research "Permission-based mobile marketing and sources of trust in selected European markets" of (Teemu, Heikki, Chanaka, & Andreas, 2007) suggests that there are 2 main factors that influence the trustworthiness the first one is the person's past experiences with the company. It does not need to be the experience in particular product or service but it counts all experiences that the person has with the entire company, it could be the company itself, the experience in products or services of the company or the experience with the company's service personal. The experience will shape the perception of trustworthiness of the person toward the company and all products and services of the company. The second factor that have significantly affects to the personal perception is the social influence

which mean the experienced through the person's network. The person network can be family members, friends, colleagues or other information of the company on the person's social network such as recommendations and narratives about the company (Bauer et al., 2005) (Sztompaka, 1999). From the study, it shows that each person has the limit scope and the amount of information that can be received therefore the information that has been represented can increase the familiness of the product or service or organization therefore it can influence the trustworthiness of the person as well (Teemu et al., 2007). This knowledge is confirmed by the experimental study of (Li & Miniard, 2006); They found that the advertising enhances the perceived trustworthiness of the brand unless the advertisement contains the over trust claim. However, there are rarely study in relationship of Perceived Trustworthiness (PT) and TAM (Kautonen et al., 2007).

2.8 Perceived Risk and TAM

There are many researches that try to integrate the perceived risk factor to TAM model. According to the study of (Yongqing, 2015); "Understanding perceived risks in mobile payment acceptance"; they studied about how the risk affect the payment acceptance which can be apply to intention to use as well. In the research, the perceive risk is compounded from financial risk, privacy risk, performance risk, psychological risk, time risk.

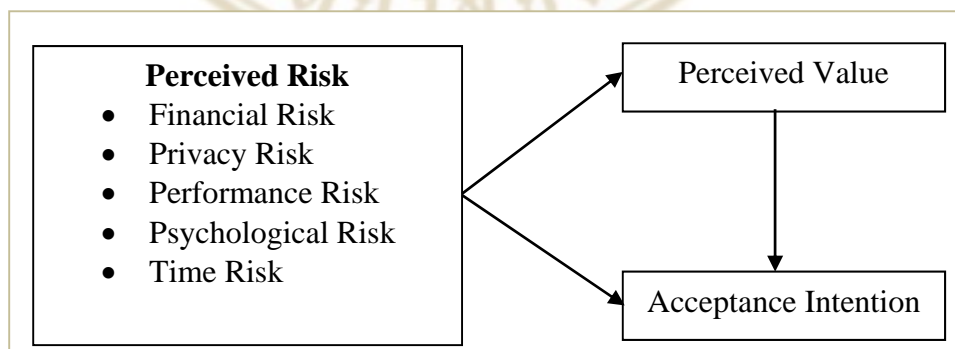


Figure 2.4 The research conceptual framework of “Understanding perceived risks in mobile payment acceptance”

Source: Yongqing (2015)

From the figure 2.4; the research found that there is a negative relationship between perceived risk and perceived value and as well as perceived intention.

2.9 Perceived Value (PV)

From the study, perceived value (PV) can be described as the perception of benefit of the product or service that the customer gets compare to the tradeoff (Zeithaml, 1988, p.14). The perceived value is different from satisfaction because the perceived value can be occurred at many stages of the purchasing such as pre-purchase and post-purchase. The value perception can be evaluated before buy or use the product or service. On the other hand, the satisfaction generally refers to the evaluation of post-purchase and post-use (Jillian, 2001). From the figure 2.4, the study found that there is a positive relationship between the perceived value (PV) and acceptance intention which leads to intention to use (Yongqing, 2015)

2.10 Perceived Risk (PR)

The perceived risk (PR) consists of the interest perception and the uncertainty that come from the usage or purchasing process. From the research of “Consumer behavior as risk taking” (Bauer, 1960); There are negative relationship between perceived risk and the purchase intention (Cox & Rich, 1964). The perceived risk influences the perceived value and the acceptance intention, (Yongqing, 2015) and there is a positive relationship between the acceptance intention and the intention to use, therefore the perceived risk could be one of the main factor to the intention to use of new technology including the homecare mobile service application.

2.11 Demographic variable and TAM

According to the research, “Role of gender on acceptance of mobile payment” (Francisco, 2013); they study the relation of gender and TAM model. From the study, they found that the difference of gender has the difference influence to the relationship

between independent factors and dependent factor that adapted from TAM model as the figure 2.5.

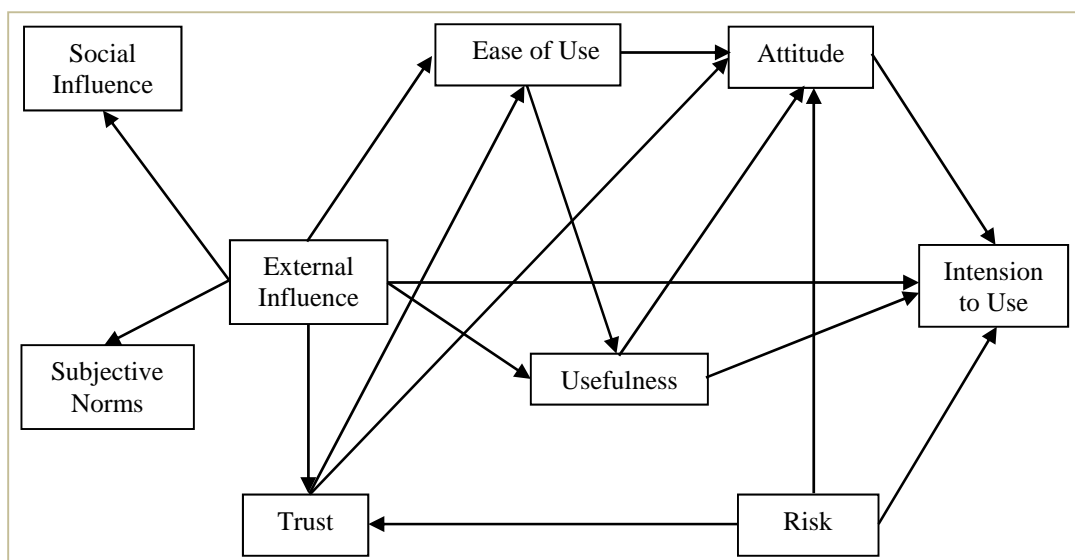


Figure 2.5 The research model: m-payment technology acceptance model (MPTAM)

Source: Francisco (2013)

From the research, they got the result as the figure 2.5

Table 2.1 Convergent validity and reliability of the internal consistency of Role of gender on acceptance of mobile payment

Variable	Item	Stand. coef. (<i>t</i> -value)	Cronbach's α	CR	EVA
Social image	SI1	0.95	0.97	0.97	0.92
	SI2	0.96 (103.47)			
	SI3	0.95 (97.15)			
Subjective norms	SN1	0.87	0.93	0.93	0.77
	SN2	0.90 (57.73)			
	SN3	0.84 (49.49)			
	SN4	0.89 (56.88)			
Ease of use	EOU1	0.74	0.91	0.92	0.7
	EOU2	0.90 (43.38)			
	EOU3	0.71 (37.88)			
	EOU4	0.95 (45.63)			
	EOU5	0.92 (44.27)			
Usefulness	US1	0.89	0.95	0.93	0.81
	US2	0.93 (68.17)			
	US3	0.86 (56.63)			
	US4	0.92 (66.21)			
Attitude	AT1	0.88	0.95	0.95	0.84
	AT2	0.92 (64.31)			
	AT3	0.92 (64.37)			
	AT4	0.93 (65.87)			
Intention of use	IU1	0.94	0.97	0.97	0.92
	IU2	0.97 (103.70)			
	IU3	0.96 (101.13)			
Trust	TR1	0.88 (69.73)	0.97	0.97	0.89
	TR2	0.95 (91.84)			
	TR3	0.96 (96.47)			
	TR4	0.95 (93.42)			
	TR5	0.93			
Perceived risk	PR1	0.76	0.92	0.93	0.76
	PR2	0.86 (42.45)			
	PR3	0.95 (46.97)			
	PR4	0.89 (43.68)			

Source: Francisco (2013)

According from the data in the table 2.1; the research has concluded that the gender has influence the independent factors in the study, the perceived usefulness has significantly influence the intention to use in male but not significant in female on the other hand the trust has significantly influence the intention to use in female but not in male (Francisco, 2013).

2.12 Social Influence (SI)

Social influence can be referred to the way that people affect from other's beliefs, behavior (Mason et al., 2007). The others' beliefs are can be called as social influencer which are the one who perceived important to consumers such as friend, family member, etc., therefore good impression of one person will lead to positive word of mouth to others, (Klobas & Clyde, 2001). From the research, "Dependency on smart phone and the impact on purchase behavior, of Young Consumers (Ding et al., 2011). They study the relationship of the social influence toward the purchase intention as it shows in the model below,

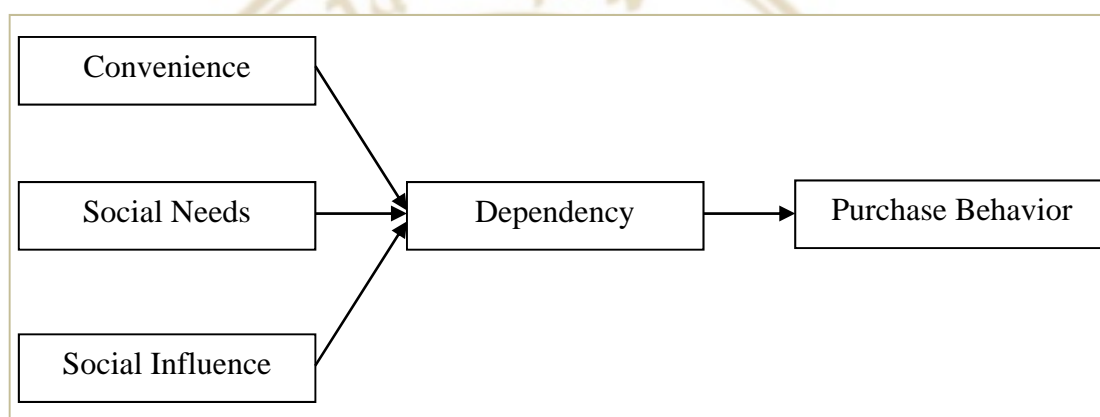


Figure 2.6 The conceptual model of (Ding et al., 2011), "Dependency on smart phone and the impact on purchase behavior", Young Consumers

According from the figure 2.6, the study finds that there is a positive relationship between the social influences and the dependency and leads to the purchase behavior.

2.13 Demographic Variables

From the literature reviews, I found that the demographic variables which are gender, age and education level can influence the purchase intention. In the research, "Role of gender on acceptance of mobile payment" (Francisco et al., 2014) has studied the effect of gender along with the main classical model of TAM for the acceptance of e-commerce. The research studies reflect the difference of behavior in purchase intention or online purchasing among the group that have difference gender. It found out that

men have more engagement willing in e-commerce than women (Wynn, 2009). Moreover, according to (Venkatesh & Morris, 2000); The studied show that the perceived usefulness (PU) are more influenced to the men more than women. From literature reviews, there are many studies have found that the increasing of age and the technology adoption have a negative relation (Chung et al., 2010). On the other hand, there are positive relationship between education level and the technology adoption. According to a research; "Consumer preferences for banking technologies by age groups" (Michael et al., 2016) It found that the people who have higher level of education are more open to the new technology.

2.14 Hypothesis

- H1: There is a positive relationship between PT and Intention to Use.
- H2: There is a positive relationship between PU and Intention to Use.
- H3: There is a positive relationship between PEOU and Intention to Use.
- H4: There is a positive relationship between PV and Intention to Use.
- H5: There is a negative relationship between PR and Intention to Use.
- H6: The SI influence the Intention to Use.
- H7: The demographic variables (Gender, Age, Education Level) influence the Intention to Use.

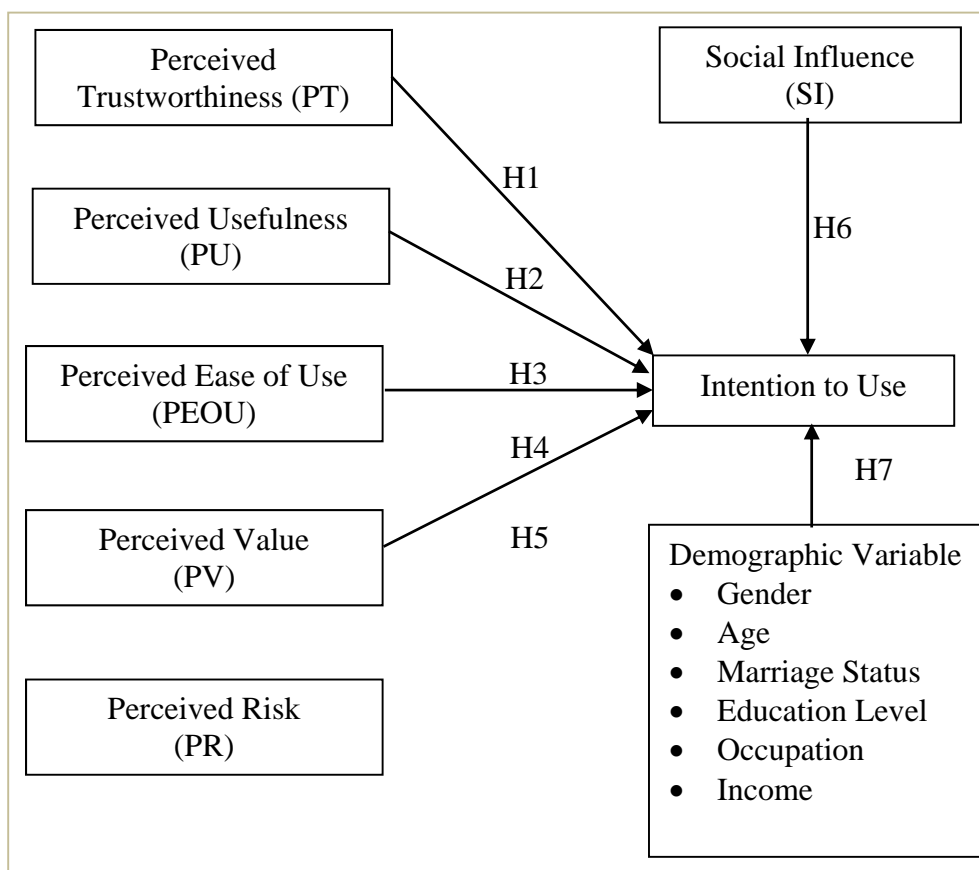


Figure 2.7 Mobile Homecare Service Application Acceptance Model; adapted from Technology Acceptance Model (TAM)

Source: Davis (1989)

The figure 2.7 demonstrates the relationship between three independent variables which are perceived trustworthiness (PT), perceived usefulness (PU), and perceived ease of use (PEOU) to one dependent variable which is intention to use.

CHAPTER III

RESEARCH METHODOLOGY

This research aims to evaluate and develop an understanding the community perception toward mobile homecare service application in Thailand and the factors that influence the intention to use of the application.

3.1 Research Design

In this research, we will use the qualitative method which is suitable for finding the significant relationships between independent factors and a dependent variable which are perceived ease of use (PEOU), perceived usefulness (PU), perceived trustworthiness (PT), perceived value (PV), perceived risk (PR), perceived value, social influence (SI) to customer's intention to use on mobile homecare service application.

3.2 Data Collection Methodology

3.2.1 Population size and Sample size

The population of the research is the working age 20-70 years old both male and female who assume to have elderly parent that live-in Bangkok and metropolitan areas which are the potential customer of the mobile homecare service application.

In this study includes 13 variables which 12 independent variables and 1 dependent variable. According to Hair, Black, Bain, and Anderson (2010), The sample size should be more than 100 and the minimum sample size should be ratio of 5 observation per variable. Therefore, the sample size of this research should be $5 \times 13 = 65$; According to this reason the minimum sample size of this research should be 100 (Hair et al., 2010).

3.2.2 Data Collection

In this research, we collected data via both offline and online because the research need variety of respondents and width length of age. For the offline we have distributed the questionnaire in Bangkok, Nonthaburi and Pathumthani. We have received 227 responses from online (google form) and 114 responses via offline distribution, during January 25th, 2017 to March 3rd, 2017. However, there are 11 responses that incomplete therefore only 103 responses that can be used in this research. The total responses from both offline and online are 329 responses.

3.3 Instrument and measurement

The questionnaire was developed base on the literature review and the questionnaire contains eight parts of questions which are,

- Part 1: Demographics (6 questions)
- Part 2: Perceived Trustworthiness (4 questions)
- Part 3: Perceived Usefulness (5 questions)
- Part 4: Perceived Ease of Use (5 questions)
- Part 5: Perceived Value (4 questions)
- Part 6: Perceived Risk (4 questions)
- Part 7: Social Influence (5 questions)
- Part 8: Intention to Use (4 questions)

3.3.1 Perceived Trustworthiness (PT)

The questionnaires to measure the perceived trustworthiness (PT) is adapt from research “Technology Acceptance of Internet Toward E-Government Initiative in Naval Finance Department of Royal Thai Navy” (Nattanpon et al., 2004)

3.3.2 Perceived Usefulness (PU) and Perceived Ease of Use (PEOU)

The questionnaires to measure the “perceived usefulness” (PU), and “perceived ease to use” (PEOU) are adapted from the research “Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology” (Davis, 1989)

3.3.3 Perceived Value (PV) and Perceived Risk (PR)

The questionnaires to measure the “Perceived Value” (PV) and “Perceived Risk” (PR) are adapted from the study, “Understanding perceived risks in mobile payment acceptance”, (Yongqing, 2015).

3.3.4 Social Influence (SI)

The questionnaires to measure the “Social Influence” (SI) are adapted from the study “Role of gender on acceptance of mobile payment” (Francisco, 2014).

3.3.5 Intention to Use

The questionnaires to measure the “Intention to Use” are adapted from the study of Ming-Yi Chen and Ching-I Teng (2013), “A comprehensive model of the effects of online store image on purchase intention in an e-commerce Environment”.

3.3.6 Pilot test

To make sure that our instruments have validity and reliability we distribute the questionnaire to the sample group which are 134 persons (58 male and 76 female) and more than 30% of the real sample size. We distributed the pilot questionnaires via online channel using google form.

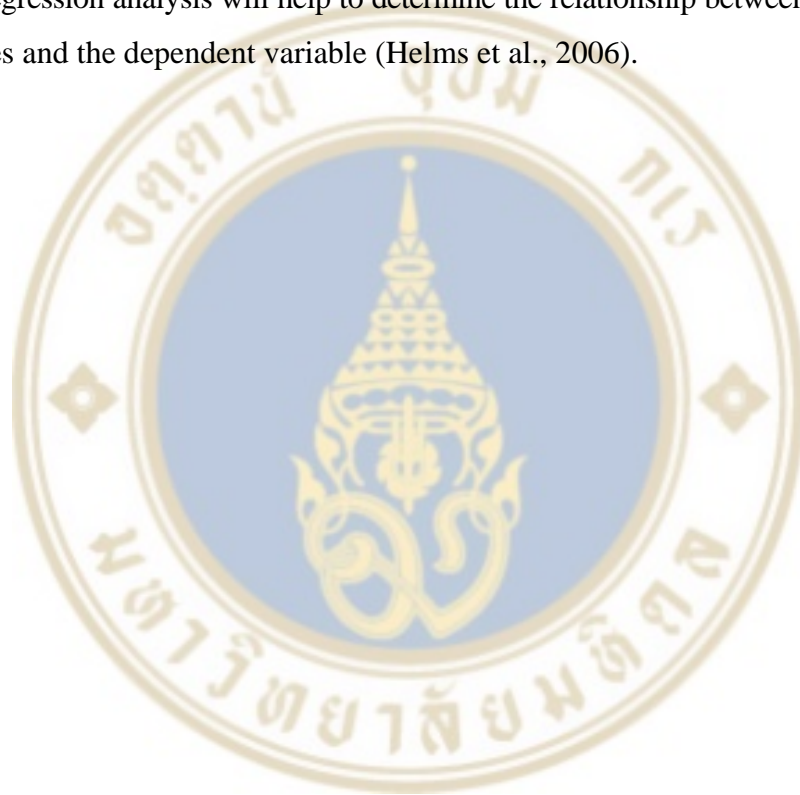
3.4 Data Analysis

This research used close-ended questionnaire to measure the factors that influencing the intension to use Mobile Homecare Service Application. The questionnaire uses Likert scale with 5 levels. The feedback from the questionnaire will be analyzed by Statistical Package for Social Sciences (SPSS®) software version 15.0. In this study, we will have 5 steps which are as followings,

- Descriptive Frequency Analysis
- Factors’ Analysis
- Correlation Analysis
- Reliability Analysis
- Crosstabs Analysis

- Multiple Linear Regression Analysis.

The descriptive frequency analysis will help to check the frequencies of the feedback demographically. And then Factor analysis will help to reduce the number variables by grouping or cut some independent variables (Thompson, 2004). The reliability analysis will help to test the reliable of each factor in the questionnaire the cutting is 0.7 (Helms et al., 2006). The correlation analysis is for investigating the correlation between the independent variable and dependent variable. And the last one the Multiple linear regression analysis will help to determine the relationship between the independent variables and the dependent variable (Helms et al., 2006).



CHAPTER IV

RESEARCH FINDINGS

From the survey in this study, we have distributed the questionnaire both online and offline. We have received 227 responses from online (google form) and 113 responses via offline distribution, however there are 11 responses that incomplete therefore only 102 responses that can be used in this research. The total responses from both offline and online are 329 responses. In this study, we used SPSS® to study the overall demographics from the all responses.

4.1 Demographics Frequencies

In this research, we collected demographic data which are gender, age, marriage status, education level, occupation, and income level.

Table 4.1 Gender Frequency of the respondents

Gender	Frequency	Percentage (%)
Male	132	40.10
Female	197	59.90
Total	329	100.00

The Table 4.1 illustrates that from the total 329 respondents, there are 132 males (40.1%) and 197 females (59.9%).

Table 4.2 Age frequency of the respondents

Age	Frequency	Percentage (%)
20-24	6	1.8
25-29	80	24.3
30-34	96	29.2
35-39	65	19.8
40-44	38	11.6
45-49	17	5.2
50-54	6	1.8
55-59	11	3.3
60-64	10	3.0
Total	329	100.0

The Table 4.2 shows that from the total 329 respondents, the ages of the respondents are 20-64. The majority of the respondents are in 30-34 years old (29.2%), the second is in 25-29 years old (24.3%) the minorities of the respondents are 20-24 and 60-64 years old which equally count as 1.8% of all.

Table 4.3 Marriage status frequency of the respondents

Marriage Status	Frequency	Percentage (%)
Single	222	67.5
Married	101	30.7
Divorce	6	1.8
Total	329	100.0

The Table 4.3 shows the marriage status of the respondents. The majority of the respondents are single which is 67.5% of all.

Table 4.4 Education level frequency of the respondents

Education level	Frequency	Percentage (%)
Bachelor Degree	193	58.7
Master Degree	134	40.7
Doctorate Degree	2	0.6
Total	329	100.0

The table 4.4 demonstrates the education level of the respondents which the majority of the respondents are in Bachelor Degree level (58.7%).

Table 4.5 The occupation of the respondents

Occupation	Frequency	Percentage (%)
Civil Servant	12	3.6
Public Enterprise Worker	35	10.6
Private Company Worker	192	58.4
Business Owner	59	17.9
General Employee	10	3.0
Unemployed	14	4.3
Other	7	2.1
Total	329	100.0

From the table 4.5, the majority of the respondents' occupation is private company worker (58.4%), however there are 7 persons are in other which 4 of them are working in their family business, and 3 of them are working as a freelancer which multiple of jobs.

Table 4.6 The income level of the respondents

Income	Frequency	Percentage (%)
< 20,000	32	9.7
20,001-30,000	54	16.4
30,001-40,000	69	21.0
40,001-50,000	50	15.2
50,001-60,000	35	10.6
60,001-70,000	32	9.7
70,001-80,000	14	4.3
80,001-90,000	4	1.2
90,001-100,000	14	4.3
> 100,000	25	7.6
Total	329	100.0

Form the table 4.6, the respondents have variety of income level, however the majority of them have 30,001-40,000 baht per month.

4.2 Frequency of each statement of independent factors influencing intention to use

From the study, we have analyzed the percentage and mean and S.D. of the independent factors and the dependent variable as follows,

Table 4.7 The statistics of perceived trustworthiness (PT) questionnaires

Questionnaire	Perceived Trustworthiness					Mean (%)	S.D. (%)
	Strongly Disagree	Disagree	Unsure	Agree	Strongly Agree		
	(%)	(%)	(%)	(%)	(%)		
I think mobile homecare service must be trustworthiness	0	0.3	9.7	37.1	52.9	4.43	0.677
I think the application must be standard	0	0	10.3	30.7	59.0	4.49	0.677

Table 4.7 The statistics of perceived trustworthiness (PT) questionnaires (cont.)

Questionnaire	Perceived Trustworthiness						Mean (%)	S.D. (%)
	Strongly Disagree	Disagree	Unsure	Agree	Strongly Agree			
	(%)	(%)	(%)	(%)	(%)			
	(%)	(%)	(%)	(%)	(%)			
I think it is important that the staffs from the application are trustworthiness	0	0	10.9	27.7	61.4	4.50	0.686	
I think the application must be reliable	0	0.6	10.6	29.8	59.0	4.47	0.707	

According to the table 4.7, it shows that there is no strongly disagree in this set of questionnaires, the average mean of this questionnaire is 4.473 and the average S.D. is 0.687.

Table 4.8 The statistics of perceived usefulness (PU) questionnaires

Questionnaire	Perceived Usefulness					Mean (%)	S.D. (%)
	Strongly Disagree	Disagree	Unsure	Agree	Strongly Agree		
	(%)	(%)	(%)	(%)	(%)		
	(%)	(%)	(%)	(%)	(%)		
The mobile homecare service application is helpful	0	0.3	5.8	54.4	39.5	4.33	0.597
The application is convenient to get homecare service	0	0.3	1.2	55.9	42.6	4.41	0.534
The application is the fast way to get homecare service	0	0.3	3.6	43.8	52.3	4.48	0.585
The application can save my time to get homecare service	0	0.3	5.8	49.8	44.13	4.38	0.608
The application is useful to get homecare service	0	0.6	7.6	58.4	33.4	4.25	0.613

According to the table 4.8, it shows that there is no strongly disagree in this set of questionnaires, the average mean of this questionnaire is 4.37 and the average S.D. is 0.587.

Table 4.9 The statistics of perceived ease of use (PEOU) questionnaires

Questionnaire	Perceived Ease Of Use						Mean	S.D.
	Strongly Disagree		Unsure		Agree Strongly			
	(%)	(%)	(%)	(%)	(%)	(%)		
The mobile homecare service application should be easy to use	0	0	2.7	36.5	60.8	4.58	0.547	
The application should be easy to understand	0	0	1.8	43.8	54.4	4.53	0.535	
The application should have a quick response rate	0	0.6	1.8	44.1	53.5	4.50	0.569	
The application should not have confused	0	0	2.4	33.7	63.8	4.61	0.535	
I do not want to put too much effort to learn how to use the application	0	0	3.0	43.8	53.2	4.50	0.558	

According to the table 4.9, it shows that there is no strongly disagree in this set of questionnaires, the average mean of this questionnaire is 4.544 and the average S.D. is 0.549.

Table 4.10 The statistics of perceived value (PV) questionnaires

Questionnaire	Perceived Value						Mean (%)	S.D. (%)
	Strongly Disagree	Disagree	Unsure	Agree	Strongly Agree			
	(%)	(%)	(%)	(%)	(%)			
I think the mobile homecare service application is valuable	0	0	12.5	52.9	34.7	4.22	0.651	
There are greater benefits than disadvantages to use the application	0	0.6	9.7	59.0	30.7	4.20	0.625	
The application is worthwhile to me	0	0	9.1	65.3	25.5	4.16	0.566	
Overall, the application is good	0	0	7.3	62.9	29.8	4.22	0.567	

According to the table 4.10, it shows that there is no strongly disagree in this set of questionnaires, the average mean of this questionnaire is 4.200 and the average S.D. is 0.602.

Table 4.11 The statistics of perceived risk (PR) questionnaires

Questionnaire	Perceived Value						Mean (%)	S.D. (%)
	Strongly Disagree	Disagree	Unsure	Agree	Strongly Agree			
	(%)	(%)	(%)	(%)	(%)			
Information security protection measures of the application must be clear	0	0	2.1	31.0	66.9	4.65	0.521	
The security of transaction information of the application should not be questionable	0	0.3	3.6	30.1	66.0	4.62	0.573	
The regulations about user rights regarding the application should not be incomplete	0	0.3	1.8	31.9	66.0	4.64	0.536	
Personal information must not be intercepted or accessed	0	0.3	2.4	32.2	65.0	4.62	0.551	

According to the table 4.11, it shows that there is no strongly disagree in this set of questionnaires, the average mean of this questionnaire is 4.633 and the average S.D. is 0.545

Table 4.12 The statistics of social influence (SI) questionnaires

Questionnaire	Social Influence						Mean	S.D.
	Strongly Disagree		Unsure		Agree			
	(%)	(%)	(%)	(%)	(%)	(%)		
I will use the mobile homecare service application after my friend	0	0	6.1	58.7	35.3	4.29	0.574	
If the people whose opinions I value use the application I will use it	0	0.6	14	51.7	33.7	4.19	0.685	
I will search for review before using the application	0	0.6	7.9	48.3	43.2	4.34	0.648	
I will use the application if my family member uses it	0	0.6	12.2	47.1	40.1	4.27	0.691	
I will use the application if doctor recommend it	0	0	10.3	51.7	38	4.28	0.639	

According to the table 4.12, it shows that there is no strongly disagree in this set of questionnaires, the average mean of this questionnaire is 4.274 and the average S.D. is 0.647

Table 4.13 The statistics of intention to use questionnaires

Questionnaire	Intention to Use					Mean	S.D.
	Strongly Disagree	Disagree	Unsure	Agree	Strongly Agree		
	(%)	(%)	(%)	(%)	(%)		
Mobile Homecare Service Application is interesting	0	0	18.8	52.6	28.6	4.10	0.683
I think I will download Mobile Homecare Service Application	0	0	20.7	53.8	25.5	4.05	0.679
I think can use mobile homecare service application	0	0	10.3	62.3	27.4	4.17	0.591
I will use the Application	0	0	10.9	57.4	31.6	4.21	0.620

According to the table 4.13, it shows that there is no strongly disagree in this set of questionnaires, the average mean of this questionnaire is 4.133 and the average S.D. is 0.643

4.3 Factor Analysis

In this study, we used factor analysis to check the relation of the factors and group the independent factors. In this study, we analyzed one dependent variable which are Intention to Use, 4 questions and 6 independent factors which are Perceived Trustworthiness (PT), 4 questions, Perceived Usefulness (PU), 5 questions, Perceived Ease Of Use (PEOU), 5 questions, Perceived Value (PV), 4 questions, Perceived Risk (PR), 4 questions, Social Influence (SI), 5 questions.

Table 4.14 KMO and Bartlett's test table of the dependent variable (Intention to use)

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.772
Bartlett's Test of Sphericity	Approx. Chi-Square	338.867
	df	6
	Sig.	.000

According to the table 4.14, the KMO (Kaiser-Meyer-Olkin Measure of Sampling Adequacy) are 0.772 therefore the data is good to proceed the data analysis (Hair, et al., 2006).

Table 4.15 Component matrix of intention to use

Component Matrix^a	
	Component
	1
Intention to Use 1	.742
Intention to Use 2	.827
Intention to Use 3	.737
Intention to Use 4	.786

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

From the table 4.15; there is only one component for the intention to use questionnaire, so it cannot be rotated.

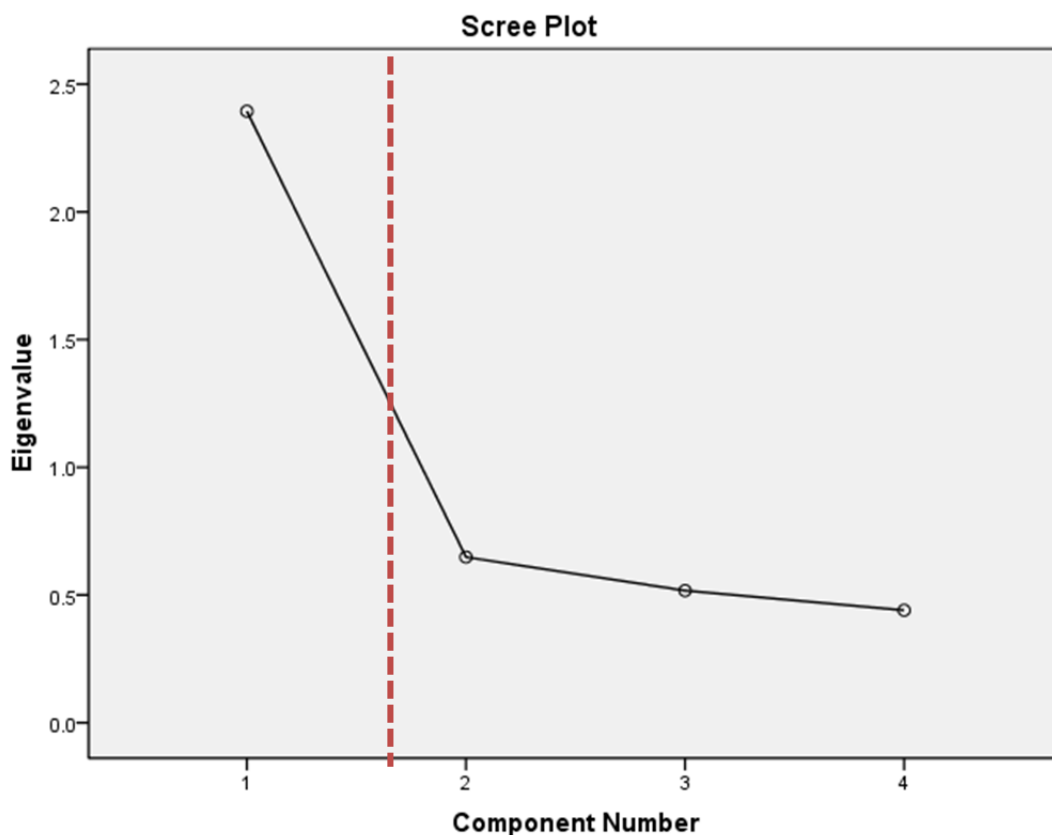


Figure 4.1 The Scree Plot of Intention to use questionnaire

Table 4.16 KMO and Bartlett's test table of the independent factors

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.792
Bartlett's Test of Sphericity	Approx. Chi-Square	5173.783
	df	351
	Sig.	.000

According to the table 4.16, the KMO (Kaiser-Meyer-Olkin Measure of Sampling Adequacy) are 0.792 therefore the data is good to proceed the data analysis, because it passes the minimum require (0.5), (Hair, et al., 2006).

Table 4.17 Total Variance Explained of the independent factors

Component		Initial Eigenvalues			Extraction Sums of Squared Loadings		
		Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
		Dimension	1	5.303	19.642	19.642	5.303
0	2	3.857	14.286	33.928	3.857	14.286	33.928
	3	3.096	11.466	45.395	3.096	11.466	45.395
	4	2.537	9.395	54.790	2.537	9.395	54.790
	5	1.826	6.762	61.551	1.826	6.762	61.551
	6	1.305	4.835	66.386	1.305	4.835	66.386
	7	.919	3.403	69.789			
	8	.852	3.157	72.946			
	9	.772	2.860	75.806			
	10	.675	2.500	78.307			
	11	.613	2.272	80.578			
	12	.601	2.226	82.804			
	13	.565	2.093	84.897			
	14	.483	1.788	86.685			
	15	.469	1.738	88.423			
	16	.425	1.575	89.998			
	17	.416	1.539	91.537			
	18	.375	1.388	92.925			
	19	.346	1.283	94.208			
	20	.306	1.133	95.341			
	21	.282	1.045	96.386			
	22	.267	.990	97.376			
	23	.222	.821	98.197			
	24	.190	.705	98.901			
	25	.150	.556	99.458			
	26	.116	.431	99.888			
	27	.030	.112	100.000			

Extraction Method: Principal Component Analysis.

According to the table 4.17; The total variance explained for the independent factors is 66.386% and pass the minimum requirement (60%).

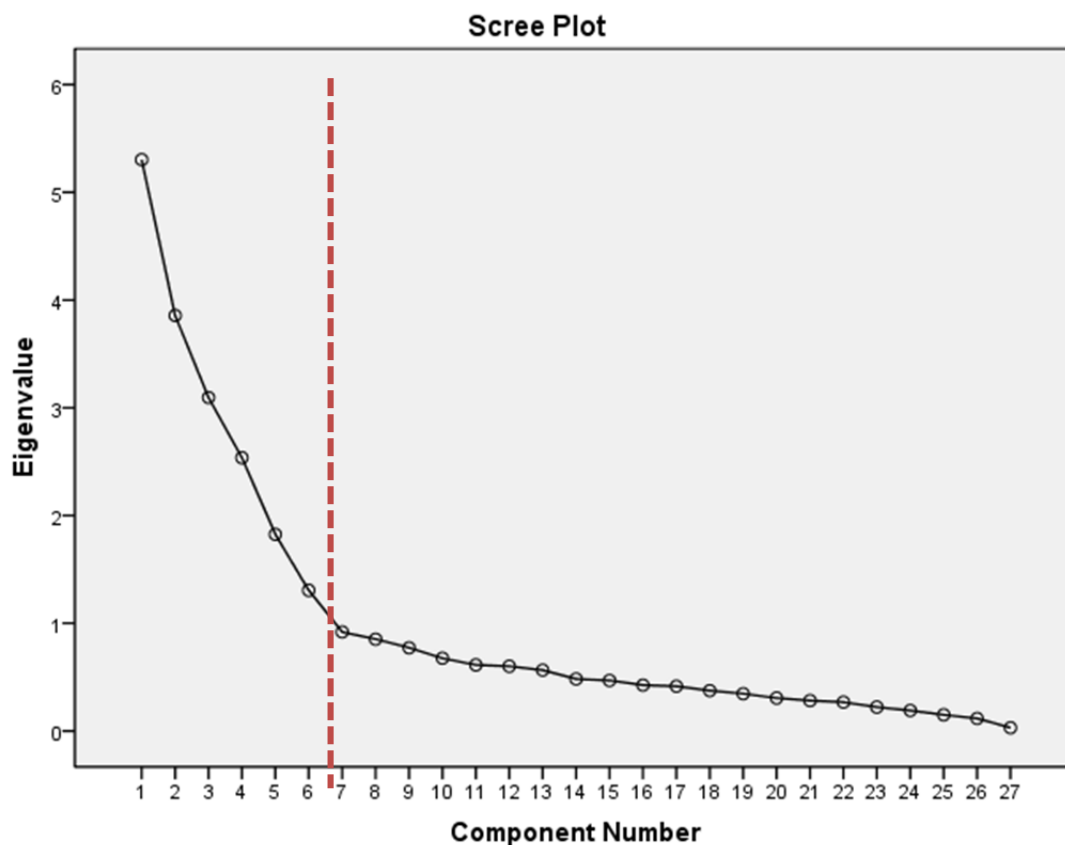


Figure 4.2 The Scree Plot of the dependent variable's questionnaire

Table 4.18 Rotated Component Matrix of the independent factors Rotated Component Matrix^a

	Component					
	1	2	3	4	5	6
Perceived Trustworthiness 1	.892					
Perceived Trustworthiness 2	.947					
Perceived Trustworthiness 3	.966					
Perceived Trustworthiness 4	.915					
Perceived Usefulness 1				.607		
Perceived Usefulness 2				.773		

Table 4.18 Rotated Component Matrix of the independent factors Rotated Component Matrix^a (cont.)

	Component					
	1	2	3	4	5	6
Perceived Usefulness 3				.721		
Perceived Usefulness 4				.709		
Perceived Usefulness 5				.510		
Perceived Ease of Use 1		.770				
Perceived Ease of Use 2		.803				
Perceived Ease of Use 3		.818				
Perceived Ease of Use 4		.857				
Perceived Ease of Use 5		.803				
Perceived Value 1						.718
Perceived Value 2						.732
Perceived Value 3				.354		.606
Perceived Value 4						.827
Perceived Risk 1			.815			
Perceived Risk 2			.913			
Perceived Risk 3			.807			
Perceived Risk 4			.886			
Social Influence 1					.440	
Social Influence 2					.801	
Social Influence 3					.756	
Social Influence 4					.781	
Social Influence 5					.679	

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

From the table 4.18; we have set the suppress absolute values less than 0.3 to remove the data that in the range of -0.3 to 0.3 which are no significant meaning. The table 4.18 shows that all questionnaires are grouped into 6 factors which are perceived

Table 4.20 Correlations matrix of Intention to Use, Perceived Trustworthiness, Perceived Usefulness, Perceived Ease of Use, Perceived Value, Perceived Risk, Social Influence (cont.)

		Correlations						
		PT	PU	PEOU	PV	PR	SI	IU
PU	Pearson Correlation	.269**	1	.173**	.499**	-.055	.325**	.466**
	Sig. (2-tailed)	.000		.002	.000	.321	.000	.000
	N	329	329	329	329	329	329	329
PEOU	Pearson Correlation	.032	.173**	1	.143**	-.214**	.078	.278**
	Sig. (2-tailed)	.559	.002		.010	.000	.157	.000
	N	329	329	329	329	329	329	329
PV	Pearson Correlation	.154**	.499**	.143**	1	.005	.325**	.688**
	Sig. (2-tailed)	.005	.000	.010		.934	.000	.000
	N	329	329	329	329	329	329	329
PR	Pearson Correlation	.036	-.055	-.214**	.005	1	-.065	-.138*
	Sig. (2-tailed)	.514	.321	.000	.934		.237	.012
	N	329	329	329	329	329	329	329
SI	Pearson Correlation	.038	.325**	.078	.325**	-.065	1	.262**
	Sig. (2-tailed)	.497	.000	.157	.000	.237		.000
	N	329	329	329	329	329	329	329
IU	Pearson Correlation	.140*	.466**	.278**	.688**	-.138*	.262**	1
	Sig. (2-tailed)	.011	.000	.000	.000	.012	.000	
	N	329	329	329	329	329	329	329

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

*. Correlation is significant at the 0.05 level (2-tailed).

According to the table 4.20; we found that there is a positive relationship between Perceived Usefulness (PU) and Intention to Use (IU). And there is also a positive relationship between Perceived Value (PV) and Intention to Use (IU).

4.5 Reliability Test

In this study, we use Cronbach's alpha to improve the reliability of all independent factors. Which it shows in the following table.

Table 4.21 Reliability test of the independent factors

Factors	Cronbach's Alpha	N of Items
Perceived Trustworthiness (PT)	0.958	4
Perceived Usefulness (PU)	0.757	5
Perceived Ease of Use (PEOU)	0.879	5
Perceived Value (PV)	0.775	4
Perceived Risk (PR)	0.887	4
Social Influence (SI)	0.766	5
Intention to Use (IU)	0.755	4

According to the Table 4.21; all independent factors have Cronbach's Alpha more than 0.7 which are good and reliable.

4.6 Regression Analysis

Regression analysis helps to estimate the relationship between one dependent variable and one or more independent variables.

Table 4.22 Regression Model Summary of Independent factors

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
Dimension 0	1	.729 ^a	.531	.522	.34411

a. Predictors: (Constant), SI, PT, PR, PEOU, PV, PU

Table 4.23 Regression Model, ANOVA of Independent factors

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	43.126	6	7.188	60.700	.000 ^a
	Residual	38.129	322	.118		
	Total	81.255	328			

a. Predictors: (Constant), SI, PT, PR, PEOU, PV, PU

b. Dependent Variable: IU

According to the Table 4.23; The significance of R-Square value is less than 0.05 then it's significant

Table 4.24 Regression Model, Coefficients of Independent factors

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.108	.313		.343	.732
	PT	.009	.031	.011	.280	.780
	PU	.155	.055	.131	2.808	.005
	PEOU	.163	.044	.147	3.706	.000
	PV	.639	.048	.598	13.249	.000
	PR	-.107	.041	-.102	-2.591	.010
	SI	.007	.044	.006	.155	.877

a. Dependent Variable: IU

According to the Table 4.24; The significance of coefficient estimates. If it is less than 0.05 then it's significant. Which only perceived usefulness (PU), perceived ease of use (PEOU), perceived value (PV), and perceived Risk (PR) that significant. On the other hand, perceived Trustworthiness (PT) and social influence (SI) are not significant.

From the data, we can interpret into a regression model as below.

$$\text{Intention to use} = 0.108 + 0.155(\text{PU}) + 0.163(\text{PEOU}) + 0.639(\text{PV}) - 0.107(\text{PR})$$

4.7 Crosstabs and Chi-Square Tests between the demographic and intention to use

In this research, we use Crosstabs and Chi-Square to test the relationship between the demographic variable which are gender, age, marriage status, education level, occupation, and income level to the dependent variable which is intention to use of homecare service application.

Table 4.25 Chi-Square Tests between the demographic and intention to use

Demographic Factor	Asymp. Sig. (2-sided)
Gender	0.234
Age	0.000
Marriage Status	0.000
Education Level	0.085
Occupation	0.000
Income Level	0.000

According to the Table 4.25; The significance of coefficient estimates. If it is less than 0.05 then it's significant. Which only age, marriage status, occupation, and income. On the other hand, gender and education level are not significant.

4.8 Result Summarization

From the research, we have 329 responses; there are 132 males (40.1%) and 197 females (59.9%). The ages of the respondents are 20-64. The majority of the respondents are in 30-34 years old (29.2%), the second is in 25-29 years old (24.3%)

the minorities of the respondents are 20-24 and 60-64 years old which equally count as 1.8% of all. The marriage status of the respondents. The majority of the respondents are single which is 67.5% of all. The education level of the respondents which the majority of the respondents are in Bachelor Degree level. The majority of the respondents' occupation is private company worker, however there are 7 persons are in other which 4 of them are working in their family business, and 3 of them are working as a freelancer which multiple of jobs. The respondents have variety of income level, however the majority of them have 30,001 - 40,000 baht per month.

The result show that the intention to use of homecare mobile application is influenced by 5 factors which are perceived usefulness, perceived ease of use, perceived value, perceived risk and demographic which are age, marriage status, occupation, and level of income.

By using regression model, this research finds that perceived usefulness, perceived ease of use, perceived value and perceived risk have positive relationship with the intention to use of homecare service application as the following formula.

$$\text{Intention to use} = 0.108 + 0.155(\text{PU}) + 0.163(\text{PEOU}) + 0.639(\text{PV}) - 0.107(\text{PR})$$

From the formula; it also demonstrates that the perceived value is a factor that can be influenced the intention to use of the mobile homecare application most.

4.9 Result findings and Discussion

The demographic which are age, marriage status, occupation, and level of income have significant relationship with the intention to use of mobile homecare application.

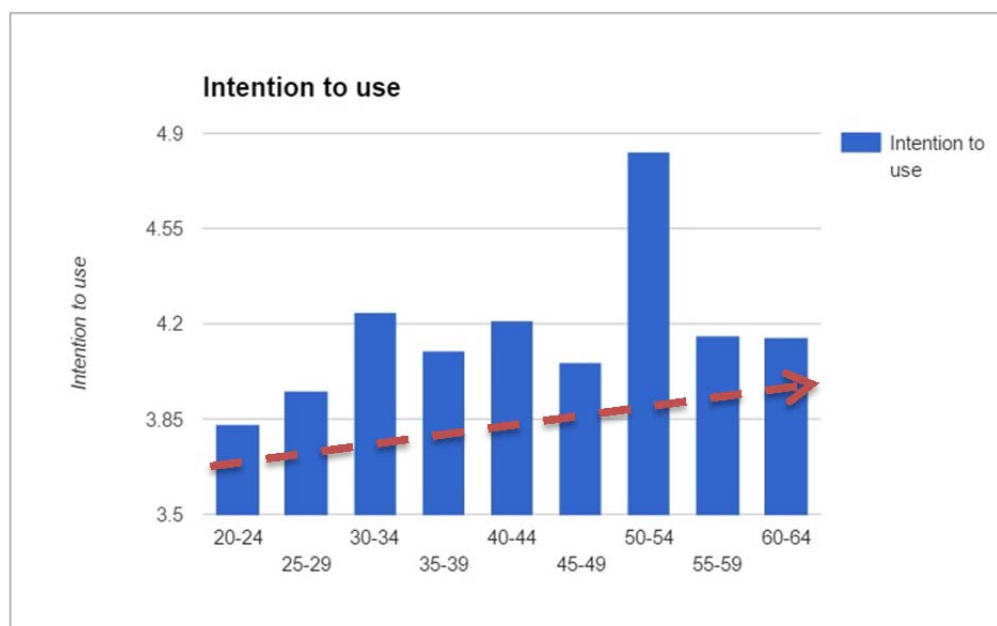


Figure 4.3 The relationship between Intention to use and Age

According from the figure 4.4; the dash line in the graph demonstrates that the intention to use trend increase for older people. The intention to use are high since the age of 30 and then there is a spike in the people who age in 50s. The reasons that we have the trend like this may come from three main causes, firstly, the one who age 30s mostly have intention to use this application for their parent because they are still working and their parent are old and might need assistant in the daily activity at home. Secondly, the usage of internet, smart phone and tablet have been increased gradually in the older age especially the one who live in the main city and the respondents in this research lives in Bangkok and Metropolitans which have highly access to internet and technology. Thirdly, the older people are more concern about their health and their future of living more. Especially, the people who in 50s which are the age that most people start to cover that they have at least one chronic decease and it make them even more concern about their health and their future therefore this can explain the trend and the spike of the graphic.

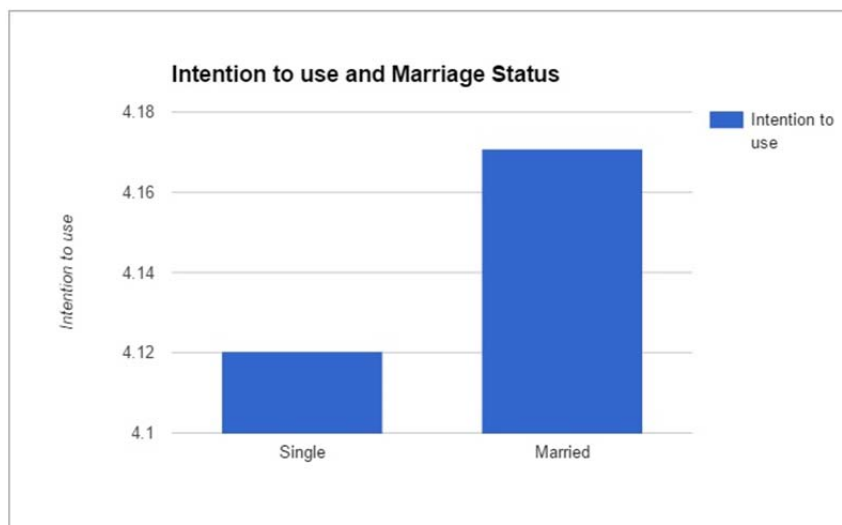


Figure 4.4 The relationship between Intention to use and Marriage Status

From the figure 4.5; it shows that the people who is in Married status are slightly more interested in mobile homecare service application than the single person. It might be because the married one are busier because of they have their partner and children or plan to have children in the future therefore, they might have not much time to take care of their parent so they are looking for an assistant. On the other hand, the single type they have less person to respond and they can spend more time and take care their parent by themselves.

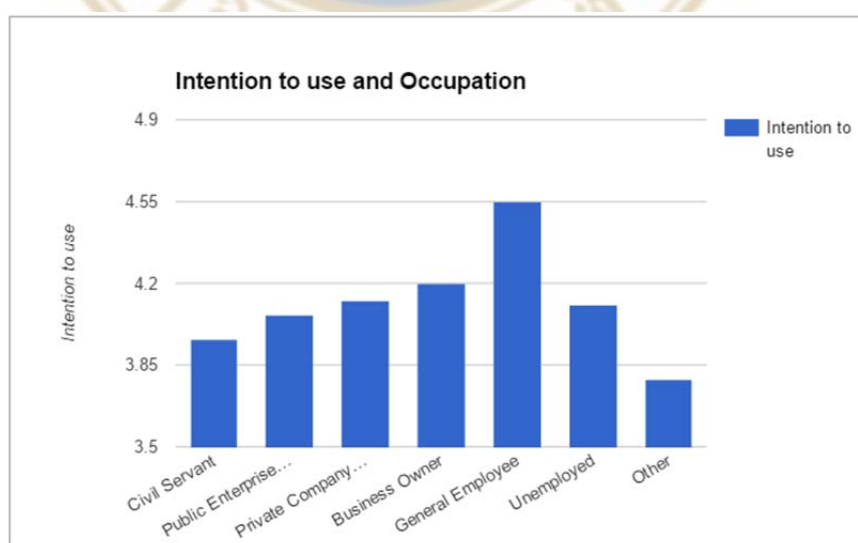


Figure 4.5 The relationship between Intention to use and Occupation

The figure 4.6 shows the intention to user of mobile homecare application of the respondents that categorized via occupation. From the figure illustrates that the respondents who are civil servant or public enterprise have lease interested of the application, it because they already have welfare for them and their parent already. On the other hand, the others who work in a private company, business owner are not provided this welfare therefore they are more interested in the application.

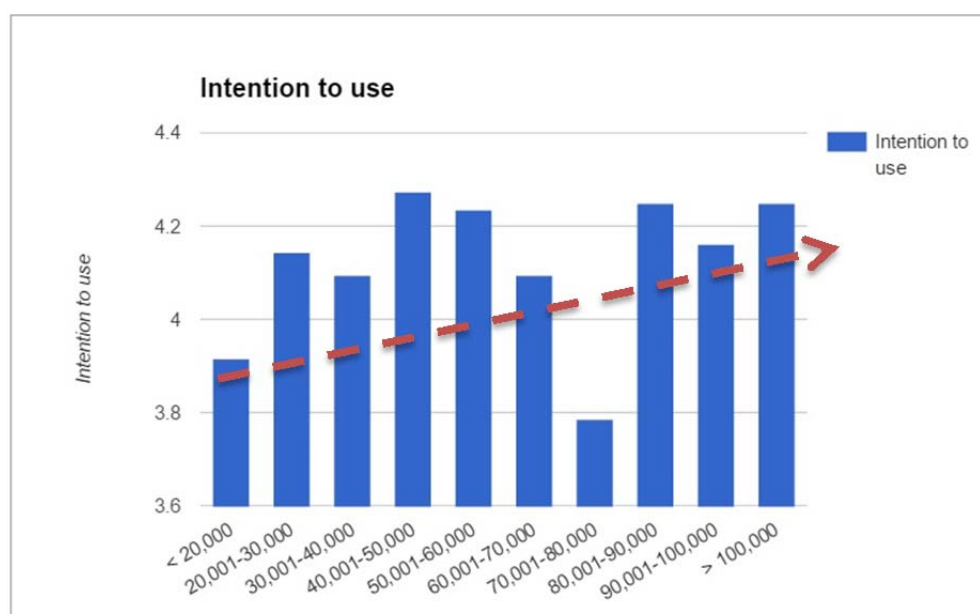


Figure 4.6 The relationship between Intention to use and Income

The figure 4.7 show the relationship between the intention to use of mobile homecare service application and the level of income of the respondents. The data shows that there is a trend that the higher income level, the higher intention to use of the mobile homecare application they have except the respondents who have income level of 70,000 – 80,000. Their intention to use of the mobile homecare service application are lowest than others.

From the literature review in the chapter two shows that there are many factors that can influence the intention to use of the homecare application, we found that perceived usefulness, perceived ease of use, have positive relationship with the intention to use of homecare service application, because the perceived usefulness makes them believe that the application will help to improve their performance or live

better, on the other hand the ease of you is a barrier for them to use the application therefore if the barrier is low, the application is easy to use then the barrier is low too and it increase the intention to use to the application so the perceived usefulness and the perceived ease of use has positive relationship with intention to use of the new technology. The result is similar with the Technology Acceptance Model (TAM) (Davis,1989)

As well as perceived value and perceived risk are also having the positive relationship to the intention to use of mobile homecare application. The perceived value is quite similar with perceived of usefulness but it also concerns about the balance cost or the tradeoff too. High perceived value mean that the application has more benefit than the cost and it increases the intention to use of the application. On the other hand, the perceived risk is also the barrier for the user and it mean that the lower risk can increase the intention to use. The result is similar with the research, Understanding perceived risks in mobile payment acceptance, Industrial Management & Data Systems, (Yongqing, 2015). Which the perceived value has the positive relationship with the intention to use and the perceived risk have negative relationship with the intention to use.

In contrast with the literature review, in this research find that the perceived trustworthiness (PT) and social influence (SI) do not have significant relationship with intention to use of the mobile homecare application.

From the other researches, they found that the trustworthiness in online is developed base on the consumers' transaction which in the is study we did not have any available application therefore, the respondents lacking chance to understand this factor (Jarvenpaa et al. 2000; McKnight et al. 1998). In the research of Shih et al. (2005) they also found that the trustworthiness does not has statistically significant to intention to use for someone who has little or no experience in the technology. However, there was a study that found the perceived trustworthiness did not have significant influence the intention to use directly but it have positive relationship with perceived usefulness and then it can influence the intention to use indirectly (Tzy-Wen Tang et al., 2011).

Similarly, with the study of Venkatesh and Morris (2000), they found that the social influence does not have statistically significant with intention to use especially in men, however the social influence factor seems to have affect in women but only just the beginning of the using. After they using the technology for while the it's not influence to the intention to use anymore. Same as the study of Lisa Seymour, Makanya,

and Berrange (2007), they found out that because the user will evaluate the application by themselves when using it therefore, the factor social influence is not statistically significant to intention to use. Moreover, from the study of Venkatesh and Davis (2000), they found that the social factor does not statistically significant with the intention to use when the technology is optional to use which the mobile homecare application is optional for the user as well.



CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusion

The objectives of this study are to find the main factors that influence the intention of use of mobile homecare service application and to find the potential customer for the application. From the study, we found that there are 5 main factors that influence the intention to use of the mobile homecare service application which are Perceived of Usefulness (PU), Perceived Ease of Use (PEOU), Perceived Value (PV), Perceived Risk (PR), and Demographic (Age, Marriage Status, Occupation, and Income). On the other hand, Perceived Trustworthiness (PT) and Social Influence (SI) do not have statistically significant to the intention to use of the mobile homecare service application in this research. After analyze the research data we have the research framework as follow,

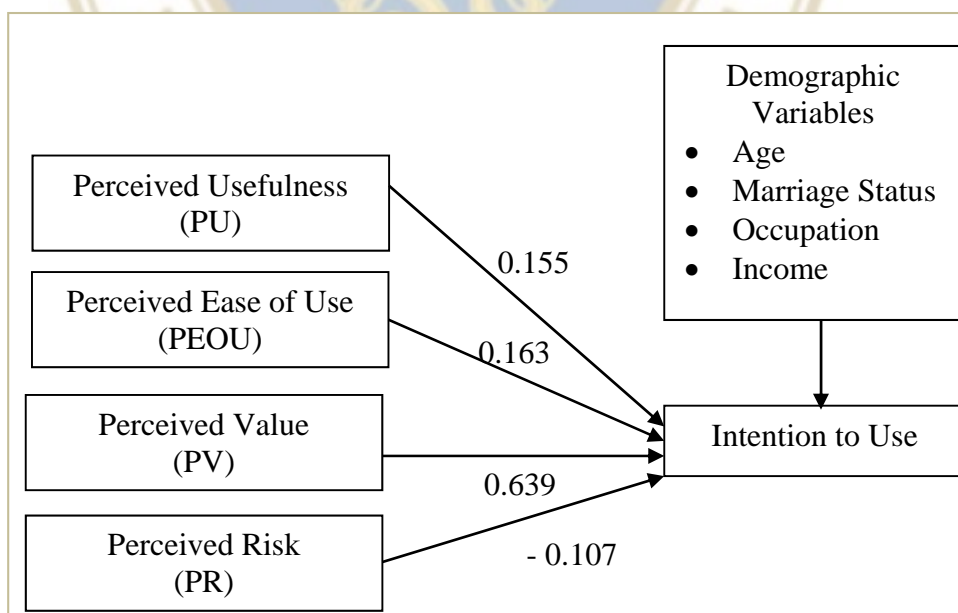


Figure 5.1 The framework of factors influence intention to use of mobile

Homecare Application

From the research, we did regression analyze and the we have the model as below,

$$\text{Intention to use} = 0.108 + 0.155(\text{PU}) + 0.163(\text{PEOU}) + 0.639(\text{PV}) - 0.107(\text{PR})$$

The model demonstrates that the first factor that have greatest influence of the intention to use of mobile homecare service application is Perceived Value (PV). The second factor is Perceived Usefulness (PU), the third is Perceived Ease of Use and the last one is Perceived Risk. The result of the study is aligned with many researches as in the literature review in the chapter two and the result findings and discussions in the chapter four.

5.2 Recommendation or Managerial Implication

The world is changing rapidly, nowadays people have more access to the internet and smart phone especially in Thailand the trend of internet of older people are increasing dramatically in the past five years therefore the perception of the population is changing. Moreover, in the era of internet there are many organization provide service through mobile application which homecare is one of potential service in nearly future.

This study will benefit the one who interested or developing the online or application of healthcare service for elderly. This project helps to update and understand the current perception toward the potential customers by focusing on the intention to use of the mobile homecare service application. From the research analyzed we have recommendation as follows

5.2.1 Market Segmentation for the mobile homecare application service

From our demographic data, we found that the older people have more intention to use of this service application, especially the one who is in 50s. Therefore, we can scope our marketing and segmentation to the older people to be more effective for example when we promote the application by use digital marketing such as on Facebook we could set the target customer who will see our advertisement to be older

than 30 which have high intention to use of this application. Beside from the age, we can focus more on the one who already married which can be set in most of the digital media providers as well.

Next, the demographic shows that the one who are in the private sector such as the employee of private company, the business owner is more interested in this application because they do not have welfare that cover to their parent therefore, we could use this data as an advantage to promote our application more effectively for example promote the application in the area that have many target customers such as the cafeteria in the private office building zone during the lunch time.

Moreover, from the demographic data we found that the people who have higher income level have more intention to use of mobile homecare service application, this information help us to see the perfect positioning of the application; We could set our positioning to be a premium service and target high income level customers.

5.2.2 The service design

From the research, there are 2 factors that quite similar and have the most impact to the intention to use of the application which are Perceived Value (PV) and Perceived Usefulness (PU). These two factors are more concern about the benefits the they will gain from using the application however, for the perceived value (PV) shows that the customers are also concern about the tradeoff which can be refer to the time, cost or effort of using the application too.

From the analysis, first of all I would recommend to develop high quality service and high standard. For example, every caregiver in the service must have certificate from the government and standard training from the organization for the best service and have standard uniform to support the standard perception. The quality and the standard of the service can be support both perceived value (PV), perceived usefulness (PU).

Secondly, we could show the data of all care giver, the photo, name, their training detail and certificate to ensure the customer about the quality of our caregiver and support the perceived risk (PR) factors and also support the premium positioning as well.

Moreover, we should offer special services that make us more value and differentiate us from the competitor and gain more perceive value (PV) and perceive

usefulness (PU) such as provide 24 hours hotline or 24 hours homecare services, or online video steaming for the customer to monitoring our services and the patient.

5.2.3 Application's user interface design and how to promote the service

Beside the demographic data, we also know from the research that there are 4 factors that can influence the intention to use of the mobile homecare service application which are perceived of usefulness (PU), perceived ease of use (PEOU), perceived value (PV), and perceived risk (PR). Therefore, we should design the application and promote according to the factors that have highly influence to the intention to use for better result and be more effective. From the study and the analysis, I would recommend to promote that the application are highly usefulness and value which quite similar issue, but the perceived value is also concern about the trade off in order to gain the benefit such as time, or money. Therefore, when we promote the service we should show the package with all benefits and the quality of the service that the customer will get and also show the cost then the customer can evaluate the value of the service. Secondly the perceive ease of use, as the support from the demographic statistic that the older people have more intention to use this application. However, one of the biggest obstacle to them is the complexity of the application interface therefore the application should be design by user oriented. It's should be simple and easy to understand and it should provide enough instruction and support. Lastly, the application should be avoiding perceived risk therefore the application should be clear and look trustable and fast respond to the user and avoid any confusing process.

5.3 Research Limitation

The number of the respondent of this research in my opinion are too small which make some group of data have too small respondents such as the age there we do not have respondent who is older than 65 and in some group for example we have only six people who age in 50-54; on the other hand, we have quite a lot of respondents who are in 25-39 years old. The second limitation is that there is no mobile homecare service application when we conduct this research therefore, it is harder to explain and have the respondents understand the application clearly enough. The result of that the

answer of them are not base on the real experience but on the instruction and explanation that we gave therefore their answer might change when they have chance to use the real application. From the research, we found that the behavior of older people in Thailand is changing, the growth of internet and smart phone usage is dramatically growth recently. Which mean that their perception toward the technology are also changing the barrier for them is lower. The changing of the context and situation may challenge to many frameworks that was conducted in the pass. As well as this research once there are mobile homecare service application in the market the perception of the consumer might change again.

5.4 Future Research

According to the limitation of the research I have two recommendations for the future research. Firstly, the next research should conduct more quantitative research on senior population to get more sample size and confirm the result of this research. Next, the future research can also conduct qualitative research to investigate what factors can influence the perceived value (PV) for the mobile homecare application such as cost, the quality of the service, the standard of the service etc. Then we can develop the service effectively to support the perceived value (PV).

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Appendix A: The Questionnaire in English

Intention to Use in Mobile Homecare Service Application

This survey is conducted for academic research purpose as part of the researcher's independent study (IS) project at the College of Management Mahidol University (CMMU).

Objectives

1. To study what are main factors that related to customer's intention to use.
2. To study the perception of the potential customers to mobile home care service application.

The survey contains eighth parts of questions, in which most questions are in a short 1-5 rating format:

PART I: Demographics (6 questions)

PART II: Perceived Trustworthiness (4 questions)

PART III: Perceived Usefulness (5 questions)

PART IV: Perceived Ease of Use (5 questions)

PART V: Perceived Value (4 questions)

PART VI: Perceived Risk (4 questions)

PART VII: Social Influence (5 questions)

PART VIII: Intention to Use (4 questions)

It should take around 10 minutes to complete the survey. All respondents' answers and personal information will remain anonymous.

Mobile Homecare Service Application						
<i>The mobile home care service application can provide the home care services at the customer's home for the patient or elderly who need some assistant or service but don't need to be monitored closely. The homecare mobile application service should provide the services such as activities of daily living (ADL) assisting, light housekeeping, meal preparation, medication reminders, companionship, transportation. The customer can book and pay fee for these services via the application which is very quick and convenient.</i>						
Gender <input type="checkbox"/> male <input type="checkbox"/> female						
Age _____ years old						
Educational Level						
<input type="checkbox"/> Junior High School						
<input type="checkbox"/> High School						
<input type="checkbox"/> Vocational School						
<input type="checkbox"/> Bachelor Degree						
<input type="checkbox"/> Master Degree						
<input type="checkbox"/> Doctorate Degree						
<input type="checkbox"/> Other _____						
Perceived Trustworthiness						
1 = Strongly disagree, 2 = Disagree, 3 = Uncertain, 4 = Agree, 5 = Strongly agree						
No.	Question	1	2	3	4	5
1	I think mobile homecare service must be trustworthy					
2	I think the application must be standard					
3	I think it is important that the staffs from the application are trustworthy					
4	I think the application must be reliable					

Perceived Usefulness						
1 = Strongly disagree, 2 = Disagree, 3 = Uncertain, 4 = Agree, 5 = Strongly agree						
No.	Question	1	2	3	4	5
1	The mobile homecare service application is helpful					
2	The application is convenient to get homecare service					
3	The application is the fast way to get homecare service					
4	The application can save my time to get homecare service					
5	The application is useful to get homecare service					
Perceived Ease Of Use						
1 = Strongly disagree, 2 = Disagree, 3 = Uncertain, 4 = Agree, 5 = Strongly agree						
No.	Question	1	2	3	4	5
1	The mobile homecare service application should be easy to use					
2	The application should be easy to understand					
3	The application should have a quick response rate					
4	The application should not be confused					
5	I don't want to put too much effort to learn how to use the application					
Perceived Value						
1 = Strongly disagree, 2 = Disagree, 3 = Uncertain, 4 = Agree, 5 = Strongly agree						
No.	Question	1	2	3	4	5
1	I think the mobile homecare service application is valuable					
2	There are greater benefits than disadvantages to use the application					
3	The application is worthwhile to me					
4	Overall, the application is good					

Perceived Risk						
1 = Strongly disagree, 2 = Disagree, 3 = Uncertain, 4 = Agree, 5 = Strongly agree						
No.	Question	1	2	3	4	5

1	Information security protection measures of the application must be clear					
2	The security of transaction information of the application should not be questionable					
3	The regulations about user rights regarding the application should not be incomplete					
4	Personal information must not be intercepted or accessed					
Social Influence						
1 = Strongly disagree, 2 = Disagree, 3 = Uncertain, 4 = Agree, 5 = Strongly agree						
No.	Question	1	2	3	4	5
1	I will use the mobile homecare service application after my friend					
2	If the people whose opinions I value use the application I will use it					
3	I will search for review before using the application					
4	I will use the application if my family member uses it					
4	I will use the application if doctor recommend it					
Intention to Use						
1 = Strongly disagree, 2 = Disagree, 3 = Uncertain, 4 = Agree, 5 = Strongly agree						
No.	Question	1	2	3	4	5
1	Mobile Homecare Service Application is interesting					
2	I think I will download Mobile Homecare Service Application					
3	I think can use mobile homecare service application					
4	I will use the Application					

Appendix B: The Questionnaire in Thai

<p>ความตั้งใจที่จะใช้งานในบริการการดูแลที่บ้าน (Home Care Service) ผ่านแอปพลิเคชัน</p> <p>แบบสอบถามนี้เป็นส่วนหนึ่งของการดำเนินงานวิจัยทางวิชาการ ซึ่งจะถูกใช้ในการเขียนวิทยานิพนธ์ ของวิทยาลัยการจัดการ มหาวิทยาลัยมหิดล</p> <p>จุดประสงค์</p> <ol style="list-style-type: none"> 1. เพื่อศึกษาหาตัวแปรหลักต่อความตั้งใจใช้งานแอปพลิเคชันการใช้งานการดูแลผู้สูงอายุที่บ้าน 2. เพื่อศึกษาความสนใจต่อแอปพลิเคชันการใช้งานการดูแลผู้สูงอายุที่บ้านของกลุ่มลูกค้า
<p>แบบสอบถามนี้มีคำถามแปดส่วน คำถามส่วนใหญ่เป็นการจัดลำดับทัศนคติแบบสเกล (scale) 1-5 ลำดับ</p> <p>ส่วนที่ 1: คำถามทางประชากรศาสตร์ (6 คำถาม)</p> <p>ส่วนที่ 2: ทัศนคติต่อความน่าเชื่อถือ (4 คำถาม)</p> <p>ส่วนที่ 3: ทัศนคติต่อความมีประโยชน์ (5 คำถาม)</p> <p>ส่วนที่ 4: ทัศนคติต่อความง่ายในการใช้งาน (5 คำถาม)</p> <p>ส่วนที่ 5: ทัศนคติต่อคุณค่า (4 คำถาม)</p> <p>ส่วนที่ 6: ทัศนคติต่อความเสี่ยง (4 คำถาม)</p> <p>ส่วนที่ 7: ทัศนคติต่อผลกระทบจากสังคม และครอบครัว (5 คำถาม)</p> <p>ส่วนที่ 8: ทัศนคติต่อความตั้งใจที่จะใช้งาน (4 คำถาม)</p> <p>ระยะเวลาในการตอบแบบสอบถามนี้อยู่ที่ประมาณ 5 นาที คำตอบและข้อมูลส่วนตัวของทุกคนจะไม่ถูกเปิดเผย</p>
<p>แอปพลิเคชันการใช้งานการดูแลผู้สูงอายุที่บ้าน (Mobile Homecare Service Application)</p> <p>แอปพลิเคชันการใช้งานการดูแลผู้สูงอายุที่บ้าน (Mobile Homecare Service Application) เป็นบริการช่วยดูแลผู้สูงอายุหรือผู้ป่วยที่บ้าน โดยมีการเรียกใช้บริการผ่านทางแอปพลิเคชันในการบริการนั้นหลักๆ เป็นบริการที่ช่วยดูแลผู้สูงอายุ หรือผู้ป่วยในการดำเนินชีวิตประจำวัน เช่น การช่วยทำความสะอาดบ้าน การเตรียมอาหาร การช่วยในการเดินและทานยา การช่วยในการเดินทาง หรือการออกกำลังกายทำกายภาพบำบัดเบื้องต้น โดยจะส่งผู้ดูแลมาบริการถึงที่บ้าน ค่าบริการจะมีรายละเอียดชัดเจน และสามารถจ่ายเงินผ่านทางแอปพลิเคชันได้</p>
<p>เพศ</p>

<input type="checkbox"/> ผู้ชาย <input type="checkbox"/> ผู้หญิง						
อายุ _____						
ระดับการศึกษา						
<input type="checkbox"/> ประถม						
<input type="checkbox"/> มัธยม						
<input type="checkbox"/> อนุปริญญา						
<input type="checkbox"/> ปริญญาตรี						
<input type="checkbox"/> ปริญญาโท						
<input type="checkbox"/> ปริญญาเอก						
<input type="checkbox"/> อื่นๆ _____						
อาชีพ _____						
สถานภาพ						
<input type="checkbox"/> โสด <input type="checkbox"/> แต่งงาน						
เงินเดือน _____						
ความน่าเชื่อถือ (Perceived Trustworthiness)						
1 = ไม่เห็นด้วยอย่างยิ่ง, 2 = ไม่เห็นด้วย, 3 = ไม่แน่ใจ, 4 = เห็นด้วย, 5 = เห็นด้วยอย่างยิ่ง						
ลำดับ	คำถาม	1	2	3	4	5
1.	ฉันคิดว่าแอปพลิเคชันการใช้งานการดูแลผู้สูงอายุที่บ้านควรเชื่อถือได้					
2.	ฉันคิดว่าแอปพลิเคชันควรมีมาตรฐาน					
3.	ฉันคิดว่าพนักงานจากแอปพลิเคชันการใช้งานการดูแลผู้สูงอายุที่บ้านควรเชื่อถือได้					
4.	ฉันคิดว่าแอปพลิเคชันการใช้งานการดูแลผู้สูงอายุที่บ้านควรวางใจได้					

ความมีประโยชน์ (Perceived Usefulness)
1 = ไม่เห็นด้วยอย่างยิ่ง, 2 = ไม่เห็นด้วย, 3 = ไม่แน่ใจ, 4 = เห็นด้วย, 5 = เห็นด้วยอย่างยิ่ง

ลำดับ	คำถาม	1	2	3	4	5
1.	แอปพลิเคชันการใช้งานการดูแลผู้สูงอายุที่บ้านเป็นสิ่งที่มีความประโยชน์					
2.	แอปพลิเคชันนี้ควรสะดวกต่อการหาบริการดูแลผู้สูงอายุ					
3.	แอปพลิเคชันนี้ควรรวดเร็วต่อการหาบริการดูแลผู้สูงอายุ					
4.	แอปพลิเคชันนี้ช่วยประหยัดเวลาในการหาบริการดูแลผู้สูงอายุได้					
5.	แอปพลิเคชันการใช้งานการดูแลผู้สูงอายุที่บ้านจะมีประโยชน์ในการหาบริการดูแลผู้สูงอายุ					
ความง่ายในการใช้งาน (Perceived Ease Of Use)						
1 = ไม่เห็นด้วยอย่างยิ่ง, 2 = ไม่เห็นด้วย, 3 = ไม่แน่ใจ, 4 = เห็นด้วย, 5 = เห็นด้วยอย่างยิ่ง						
ลำดับ	คำถาม	1	2	3	4	5
1	แอปพลิเคชันการใช้งานการดูแลผู้สูงอายุที่บ้านควรใช้งานง่าย					
2	การใช้งานแอปพลิเคชันควรเข้าใจง่าย					
3	แอปพลิเคชันควรตอบสนองการใช้งานอย่างว่องไว					
4	แอปพลิเคชันไม่ควรทำให้เกิดความสับสน					
5	แอปพลิเคชันไม่จำเป็นต้องใช้ความตั้งใจและเวลาในการเรียนรู้การใช้งานมากนัก					
คุณค่า (Perceived Value)						
1 = ไม่เห็นด้วยอย่างยิ่ง, 2 = ไม่เห็นด้วย, 3 = ไม่แน่ใจ, 4 = เห็นด้วย, 5 = เห็นด้วยอย่างยิ่ง						
ลำดับ	คำถาม	1	2	3	4	5
1	ฉันคิดว่าแอปพลิเคชันการใช้งานการดูแลผู้สูงอายุที่บ้านเป็นสิ่งที่มีความคุ้มค่า					
2	แอปพลิเคชันนี้มีประโยชน์มากกว่าโทษ					
3	แอปพลิเคชันนี้มีประโยชน์ต่อฉัน					
4	โดยรวมแล้วแอปพลิเคชันนี้เป็นสิ่งที่ดี					
ความเสี่ยง (Perceived Risk)						
1 = ไม่เห็นด้วยอย่างยิ่ง, 2 = ไม่เห็นด้วย, 3 = ไม่แน่ใจ, 4 = เห็นด้วย, 5 = เห็นด้วยอย่างยิ่ง						
ลำดับ	คำถาม	1	2	3	4	5

1	การเก็บรักษาความลับของลูกค้าควรมีความชัดเจน และ ได้มาตรฐาน					
2	การส่งผ่านข้อมูลในระบบต้องมีความมีความปลอดภัย					
3	ข้อตกลงและกฎระเบียบการใช้งานควรมีความสมบูรณ์					
4	ข้อมูลส่วนตัวของลูกค้าควรถูกเก็บเป็นความลับ					
ผลกระทบจากสังคม และคนรอบข้าง (Social Influence)						
1 = ไม่เห็นด้วยอย่างยิ่ง, 2 = ไม่เห็นด้วย, 3 = ไม่แน่ใจ, 4 = เห็นด้วย, 5 = เห็นด้วยอย่างยิ่ง						
ลำดับ	คำถาม	1	2	3	4	5
1	ฉันจะสนใจแอปพลิเคชันนี้มากขึ้นถ้าฉันรู้ว่าเพื่อนๆ ของฉันใช้งานมัน					
2	ถ้าคนที่ฉันชื่นชมใช้งานแอปพลิเคชันนี้ฉันจะอยากลองใช้งานด้วย					
3	ฉันชอบดูบทวิจารณ์ (review) การใช้งานก่อนใช้งานจริง					
4	ฉันจะรู้สึกอยากใช้งานมากขึ้นถ้าคนในครอบครัวของฉันใช้งานแอปพลิเคชันนี้					
5	ฉันจะรู้สึกอยากใช้งานมากขึ้นถ้าหมอแนะนำแอปพลิเคชันนี้					
ความตั้งใจที่จะใช้งาน (Intention to Use)						
1 = ไม่เห็นด้วยอย่างยิ่ง, 2 = ไม่เห็นด้วย, 3 = ไม่แน่ใจ, 4 = เห็นด้วย, 5 = เห็นด้วยอย่างยิ่ง						
ลำดับ	คำถาม	1	2	3	4	5
1	ฉันสนใจแอปพลิเคชันการใช้งานการดูแลผู้สูงอายุที่บ้าน					
2	ฉันคิดว่าจะดาวน์โหลดแอปพลิเคชันนี้มาใช้					
3	ฉันคิดว่าฉันสามารถใช้งานแอปพลิเคชันนี้ได้					
4	ฉันจะใช้งานแอปพลิเคชันนี้					

Appendix C: The Questionnaires References

Independence factors questionnaires references

Independent Factor	Question	References
Perceived Trustworthiness	We have confidence in one another in this workplace.	(Nattanpon et al., 2004)
Perceived Trustworthiness	My co-workers are honest in their dealing with me.	(Nattanpon et al., 2004)
Perceived Trustworthiness	Overall, my co-workers are capable and proficient.	(Nattanpon et al., 2004)
Perceived Trustworthiness	Members of my workplace show a great deal of integrity.	(Nattanpon et al., 2004)
Perceived Trustworthiness	I can rely on my co-workers.	(Nattanpon et al., 2004)
Perceived Trustworthiness	If I required help, my co-workers would care enough to help me.	(Nattanpon et al., 2004)
Perceived Trustworthiness	If I can depend on my co-workers on occupation-sensitive issues.	(Nattanpon et al., 2004)
Perceived Usefulness	My job would be difficult to perform without electronic mail.	(Davis, 1989)
Perceived Usefulness	Using electronic mail gives me greater control over my work.	(Davis, 1989)
Perceived Usefulness	Using electronic mail improves my job performances.	(Davis, 1989)
Perceived Usefulness	The electronic mail system addresses my job-related needs.	(Davis, 1989)
Perceived Usefulness	Using electronic mail saves me times.	(Davis, 1989)
Perceived Usefulness	Electronic mail supports critical aspects of my job.	(Davis, 1989)
Perceived Usefulness	Using electronic mail allows me to accomplish more work than would otherwise be possible	(Davis, 1989)

Independent Factor	Question	References
Perceived Usefulness	Using electronic mail reduces the time I spend on unproductive activities.	(Davis, 1989)
Perceived Usefulness	Using electronic mail enhances my effectiveness on the job.	(Davis, 1989)
Perceived Usefulness	Using electronic mail improves the quality of the work I do.	(Davis, 1989)
Perceived Usefulness	Using electronic mail increases my productivity.	(Davis, 1989)
Perceived Usefulness	Using electronic mail makes it easier to do my job.	(Davis, 1989)
Perceived Usefulness	Overall, I find the electronic mail system useful in my job.	(Davis, 1989)
Perceived Ease of Use	I often become confused when I use the electronic mail system.	(Davis, 1989)
Perceived Ease of Use	I make errors frequently when using electronic mail.	(Davis, 1989)
Perceived Ease of Use	Interacting with the electronic mail system is often frustrating	(Davis, 1989)
Perceived Ease of Use	I need to consult the user manual often when using electronic mail.	(Davis, 1989)
Perceived Ease of Use	Interacting with the electronic mail system requires a lot of my mental effort.	(Davis, 1989)
Perceived Ease of Use	I find it easy to recover from errors encountered while using electronic mail.	(Davis, 1989)
Perceived Ease of Use	The electronic mail system is rigid and inflexible to interact with.	(Davis, 1989)
Perceived Ease of Use	I find it easy to get the electronic mail system to do what I want it to do.	(Davis, 1989)

Independent Factor	Question	References
Perceived Ease of Use	The electronic mail system often behaves in unexpected ways.	(Davis, 1989)
Perceived Ease of Use	I find it cumbersome to use the electronic mail system.	(Davis, 1989)
Perceived Ease of Use	My interaction with the electronic mail system is easy for me to understand.	(Davis, 1989)
Perceived Ease of Use	It is easy for me to remember how to perform tasks using the electronic mail system.	(Davis, 1989)
Perceived Ease of Use	The electronic mail system provides helpful guidance in performing tasks.	(Davis, 1989)
Perceived Ease of Use	Overall, I find electronic mail system easy to use.	(Davis, 1989)
Perceived Risk	Considering the cost, risk, and benefits, I think it is valuable.	(Yongqing, 2015)
Perceived Risk	Despite the time, effort, and capital involved in m-payment, it is worthwhile to me.	(Yongqing, 2015)
Perceived Risk	There are greater benefits than disadvantages of using m-payment.	(Yongqing, 2015)
Perceived Risk	Overall, it delivers value.	(Yongqing, 2015)
Perceived Value	The use of m-payment would cause the exposure of capital accounts and passwords.	(Yongqing, 2015)
Perceived Value	Malicious and unreasonable charging occurs.	(Yongqing, 2015)
Perceived Value	A careless operation could lead to a surprising loss.	(Yongqing, 2015)
Perceived Value	The use of m-payment can cause financial risk.	(Yongqing, 2015)

Independent Factor	Question	References
Perceived Value	Privacy information could be misused, inappropriately shared, or sold.	(Yongqing, 2015)
Perceived Value	Personal information could be intercepted or accessed.	(Yongqing, 2015)
Perceived Value	Payment information could be collected, tracked, and analyzed.	(Yongqing, 2015)
Perceived Value	Privacy could be exposed or accessed when using m-payment.	(Yongqing, 2015)
Perceived Value	The payment system may be unstable or blocked.	(Yongqing, 2015)
Perceived Value	It does not work as expected.	(Yongqing, 2015)
Perceived Value	The performance level may be lower than designed.	(Yongqing, 2015)
Perceived Value	The service performance may not match its advertised level.	(Yongqing, 2015)
Perceived Value	It would cause unnecessary tension, e.g., concerns about errors in operation.	(Yongqing, 2015)
Perceived Value	A breakdown in m-payment could cause unwanted anxiety and confusion.	(Yongqing, 2015)
Perceived Value	The usage of m-payment could cause discomfort.	(Yongqing, 2015)
Perceived Value	Time loss could be caused by instability and low speed.	(Yongqing, 2015)
Perceived Value	It may take too much time to learn how to use it.	(Yongqing, 2015)
Perceived Value	More time is required to fix payment errors offline.	(Yongqing, 2015)
Perceived Value	Using m-payment may waste time.	(Yongqing, 2015)

Independent Factor	Question	References
Social Influence	The people in my environment who use this type of tool are more prestigious than those who do not use it.	(Francisco José et al., 2014)
Social Influence	The people in my environment who use this type of tool have a superior profile Using this type of tool is a status symbol in my environment.	(Francisco José et al., 2014)
Social Influence	The people whose opinions value would approve of measuring ZONG to purchase products.	(Francisco José et al., 2014)
Social Influence	Most of the people I have in mind think that I should use ZONG to purchase products. They hope that I use ZONG to purchase products.	(Francisco José et al., 2014)
Social Influence	The people who are close to me would agree with me using ZONG to purchase products.	(Francisco José et al., 2014)

Dependence factors questionnaires references

Dependent Factor	Questions	References
Intention to Use	I am positive towards buying the travel products on the website	(Ming-Yi Chen et al., 2013)
Intention to Use	The thought of buying the travel products at the website is appealing to me	(Ming-Yi Chen et al., 2013)
Intention to Use	I think it is a good idea to buy the travel products at the website	(Ming-Yi Chen et al., 2013)

Appendix D: IPSR Certificate of Ethical Approval



IPSR-Institutional Review Board (IPSR-IRB)

Established 1985

COA. No. 2017/01-012

Certificate of Ethical Approval

Title of Project: *Intention to Use in Mobile Homecare Service Application*

Duration of Project: *4 Months (January - April 2017)*

Principal Investigator (PI): *Mr. Sanchai Khammaha*

PI's Institutional Affiliation: *College of Management, Mahidol University*

Approval includes:

- 1) Submission form*
- 2) Research proposal*
- 3) Questionnaire*
- 4) Participant information sheet*
- 5) Informed consent document*

IPSR-Institutional Review Board (IPSR-IRB) met on 26th January 2017 and decided to issue the COA to the above project.

Signature

(Professor Emeritus Pramote Prasartkul)

Chairman, IPSR-IRB

Date: .. January 26, 2017...

Remarks

- 1) Upon the completion of this project, the PI should inform the IPSR-IRB of such progress.
- 2) The PI is obliged to notify any modification of the research project to the IPSR-IRB.

IORG Number: IORG0002101; FWA Number: FWA00002882; IRB Number: IRB0001007

Office of the IPSR- IRB, Institute for Population and Social Research, Mahidol University, Phuttamonthon 4 Rd., Salaya, Phuttamonthon district, Nakhon Pathom 73170. Tel (662) 441-0201-4 ext. 228