BEHAVIORAL INTENTION STUDY OF THAI CONSUMERS' USING MOBILE MEDICAL CONSULTATION SERVICE APPLICATION.

ATTAPOND SUKASAME

A THEMATIC PAPER SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF MANAGEMENT
COLLEGE OF MANAGEMENT
MAHIDOL UNIVERSITY
2019

BEHAVIORAL INTENTION STUDY OF THAI CONSUMERS' USING MOBILE MEDICAL CONSULTATION SERVICE APPLICATION.

was submitted to the College of Management, Mahidol University
for the degree of Master of Management
on
September 7, 2019

.....
Mr. Attapond Sukasame
Candidate

.....
Asst. Prof. Randall Shannon,
Ph.D.
Advisor

.....
Assoc. Prof. Astrid Kainzbauer,
Ph.D.
Chairperson

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

.....
Ronald Surachai Thesenvitz,
Ph.D.
Committee member

ACKNOWLEDGEMENTS

I would like to express the deepest appreciation of those who supported and assisted me to accomplish this research. First of all, I would like to thank you to my advisor Dr. Ronald Vatananan-Thesenvitz, for providing his valuable guidance, insightful comments, and considerable encouragement including valuable knowledge throughout the whole process of this study.

Secondly, I would especially like to thanks lecturers of The College of Management, Mahidol University (CMMU) that always provide information, advice, and support during my study at CMMU.

Thirdly, thank you to all respondents and friends for your valuable output that becomes meaningful for me to conduct this research.

Last but not least, I would like to convey my gratefulness to my family for providing a great opportunity to study at CMMU. Moreover, I'm so thankful to my friends and CMMU staff for supporting and sharing a great experience throughout the entire master's degree course at CMMU.

Attapond Sukasame

BEHAVIORAL INTENTION STUDY OF THAI CONSUMERS' USING MOBILE MEDICAL CONSULTATION SERVICE APPLICATION.

ATTAPOND SUKASAME 6049077

M.M. (MARKETING AND MANAGEMENT)

THEMATIC PAPER ADVISORY COMMITTEE: ASST. PROF. RANDALL SHANNON, Ph.D., ASSOC. PROF. ASTRID KAINZBAUER, Ph.D., RONALD SURACHAI THESENVITZ, Ph.D.

ABSTRACT

The purpose of this thematic paper is to explore the key factors that influence Thai consumer behavior in using the Mobile Medical Consultation Service Application. Therefore, we can develop the application which is one of the telemedicine applications by adapting the knowledge and finding from this research including ascertaining the appropriate strategies for the current or future telemedicine service providers to improve their service. This research uses a quantitative method to examine the relationship between factors and intention to use the mobile medical consultation service application. The conceptual framework of this study was adopted from the Technology Acceptance Model (TAM) theory. The data were collected from conducting the online survey via google form with 290 respondents who were at working age.

The research results indicate that there were several factors influenced Thai consumers' intention to use the mobile medical consultation service application. This research will benefit anyone as a guideline to understand Thai consumers' insight and apply suitable marketing strategies to match Thai consumers' behavior for a better chance to be a success in the business.

KEYWORDS: Telemedicine/ Health Care/ Mobile Application/ Medical Consultation

70 Pages

CONTENTS

CONTENTS (cont.)

CONTENTS (cont.)

LIST OF TABLES

LIST OF TABLES (cont.)

LIST OF FIGURES

CHAPTER I
INTRODUCTION

1.1 Background

The mobile phone such as Apple's iPhone and Google's Android have taken a vast amount of mobile market share since 2007. The application is third-party's software programs that serve to expand the utility of mobile devices (Payne, Lister, West, & Bernhardt, 2015). The digital media market has been continuously developing the leap of mobile applications that are designed for national surveys when approximately 185 million apps by 2014, according to media popularity and forecasts. That there will be $38 billion in revenue from the market in 2015 (Bilton, 2011).

Health-related applications have been a surge in number in recent years, which released on the two leading platforms, iPhone operating system (iOS) and Andriod (Jahns, 2017). Traditionally, health care service has been delivered through face-to-face with clinical professionalists (Zhao, Freeman, & Li, 2016). With this technology, both patients and clinical professionalists can change the way to interact.

Thailand is the Asian's second-largest smartphone market that shows more than 90% of internet users use their smartphone to go online (National Statistical Office of Thailand, 2017). There is also 43.8% of Thai people is going to be smartphone users by the end of 2017, with over half all Thai people who are using smartphones by 2020 (Kressmann, 2017).

1.1.1 Telemedicine (TM)

The definition of telemedicine is the use of telecommunication systems to deliver health care at a distance (Bashshur, 2005). Telemedicine is a swiftly growing segment of healthcare and has much more room to grow. One of the reasons that this technology becomes so popular because of its ease and safety. However, it is still guided by strict standards and protocols to assure its maintained safety. Telemedicine technology can be widely arranged into three categories.

1. **Remote monitoring** - the Mobile phone can be used to monitor the health of patients with long-term conditions by transferring clinical data. It allows the clinician, the patient, or both, to respond and adjust treatment regimens in a more instantaneous way that would be possible with, for example, routine clinic visits. Some telemedicine systems may be designed with automated voice response software to give instructions to patients; others may alert health specialists and a patient to clinical values outside an acceptable range and, in other systems, a health professional may respond promptly (Anker, Koehler, & Abraham, 2011).

2. **Store and forward applications** - These systems transmit clinical data to be analyzed at a later date, and may also be used if there is intermittent connectivity. These technologies have been in use for many years, for instance, in dermatology (Arenson, Andriole, Avrin, & Gould, 2000), pathology (Collins, Bowns, & Walters, 2004), and radiology (Weinstein, et al., 2009). Electronic images and clinical data are transmitted to a clinician remote from the participant, and stored for them to access at any time; the clinician may then return their report electronically, or have a face to face or telephone consultation with the patient and another clinician. The broad availability of e-mail and digital imaging systems for radiology and pathology has increased the use of these applications (Anker, Koehler, & Abraham, 2011).

3. **Interactive telemedicine (TM) (real-time)** – In these applications, clinicians and patients can exchange information and communicate in real-time. Clinical data might be provided from patient self-monitoring devices, digital cameras, or X-ray images. The consulting clinician may be in a tertiary center or a dedicated TM center; the patient may be at home or in a healthcare facility (Flodgren, Rachas, Farmer, Inzitari, & Shepperd, 2015)

1.1.2 Mobile Medical Consultation Service Applications

As for the mobile medical consultation service applications, called “App Har Mhor” in the Thai language, is one of the health care application, which is interactive telemedicine type, has been offered in Thailand recently. Basically, in everyday life, many people are going to the hospital to see the doctor while wasting their time traveling or waiting for the hospital activities process is a problem for a long time.

So, medical consultation applications are providing consultation services from experienced and certified doctors, which is very convenient for consumers. Since the medical treatment for well-being is one of the basic needs of human, the doctor consultation application has excellent potential for the Thai market and provide an alternative option for consumers who do not want to travel to hospital or perhaps get a minor illness and only need to consultation. Moreover, It can help to reduce the workload of medical professionals who often a shortage in Thai society.

The mobile medical consultation service application provides the diagnosis and recommendation treatment or medication from the doctors via text chat, voice call and video call for most primary medical issues such as vomiting, diarrhea, skin rashes/infection, etc. The customer can get prescriptions and drugs delivered and pay a fee for these services via an application, which is very quick and convenient. Also, the customer can book the appointment if they need further clinical activities.

In Thailand, there are relatively new and have a few service providers such as “Raksa” and “See Doctor Now.” Both service providers have the applications available on the Apple Store and Google Play, which are significant mobile applications platforms for every consumer. These applications also aim to revolutionize the healthcare industry in Thailand by offering access to affordable, convenient, on-demand, and secure mobile-based healthcare from a combination of proven telemedicine technologies with business model innovations.

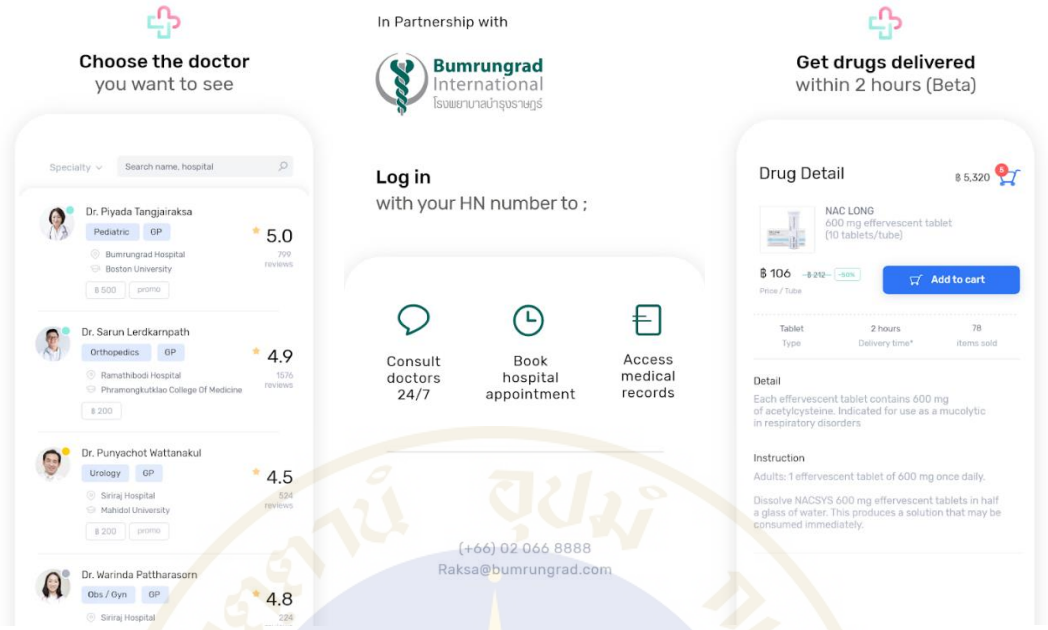

Figure 1.1 Sample Screenshots of Raksa Application (Source: Google Play, 2019)

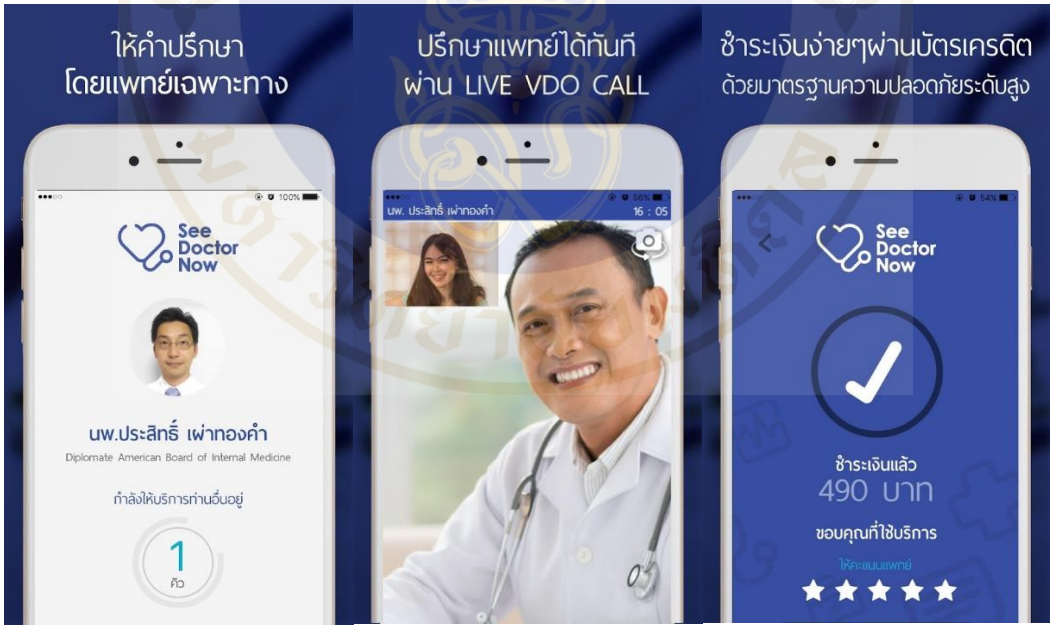

Figure 1.2 Sample Screenshots of SeeDoctorNow Application (Source: Google Play, 2019)

1.2 Problem Statement

Since the mobile application for medical consultation service is relatively new in Thailand, therefore, there could make the customer feel hesitate to purchase the service.

1.3 Research Objective

To investigate and analyze the key factors that influence Thai consumer's intention to use the mobile medical consultation service application.

1.4 Research Question

1.4.1. What are the main factors that influence the consumer's intention to use the mobile medical consultation service application?

1.4.2. What is the relationship between the main factors and the consumer's intention to use mobile medical consultation service?

1.4.3 What are the recommended strategies for improving the application to meet the expectation of customer needs?

1.5 Scope of the Study

This study focuses on behavioral intention on the consumers who are users or non-users, including consumers who don't know about this application as well. The consumers will see the information and the example of this application before collecting the data through questionnaires. This study will take place in Thailand, which is the country of origin of this study and author. There have been very studies related to this topic, and the author would like to explore more about how it relates to the Thai context. The method to collect the data will be via a questionnaire, which can accumulate at various times.

1.6 Expected Benefits

The result of this research should reveal the influence factors behind Thai people using the medical consultation service application. The knowledge from this study can be used as a guideline for developers to increase the chance to succeed in developing and improving application and also service providers for the cumulative process for better service in the future.

CHAPTER II
LITERATURE REVIEW

2.1 Mobile Medical Consultation Service Application

According to the literature review reveals that the trend of using mobile applications is increasing since Apple introduced the 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 (Jaramillo & Harting, 2013). Moreover, there is also an e-commerce store from other prominent players in the technology industry like Google, Amazon as well.

From the market trend, nowadays, many businesses provide services on the mobile application more and more. As there is little research about consumer behavior toward using medical consultation service applications, the existing literature reviews about other mobile clinical and health-related applications and technology adoption will be referred to in this study. The medical consultation service application on a smartphone is defined as an interactive telemedicine application, and the most widely used theories to study this technology is the Technology Acceptance Model.

2.2 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) introduced by Davis in 1989 is one of the most frequently used models to specify how users accept and use the technologies. At that time of the research, many industries use new technology to improve the efficiency of the organization like increase productivity, reduce the cost, time, and error. Consequently, the employee needs to adapt to the new technology for greater good such as using e- mail instead of writing regular mail, which is time-consuming and higher cost. The research objective was to find a better way to measurement and evaluation of the intention to use the technology. The study

discovered that there are two main factors that are perceived usefulness and perceived ease of use that significantly have a positive relationship with the intention to use in the new technology.

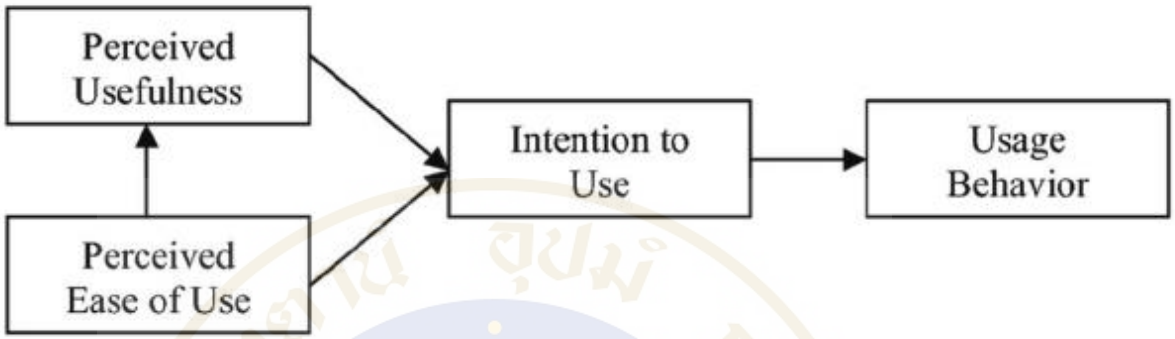

Figure 2.1 Technology Acceptance Model (TAM) (Davis, 1989)

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 usage behavior (Davis, 1989).

2.3 Perceived Ease of Use

According to Davis (1989), the definition of ease is “freedom from the difficulty of great effort” and effort can be referred to as a resource allocated by the person to accomplish the task. Consequently, the perceived ease of use can be related to the degree of effort in user’s perception to use a particular technology. In the TAM model, perceived ease of use is considered to be one of the two main factors that success to predict satisfaction in the mobile application (Amin, Rezaei, & Abolghasemi, 2014). The ease of use in technology can diminish time and effort to use the technology. The user can adjust to their behavior to the new technology easier if they perceive that it is easy to use (Amin, Rezaei, & Abolghasemi, 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. Besides, they also see the value of the user experience, which focuses on the

feeling of using the technology or application. Both user-friendly also, the user experience is to strengthen the user's perception that the technology is easy to use (Amin, Rezaei, & Abolghasemi, 2014).

2.4 Perceived Usefulness

The perceived usefulness can be referred to as the degree of the people believe that the use of 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 advantages such as the higher profession advancement or the opportunity to be promoted or get raise or bonuses. According to the research, it also states that the perceived usefulness can also be described by the cost-benefit paradigm that involves the decision making strategy that the people consider the tradeoff between the cost which means the afford that required and the potential benefits in the decision making (Davis, 1989). Furthermore, one of the notable findings is to know the relative strength between perceived usefulness and perceived ease of use to the user's intention to use. The study found that perceived usefulness is more solidly connected to the intention to use than the ease of use significantly (Davis, 1989). Although the technology acceptance model was created a long time ago, it still the simplified model to predict the intention to use the new technology.

In this study, we interested in the intention to use in mobile medical consultation 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 medical consultation service application. Nevertheless, since the app provides service that high involvement in the service receiver's healthiness and well-being so we believe that there should be one more independent factor that impacts the intention to use mobile medical consultation service application which is perceived Trustworthiness.

2.5 Perceived Trustworthiness

According to the study "The User satisfaction with mobile websites: the impact of perceived usefulness (PU), perceived ease of use (PEOU) and trust" (Amin, Rezaei, & Abolghasemi, 2014), there is one of the first few attempts that integrate the trust factor to the TAM model. The study detects that there is a positive relationship between trust and mobile user satisfaction. The research also shows that there is a relationship between mobile user satisfaction and purchase intention in the mobile business (Amin, Rezaei, & Abolghasemi, 2014). Trustworthiness is an essential factor for mobile commerce, especially in healthcare service, which has a more vital effect on the health and well-being of the user or the one who receives the service.

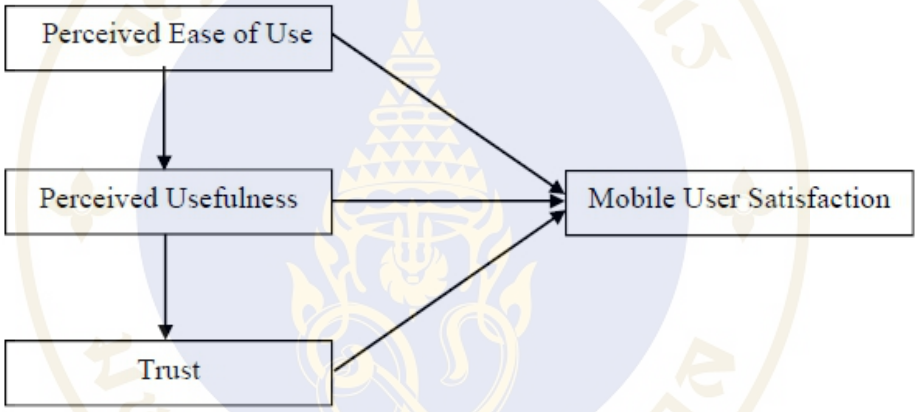

Figure 2.2 The Model from "The User satisfaction with mobile websites: the impact of perceived usefulness (PU), perceived ease of use (PEOU) and trust" (Amin, Rezaei, & Abolghasemi, 2014)

Figure 2.2 shows the relationship of perceived ease of use, perceived usefulness, and trust to the mobile user satisfaction. When users come to access e-commerce or payment related applications, Gefen, Karahanna, and Straub (2003) introduced to enhance the TAM model with trust in the service provider. Meanwhile, consumers are using mobile services that are provided to them by complex mobile service networks; trust in the service providers also becomes an issue. As mobile services accumulate and use more and more information about the usage environment and the user, ethical concerns require more consideration, particularly assuring the

privacy of the user. Additionally, while the users get more and more dependent on mobile services, reliability of the technology, and conveying information about reliability to the user becomes more critical (Kaasinen, 2016).

2.6 Perceived Value

From the study, perceived value can be defined as the perception of the benefit of the product or service that the customer gets compare to the tradeoff (Zeithaml, 1988). The perceived value is different from satisfaction because the perceived value can occur at many stages of purchasing, such as pre-purchase and post-purchase. The value perception can be evaluated before purchase or use the product or service. On the other hand, satisfaction regularly refers to the evaluation of post-purchase; also, post-use (Sweeney & Soutar, 2001). As the focus group studies by Jarvenpaa, Lang, Takeda, and Tuunainen (2003) indicate, consumers may need a compelling motivation to adopt new mobile services unless those services create new options where mobility matters and manage to affect people's lives positively. This study conforms to our research that the mobile medical consultation service application provides a choice for consumers to get health care services conveniently.

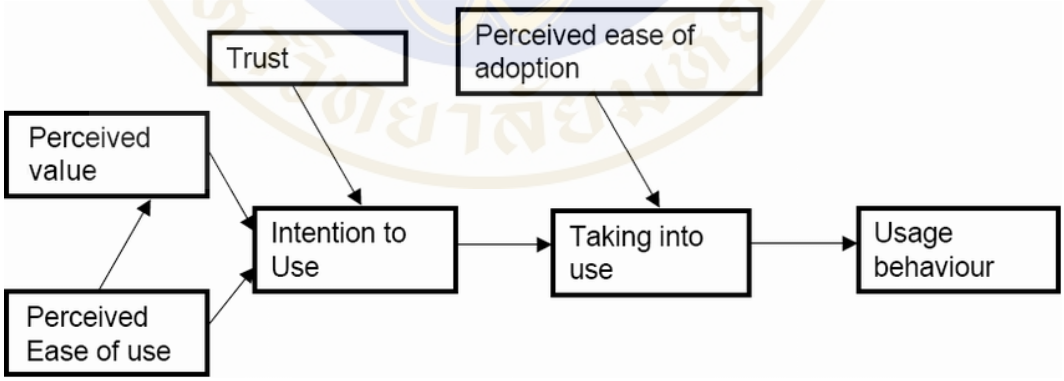

Figure 2.3 Technology Acceptance Model for Mobile Services (Kaasinen, 2016)

Figure 2.3 shows how perceived value replace perceived usefulness in the TAM primary model and has a positive relationship between perceived value and

intention to use, also a trust variable which is displayed to connect with intention to use as well.

2.7 Social Influence

Social influence is related to the way other people affect one's beliefs, feelings, and behavior (Mason, Conrey, & Smith, 2007). The others' beliefs can be called as a social influencer, which is the one who perceived essential to consumers such as a friend, family member. Therefore good impression of one person will lead to positive word of mouth to others, (Klobas & Clyde, 2001). From the research, "Dependency on smartphone and the impact on purchase behavior, of Young Consumers" (Ting, Lim, Patanmacia, Low, & Ker, 2011). They study the relationship of the social influence toward the purchase intention as it shows in figure 2.4.

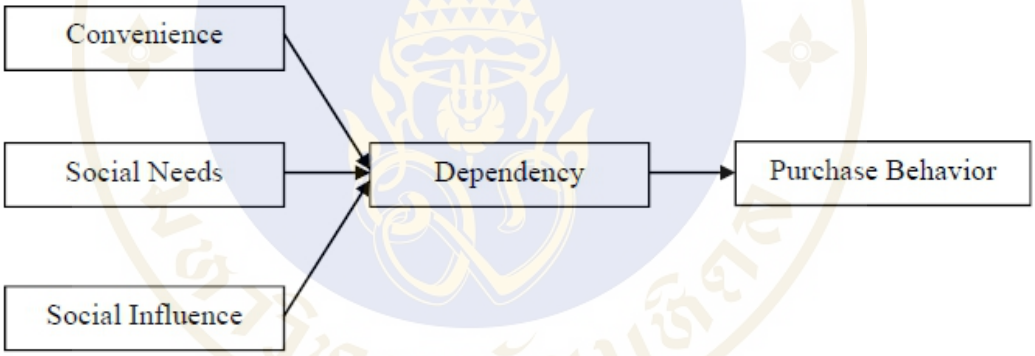

Figure 2.4 The conceptual model of "Dependency on smartphone and the impact on purchase behavior, of Young Consumers" (Ting, Lim, Patanmacia, Low, & Ker, 2011).

According to figure 2.4, the study finds that there is a positive relationship between social influences and dependency and leads to purchase behavior.

2.8 Demographic Variables

Based on literature reviews, also found that the demographic variables, which are gender, age, and education level can influence purchase intention. In the research, “Role of gender on acceptance of mobile payment” (Liébana-Cabanillas, Sánchez-Fernández, & Muñoz-Leiva, 2014) has analyzed the effect of gender along with the primary classical model of TAM for the acceptance of e-commerce. The research studies reveal the variation of behavior in purchase intention or online purchasing among the group that has difference gender. It found out that men have more engagement willing in e-commerce than women (Wynn, 2009). Besides, according to (Venkatesh & Morris, 2000); the studied show that the perceived usefulness are more influenced to the men more than women. From literature reviews, many studies have found that the increase in age and technology adoption have a negative relation (Chung, Park, Wang, Fulk, & Mclaughlin, 2010). Whereas, there is a positive relationship between education level and technology adoption. According to research; “Consumer preferences for banking technologies by age groups” (Harris, Cox, Musgrove, & Ernstberger, 2016). It found that the people who have a higher level of education are more open to new technology.

2.9 Conceptual Framework and Hypothesis Development

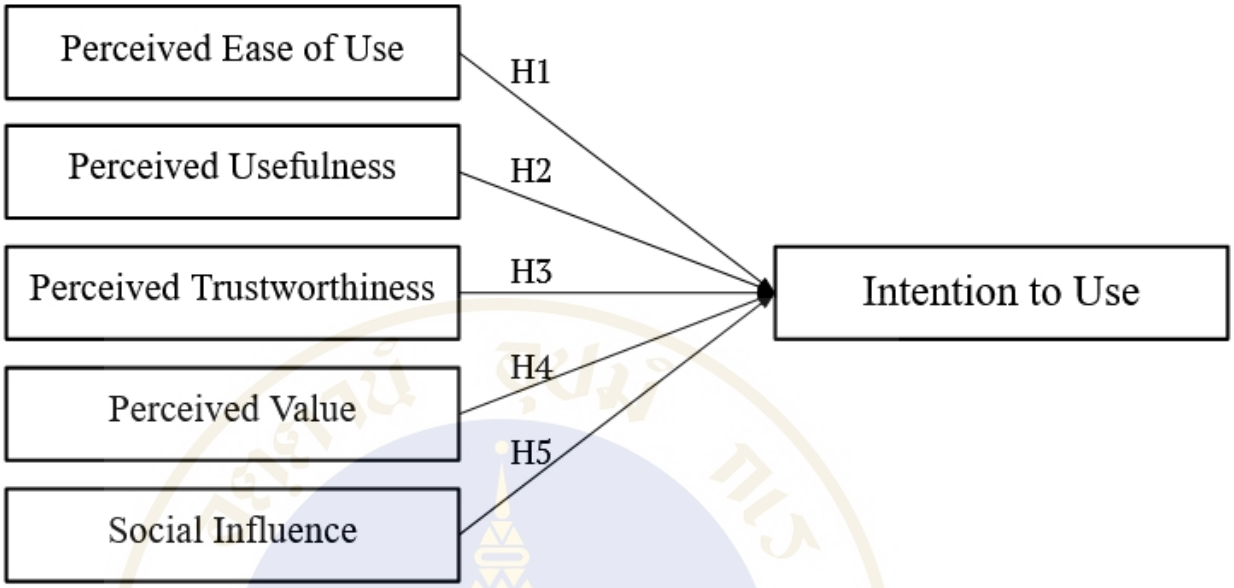

Figure 2.5 The Conceptual Framework

The above theory and empirical studies contribute to hypotheses as followed:

2.9.1 Hypotheses

Hypothesis 1: Perceived Ease of Use has a positive effect on the Intention to Use

Hypothesis 2: Perceived Usefulness has a positive effect on the Intention to Use

Hypothesis 3: Perceived Trustworthiness has a positive effect on the Intention to Use

Hypothesis 4: Perceived Value has a positive effect on the Intention to Use

Hypothesis 5: Social Influence has a positive effect on the Intention to Use

From the conceptual framework, figure 2.5 demonstrates the relationship between the independent variables which are perceived ease of use, perceived

usefulness, perceived trustworthiness, perceived value, and social influence to the dependent variable which is the intention to use the mobile medical consultation service application. Also, the hypotheses of this study define that all independent variables have a positive effect on the intention to use the mobile medical consultation service application.

2.10 The Independence items in questionnaires reference

Table 2.1 Independent variables items measurement

Independent Variables	Items	References
Perceived Ease of Use	• I often become confused when I use the electronic mail system • Interacting with the electronic mail system requires a lot of my mental effort • I find it easy to recover from errors encountered while using electronic mail • My interaction with the electronic mail system is easy for me to understand • The electronic mail system provides helpful guidance in performing tasks • Overall, I find the electronic mail system easy to use	(Davis, 1989)
Perceived Usefulness	• My job would be difficult to perform without electronic mail. • Using electronic mail give me greater control over my work • Using electronic mail saves me time. • Using electronic mail makes it easier to do my job • Using electronic mail increases my productivity • Overall, I find the electronic mail system useful in my job	(Davis, 1989)

Table 2.1 Independent variables items measurement (cont.)

Perceived Trustworthiness	• Trust is defined as an indicator of a positive belief about the perceived reliability of, dependability of, and confidence in a person • Trust is the positive expectation a person has for another person or an organization based on past performance and truthful guarantees. • User trust in mobile services includes perceived reliability of the technology and the service provider, reliance on the service in planned usage situations, and the user's confidence that (s)he can keep the service under control and that the service will not misuse his/her personal data.	(Kaasinen, 2016)
Perceived Value	• Value is low price, indicating that they had to give up was most salient in their perceptions of value. • Value is whatever I want in a product, which emphasized the benefits they received from the product as the most important components of value • Value is the quality I get for the price I pay, which conceptualized value as a tradeoff between one " give" component, price, and one " get" component, quality • Value is what I get for what I give, considered all relevant "get" components, as well as all relevant," give" components when describing value.	(Zeithaml, 1988)

Table 2.1 Independent variables items measurement (cont.)

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 • The people whose opinions value would approve of measuring ZONG to purchase products. • 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. • The people who are close to me would agree with me using ZONG to purchase products.	(Liébana-Cabanillas, Sánchez-Fernández, & Muñoz-Leiva, 2014)

CHAPTER III
RESEARCH METHODOLOGY

This research aims to evaluate and develop an understanding of the behavioral and perception of Thai consumers toward mobile medical consultation service applications in Thailand and factors that influence the intention to use the app.

3.1 Research Design

This research used a quantitative research approach to distributing online questionnaires. According to the Google Forms, this online survey can provide more accuracy since the respondents enter their answers directly to the system. This method is time-saving as the researcher can analyze the result from the online study by using the tools to show the information in graphs, tables and export the result to Microsoft Excel and use the SPSS to analyze in terms of statistics. Moreover, the benefit of an online survey is convenient for the respondents as most people have internet access through their mobile phones, so they can pick up any time to complete the questionnaire. Therefore, the quantitative research method is implemented because it allows for studying a larger sample size than the interview approach in a limited timeframe.

3.2 Population and Sample Size

The population of this research focuses on Thai consumers at the working-age, both male and female who are not likely to have time for enrolling in the hospital process all day. The respondents can be both users and non-users of the application to find out which factors drive them to use the mobile medical consultation service.

For the sample size, according to Hair, Black, Bain, and Anderson (2010), the sample size should be more than 100, and the minimum sample size should be the ratio of five observations per variable. There are 30 specific questions, so n = 30 items

x 5 = 150. However, this study will use non-probability sampling for convenience and limited time frame issues. So, the survey will be distributed with the intended sample size of at least 150 respondents.

3.3 Questionnaire Design

The questionnaire is designed based on the conceptual framework and factors toward intention to use the mobile medical consultation service application. The survey questions consist of 3 sections focusing on different aspects: Screening question and General questions, Specific questions, and Demographic questions.

Section 1 Screening Questions and General Questions (5 questions):: This section is used to verify the consumers who are familiar with the app or even a user or nonuser after briefly explain about the mobile medical consultation service app at the beginning of the survey. Also, The General Questions are used to explore consumer behavior for understanding more about the perception of the mobile medical consultation service application.

Section 2 Specific Questions (30 questions): This section is used to investigate the detail of all variables mentioned in the framework with the Linkert scales. The respondents will be asked to check the answer which best described their level of agreement with the contents (Losby & Wetmore, 2012).

Section 3 Demographic Questions (8 questions): This section is used to request personal information for Demographic Variables which are age, gender, education, marriage status, occupation, and income.

For ensuring content validity, the questionnaire is developed and adapt from reviewing the literature extensively and applying it from the measurement that was used in the previous research. Nevertheless, the wording is adjusted to fit the context of the mobile medical consultation service applications.

3.4 Data Collection and Data Analysis

The online questionnaires will be distributed with the intended sample size of 200 respondents to collect the quantitative data. Hence, the collected data will be

analyzed by the Statistical Package for Social Sciences (SPSS) software. This study will have five steps, which are as followings:

1. Descriptive Frequency Analysis – This will help to check the frequencies of the feedback demographically by presenting through tables and graphs in order to describe the demographic information of the respondents. The descriptive frequency analysis will answer all of the demographic questions, general questions, and specific questions.

2. Factor Analysis – This will help to reduce the number of variables by grouping or cut some independent variables (Thompson, 2004). This method will reduce the unnecessary variables into a few essential variables and identify structure in the relationship between variables. Hence, the factor analysis will answer all of the specific questions and group them into the new constructs.

3. Reliability Analysis – This will help to test the reliability of each factor in the questionnaire. In this study, the researcher uses this method to improve the reliability of all independents factors in order to test the confidence by finding the coefficient alpha (Alpha – Coefficient) of the Cronbach which has the following formula (Cronbach, 1951).

By α = coefficient of reliability

K = number of items

Si^2 = variance of points

St^2 = variance of scores in each item

$$\text{Alpha} = \frac{K}{K-1}\left\{1 - \frac{\sum Si^2}{St^2}\right\}$$

Interpreting that the calculated confidence value should be between 0 and one only, i.e., if any measurement tool or query is useful. The respondents will be able to answer the constant answers. The scores from each test result will be constant. The confidence value will continue to decrease until approaching 0 (zero), and if the confidence value is 0, then it indicates that the test is not accurate. Therefore, a good test should have at least 0.70 confidence (Cronbach, 1951). The reliability tests will

determine the specific questions based on the new constructs after grouping by factor analysis.

4. The correlation analysis – This is for investigating the correlation between the independent variables and the dependent variable. This method also used to describe and show whether and how strongly pairs of factors are related and direction of the linear relationship, which are predicted to be positive in the hypotheses of this study. So, the correlation analysis will answer the specific questions based on the new constructs after grouping by factor analysis.

5. Multiple Linear Regression Analysis – This will help to determine the relationship between the independent variables and the dependent variable (Helms, Henze, Sass, & Mifsud, 2006). This method will help to forecast the hypotheses by identifying the relationship between the independent variables and the dependent variable, which is the intention to use the application. The multiple regression will define the specific questions based on the new constructs after grouping by factor analysis.

CHAPTER IV
RESEARCH FINDING AND DATA ANALYSIS

The finding and data analysis of this research will be summarized in this chapter. From the survey in this study, we have received 290 responses from the online questionnaire via a google form. The first analysis included a result of the demographic profile and general information of respondents by using descriptive frequency analysis. Secondly, we analyzed the attributes by using the Factor Analysis to group new components by cutting the non-significant attributes. Then, we analyzed the new components by using Correlation, Reliability, and Multiple regression for determining the relationship.

4.1 Demographic Profile and General Information Frequencies

4.1.1 Demographic Profile of Respondents

In this research, we collected demographic data, which are gender, age, education level, marital status, income level, occupation, number of household members, and members of the household.

Table 4.1 Gender Frequency of the respondents

Gender	Frequency (N=290)	Percentage (%)
Male	155	53.4
Female	135	46.6
Total	**290**	**100.0**

From table 4.1, it illustrates that from 290 respondents, there are 155 males (53.4%) and 135 females (46.6%)

Table 4.2 Age Frequency of the respondents

Age	Frequency (N=290)	Percentage (%)
Under 20 years	0	0
21-30	63	21.7
31-40	87	30.0
41-50	42	14.5
51-60	49	16.9
Above 60	49	16.9
Total	**290**	**100.0**

Table 4.2 also shows that from a total of 290 respondents, the majority of the respondents are 31-40 years old (30.0%) about 87 out of 290 respondents while the minority is in 41-50 (14.5%) and no respondent is under 20 years old.

Table 4.3 Education Level Frequency of the respondents

Education Level	Frequency (N=290)	Percentage (%)
Primary School	1	3.0
Secondary School	14	4.8
Vocational Education	7	2.4
Bachelor Degree	152	52.4
Master Degree	82	28.3
Doctor Degree	34	11.7
Total	**290**	**100.0**

Table 4.3 shows that most of the respondents are in the Bachelor Degree which is about 152 out of 290 total respondents (52.4%)

Table 4.4 Marital Status Frequency of the respondents

Marital Status	Frequency (N=290)	Percentage (%)
Single	112	38.6
In a relationship	40	13.8
Married	124	42.8
Separated	1	0.3
Divorced	11	3.8
Widowed	2	0.7
Total	**290**	**100.0**

Table 4.4 represents the marital status of the respondents. The majority of respondents are Married (52.4%), followed by Single (38.6%)

Table 4.5 Income Level Frequency of the respondents

Income (THB)	Frequency (N=290)	Percentage (%)
Under 20,000	47	16.2
20,001-40,000	88	30.3
40,001-60,000	63	21.7
60,001-80,000	28	9.7
80,001-100,000	23	7.9
More than 100,000	41	14.4
Total	**290**	**100.0**

Table 4.5 shows that the respondents have a variety of income levels. However, the majority of them have 20,001-40,000 baht per month (30.3%).

Table 4.6 Occupation Frequency of the respondents

Education Level	Frequency (N=290)	Percentage (%)
Student	12	4.1
Government Officer	33	11.4
State Enterprise OFficer	12	4.1
Private Company Officer	85	29.3
Business Owner	86	29.7
Freelancer	32	11.0
Other	30	10.3
Total	**290**	**100.0**

Table 4.6 demonstrates the occupation of respondents in which the majority occupation is Business Owner (29.7%), followed by Private Company Officer (29.3%) while the minority are Student (4.1%) and State Enterprise Officer (4.1%).

Table 4.7 Number of members in the household of respondents Frequency

Number of Members	Frequency (N=290)	Percentage (%)
1 (Only you)	20	3.9
2	43	14.8
3	56	19.3
4	81	27.9
5	49	16.9
6	21	7.2
More than 6 members	20	6.9
Total	**290**	**100.0**

From table 4.7, there are a variety of members in the respondent's household, but most of the respondents also have four members in their house (27.9%).

Table 4.8 Members who live in the respondents household Frequency

Members	Frequency (N=290)	Percentage (%)
Living Alone	33	11.4
Living with a partner	59	20.3
Living with children	14	4.8
Living with partner and children	64	22.1
Living with parents	68	23.4
Living with elderly parents	1	3.0
Living with a big family	51	17.6
Total	**290**	**100.0**

Table 4.8 illustrates that who are living with the respondents in their household. The majority of respondents are living with parents (23.4%), followed by living with partner and children (22.1%).

4.1.2 General Information

The general information consists of question 1 to question 5 from the questionnaire, which provides information about consumer behavior and understands the customer insight better. In this section, we interpret the result into descriptive frequency as same as demographic information.

Table 4.9 Have you heard about the "Mobile Medical Consultation Service Application" before?

	Frequency (N=290)	Percentage (%)
Yes	118	40.7
No	172	59.3
Total	**290**	**100.0**

Table 4.9 presents that there were 118 respondents (40.7%) who already heard about the application before. Meanwhile, the respondents who did not hear about

this application were about 172 (59.3%), which is higher. From the result, that means more than half the respondents did not know or heard about the Mobile Medical Consultation Service Application before.

Table 4.10 Which Mobile Medical Consultation Service Application do you know?

	Frequency (N=118)	Percentage (%)
Raksa	18	15.25
See Doctor Now	12	10.17
Both Raksa, See Doctor Now	8	6.78
Other	11	9.32
None	69	58.47
Total	**118**	**100.0**

Table 4.10 shows the result of the respondents who heard about the Mobile Medical Consultation Service Application from the previous question, which are 118 respondents. Therefore, the result shows that most of the respondents (58.47%) did not know the name of this application, but they still heard that there has a Mobile Medical Consultation Service Application in the application store.

Table 4.11 Have you ever used the Mobile Medical Consultation Service Applications before?

	Frequency (N=118)	Percentage (%)
Yes	11	9.3
No	107	90.7
Total	**118**	**100.0**

From table 4.11, the majority of the respondents, which is about 107 out of 118 respondents (90.7%) never use the Mobile Medical Consultation Service Application before. So, there are only a few respondents who have used the application (11 out of 118 respondents, 9.3%). The result can tell that the applications were not widely used nowadays.

Table 4.12 What medical issue did you have when you use the Mobile Medical Consultation Service Application?

	Frequency (N=11)	Percentage (%)
Cold/Fever	2	18.2
Skin Issue	2	18.2
Private / Sensitive issue	2	18.2
Psychological issue	2	18.2
Other	3	27.3
Total	**11**	**100.0**

Table 4.12 shows the medical issues from 11 respondents who were the application users who used the Mobile Medical Consultation Service Application for these reasons. The respondents have a variety of medical issues to use the application, but three respondents used for another purpose, like searching for medical information or gain knowledge.

Table 4.13 What will drive you to use the Mobile Medical Consultation Service Application?

	Frequency (N=290)	Percentage (% of 290)
Ease of Use	228	78.6
Usefulness	196	67.6
Trustworthy	178	61.4
Valuable	63	21.7
Social Influence	60	20.7
Other	6	2.1
Total	**731**	**252.0**

*Average Responses per person 2.52, which means one respondent will have 2.52 answers average.

From table 4.13, the result shows that most respondents think about Ease of Use is the first reason that will drive them to use the application, while Usefulness and Trustworthy is the following reason that encourages them to use the app as well. The other reasons are convenient, affordable and pricing.

4.2 Frequency of each statement of independent factors influencing the Intention to Use the Mobile Medical Consultation Service Application

From the study, we have analyzed the percentage and mean, including the standard deviation of the independent factors and the dependent factor as follows:

Table 4.14 The statistics of Perceived Ease of Use questionnaires

Perceived Ease of Use

Questionnaire	Strongly Disagree %	Disagree %	Agree %	Strongly Agree %	Total Mean	Total S.D.
Q6: The mobile medical consultation service application should be easy to use	2.4	0.7	41.7	55.2	3.50	0.64
Q7: The application should be easy to understand	2.1	0.7	41.0	56.2	3.51	0.62
Q8: Using the application should not be confusing.	1.7	0.3	38.6	59.3	3.56	0.60
Q9: The application process is simple.	2.4	1.4	44.1	52.1	3.46	0.65
Q10: The application should have easy payment methods.	2.4	7.9	44.5	45.2	3.32	0.72
Q11: I don’t want to put too much effort to learn how to use the application.	6.2	8.6	43.1	42.1	3.21	0.84
Total Average					3.43	0.68

According to table 4.14, it shows that the average mean of this questionnaire is 3.43, and average S.D. is 0.68.

Table 4.15 The statistics of Perceived Usefulness questionnaires

Perceived Usefulness

Questionnaire	Strongly Disagree %	Disagree %	Agree %	Strongly Agree %	Total Mean	Total S.D.
Q12: The mobile medical consultation service application is useful.	2.1	0.3	54.1	43.4	3.39	0.61
Q13: The application is convenient to get medical advice.	1.4	0.3	47.9	50.3	3.47	0.58
Q14: The application is a fast way to consult with a doctor.	1.7	4.5	46.6	47.2	3.39	0.66
Q15: The application can save time instead of travel to the hospital.	2.8	5.2	44.5	47.6	3.37	0.71
Q16: The application will be necessary for me when I need medical advice.	3.1	6.9	49.7	40.3	3.27	0.72
Total Average					3.38	0.66

According to table 4.15, it shows that the average mean of this questionnaire is 3.38, and average S.D. is 0.66.

Table 4.16 The statistics of Perceived Trustworthiness questionnaires

Perceived Trustworthiness

Questionnaire	Strongly Disagree %	Disagree %	Agree %	Strongly Agree %	Total Mean	Total S.D.
Q17: I think the mobile medical consultation service application must be trustworthy	1.7	2.1	35.2	61	3.56	0.63
Q18: I think the application must have a medical standard.	1.7	0.7	37.6	60	3.56	0.60
Q19: I think it is essential that the doctor must be certified.	1.4	3.4	32.8	62.4	3.56	0.63
Q20: I think it is essential that the doctor must have experienced	1.7	2.1	39.7	56.6	3.51	0.63
Q21: I think that the payment process should be reliable.	1	2.1	37.9	59	3.55	0.59
Q22: I think that service providers must have high security for personal information.	1.4	1.4	31.4	65.9	3.62	0.59
Total Average					3.56	0.59

According to table 4.16, it shows that the average mean of this questionnaire is 3.56, and average S.D. is 0.59.

Table 4.17 The statistics of Perceived Value questionnaires

Perceived Value

Questionnaire	Strongly Disagree %	Disagree %	Agree %	Strongly Agree %	Total Mean	Total S.D.
Q23: I think that the mobile medical consultation service application is valuable	1.4	3.4	58.6	36.6	3.30	0.60
Q24: There are more benefits than disadvantages to using the application.	2.1	7.9	57.9	32.1	3.20	0.67
Q25: The application is worthwhile to me.	2.4	7.9	59	30.7	3.18	0.67
Q26: I think using a Mobile Medical Consultation Service Application is helpful	1.7	3.8	55.2	39.3	3.32	0.63
Total Average					3.25	0.64

According to table 4.17, it shows that the average mean of this questionnaire is 3.25, and average S.D. is 0.64.

Table 4.18 The statistics of Social Influence questionnaires

Social Influence

Questionnaire	Strongly Disagree %	Disagree %	Agree %	Strongly Agree %	Total Mean	Total S.D.
Q27: I will search for the review before using the mobile medical consultation service application.	1.4	8.3	54.5	35.9	3.25	0.66
Q28: I will use the application after my friend used it.	2.8	15.2	57.6	24.5	3.04	0.71
Q29: I will use the application if my family member uses it.	3.4	16.6	55.5	24.5	3.01	0.74
Q30: I will use the application if the doctor recommends it.	1.4	5.5	50	43.1	3.35	0.65
Q31: Mass media (T.V., radio, newspaper) will influence my decision to use the application.	3.8	15.5	58.6	22.1	2.99	0.73
Total Average					3.13	0.70

According to table 4.18, it shows that the average mean of this questionnaire is 3.13, and average S.D. is 0.70.

Table 4.19 The statistics of Intention to Use questionnaires

Intention to Use

Questionnaire	Strongly Disagree %	Disagree %	Agree %	Strongly Agree %	Total Mean	Total S.D.
Q32: Mobile Medical Consultation Service Application is interesting	1.7	6.6	61.4	30.3	3.20	0.63
Q33: I think I will download the application to my device.	1.4	11	61.4	26.2	3.12	0.64
Q34: I will use the application regularly if I have a chance.	1.7	4.5	64.8	29	3.21	0.60
Q35: I will strongly recommend others to use the application.	2.4	13.1	59.7	24.8	3.07	0.69
Total Average					3.15	0.64

According to table 4.19, it shows that the average mean of this questionnaire is 3.15, and average S.D. is 0.64.

4.3 Factor Analysis

In this research, we used factor analysis to group similar to constructs. The information can be summarized into meaningful words and related direction groups, which creates new significant constructs. The factor analysis is used to see whether the constructs successfully measure, which is identified items of the questionnaire that stick together and reduced attributes that are not significant. According to defined the significant variable, this research has criteria by using factor loading to see a correlation between the original variable. As a result, the criteria for cutting insignificant variables are included. The low scores which mean attributes with factor loading below 0.4 should be eliminated. Besides, the initial eigenvalue score needs to be higher than one because

it illustrates the level of each variable contribution. Scree plot demonstrated the number of significant factors that proper for analysis.

In this study, we analyzed one dependent variable which is Intention to Use, 4 questions and five independent factors which are Perceived Ease of Use, 6 questions, Perceived Usefulness, 5 questions, Perceived Trustworthiness, 6 questions, Perceived Value, 4 questions, and Social Influence 5 questions.

Table 4.20 KMO and Bartlett's test table of the independent variable

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.951
Bartlett's Test of Sphericity	Approx. Chi-Square	5785.692
	df	231
	Sig.	.000

Kaiser-Meyer-Olkin Measure of Sampling Adequacy or KMO values of this study was 0.951, which is more than 0.5 (Hair, Black, Bain, and Anderson, 2010). So, the data is competent to proceed with the data analysis because it passes the minimum required.

Table 4.21 Total variance explained of independent factors influencing to use the application

Total Variance Explained

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	12.100	54.999	54.999	8.607	39.121	39.121
2	2.267	10.305	65.303	3.589	16.316	55.437
3	1.131	5.139	70.442	3.301	15.005	70.442
4	.927	4.214	74.656			
5	.653	2.969	77.625			
6	.588	2.674	80.299			
7	.566	2.572	82.870			
8	.457	2.079	84.949			
9	.442	2.011	86.960			
10	.388	1.763	88.723			
11	.339	1.543	90.266			
12	.305	1.387	91.653			
13	.292	1.329	92.981			
14	.281	1.276	94.258			
15	.231	1.050	95.308			
16	.206	.938	96.246			
17	.171	.775	97.021			
18	.169	.767	97.788			
19	.152	.692	98.480			
20	.143	.652	99.132			
21	.104	.473	99.605			
22	.087	.395	100.000			

Extraction Method: Principal Component Analysis.

Table 4.21 illustrated three factors that can influence Thai consumers to use the Mobile Medical Consultation Service Application. The Total Variance explained showed that initial eigenvalues (Total column) are more than 1 with a higher % cumulative more than 60%. As a consequence, there are three components that were substantial and reliable among the total variability of the data.

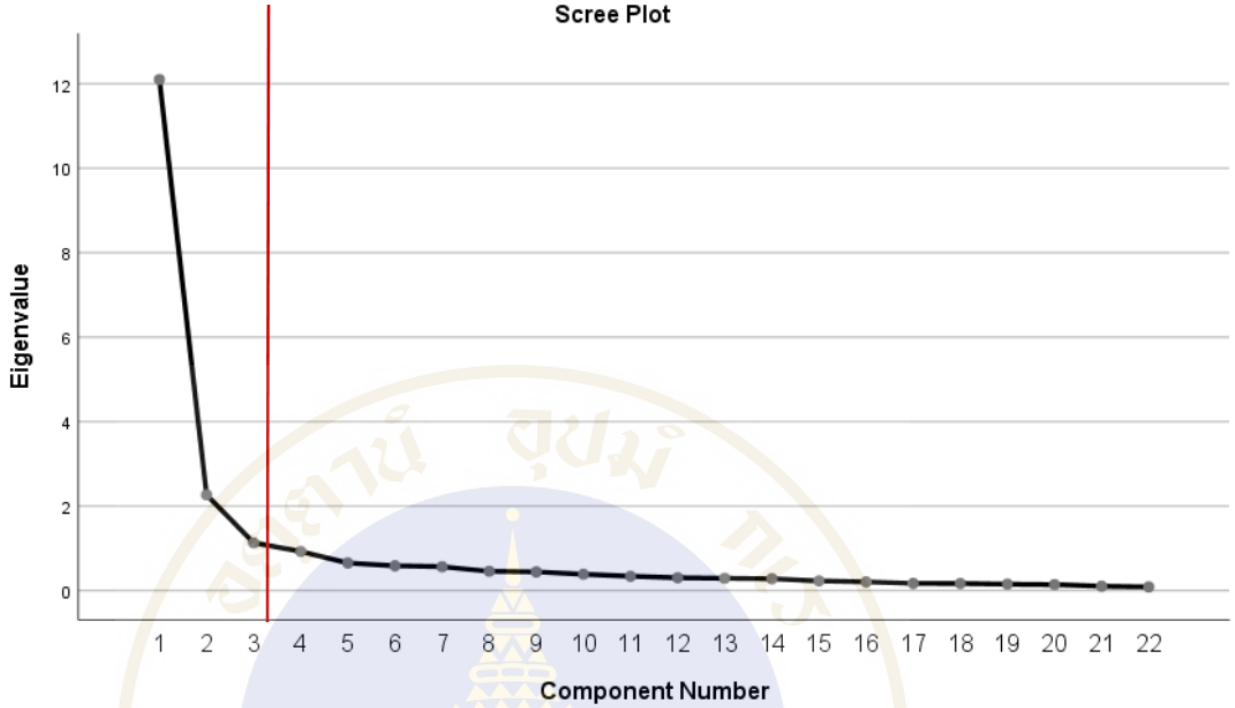

Figure 4.1 The Scree Plot of three factors influencing Thai consumers to use the application

Scree plot is determined as several factors to show clear constructs in the plot as Figure 4.1 represented. There are three significant factors that are essential for Thai consumers'intention to use the Mobile Medical Consultation Service Application.

As for the Rotated Component Matrix, it is the number of columns shows a number of factors. The values in the Rotated Component Matrix table is represented as the factor loading of the attribute on the factor. Also, the meaning of the variable has to match in the group.

Table 4.22 Rotated Component Matrix of the independent factors

Rotated Component Matrix[a]

	Component		
	1	2	3
Q7: The application should be easy to understand	.860		
Q6: The mobile medical consultation service application should be easy to use	.848		
Q8: Using the application should not be confusing.	.847		
Q18: I think the application must have a medical standard.	.825		
Q22: I think that service providers must have high security for personal information.	.785		
Q9: The application process is simple.	.795		
Q17: I think the mobile medical consultation service application must be trustworthy	.778		
Q21: I think that the payment process should be reliable.	.775		
Q20: I think it is essential that the doctor must have experienced	.757		
Q19: I think it is essential that the doctor must be certified.	.749		
Q13: The application is convenient to get medical advice.	.714		
Q10: The application should have easy payment methods.	.688		
Q11: I don't want to put too much effort to learn how to use the application.	.628		
Q28: I will use the application after my friend used it.		.843	
Q29: I will use the application if my family member uses it.		.833	
Q31: Mass media (T.V., radio, newspaper) will influence my decision to use the application.		.678	
Q30: I will use the application if the doctor recommends it.		.621	
Q27: I will search for the review before using the mobile medical consultation service application.		.602	
Q24: There are more benefits than disadvantages to using the application.			.783
Q25: The application is worthwhile to me.			.745
Q23: I think that the mobile medical consultation service application is valuable			.677

Perceived User-Friendly

Social Influence

Perceived Value

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.[a]

a. Rotation converged in 5 iterations.

According to table 4.22, we have set the suppress absolute values less than 0.4 to remove the data that in the range of -0.4 to 0.4, which are no significant meaning. Table 4.22 shows that the rotated component matrix showed the questionnaires which are grouped into three factors influencing Thai consumers to use the application. As a result, the new factors showed as Perceived User-Friendly relevant to Perceived Ease of Use, Perceived Usefulness, and Perceived Trustworthiness, meanwhile Social Influence and Perceived Value are still the same.

4.4 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 4.23 Reliability test of the Independent Factors and Dependent Factor

Factor	Cronbach's Alpha	N of Items
Perceived User-Friendly (PUF)	0.960	13
Social Influence (SI)	0.836	5
Perceived Value (PV)	0.899	3
Intention to Use (IU)	0.926	4

According to Table 4.23; all independent factors (PUF, SI, PV) and dependent factor (IU) have Cronbach's Alpha more than 0.7 (Cronbach, 1951). Therefore there are good and reliable.

4.5 Correlation Analysis

Perceived User-Friendly, Social Influence, and Perceived Value were used in correlation analysis to find the correlation of three factors that influencing Thai consumers' intention to use the Mobile Medical Consultation Service Application. As a result, the Correlation analysis is used to determine the correlation between independent variables and dependent variables.

Table 4.24 Descriptive Statistics of Intention to Use, Perceived User-Friendly, Social Influence, and Perceived Value

Descriptive Statistics			
	Mean	Std. Deviation	N
Perceived User-Friendly	3.4910	.53029	290
Social Influence	3.1269	.54312	290
Perceived Value	3.2276	.59111	290
Intention to Use	3.1517	.58031	290

Table 4.24 illustrates the descriptive statistics, which are Mean, Standard Deviation, and also a number of all respondents (N).

Table 4.25 Correlation matrix of Intention to Use, Perceived User-Friendly, Social Influence, and Perceived Value

Correlations					
		Perceived User-Friendly	Social Influence	Perceived Value	Intention to Use
Perceived User-Friendly	Pearson Correlation	1	.516**	.667**	.538**
	Sig. (2-tailed)		.000	.000	.000
	N	290	290	290	290
Social Influence	Pearson Correlation	.516**	1	.616**	.647**
	Sig. (2-tailed)	.000		.000	.000
	N	290	290	290	290
Perceived Value	Pearson Correlation	.667**	.616**	1	.699**
	Sig. (2-tailed)	.000	.000		.000
	N	290	290	290	290
Intention to Use	Pearson Correlation	.538**	.647**	.699**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	290	290	290	290

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

Table 4.25 shows the correlation between variables which are Perceived User-Friendly, Social Influence, Perceived Value, and Intention to Use. The result shows that there are statistically significant positive relationships between all of the variables at the 1% significance level as P-values were lower than 0.01.

Regarding the correlation coefficients value, the top three relationships between Perceived Value and Intention to Use (R=0.699) is the strongest, followed by Perceived User-Friendly and Perceived Value (R=0.667), Social Influence and Intention to Use (R=0.647), respectively. As a result, this indicates that there is a strong positive correlation among these variables even the lowest value of the correlation coefficient is

from the relationship between Perceived User-Friendly and Social Influence has R = 0.516 which means a moderately correlated between each other.

4.6 Multiple Regression Analysis

Multiple Regression Analysis was conducted to test the hypothesis pf independent variables that affect the dependent variable.

According to the Factor Analysis, the independent factors which are Perceived Ease of Use, Perceived Usefulness, and Perceived Trustworthiness now regrouped to Perceived User-Friendly. So, the new hypotheses are as followed:

Hypothesis 1: Perceived User-Friendly has a positive effect on the Intention to Use the Mobile Medical Consultation Service Application

Hypothesis 2: Social Influence has a positive effect on the Intention to Use the Mobile Medical Consultation Service Application

Hypothesis 3: Perceived Value has a positive effect on the Intention to Use the Mobile Medical Consultation Service Application

As a result, the decision of accepting or rejecting the hypothesis for this statistical test based on a 95% confidential interval in which P-value is less than 0005 level of significance to avoid errors.

Table 4.26 Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.756[a]	.572	.567	.38179

a. Predictors: (Constant), Perceived Value, Social Influence, Perceived User-Friendly

The result in table 4.26 of the model summary represented the R square of 0.572, which is reasonably high. Therefore, it shows that independent variables which are Perceived User-Friendly, Social Influence, and Perceived Value explain 57.2% variance of the dependent variable, which is the Intention to Use.

Table 4.27 Regression Model. ANOVA of Independent factors

ANOVA[a]						
	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	55.637	3	18.546	127.233	.000[b]
	Residual	41.687	286	.146		
	Total	97.324	289			

a. Dependent Variable: Intention to Use

b. Predictors: (Constant), Perceived Value, Social Influence, Perceived User-Friendly

According to table 4.27, the ANOVA's result while running the multiple regression to measure the significant level of independent factors which is included Perceived User-Friendly, Social Influence, and Perceived Value, also the dependent factor which is the Intention to Use the Mobile Medical Consultation Service Application. As a consequence, the significance of the R-Square value is 0.000, which is less than 0.05; therefore, this is considered significant.

Table 4.28 Coefficients of Dependent and Independent Factors

Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	.342	.162		2.112	.036
	Perceived User-Friendly (PUF)	.062	.058	.057	1.068	.286
	Social Influence (SI)	.369	.053	.346	7.007	.000
	Perceived Value (PV)	.446	.056	.454	8.005	.000

a. Dependent Variable: Intention to Use (IU)

For the relationship between independent variables and the dependent variable, the coefficient tests in table 4.28 are used to determine which of independent

variables is significant, and the contribution to the dependent variable. According to table 4.28, the result shows the significance of coefficient estimates. If it is less than 0.05, then it's statistically significant. As a result, there are two constructs of **Social Influence (t=7.007, P-value=0.000) and Perceived Value (t=8.005, P-value=0.000)** influencing Intention to Use the Mobile Medical Consultation Service Application.

Table 4.29 Model Summary without non-significance value

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.755[a]	.570	.567	.38188

a. Predictors: (Constant), Perceived Value, Social Influence

The result of the second –run regression analysis in table 4.29 demonstrated the model summary after removing the non-significance value. The R-Square value from this table slightly reduces compare to the value from table 4.26. As a result, the Perceived Value and Social Influence could explain the Intention to Use by 57.0%.

Table 4.30 Regression Model. ANOVA of significance Independent factors

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	55.470	2	27.735	190.185	.000[b]
	Residual	41.854	287	.146		
	Total	97.324	289			

a. Dependent Variable: Intention to Use

b. Predictors: (Constant), Perceived Value, Social Influence

The result of table 4.30 shows the significance of the p-value of 0.000 of all independent factors, which less than 0.05. The model was statistically significant valid to predict the factors influencing intention to use the Mobile Medical Consultation Service Application.

Table 4.31 Coefficients of Dependent and significance Independent Factors

Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	.424	.143		2.969	.003
	Social Influence (SI)	.380	.052	.356	7.353	.000
	Perceived Value (PV)	.477	.048	.486	10.034	.000

The second result eventually shows the confirmation of two constructs which are **Social Influence (t=7.353, p-value=0.000) and Perceived Value (t=10.034, p-value=0.000)** influencing Intention to Use the Mobile Medical Consultation Service Application

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

Intention to Use (IU) = 0.424 + 0.380 (SI) + 0.477 (PV)

According to the regression equation, the increase in each item of Social Influence and Perceived Value, which are independent variables, could be used to predict the rate of Intention to Use the Mobile Medical Consultation Service Application which is the dependent variable.

4.7 Crosstabs and Chi-Square Tests between the Demographic and Intention to Use

In this research, we use Crosstab and Chi-Square to test the relationship between the demographic variables, consisting of gender, age, education level, marital status, income level, occupation, number of household members, and members in respondents household to the dependent variable which is Intention to Use the Mobile Medical Consultation Service Application.

Table 4.32 Chi-Square Tests between the Demographic and Intention to Use

Demographic Factor	Asymptotic Significance (2-sided)
Gender	0.249
Age	0.221
Education Level	0.651
Marital Status	0.996
Income Level	0.044
Occupation	0.538
Number of household members	0.628
Members living in the household	0.115

According to table 4.32; the significance of coefficient estimates. If it is less than 0.05, then it is significant. So, only **Income Level** is significant, affecting the Intention to Use the Mobile Medical Consultation Service Application. Meanwhile, other demographic factors are not significant.

Figure 4.2 also shows the relationship between the intention to use the Mobile Medical Consultation Service Application and the level of income of the respondents. The data shows that there are ranges of income that under 20,000 baht per month and more than 100,000 baht per month have a high mean score, including the scope of income at 40,001-60,000 baht per month. From this result, there can describe that at the lowest income level, they may tend to use the application more than higher income, while the highest income level also tends to use the app as well.

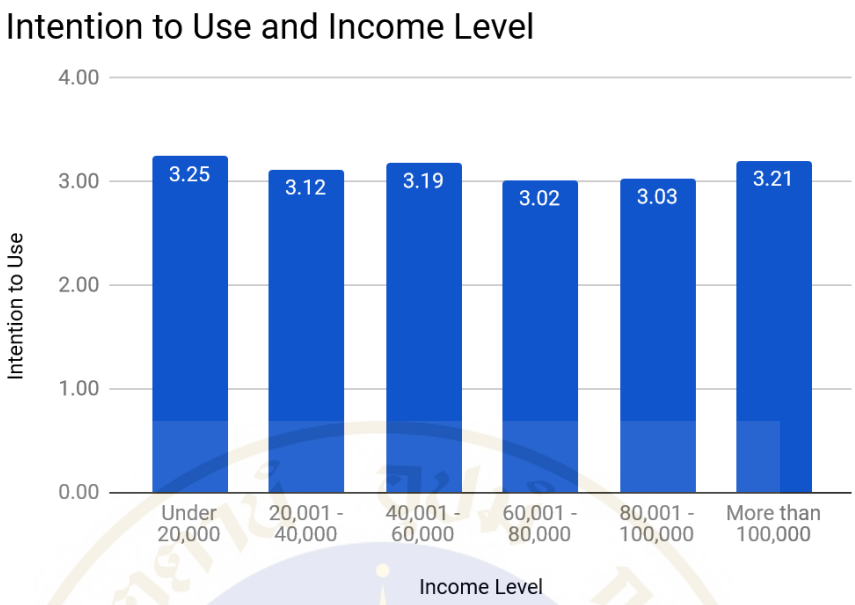

Figure 4.2 The relationship between Intention to Use and Income Level

4.8 Hypotheses Summary

According to this research, Factor Analysis and Multiple Regression methods were used to test hypotheses to describe the relationship with all variables, both dependent variable and independents variables. After Factor Analysis, we grouped the new constructs from five independent factors into three independent factors and rearranged the hypotheses. Therefore, the summary of the research finding is shown in Table 4.33 as follow:

Table 4.33 Hypotheses Summary

Hypothesis	Method Test	Result
H1: Perceived User-Friendly has a positive effect on the Intention to Use the Mobile Medical Consultation Service Application	Multiple regression	Rejected
H2: Social Influence has a positive effect on the Intention to Use the Mobile Medical Consultation Service Application	Multiple regression	Accepted
H3: Perceived Value has a positive effect on the Intention to Use the Mobile Medical Consultation Service Application	Multiple regression	Accepted

4.9 Final Model

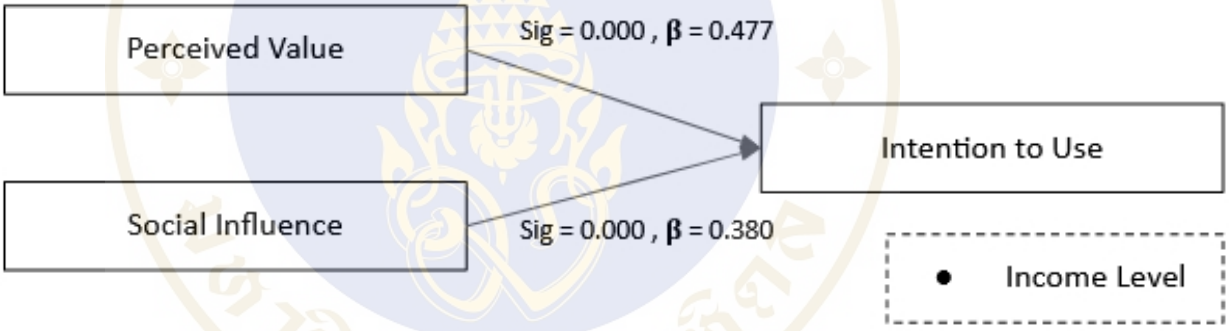

Figure 4.3 The Final Model; The Framework of Factors Influencing Intention to Use the Mobile Medical Consultation Service Application

Figure 4.3 demonstrates the model of factors influencing intention to use the application. The model shows that the Perceived Value and Social Influence, including income level, influence Thai consumers' intention to use the Mobile Medical Consultation Service Application. Besides, Perceived Value also has a greater influence on the intention to use the application than Social Influence.

CHAPTER V
CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusion

The objective of this study is to find the main factors that influence the intention to use the Mobile Medical Consultation Service Application. This study used quantitative methods to investigate the factors and explore their relationship between them. To verify the hypotheses of this study, we analyzed the data from the online survey via google form by SPSS program using Descriptive Frequency Analysis, Factor Analysis, Reliability Analysis, Correlation Analysis, Multiple Linear Regression Analysis, and Crosstabs and Chi-Square Tests.

In terms of data collecting, there is a total of 290 respondents who took part in the online questionnaire, which 53.4% of them are male, and 46.6% of them are female. Most of the respondents are in 31-40 years old range, followed by 21-30 years old. Base on the result of the survey, the majority of respondents, graduated with a bachelor's degree (52.4%) and most of their marital status is married (52.4%). The respondents have a variety of income levels. However, the majority of them have 20,001-40,000 baht per month (30.3%). The occupation of respondents which the majority occupation is Business Owner (29.7%), followed by Private Company Officer (29.3%). Most of the respondents have four members in their household, which they are living with the parents (23.4%), followed by living with partner and children (22.1%).

As for general information, more than half of the respondents (59.3%) did not know or heard about the Mobile Medical Consultation Service Application before; furthermore, most of the respondents who already heard about this application did not know the name of the apps which are already in the application store in nowadays. For the minority of the respondents who already used this application are about 11 of 290 are using for a variety of several medical issues such as cold/fever, skin issue, private/sensitive issue, psychological issue, and other activities like searching for medical information or gain knowledge. It could explain that the Mobile Medical

Consultation Service Application is not widely used or not quite popular in Thailand nowadays. Moreover, the top three of the respondents' opinions that will drive them to use the application are Ease of Use, Usefulness, and Trustworthy.

Regarding Factor Analysis, there were three factors, including Perceived Value, Social Influence and also Perceived User-Friendly, which is relevant to Perceived Ease of Use, Perceived Usefulness, and Perceived Trustworthiness after grouping into a new construct.

The Correlation Analysis determined the focusing relationship between the independent factors and the dependent factor, which had a strong positive relationship. Regarding the result of the correlation, the relationship between Perceived Value and Intention to Use was the strongest, even the weakest relationship; Perceived User-Friendly was considered moderately strong.

The Multiple Linear Regression Analysis is the method to identify the proposed hypotheses between independent factors and the dependent factor, which is the intention to use. According to the result of Regression Analysis, which illustrates that perceived value and social influence is a key factor that influences the Thai consumer’s intention to use the Mobile Medical Consultation Service Application. As for Perceived Value, it is quite a concern about the balance cost or the trade-off. High perceived value means that the application has more benefits than the price, and it increases the intention to use the application. Social Influence has a significant relationship with the intention to use the app which explained that the influencers particularly the doctor who plays an essential role in the consultation service and also recommenders for Thai consumers to use the application.

On the contrary, the Perceived User-Friendly, which is relevant to Perceived Ease of Use, Perceived Usefulness, and Perceived Trustworthiness, is not statistically significant, which is quite the opposite of the literature review. There could indicate that the result from the questionnaires of these factors which are relatively higher than other factors including the general information about the respondents’ opinion that these factors are the top three of the reasons that encourage them to use the application could be the primary or minimum requirement in the Mobile Medical Consultation service Application. Due to not statistically significant does not mean it’s not essential for the application, because of the services from this application is relevant to the basic need of

people, which is safety needs. So, it could be explained that even if the app has higher perceived user-friendly, it does not influence the consumers to use more than common, but it still needs to have it for medical standards and legal issues.

Lastly, Crosstabs and Chi-Square were used to test the relationship between Demographic variables and Intention to Use. From the result, it identified that there was only an income level, which significantly affected the intention to use the Mobile Medical Consultation Service.

5.2 Recommendation

The world is also changing rapidly. Nowadays, people have more access to the internet and smartphone, especially in Thailand. In this era of the internet, many organizations provide services through the mobile application. The Mobile Medical Consultation Service is one of the telemedicine technology which delivers health care at a distance. As for the health-related mobile apps and healthy trend have been rising in recent years. Therefore, the Mobile Medical Consultation Service Application is one of the interesting and high potential services in nearly future.

This study will benefit the service provider who is developing these applications to increase the chance to succeed in improving the apps for better service and understand the perception toward the consumers by focusing on the intention to use the Mobile Medical Consultation Service Application. From the research analyzed, we have recommendations as follows**.**

From the demographic data, we can utilize the information on consumer's profiles for the right target.The data shows that the income level has statistically significant to intention to use the application both lowest income range and highest income range. Therefore, we can scope our marketing and segmentation to both sides. As for the lower-income consumer, by setting the lower price in a specific time or offering a free consultation for special occasions to attract the consumers, while the result of these activities may increase the customer's experience. Hence, the excellent customer experience may lead to word of mouths and positive reviews from the users, which is very useful in Thai social nowadays. For the high-income consumer, which also have high spending power will have premium service with a premium price such

as the level of service will have priority than other users like queue priority and premium delivery for drug and prescription.

Also, for the perceived value, the unique selling point of the mobile medical consultation service is convenience and does not waste time to go to the hospital for a primary medical issue. The perceived value shows than the consumers are also concern about the tradeoff, which can be referred to as the time, cost, or effort of using the application too. So, we should set the price that makes the customer feel cheaper compared to the opportunity cost they have lost if they regularly go to the hospital.

From the general information we have collected, the main problem of this application lacks awareness. More than half of the respondents did not know about this application, even the respondents who already knew, most of them couldn't recognize the name of the app as well. Hence, the mobile medical consultation service application should be promoted by social media, mass media, and micro-influencer like healthy bloggers or YouTubers to build awareness to the consumers because social influence has a significant level in using the application. Also, the recommendation from the doctor is a trustworthy source that affects the consumer's belief that the mobile medical consultation service has medical standards and reliability.

5.3 Research Limitation

Firstly, the real target respondent of this research was un-cleared, because most of the studies about the telemedicine in the past were about the adoption perspective of physicians or nurses who provide medical service for patients. This research focused on the consumer intention to use the Mobile Medical Consultation Service Application, which is an alternative medical service, by using exploratory study on Thai consumers. Therefore, this researcher uses non-probability sampling for convenience with the intended sample size of at least 200 respondents. As a result, the researcher distributed online questionnaires through online communities that are closest to the researcher, so it is difficult to confirm that the sample will be cover to overall Thai consumers who are in working-aged, and this can lead to inaccuracy.

Moreover, in terms of the research method, due to the small scope of the research paper, including a limited time frame and budget, the quantitative method was

only used. From the result of this study, It indicated that income level has a significant effect on the intention to use the application on both the lowest income level and highest income level. To better understand consumer behavior, this is an example of why qualitative methods such as an in-depth interview or a focus group should be conducted as well.

Besides, the other limitation is that the application is not quite widely used in Thai society right now, so the respondents who were users of this app are the minority. Therefore, it is hard to explain that the rest of the respondents understand the application clearly enough. The result of that, their answers are not based on the real experience but on the instruction and explanation that we gave, so their answers might change when they have a chance to use the actual application.

5.4 Future Research

For future research, to collect the various information, the prospective study should be increased the number of sample sizes, more distribution channels for the survey and find out more insight for Thai consumers by using qualitative research to measure and deeply understand more about Thai consumer's behavior. Also, the qualitative research could help the researcher to screen the respondents who were the real user as they could provide the consumer insight to investigate other factors influencing intention to use the application

REFERENCES

Amin, M., Rezaei, S., & Abolghasemi, M. (2014). User satisfaction with mobile websites: The impact of perceived usefulness (PU), perceived ease of use (PEOU) and trust. *Nankai Business Review International, 5*(3), 258-274. DOI:10.1108/nbri-01-2014-0005

Arenson, R. L., Andriole, K. P., Avrin, D. E., & Gould, R. G. (2000). Computers in imaging and health care: Now and in the future. *Journal of Digital Imaging, 13*(4), 145-156. DOI:10.1007/bf03168389

Bashshur, R., Shannon, G., & Sapci, H. (2005). Telemedicine Evaluation. *Telemedicine and E-Health, 11*(3), 296-316. DOI:10.1089/tmj.2005.11.296

Bilton, N. (2011, February 28). Mobile App Revenue to Reach $38 Billion by 2015, Report Predicts. Retrieved from https://bits.blogs.nytimes.com/2011/02/28/mobile-app-revenue-to-reach-38-billion-by-2015-report-predicts/

Chung, J. E., Park, N., Wang, H., Fulk, J., & Mclaughlin, M. (2010). Age differences in perceptions of online community participation among non-users: An extension of the Technology Acceptance Model. *Computers in Human Behavior, 26*(6), 1674-1684. DOI:10.1016/j.chb.2010.06.016

Collins, K., Bowns, I., & Walters, S. (2004). General practitioners' perceptions of asynchronous telemedicine in a randomized controlled trial of teledermatology. *Journal of Telemedicine and Telecare, 10*(2), 94-98. DOI:10.1258/135763304773391530

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika, 16*(3), 297-334. DOI:10.1007/bf02310555

Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly, 13*(3), 319. DOI:10.2307/249008

Flodgren, G., Rachas, A., Farmer, A. J., Inzitari, M., & Shepperd, S. (2015). Interactive telemedicine: Effects on professional practice and health care outcomes. *Cochrane Database of Systematic Reviews*. DOI:10.1002/14651858.cd002098.pub2

Gefen, D., Karahanna, E., & Straub, D. (2003). Inexperience and experience with online stores: The importance of tam and trust. *IEEE Transactions on Engineering Management, 50*(3), 307-321. DOI:10.1109/tem.2003.817277

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis: A global perspective*. Upper Saddle River, NJ: Pearson.

Harris, M., Cox, K. C., Musgrove, C. F., & Ernstberger, K. W. (2016). Consumer preferences for banking technologies by age groups. *International Journal of Bank Marketing, 34*(4), 587-602. DOI:10.1108/ijbm-04-2015-0056

Helms, J. E., Henze, K. T., Sass, T. L., & Mifsud, V. A. (2006). Treating Cronbach's Alpha Reliability Coefficients as Data in Counseling Research. *The Counseling Psychologist, 34*(5), 630-660. DOI:10.1177/0011000006288308

Jahns, R. G. (2017, November 19). The 8 drivers and barriers that will shape the mHealth app market in the next 5 years. Retrieved from https://research2guidance.com/8-drivers-and-barriers-which-will-shape-mhealth-market-in-the-next-5-years/

Jaramillo, S., & Harting, C. D. (2013). The utility of Mobile Apps as a Service (MAaaS): A case study of BlueBridge Digital. *Journal of Technology Management in China, 8*(1), 34-43. DOI:10.1108/jtmc-04-2013-0019

Jarvenpaa, S. L., Lang, K. R., Takeda, Y., & Tuunainen, V. K. (2003). Mobile commerce at crossroads. *Communications of the ACM, 46*(12), 41.DOI:10.1145/953460.953485

Kaasinen, E. (2016). Eija Kaasinen User acceptance of mobile services – value, ease of use, trust, and ease. *VTT Technical Research Centre of Finland* (January 2009).

Klobas, J. E., & Clyde, L. A. (2001). Social influence and Internet use. *Library Management, 22*(1/2), 61-68. DOI:10.1108/01435120110358943

Kressmann, J. (2017, February 13). More than 90% of Internet Users in Thailand Use Smartphones to Go Online. Retrieved from https://www.emarketer.com/Article/More-than-90-of-Internet-Users-Thailand-Use-Smartphones-Go-Online/1015217

Liébana-Cabanillas, F. J., Sánchez-Fernández, J., & Muñoz-Leiva, F. (2014). Role of gender on acceptance of mobile payment. *Industrial Management & Data Systems, 114*(2), 220-240. DOI:10.1108/imds-03-2013-0137

Losby, J., & Wetmore, A. (2012). CDC coffee break: Using Likert Scales in evaluation survey work. *Centers for Disease Control and Prevention*.

Mason, W. A., Conrey, F. R., & Smith, E. R. (2007). Situating Social Influence Processes: Dynamic, Multidirectional Flows of Influence Within Social Networks. *Personality and Social Psychology Review, 11*(3), 279-300. DOI:10.1177/1088868307301032

National Statistical Office of Thailand. (2017). *Devices Used by Internet Users in Thailand Access the Internet*. Bangkok, Thailand: National Statistical Office of Thailand.

Payne, H. E., Lister, C., West, J. H., & Bernhardt, J. M. (2015). Behavioral Functionality of Mobile Apps in Health Interventions: A Systematic Review of the Literature. *JMIR MHealth and UHealth, 3*(1). DOI:10.2196/mhealth.3335

Raksa - ป่วยทัก รักษา - Apps on Google Play. (2019). Retrieved 2019, from https://play.google.com/store/apps/details?id=com.doctorraksa&hl=en

See Doctor Now - Apps on Google Play. (2019). Retrieved 2019, from https://play.google.com/store/apps/details?id=com.seedoctornow&hl=en

Sweeney, J. C., & Soutar, G. N. (2001). Consumer perceived value: The development of a multiple-item scale. *Journal of Retailing, 77*(2), 203-220. DOI:10.1016/s0022-4359(01)00041-0

Thompson, B. (2004). *Exploratory and confirmatory factor analysis: Understanding concepts and applications*. Washington, DC: American Psychological Association.

Ting, D. H., Lim, S. F., Patanmacia, T. S., Low, C. G., & Ker, G. C. (2011). Dependency on smartphones and the impact on purchase behavior. *Young Consumers, 12*(3), 193 203.DOI:10.1108/17473611111163250

Venkatesh, V., & Morris, M. G. (2000). Why Don't Men Ever Stop to Ask for Directions? Gender, Social Influence, and Their Role in Technology Acceptance and Usage Behavior. *MIS Quarterly, 24*(1), 115. DOI:10.2307/3250981

Weinstein, R. S., Graham, A. R., Richter, L. C., Barker, G. P., Krupinski, E. A., Lopez, A. M., . . . Gilbertson, J. R. (2009). Overview of telepathology, virtual microscopy, and whole slide imaging: Prospects for the future. *Human Pathology, 40*(8), 1057-1069. DOI:10.1016/j.humpath.2009.04.006

Wynn, A. J. (2009). *An Investigation of the contributions of gender, shopping orientation, online experience, and Website interactive features to consumers' intentions to engage in apparel e-commerce shopping*.

Zeithaml, V. A. (1988). Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence. *Journal of Marketing, 52*(3), 2. DOI:10.2307/1251446

Zhao, J., Freeman, B., & Li, M. (2016). Can Mobile Phone Apps Influence People's Health Behavior Change? An Evidence Review. *Journal of Medical Internet Research, 18*(11). DOI:10.2196/jmir.5692

APPENDICES

Appendix A: Questionnaire

Introduction

This survey is conducted for academic research purposes as part of the study "Behavioral intention study of Thai consumers' using mobile medical consultation service application" from the College of Management Mahidol University.

This questionnaire will not take more than 15 minutes to complete. All respondents' answers and personal information will remain anonymous and used for research purposes only.

Mobile Medical Consultation Service Application (MMCSA)

The mobile medical consultation service application, called "App Har Mhor" in the Thai language, is a software program offered on mobile devices that provides the diagnosis and recommendation treatment or medication from the doctors via text chat, voice call and video call for most primary medical issues such as vomiting, diarrhea, skin rashes/infection, etc. The customer can get prescriptions and drugs delivered and pay a fee for these services via an application, which is very quick and convenient. Also, the customer can book the appointment if they need further clinical activities.

Section 1: Screening Question & General Question

1. Have you heard about the " Mobile Medical Consultation Service Application" before?

□ Yes □ No (To question 5)

2. Which mobile medical consultation service application do you know? (can choose more than one answer)

□ Raksa □ See Doctor Now □ None □ Other_____

3. Have you ever used the mobile medical consultation service applications before?

□ Yes □ No (To question 5)

4. What medical issue did you have when you use the mobile medical consultation service application?

- □ Cold / Fever
- □ Digestive system issue
- □ Allergy
- □ Skin issue
- □ Private / Sensitive issue
- □ Pediatric issue
- □ Psychological issue
- □ Other_____

5. In your opinion, what will drive you to use the mobile medical consultation service application? (Check all that apply)

- □ Ease of Use
- □ Usefulness
- □ Trustworthy
- □ Valuable
- □ Social Influence
- □ Other, please specify_____

Section 2: Specific Questions

Please specify the level of your agreement on the following statement:
(Assessment scale: 1=Strongly Disagree, 2=Disagree, 3=Agree, 4=Strongly Agree)

Perceived Ease of Use

No.	Statement	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)
6	The mobile medical consultation service application should be easy to use				
7	The application should be easy to understand				
8	Using the application should not be confusing.				
9	The application process is simple.				
10	The application should have easy payment methods.				
11	I don’t want to put too much effort to learn how to use the application.				

Perceived Usefulness

No.	Statement	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)
12	The mobile medical consultation service application is useful.				
13	The application is convenient to get medical advice.				
14	The application is a fast way to consult with a doctor.				
15	The application can save time instead of travel to the hospital.				
16	The application will be necessary for me when I need medical advice.				

Perceived Trustworthiness

No.	Statement	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)
17	I think the mobile medical consultation service application must be trustworthy				
18	I think the application must have a medical standard.				
19	I think it is essential that the doctor must be certified.				
20	I think it is essential that the doctor must have experienced				
21	I think that the payment process should be reliable.				
22	I think that service providers must have high security for personal information.				

Perceived Value

No.	Statement	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)
23	I think that the mobile medical consultation service application is valuable				
24	There are more benefits than disadvantages to using the application.				
25	The application is worthwhile to me.				
26	I think using a Mobile Medical Consultation Service Application is helpful				

Social Influence

No.	Statement	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)
27	I will search for the review before using the mobile medical consultation service application.				
28	I will use the application after my friend used it.				
29	I will use the application if my family member uses it.				
30	I will use the application if the doctor recommends it.				
31	Mass media (T.V., radio, newspaper) will influence my decision to use the application.				

Intention to Use

No.	Statement	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)
32	Mobile Medical Consultation Service Application is interesting				
33	I think I will download the application to my device.				
34	I will use the application regularly if I have a chance.				
35	I will strongly recommend others to use the application.				

Section 3: Demographic Questions

36. Please indicate your gender

□ Male □ Female

37. What is your age range?

□ Under 20 years

□ 21-30 years

□ 31-40 years

□ 41-50 years

□ 51-60 years

□ Above 60 years

38. What is your highest level of educational qualification?

□ Primary school □ Secondary school

□ Vocational education □ Bachelor degree

□ Master or Doctoral degree □ Other_____

39. What is your marital status?

□ Single

□ In a relationship

□ Married

□ Separated

□ Divorced

□ Widowed

40. What is your income range? (Baht per Month)

- □ Under 20,000
- □ 20,001 - 40,000
- □ 40,001 - 60,000
- □ 60,001 - 80,000
- □ 80,001 - 100,000
- □ More than 100,000

41. What is your occupation?

- □ Student
- □ Government Officer
- □ State Enterprise Officer
- □ Private Company Officer
- □ Business Owner
- □ Freelancer
- □ Other_____

42. How many members in your household?

- □ One only you
- □ 2
- □ 3
- □ 4
- □ 5
- □ 6
- □ more than 6 members

43. Who do you live within your household?

□ Living alone

□ Living with a partner

□ Living with children

□ Living with partner and children

□ Living with parents

□ Living with elderly parents

□ Living with a big family

Thank you for your kind cooperation.