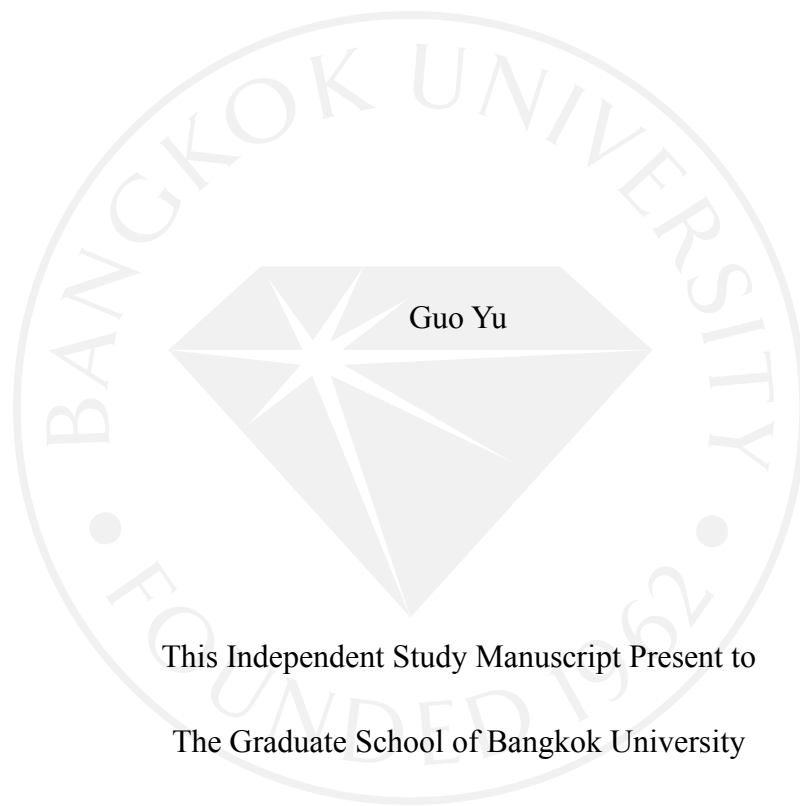


THE IMPACT OF PERCEIVED RISK, MOBILE PAYMENT CHARACTERISTICS  
AND CUSTOMER SATISFACTION ON CHINESE USERS' DECISION TO USE  
MOBILE PAYMENT



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MOBILE PAYMENT

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**ABSTRACT**

This independent study aims to investigate perceived risk, mobile payment characteristics, and customer satisfaction that affect Chinese users' decision to use mobile payments. Quantitative research used survey questionnaires to collect primary data and randomly selected 150 samples from mobile payment users in Southwest China. The study used frequency, percentage, mean, standard deviation and multiple regression analysis as statistical tools. The results found that most of them were females with 20-39 years of age, finished bachelor's degrees, had monthly income less than 4,000 CNY and often use Alipay and WeChat Pay. The results also revealed that the reliability is 0.895; perceived risk negatively affected on Chinese users' decision to use mobile payment, with a significant level of 0.018; mobile payment characteristics and customer satisfaction positively affected on Chinese users' decision to use mobile payment, both with a significant level of 0.000.

*Keywords: perceived risk, mobile payment characteristics, customer satisfaction, Chinese users' decision*

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## TABLE OF CONTENTS

	Page
ABSTRACT.....	iv
ACKNOWLEDGEMENT.....	v
LIST OF TABLES.....	viii
LIST OF FIGURES.....	ix
CHAPTER 1: INTRODUCTION.....	1
1.1 Background.....	1
1.2 Statement of the Problems.....	3
1.3 Research Objectives.....	4
1.4 Benefit of the Research.....	5
CHAPTER 2: LITERATURE REVIEW.....	6
2.1 Related Literature and Theories.....	6
2.1.1 Perceived Risk and Chinses Users' Decision.....	6
2.1.2 Mobile Payment Characteristics and Chinses Users' Decision.....	8
2.1.3 Customer Satisfaction and Chinses Users' Decision.....	10
2.2 Hypothesis Statement.....	11
2.3 Conceptual Framework.....	12
CHAPTER 3: METHODOLOGY.....	13
3.1 Research Design.....	13
3.2 Population and Sample.....	14
3.2.1 Population.....	14
3.2.2 Samples and Samples Size.....	14
3.3 Instruments for Data Collection.....	14
3.4 Content Validity Measurement.....	16
3.5 Reliability Measurement.....	17
3.6 Statistics for Data Analysis.....	18

**TABLE OF CONTENTS (Continued)**

	Page
CHAPTER 4: RESEARCH FINDINGS AND DATA ANALYSIS.....	19
4.1 The Analysis of Demographic Data of Samples.....	19
4.2 The Analysis of Research Variables.....	23
4.2.1 The Analysis of Perceived Risk.....	23
4.2.2 The Analysis of Mobile Payment Characteristics.....	24
4.2.3 The Analysis of Customer Satisfaction with Mobile Payment.....	25
4.2.4 The Analysis of Chinese Users' Decision to Use Mobile Payment.....	26
4.3 The Results of Multiple Regression Analysis.....	27
4.4 The Analysis of Hypothesis Testing.....	28
CHAPTER 5: DISCUSSION AND RECOMMENDATION.....	29
5.1 Research Findings and Conclusion.....	29
5.2 Discussion.....	30
5.3 Recommendation for Managerial Implications.....	31
5.4 Recommendation for Further Research.....	32
BIBLIOGRAPHY.....	34
APPENDIX.....	40
BIODATA.....	48
LICENSE AGREEMENT OF INDEPENDENT STUDY	



## LIST OF TABLES

	Page
Table 3.1: The range of Mean Interpretation.....	15
Table 3.2: Reliability Analysis of Cronbach’s Alpha Coefficient.....	17
Table 4.1: Frequency and Percentage of samples classified by Gender.....	19
Table 4.2: Frequency and Percentage of samples classified by Age.....	19
Table 4.3: Frequency and Percentage of samples classified by Education Level.....	20
Table 4.4: Frequency and Percentage of samples classified by Occupation.....	20
Table 4.5: Frequency and Percentage of samples classified by Monthly Income.....	21
Table 4.6: Frequency and Percentage of samples classified by What kind of your transaction do you always use mobile payment.....	21
Table 4.7: Frequency and Percentage of samples classified by What kind of mobile payment service do you often use.....	22
Table 4.8: Mean and Standard Deviation of Perceived Risk.....	23
Table 4.9: Mean and Standard Deviation of Mobile Payment Characteristics.....	24
Table 4.10: Mean and Standard Deviation of Customer Satisfaction with Mobile Payment.....	25
Table 4.11: Mean and Standard Deviation of Chinese Users’ Decision to Use Mobile Payment.....	26
Table 4.12: Multiple Regression Analysis.....	27
Table 4.13: Summary of Hypothesis Testing Results.....	28

## LIST OF FIGURES

	Page
Figure 2.1: The conceptual framework of factors affecting Chinese users' decision to use mobile payment.....	12



## CHAPTER 1

### INTRODUCTION

#### 1.1 Background

In recent years, with the continuous development of China's Internet economy, the popularity of smart phones, the empowerment of big data, and the maturity of products such as Alipay and WeChat Pay, mobile payment has entered thousands of households and it has become the norm to go out without cash. Mobile payment has become the main method of payment by Chinese netizens. China Mobile payment market development maturity has a leading position in the world: among the world's major economies, China's domestic mobile payment consumption accounts for the highest proportion, of which e-commerce consumption accounts for 65% of mobile payment consumption, and China's "cash-free era" is expected to be realized. (iiMedia Research, 2019)

According to a press conference held by the Information Office of the State Council of the People's Republic of China on January 30, 2018, Zhang Feng, chief engineer of the Ministry of Industry and Information Technology, said that as of the end of October 2017, China's mobile payment transactions amounted to nearly 150 trillion yuan, ranking first in the world; From 5.545 billion transactions in 2013 to 122.86 billion transactions in 2016, China's mobile payment business had developed rapidly in recent years. According to the 41st "Statistical Report on the Development of China's Internet Network" released by the China Internet Network Information Center on January 31, 2018, the scale of mobile payment users in China had grown rapidly, reaching 527 million

by December 2017. This was an increase of 57.83 million people over the end of 2016.

iiMedia Research released the “*iiMedia Report | 2019Q1 China Mobile Payment Market Research Report*”. The data showed that the number of mobile payment users in China reached 659 million in 2018, and the monthly mobile payment accounted for 43.6% of the total expenditure; In 2018, China mobile payments reached 277.4 trillion yuan, an increase of 136.7% compared with 2017; In the first quarter of 2019, the transaction volume reached 83.9 trillion yuan.

Regarding the mobile payment industry chain, participants including banks, financial institutions, mobile operators, third-party mobile payment platforms, as well as users and merchants, each of which plays an important role. Although the operating modes of the various agencies are different, their development trends are roughly the same. There are four main types: the virtualization of banknotes, the mobilization of banking services, the personalization of financial instruments and the internationalization of virtual currencies.

Under the current environment, Chinese users mainly adopt the third-party account payment of mobile clients: consumers can register third-party independent accounts and associate personal bank accounts with clients. For example, in Alipay and WeChat Pay platform, customers can complete online shopping, consumption, transfer and so on by scanning the two-dimensional code. Customers can also “swipe cards” through the client, so that bank information can be presented and traded in the form of cards. According to the “*Monthly Monitoring Report of China’s Third-Party Mobile Payment Market in the First Quarter of 2018*” released by Analysis International, in the

first quarter of 2018, Alipay accounted for 53.76% of the market share in the third-party mobile payment market; Tencent Finance, including WeChat Pay and TenPay, ranked second in the market with 38.95%; The market share of the two companies reached 92.71%, which occupied the absolute dominant position. According to iiMedia Research (2019) data, in the first quarter of 2019, Alipay and Tencent Finance (WeChat Pay and TenPay) accounted for 48.3% and 44.9% of the market share of China's third-party mobile payment transactions, respectively. The duopoly pattern is obvious.

## **1.2 Statement of the Problems**

Even the mobile payment is widely increasing in China market, many issue are criticized as follows:

1. The competition in the mobile payment market is particularly fierce: mobile payment is mainly benefited from the customer base. The competition among various organizations is mainly the competition of users. Whoever gets the favor of customers will gain more market share.

2. Security of transactions: The security issue of mobile payment has always been a bottleneck for the rapid promotion of mobile payment. The confidentiality, integrity, non-repudiation, authenticity, payment mode, identity verification and payment terminal (mobile-phone) security of information (Such as virus infections, mobile phone vulnerabilities, fraudulent calls and text messages, etc.,) all have hidden dangers and loopholes, increasing the risk of consumer information leakage, which increases the threat to mobile payment security.

3. The legal guarantees for all aspects of mobile payment are not perfect: such as contract signing, delivery, payment, breach of contract, after-sale responsibility, return of goods, tax payment, invoice issuance, payment audit and so on. If users are infringed by these problems in the use process, their rights and interests will not be guaranteed.

4. Industry standards have not yet been fully integrated: China still lacks a unified and widely recognized standard for payment security procedures, protocols and security management.

As mentioned above, it is very important for the parties which provide the mobile payment service to improve the system and standards for all users' account abilities. That means the mobile payment providers must concern about how to decrease the users' perceived risk when they use the mobile payment, how to set up the better system to make them satisfy and still use the service of mobile payment continuously.

### **1.3 Research Objectives**

The purpose of this study was to investigate factors that influence Chinese users' decision to use mobile payment. This study will emphasize customer satisfaction, mobile payment characteristics and risk taking of using mobile payment perceived by Chinese users as follows:

1. To investigate how perceived risk affects Chinese users' decision to use mobile payment.
2. To investigate how mobile payment characteristics affects Chinese users' decision to use mobile payment.

3. To investigate how customer satisfaction affects Chinese users' decision to use mobile payment.

#### **1.4 Benefit of the Research**

Regarding the expansion of academic knowledge, this study can theoretically analyze the factors affecting Chinese users' decision to use mobile payment, and study the relationships between each independent variable(perceived risk, mobile payment characteristics: perceived usefulness and perceived ease of use, customer satisfaction) and dependent variable (Chinese users' decision to use mobile payment), and enrich relevant research data from the theoretical level.

Regarding the business practices, the ultimate goal of this research is to help mobile payment services providers understand how their services are satisfactory to consumers. The results would be used for developing appropriate marketing strategies to serve customers' decision to adopt their services continuously.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 Related Literature and Theories**

The purpose of this study is to study the impact of perceived risk, mobile payment characteristics and customer satisfaction on Chinese users' decision to use mobile payment. The researcher reviewed relevant literature and theories, and based on these contents, presented hypotheses and conceptual framework in this chapter.

##### **2.1.1 Perceived Risk and Chinese Users' Decision**

Perceived risk was originally developed by Harvard University Bauer in 1960 from psychology-related theories. He believed that any purchase behavior of consumers had unpredictable results, and some results may make consumers feel unhappy. Therefore, consumer purchasing decisions meant uncertainty in outcomes, and this uncertainty is the original concept of risk. Cox and Rich (1964) followed the Bauer's (1960) study to clarify the concept of perceived risk. They believed that consumers had a corresponding purchase target for each purchase, and when the purchase behavior occurred, the result could not reach the expected goal. It might have adverse consequences and create a perceived risk. Jacoby and Kaplan (1972) classified customer perceived risks into financial, functional, physical, psychological and social risk. The sixth important risk was proposed by Peter and Tarpey (1975) is time risk.

There are many studies that have tested the impact of perceived risk on mobile payments. Because of perceived information asymmetry (Chen & Chang,



2005; Pavlou et al., 2007) perceived technological uncertainty (Song, 2001; Ellis & Shpielberg, 2003; Pavlou, 2007; Heavey & Simsek, 2013) perceived service intangibility (Mitchell, 1999; Laroche et al., 2004) and perceived regulatory uncertainty (Engau & Hoffmann, 2011; Fabrizio, 2013), consumers will have multiple perceived risks in the process of using mobile payment.

Yongqing Yang (2015) believed that perceived risk refers to the extent to which consumers perceive the possible losses that could be created due to the uncertainties of using mobile payment. The losses include any unfavorable consequences to consumer, such as financial loss, the violation of privacy, dissatisfaction with performance, psychological anxiety or discomfort and wasting time. Featherman and Pavlou (2003) argued that users' risks in using mobile payments included perceived financial risk, perceived privacy risk, perceived performance risk and perceived time risk: Perceived financial risk refers to the potential loss of money when users use mobile payment due to password theft, QR code being tampered with and hackers stealing financial information; perceived privacy risk means that many private information, such as phone numbers, social security numbers, passwords, places of purchase, shopping records, etc., may be exposed during the use of mobile payment by consumers; perceived performance risk means that mobile payments may not be able to provide services to users as expected and advertising due to system failures, speed limitations and instability of the mobile network; Perceived time risk refers to the time lost due to the difficulty of learning operating software, loading speed, responsiveness and processing power of the

network and the terminal. Lim (2003) suggested that users may have psychological risks in using mobile payment. When the user is unable to operate the mobile payment system or the transaction is unsuccessful, the user may cause psychological frustration, stress or anxiety.

Yongqing Yang (2015) believed that perceived financial risk was the strongest negative factor hindering the consumer acceptance of mobile payment; perceived privacy risk had a salient impact on acceptance intention; perceived psychological risk and perceived time risk were found to have no effect on acceptance intention.

Therefore, the hypothesis of this study in the context of the Chinese users would be:

**Hypothesis 1:** Perceived risk significantly affects Chinese users' decision to use mobile payment.

### **2.1.2 Mobile Payment Characteristics and Chinese Users' Decision**

Mobile payment refers to an economic transaction of personal or commercial activities conducted using electronic devices that support the mobile Internet (Liébana-Cabanillas et al., 2014). Unlike time and space restrictions for online and offline payments (Zhou, 2013), mobile payment users can pay for safer, faster and more convenient transactions anytime, anywhere (Liébana-Cabanillas et al., 2014; Zhou, 2013; Ondrus & Pigneur, 2009).

The concept of convenience first appeared in the marketing literature of the product category (Copeland, 1923). The choice of mobile commerce by users is often

related to their convenience (Kim et al., 2010; Luarn & Lin, 2005). Jih (2007) pointed out that the users' will was positively influenced by the convenience of the transaction. Eastin (2002) found that perceived convenience had a positive relationship with e-commerce activities. Yoon and Kim (2007) also reported that perceived transaction convenience was a determining factor in the adoption and use of information technology by users. Chen (2008) believed that mobile payment had the advantage of differentiation over traditional payment methods, especially in terms of transaction speed. Yang (2009) pointed out that fast transaction response speed would encourage users to use mobile banking. Pagani (2004) listed speed of use as the most critical determinant of mobile multimedia service adoption.

In 1989, Davis explained the decisive factors for the widely accepted information technology in the computer field, and proposed the technology acceptance model. The technology acceptance model proposed two main determinants: perceived usefulness and perceived ease of use. Perceived usefulness reflects the extent to which a person thinks that using a particular system improves his job performance; perceived ease of use reflects the extent to which one considers it's easy to use a particular system. Schierz et al. (2010) pointed out that perceived usefulness affected the attitude of mobile payment users; Kim et al. (2010) proposed that perceived usefulness and perceived ease of use determined the users' willingness to use mobile payments.

In the context of e-retail banks, Liao and Cheung (2002) found that convenience construction was one of the most critical quality characteristics of

perceived usefulness. Chen (2008) surveyed 299 mobile payment users and found that perceived transaction convenience was positively correlated with perceived usefulness. Liao and Cheung (2002) provided evidence that the speed of transactions had a significant impact on the perceived usefulness of e-banking. Chen (2008) found that from the perspective of mobile payment adoption, perceived transaction speed had a positive correlation with perceived usefulness.

According to the above theory, this study believes that mobile payment is widely accepted because of the two main characteristics of mobile payments: perceived usefulness and perceived ease of use. Therefore, the hypothesis of this study in the context of the Chinese users would be:

**Hypothesis 2:** Mobile payment characteristics significantly affects Chinese users' decision to use mobile payment.

### **2.1.3 Customer Satisfaction and Chinese Users' Decision**

Expectation confirmation theory is widely used to gain insight into consumer satisfaction (Koppius et al., 2005; Wen et al., 2011), and expectation confirmation theory suggested that consumers form initial expectations for products before purchase (Oliver, 1980; Overby & Lee, 2006), then accept and use the product. After consumption, consumers form a perception of product performance and begin to compare it to expectations, determine confirmation, and then form satisfaction based on the confirmation.

Personal satisfaction refers to the degree to which consumer satisfaction is

measured by the shopping experience (Chen & Li, 2007). Satisfaction can be established at different points in time, usually it is considered to occur post-purchase/post-consumption/post-selection (Giese & Cote, 2000). For example, Fornell (1992) defined satisfaction as “the overall post-purchase assessment” (page 11). Bhattacharjee (2001) showed that satisfaction with previous online banking was the strongest predictor of consumers’ repeated use of online banking in the future.

According to the above theories, this study considers customer satisfaction as the overall evaluation of mobile payment service experience after users use mobile payment. Therefore, the hypothesis of this study in the context of the Chinese users would be:

**Hypothesis 3:** Customer satisfaction significantly affects Chinese users’ decision to use mobile payment.

## 2.2 Hypothesis Statement

The summary of hypothesis would be as follows:

Hypothesis 1: Perceived risk significantly affects Chinese users’ decision to use mobile payment. (Bauer, 1960; Cox & Rich, 1964; Jacoby & Kaplan, 1972; Peter Tarpey, 1975; Mitchell, 1999; Song, 2001; Ellis & Shpielberg, 2003; Featherman & Pavlou, 2003; Lim, 2003; Laroche et al., 2004; Chen & Chang, 2005; Pavlou et al., 2007; Pavlou, 2007; Engau & Hoffmann, 2011; Fabrizio, 2013; Heavey & Simsek, 2013; Yongqing Yang, 2015)

Hypothesis 2: Mobile payment characteristics significantly affects Chinese

users' decision to use mobile payment. (Copeland, 1923; Davis, 1989; Eastin, 2002; Liao & Cheung, 2002; Pagani, 2004; Luarn & Lin, 2005; Jih, 2007; Yoon & Kim, 2007; Chen, 2008; Ondrus & Pigneur, 2009; Yang, 2009; Schierz et al., 2010; Kim et al., 2010; Zhou, 2013; Liébana-Cabanillas et al., 2014)

Hypothesis 3: Customer satisfaction significantly affects Chinese users' decision to use mobile payment. (Oliver, 1980; Fornell, 1992; Giese & Cote, 2000; Bhattacharjee, 2001; Koppius et al., 2005; Overby & Lee, 2006; Chen & Li, 2007; Wen et al., 2011)

### 2.3 Conceptual Framework

As shown in the figure 2.1, it depicts the important variables of this research includes perceived risk, mobile payment characteristics and customer satisfaction as independent variables and Chinese users' decision to use mobile payment as dependent variable.

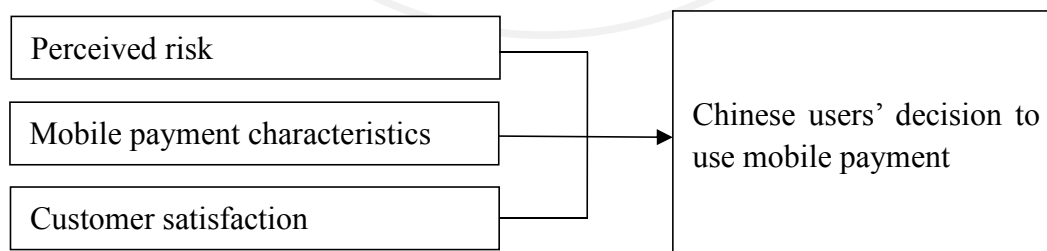


Figure 2.1: The conceptual framework of factors affecting Chinese users' decision to use mobile payment.

## **CHAPTER 3**

### **METHODOLOGY**

This chapter presents the research procedure to attain the purposes of this study.

This chapter describes the details of the research population, who are the respondents and sampling procedures, research tools/questionnaires, reliability results, and how to collect data. Finally, statistical data processing. The details are shown below.

#### **3.1 Research Design**

The purpose of this study was to determine the impact of perceived risk, mobile payment characteristics and customer satisfaction on Chinese users' decision to use mobile payment. The quantitative approach was considered to be applied this research to explore, identify and verify on the causal relationships between such variables (Bryman, 1984).

The survey questionnaire was applied for the data collection, based upon the use of structured questions provided to the participants (Malhotra & Birks, 2007). This technique was considered as suitable for this study with limited time and budget. The questionnaires were distributed by randomly sampling to Chinese who use mobile payment via Wechat pay, Alipay and Union pay in southwest China. These users can effectively provide the relevant data and ensure the authenticity of the questionnaire.

## **3.2 Population and Sample**

### **3.2.1 Population**

The population of this study can be determined as the person living in Southwest China regardless of age, gender, education level, occupation, and monthly income. All participants have experience using mobile payments.

### **3.2.2 Samples and Samples Size**

The researcher selected purposive sampling to collect data based on non-probability sampling techniques. The researchers collected 150 sample data from mobile payment users. Based on the accessibility of the researcher to the respondent, the target sample is further used to select the respondents. Using the G-Star Power program (Cohen, 1977), the sample size is 150 respondents.

## **3.3 Instruments for Data Collection**

In this study, the questionnaires were designed based on the research objectives and conceptual framework which included three independent variables, including perceived risk, mobile payment characteristics and customers satisfaction and one dependent variable, which is Chinese users' decision to use mobile payment.

The researcher designed the questionnaire as the research instrument by applying the explanations and evidences of the related theories and the precious research findings. The questionnaire which consisted of five parts with the use of closed-end questions were as follows:



Part I: The close-ended demographic questions consisted of gender, age, education level, occupation and monthly income. In addition, there were two multiple-choice questions about “What kind of your transaction do you always use mobile payment?” and “What kind of mobile payment service do you often use?”

Part II: The close-ended questions about perceived risk and divided into 5 questions. this part discussed the perceived risk of users in the process of using mobile payment, with the use of Five-point Likert’s scale employed with anchors ranging from 1 = Most lowly perceive, 2 = Rather lowly perceive, 3 = Moderately perceive, 4 = Rather highly perceive, 5 = Most highly perceive for all questions in this part.

Part III: The close-ended questions about mobile payment characteristics and divided into 7 questions. This part discussed the user’s attitude towards mobile payment characteristics, with the use of Five-point Likert’s scale employed with anchors ranging from 1 = Strongly disagree, 2 = Rather disagree, 3 = Moderately agree, 4 = Rather agree, 5 = Strongly agree for all questions in this part.

Part IV: The close-ended questions about customer satisfaction and divided into 8 questions. This part explored customer satisfaction with mobile payments, with the use of Five-point Likert’s scale employed with anchors ranging from 1 = Mostly dissatisfied, 2 = Rather dissatisfied, 3 = Moderately satisfied, 4 = Rather satisfied, 5 = Mostly satisfied for all questions in this part.

Part V: The close-ended questions about Chinese users’ decision to use mobile payment and divided into 7 questions. This part explored the decision of Chinese users to use mobile payment, with the use of Five-point Likert’s scale employed with anchors

ranging from 1 = Strongly disagree, 2 = Rather disagree, 3 = Moderately agree, 4 = Rather agree, 5 = Strongly agree for all questions in this part.

Regarding part II, part III, part IV and part V, the researcher exercised on the Likert's 5-point scale for measuring the statistical mean range for mean interpretation as follows:

$$\begin{aligned} \text{Range} &= \frac{\text{Maximum-Minimum}}{\text{Scale level}} \\ &= \frac{5 - 1}{5} = 0.80 \end{aligned}$$

Table 3.1: The range of Mean Interpretation

Range	Interpretation
1.00 – 1.80	Most lowly perceive/ Strongly disagree/ Mostly dissatisfied
1.81 – 2.61	Rather lowly perceive/ Rather disagree/ Rather dissatisfied
2.62– 3.42	Moderately perceive/ Moderately agree/ Moderately satisfied
3.43– 4.23	Rather highly perceive/Rather agree/ Rather satisfied
4.24 – 5.00	Most highly perceive/ Strongly agree/ Mostly satisfied

### 3.4 Content Validity Measurement

In order to approve the content of questions in the questionnaire, the researcher submitted the questionnaire to the adviser for determination and suggestions. After that the researcher had developed the questionnaire based on the adviser's suggestion before distributing it to the pilot-test samples fore measuring reliability value.

### 3.5 Reliability Measurement

Reliability analysis will be conducted as the pilot-test to test the consistency of measure using Cronbach's alpha method. An alpha of 0.7 and higher indicates that there is an acceptable level of internal consistency among the items making up factors (Hair, Tatham, Ronald, Anderson, & Black, 1998).

The questionnaire was examined to ensure that all respondents had a common understanding to answer all questions in the questionnaire. The table 3.2 illustrates each part of questionnaire has accepted the value of Cronbach's Alpha coefficient. The reliability was indicated by using the value of Cronbach's Alpha Coefficient. The value of Cronbach's Alpha Coefficient of overall questionnaire was 0.895.

Table 3.2: Reliability Analysis of Cronbach's Alpha Coefficient

Variables	Cronbach's Alpha Coefficient			
	Pilot Test		Field Survey	
	Item	n = 40	Items	n = 150
Perceived risk	5	0.840	5	0.837
Mobile payment characteristics	7	0.877	7	0.905
Customer satisfaction	8	0.891	8	0.864
Decision to use mobile payment	7	0.861	7	0.882
Overall	27	0.877	27	0.895

### 3.6 Statistics for Data Analysis

The data analysis was conducted by applying Statistical Package for Social Sciences (SPSS) program version 22. Consequently, the statistical techniques used for data analysis and interpretation included descriptive and inferential statistics as follows:

**Descriptive Statistical Analysis:** It was to analyze demographic data such as gender, age, education level, occupation and monthly income and to present those data in forms of frequency and percent (Hair et al., 2013).

**Reliability Test:** By using SPSS, it provided the reality value for Cronbach's alpha coefficient. The variables will be considered acceptable if Cronbach's alpha is equal 0.65 or higher (Nunnally, 1978).

**Multiple Regression Analysis:** It was deemed as the way to calculate a coefficient of multiple determination and regression using more than independent variables (Hair et al., 2013). This study aims to investigate 3 independent variables: perceived risk, mobile payment characteristics and customer satisfaction; the dependent variable is Chinese user's decision to use mobile payment. This test analyzed how these factors had influence on the Chinese users' decision to use mobile payment.

## CHAPTER 4

### RESEARCH FINDINGS AND DATA ANALYSIS

This chapter demonstrated about the results of this study, the findings consisted demographic data of samples who used mobile payment (Alipay, Wechat Pay and Union Pay). The descriptive statistical including frequency and percentage, as well as the inferential statistical which was multiple regression analysis were used for data analysis.

#### 4.1 The Analysis of Demographic Data of Samples

Table 4.1: Frequency and Percentage of samples classified by Gender.

<b>Gender</b>	<b>Frequency(n)</b>	<b>Percentage(%)</b>
Male	48	32.0
Female	102	68.0
Total	150	100.0

According to the collected questionnaire data: The total number of respondents are 150. Most of the respondents are female with a total of 102, accounting for 68.0%.

The total number of male respondents was 48, accounting for 32.0%.

Table 4.2: Frequency and Percentage of samples classified by Age.

<b>Age</b>	<b>Frequency(n)</b>	<b>Percentage(%)</b>
Under 20 years old	12	8.0
20-39 years old	126	84.0
40-60 years old	12	8.0
Over 60 years old	0	0
Total	150	100.0

The majority of respondents were between the ages of 20 and 39, which is equivalent to 126 respondents (84.0%), Secondly, the total number of respondents under the age of 20 and the respondents aged 40-60 are both equal to 12 (8.0%), and there are no respondents who are over 60 years old.

Table 4.3: Frequency and Percentage of samples classified by Education Level.

<b>Education Level</b>	<b>Frequency(n)</b>	<b>Percentage(%)</b>
High school / Vocation	36	24.0
Bachelor's degree	88	58.7
Master's degree	24	16.0
Doctor's degree	2	1.3
Total	150	100.0

Most of the respondents had a bachelor's degree in education, equivalent to 88 respondents (58.7%), 36 (24.0%) respondents in high school and higher vocational degrees, 24 (16.0%) master's degree respondents and 2 (1.3%) doctor's degree respondents.

Table 4.4: Frequency and Percentage of samples classified by Occupation.

<b>Occupation</b>	<b>Frequency(n)</b>	<b>Percentage(%)</b>
Student	55	36.7
Government employee	29	19.3
Company employee	34	22.7
Self-employed / freelancer	17	11.3
Retiree	4	2.7
Other	11	7.3
Total	150	100.0

Most of the respondents were students, equivalent to 55 (36.7%), followed by 34 (22.7%) company employees, 29 (19.3%) government employees, 17 (11.3%) self-employed / freelancers, 4 (2.7%) retirees and 11 (7.3%) others.

Table 4.5: Frequency and Percentage of samples classified by Monthly Income.

Monthly Income	Frequency(n)	Percentage(%)
Below 4,000 CNY	70	46.7
4,000 - 6,000 CNY	45	30.0
6,001-10,000 CNY	26	17.3
Above 10,000 CNY	9	6.0
Total	150	100.0

The majority of respondents' monthly incomes is below 4000 CNY which was equal to 70 respondents (46.7%), 4000-6000 CNY 45 respondents (30.0%), 6001-10000 CNY 26 respondents (17.3%) and above 10000 CNY 9 respondents (6.0%) respectively.

Table 4.6: Frequency and Percentage of samples classified by What kind of your transaction do you always use mobile payment.

What kind of your transaction do you always use mobile payment?	Frequency(n)	Percentage(%)	Percentage of cases(%)
Online and offline shopping	132	32.8%	88.0%
Pay telephone expense	109	27.0%	72.7%
Pay for utilities	78	19.4%	52.0%
Pay internet change	84	20.8%	56.0%
Total	403	100.0%	268.7%

Most of the respondents always use mobile payment online and offline shopping, which is equivalent to 132, accounting for 32.8% and the percentage of case is 88.0%. Paying telephone expense 109 respondents (27.0%) and the percentage of case is 72.7%. Paying for utilities 78 respondents (19.4%) and the percentage of case is 52.0%. Paying internet charge 84 respondents (20.8%) and the percentage of case is 56.0%.

Table 4.7: Frequency and Percentage of samples classified by What kind of mobile payment service do you often use.

What kind of mobile payment service do you often use?	Frequency(n)	Percentage(%)	Percentage of cases(%)
Wechat Pay	138	46.3%	92.0%
Alipay	127	42.6%	84.7%
Union Pay	33	11.1%	22.0%
Total	298	100.0%	198.7%

Most of the respondents often use Wechat Pay, which is equivalent to 138, accounting for 46.3% and the percentage of case is 92.0%. Using Alipay 127 respondents (42.6%) and the percentage of case is 84.7%. Using Union Pay 33 respondents (11.1%) and the percentage of case is 22.0%.



## 4.2 The Analysis of Research Variables

### 4.2.1 The Analysis of Perceived Risk

Table 4.8: Mean and Standard Deviation of Perceived Risk.

Perceived Risk	Mean	Std. Deviation	Interpretation
1. Personal confidential could be disclosed.	3.173	0.968	Moderately perceive
2. Transaction is transferred to wrong accounts.	2.867	1.235	Moderately perceive
3. Transfer system is closed without announcement before.	2.747	1.216	Moderately perceive
4. Mobile payment system is closed in emergency.	2.820	1.290	Moderately perceive
5. Mobile payment code is illegally hacker on stolen.	3.173	1.300	Moderately perceive
Average value	2.956	1.202	Moderately perceive

According to the analysis of perceived risk most respondents moderately perceived about risk for using mobile payment (Mean=2.956, S.D.=1.202). However, when considering about each type of risk as perceived, it was found that the respondents moderately perceived of many kinds of risk as follows: personal confidential could be disclosed (Mean=3.173, S.D.=0.968), transaction is transferred to wrong accounts (Mean=2.867, S.D.=1.235), transfer system is closed without announcement before (Mean=2.747, S.D.=1.216), mobile payment system is closed in emergency (Mean=2.820, S.D.=1.290) and mobile payment code is illegally hacker on stolen (Mean=3.173, S.D.=1.300).

#### 4.2.2 The Analysis of Mobile Payment Characteristics

Table 4.9: Mean and Standard Deviation of Mobile Payment Characteristics.

Mobile Payment Characteristics	Mean	Std. Deviation	Interpretation
1. Mobile payment system is easy to use.	4.100	0.809	Rather agree
2. Mobile payment system can transfer money very quickly and easily.	4.140	0.905	Rather agree
3. Mobile payment is very usefulness for daily and work life.	4.280	0.795	Strongly agree
4. Mobile payment can enhance the quality of life.	4.033	0.923	Rather agree
5. Mobile payment can enhance the process of money payment to be faster.	4.207	0.771	Rather agree
6. Mobile payment can save time for connection among people.	3.880	0.889	Rather agree
7. Mobile payment can be used any time and anywhere.	3.933	0.857	Rather agree
Average value	4.082	0.850	Rather agree

According to the analysis of mobile payment characteristics most respondents rather agreed that mobile payment had a various of characteristics (Mean=4.082, S.D.=0.850). when considering in details about the kinds of mobile payment characteristics, it was found that the respondents strongly agreed that mobile payment is very usefulness for daily and work life (Mean=4.280, S.D.=0.795); it was also found that the respondents rather agreed consecutively in the following characteristics: mobile payment system is easy to use (Mean=4.100, S.D.=0.809), mobile payment system can transfer money very quickly and easily (Mean=4.140, S.D.=0.905), mobile payment can

enhance the quality of life (Mean=4.033, S.D.=0.923), mobile payment can enhance the process of money payment to be faster (Mean=4.207, S.D.=0.771), mobile payment can save time for connection among people (Mean=3.880, S.D.=0.889) and mobile payment can be used any time and anywhere (Mean=3.933, S.D.=0.857).

#### 4.2.3 The Analysis of Customer Satisfaction with Mobile Payment

Table 4.10: Mean and Standard Deviation of Customer Satisfaction with Mobile Payment.

Customer Satisfaction with Mobile Payment	Mean	Std.Deviation	Interpretation
1. Convenience	4.267	0.748	Mostly satisfied
2. Timeliness	4.167	0.839	Rather satisfied
3. Accuracy	3.960	0.776	Rather satisfied
4. Confidential	3.260	0.815	Moderately satisfied
5. Innovation and creativity	3.867	0.841	Rather satisfied
6. Speed (fast)	4.267	0.757	Mostly satisfied
7. Ease of access	3.940	0.845	Rather satisfied
8. Cost-saving	3.953	0.870	Rather satisfied
Average value	3.960	0.811	Rather satisfied

According to the analysis of customer satisfaction with mobile payment, it was found that the respondents rather satisfied with mobile payment (Mean=3.960, S.D.=0.811). However, the respondents mostly satisfied in these followings: convenience (Mean=4.267, S.D.=0.748) and speed (fast) (Mean=4.267, S.D.=0.757). The respondents rather satisfied in these followings: timeliness (Mean=4.167, S.D.=0.839), accuracy

(Mean=3.960, S.D.=0.776), innovation and creativity (Mean=3.867, S.D.=0.841), ease of access (Mean=3.940, S.D.=0.845) and cost-saving (Mean=3.953, S.D.=0.870). Moreover, the respondents moderately satisfied with confidential (Mean=3.260, S.D.=0.815).

#### 4.2.4 The Analysis of Chinese Users' Decision to Use Mobile Payment

Table 4.11: Mean and Standard Deviation of Chinese Users' Decision to Use Mobile Payment.

<b>Decision to Use Mobile Payment</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Interpretation</b>
1. I surely use mobile payment.	3.747	0.861	Rather agree
2. I choose mobile payment as my first choice.	3.867	0.887	Rather agree
3. I can save time when I use mobile payment.	4.047	0.771	Rather agree
4. I will not use another channel if mobile payment still exists.	3.333	0.994	Moderately agree
5. I still use mobile payment even there is some error coming from its error system.	3.340	0.926	Moderately agree
6. I normally use mobile payment because I love technology.	3.673	0.831	Rather agree
7. I always use mobile payment as long as I get convenient.	4.040	0.818	Rather agree
Average value	3.721	0.870	Rather agree

According to the analysis of Chinese users' decision to use mobile payment the respondents rather agreed that their decision to use mobile payment would be accepted in these following attitudes: "I surely use mobile payment" (Mean=3.747, S.D.=0.861), "I

choose mobile payment as my first choice” (Mean=3.867, S.D.=0.887), “I can save time when I use mobile payment” (Mean=4.047, S.D.=0.771), “I normally use mobile payment because I love technology” (Mean=3.673, S.D.=0.831) and “I always use mobile payment as long as I get convenient” (Mean=4.040, S.D.=0.818). While the respondents moderately agreed about their decision to use mobile payment under these following altitudes: that “I will not use another channel if mobile payment still exists” (Mean=3.333, S.D.=0.994) and “I still use mobile payment even there is some error coming from its error system” (Mean=3.340, S.D.=0.926).

#### 4.3 The Results of Multiple Regression Analysis

Table 4.12: Multiple Regression Analysis

<b>Independent Variables</b>	<b>B</b>	<b>Beta</b>	<b>t</b>	<b>Sig.</b>
Perceived Risk	-0.134	0.134	-2.396	0.018*
Mobile Payment Characteristics	0.371	0.377	4.921	0.000*
Customer Satisfaction	0.409	0.407	5.300	0.000*

Dependent Variable: Chinese Users' Decision to Use Mobile Payment

Adjusted R square=0.544, F=58.113, P\*<0.05

According to table 4.12, the consequence of multiple regression analysis found that perceived risk, mobile payment characteristics and customer satisfaction significantly affects Chinese users' decision to use mobile payment.

The findings also revealed that customer satisfaction ( $\beta=0.407$ ) accounted for the largest weighs of relative contribution toward Chinese users' decision to use mobile payment, followed by mobile payment characteristics ( $\beta=0.377$ ) and perceived risk ( $\beta=0.134$ ) respectively.

#### 4.4 The Analysis of Hypothesis Testing

Table 4.13: Summary of Hypothesis Testing Results

Hypotheses	Results
<b>H1:</b> Perceived risk affects Chinese users' decision to use mobile payment.	Accepted
<b>H2:</b> Mobile payment characteristics affects Chinese users' decision to use mobile payment.	Accepted
<b>H3:</b> Customer satisfaction affects Chinese users' decision to use mobile payment.	Accepted

Table 4.13 showed that hypothesis 1, 2, and 3 were accepted.

## CHAPTER 5

### DISCUSSION AND RECOMMENDATION

This independent study was quantitative research which aimed to study the impact of perceived risk, mobile payment characteristics and customer satisfaction on Chinese users' decision to use mobile payment. The questionnaires were used for collecting data from 150 respondents. The data were analyzed by implementing SPSS Statistics. Finally, the research results were summarized, discussed, and proposed for the recommendation and further research.

#### 5.1 Research Findings and Conclusion

Based on the personal data of 150 respondents, the survey found that the majority of respondents were female (68.0%) and were between 20-39 years old (84.0%). The majority of respondents were students (36.7%) and company employees (22.7%). They completed a bachelor's degree (58.7%), and most of the respondents earned less than 4,000 yuan (46.7%) or between 4,000 and 6,000 yuan (30.0%). Most respondents always use mobile payments for online and offline shopping (32.8.0%), telephone expense (27.0%), utilities (19.4%) and internet change (20.8%). Most respondents often use WeChat pay (46.3%) and Alipay (42.6%), and a small number of respondents use UnionPay (11.1%).

The results of multiple regression analysis found that perceived risk, mobile payment characteristics and customer satisfaction affected Chinese users' decision to use

mobile payment at 0.05 level of statistical significance. In addition, the findings also revealed that customer satisfaction ( $\beta=0.407$ , Sig.=0.000) has the greatest impact on Chinese users' decision to use mobile payment, followed by mobile payment characteristics ( $\beta=0.377$ , Sig.=0.000). The least impact on Chinese users' decision to use mobile payment is perceived risk ( $\beta=0.134$ , Sig.=0.018).

## 5.2 Discussion

**Hypothesis1:** Perceived risk significantly affects Chinese users' decision to use mobile payment. The research results showed that perceived risk ( $\beta = -0.134$ , Sig.=0.018) significantly affects Chinese users' decision to use mobile payment. The results confirmed the previous studies that users may have perceived financial risk and perceived privacy risk in the process of using mobile payment (Yongqing Yang, 2015; Featherman and Pavlou, 2003). And perceived financial risk and perceived privacy risk have a significant negative impact on users' acceptance of mobile payment (Yongqing Yang, 2015).

**Hypothesis2:** Mobile payment characteristics significantly affects Chinese users' decision to use mobile payment. The research results showed that mobile payment characteristics ( $\beta = 0.377$ , Sig.= 0.000) significantly affects Chinese users' decision to use mobile payment. The results confirmed the previous studies that perceived transaction convenience and transaction speed have a significant positive impact on perceived usefulness (Liao and Cheung, 2002; Chen, 2008;). Perceived usefulness and perceived ease of use determine the user's willingness to use mobile



payments (Schierz et al., 2010; Kim et al., 2010).

**Hypothesis3:** Customer satisfaction significantly affects Chinese users' decision to use mobile payment. The research results showed that customer satisfaction ( $\beta = 0.407$ , Sig.= 0.000) significantly affects Chinese users' decision to use mobile payment. The results confirmed the previous studies that customer satisfaction as the overall evaluation of mobile payment service experience after users use mobile payment, customer satisfaction with previous mobile payments is the strongest predictor of consumers' repeated use of mobile payments in the future. The results also aligned with the research of Chen and Li (2007), Giese and Cote (2000), Fornell (1992), Bhattacharjee (2001) in which customer satisfaction was commonly viewed as a post-purchase, post-consumption and post-selection assessment and strongest predictor of consumers' repeated purchase, consumption or selection in the future.

### **5.3 Recommendation for Managerial Implications**

According to the research results, perceived risk has a negative impact on Chinese users' decision to use mobile payment. Most users are worried about the property damage caused by hacking and privacy leakage in the process of using mobile payment. The security of transactions is an important factor affecting the use of decisions, therefore, it is very important to reduce the perceived risk of users. Mobile payment platform should consciously strengthen user privacy information protection awareness and industry self-discipline awareness, adopt effective methods to protect users' privacy and financial security.

In addition, mobile payment characteristics and customer satisfaction have a positive impact on Chinese users' decision to use mobile payment. Although users have a good evaluation of the convenience and speed of mobile payments, companies can also dig deeper into users' needs. For example, enterprises can improve the stability of the system, simplify the operation steps, shorten the application installation, response and opening time, and save more time for users to use mobile payment; mobile payment platform can design a simple and beautiful interface, users can operate more easily, so it can relieve users' anxiety; enrich offline payment scenarios and develop new features to improve the efficiency of life services, thereby increasing the frequency of users' usages; provide customized services for different groups of people to attract more users.

Finally, according to the research findings, the factors that are important to initiate Chinese people to use mobile payments would be perceived risk, mobile payment characteristics and customer satisfaction respectively.

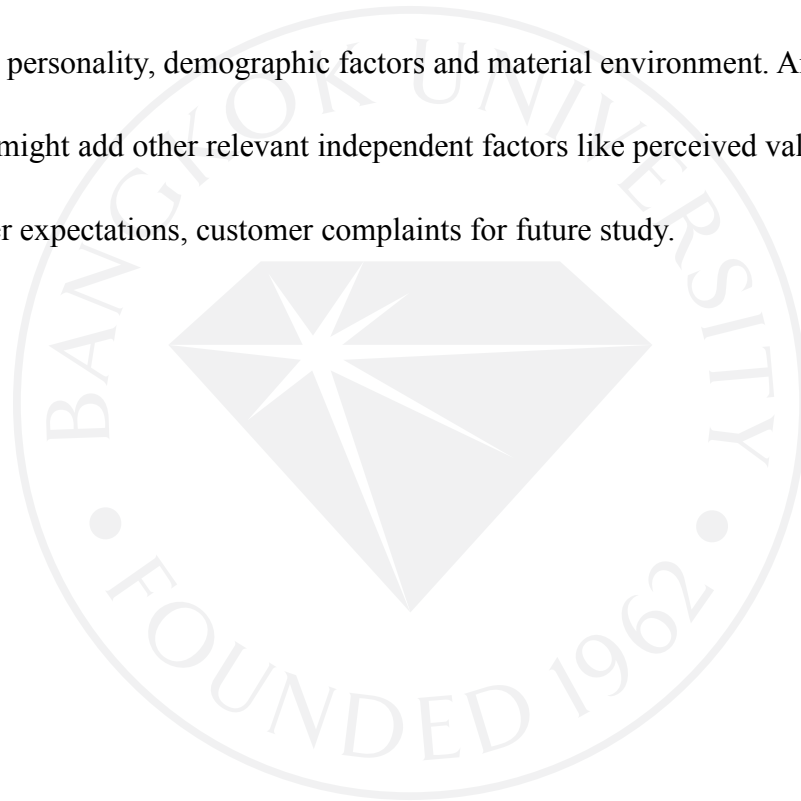
#### **5.4 Recommendation for Further Research**

This study is mainly for the southwestern region of China, through the random sampling of users using mobile payment to answer. From a spatial point of view, similar research in the future can be based on the relevant materials of this study to study the rest of China, through the study of the distribution of different regions, we can more intuitively understand the willingness of consumers in most of China.

The age of the respondents in this article is mainly between 20-39 years old (84.0%), and this age group is China's largest economic contributor. In order to more

effectively reflect the willingness of Chinese mainstream consumers to consume, future research should regard studying this range of age more closely to achieve more reliable results.

But in this study 36.7% respondents were students, this range of 20-39 years old might not be a good range to separate between students and working people. Future research can distinguish between income, occupation, consumption concept, lifestyle, preference, personality, demographic factors and material environment. And the researcher might add other relevant independent factors like perceived value, perceived quality, user expectations, customer complaints for future study.



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## Questionnaire about Impacting of Chinese Users' Decision to Use Mobile Payment

### 关于影响中国用户使用移动支付决策的调查问卷

Dear Participants,

I am a student of the Bangkok University , and conducting a research study on the impact of perceived risk, mobile payment characteristics and customer satisfaction on Chinese users' decision to use mobile payment. I hope that you are willing to participate and fill out this questionnaire according to your actual situation. your answer are very important to me and thank you very much for your support.

尊敬的参加者：

您好，我是曼谷大学的一名学生，正在研究感知风险、移动支付特征和顾客满意度对中国用户使用移动支付决策的影响。我希望您愿意参加并根据您的实际情况填写这份问卷。您的回答对我很重要，非常感谢您的支持。

#### Part I: Demographic data (第一部分：个人资料)

Instruction: Please check only one answer that is mostly related to your opinions.

(说明：请根据您的实际情况选择和您的情况最相近的一项答案。)

#### 1. Gender (性别) :

A. Male (男)

B. B. Female (女)

**2. Age (年龄) :**

- A. Under 20 years old (20 岁以下)
- B. 20 – 39 years old(20—39 岁)
- C. 40 – 60 years old (40—60 岁)
- D. Over 60 years old (60 岁以上)

**3. Educational level (受教育程度) :**

- A. High school / vocational (中专、大专及以下)
- B. Bachelor's degree (本科学士学位)
- C. Master's degree (硕士学位)
- D. Doctor's degree (博士学位)

**4. Occupation (职业) :**

- A. Student (学生)
- B. Government employee (公务员/事业单位职工/国企职工)
- C. Company employee (公司职员)
- D. Self-employed /freelancer (个体经营/自由职业)
- E. Retiree (退休)
- F. Other (其他)

**5. Monthly income (月收入) :**

- A. Below 4,000 CNY (4000 元以下)
- B. 4,000 - 6,000 CNY (4000—6000 元)
- C. 6,001-10,000 CNY (6001—10000 元)
- D. Above 10,000 CNY (10000 元以上)

**6. What kind of your transaction do you always use mobile payment?(You can select more than one answer.)**

(您经常使用哪种类型的移动支付? 您可以选择多个答案)

- A. Online and offline shopping (线上线下购物)
- B. Pay telephone expense (支付通信费用)
- C. Pay for utilities (生活缴费)
- D. Pay internet charge (支付网络费用)

**7. What kind of mobile payment service do you often use?(You can select more than one answer.)**

(您经常使用哪种移动支付服务? 您可以选择多个答案)

- A. Wechat Pay (微信支付)
- B. Alipay (支付宝)
- C. Union Pay (银联支付)

## Part II: Perceived risk (第二部分: 感知风险)

Instruction: How do you perceive about mobile payment risk? Please put  in the only

one block which is mostly related to you.

(说明: 您如何看待移动支付风险? 请根据实际情况选择与您情况最相近的一选项并在对应方框中打 。)

**1 = Most lowly perceive (最低感知)**

**2 = Rather lowly perceive (低度感知)**

**3 = Moderately perceive (中度感知)**

**4 = Rather highly perceive (高度感知)**

**5 = Most highly perceive (最高感知)**

Statements of perceived risk (感知风险的陈述)	Level of perception (感知程度)				
	1	2	3	4	5
1. Personal confidential could be disclosed. (个人机密会泄露。)					
2. Transaction is transferred to wrong accounts. (转账交易到错误账户。)					
3. Transfer system is closed without announcement before. (转账系统在没有通告前被关闭。)					
4. Mobile payment system is closed in emergency. (移动支付系统被紧急关闭。)					
5. Mobile payment code is illegally hacker on stolen. (移动支付二维码被黑客或不法人员非法盗用。)					

### Part III :Mobile payment characteristics (第三部分: 移动支付的特征)

Instruction: What do you think about characteristics of mobile payment? Please put  $\checkmark$  in the only one block which is mostly related to you.

(说明: 您如何看待移动支付的特征? 请根据实际情况选择与您情况最相近的一个选项并在对应方框中打  $\checkmark$ 。)

**1 = Strongly disagree (非常不同意)**

**2 = Rather disagree (不同意)**

**3 = Moderately agree (中等)**

**4 = Rather agree (同意)**

**5 = Strongly agree (非常同意)**

Statements of mobile payment characteristics (移动支付特征的陈述)	Level of agreement (同意程度)				
	1	2	3	4	5
1. Mobile payment system is easy to use. (移动支付系统易于使用。)					
2. Mobile payment system can transfer money very quickly and easily. (移动支付系统可以非常快速, 容易地转账。)					
3. Mobile payment is very usefulness for daily and work life. (移动支付对日常生活和工作都非常有用。)					
4. Mobile payment can enhance the quality of life. (移动支付可以提高生活质量。)					
5. Mobile payment can enhance the process of money payment to be faster. (移动支付可以加快支付流程的速度。)					
6. Mobile payment can save time for connection among people. (移动支付可以节省人与人之间的联系活动时间。)					
7. Mobile payment can be used any time and anywhere. (移动支付可以随时随地使用。)					

#### Part IV: Customer satisfaction with mobile payment

(第四部分：移动支付的顾客满意度)

Instruction: What do you think about customer satisfaction with mobile payment? Please put  $\checkmark$  in the only one block which is mostly related to you.

(说明：您对移动支付的顾客满意度有何看法？请根据实际情况选择与您情况最相近的一个选项并在对应方框中打 $\checkmark$ 。)

**1 = Mostly dissatisfied (非常不满意)**

**2 = Rather dissatisfied (不满意)**

**3 = Moderately satisfied (中等)**

**4 = Rather satisfied (满意)**

**5 = Mostly satisfied (非常满意)**

Statements of customer satisfaction (顾客满意度的陈述)	Level of satisfaction (满意程度)				
	1	2	3	4	5
1. Convenience (便利性)					
2. Timeliness (及时性)					
3. Accuracy (准确性)					
4. Confidential (机密性)					
5. Innovation and creativity (创新性和创造性)					
6. Speed(fast) (快速性)					
7. Ease of access (易访问性)					
8. Cost-saving (节约成本)					



### Part V: Chinese users' decision to use mobile payment

(第五部分：中国用户使用移动支付的决定)

Instruction: According to these following statements, what extent do you intend to use mobile payment? Please put  $\checkmark$  in the only one block which is mostly related to you.

(说明：根据以下陈述，您打算在多大程度上使用移动支付？请根据实际情况选择与您情况最相近的一个选项并在对应方框中打 $\checkmark$ 。)

**1 = Strongly disagree** (非常不同意)

**2 = Rather disagree** (不同意)

**3 = Moderately agree** (中等)

**4 = Rather agree** (同意)

**5 = Strongly agree** (非常同意)

Statements of decision to use mobile payment (使用移动支付的决定的陈述)	Level of agreement (同意程度)				
	1	2	3	4	5
1. I surely use mobile payment. (我一定使用移动支付。)					
2. I choose mobile payment as my first choice. (我选择移动支付作为我的第一选择。)					
3. I can save time when I use mobile payment. (当我使用移动支付时可以节省时间。)					
4. I will not use another channel if mobile payment still exists. (如果移动支付仍然存在，我将不会使用其他渠道。)					
5. I still use mobile payment even there is some error coming from its error system. (我仍然使用移动支付，即使它的系统有一些错误。)					
6. I normally use mobile payment because I love technology. (我通常会使用移动支付，因为我喜欢科技。)					
7. I always use mobile payment as long as I get convenient. (因为方便我总是使用移动支付。)					

**Thank you for your kind cooperation**

(感谢您的友好合作)

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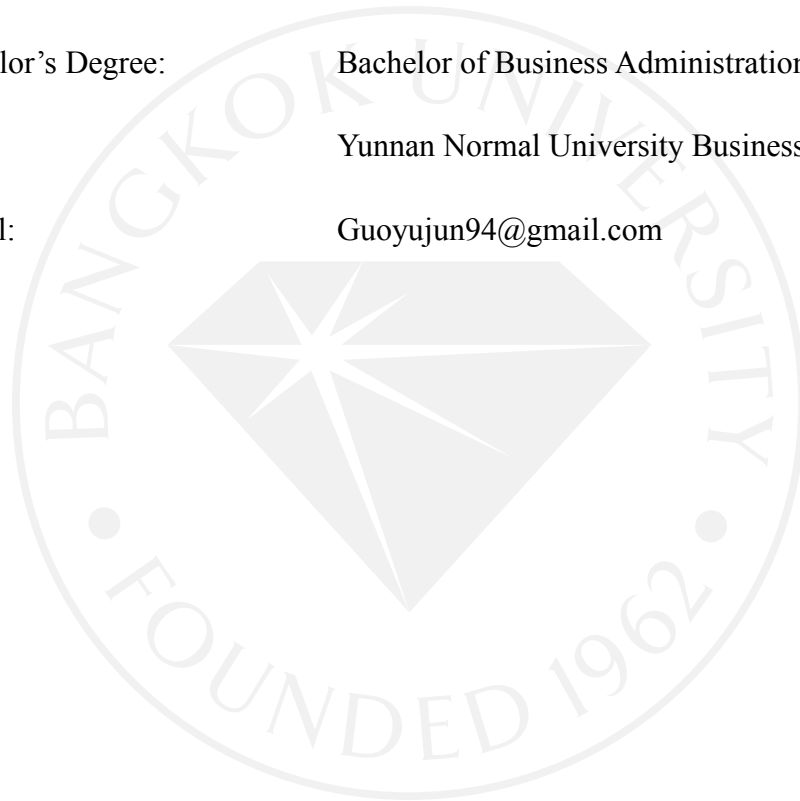
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