



## Analysis on the difference of willingness to use third-party mobile payment: A case study of Thailand and China

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### Abstract

In recent years, with the popularity of mobile terminals, the continuous innovation of online banking payment services, and third-party payment platforms, mobile payment is undergoing a rapid promotion process. In the present, few studies are comparing third-party mobile payments in different countries. Also, most research works stay at the level of technology and mode or start from the perspective of consumers' first adoption to explore the influencing factors of consumers' willingness to use third-party mobile payment. Therefore, this study adopts a quantitative research method to solve this problem. Firstly, the theoretical model of relevant variables was pulled down, compared and analyzed, and then the data were collected by questionnaires to explain the hypotheses of this study by statistical methods. The results show that Chinese people are more willing to use third-party mobile payment than Thais. Discount promotion, sociability, and message awareness have a significant effect on perceived risk, direct risk has a significant positive effect on continuous purchase intention, and perceived risk has a mediating effect.

**Keywords:** *Discount sales promotion, sociability, message awareness, perceived risk, willingness to continue adoption*

### 1. Introduction

#### 1.1 Research background

With the advent of the Internet era, the operation of many traditional industries began to innovate in combination with the Internet, and the innovation of operation mode also brought the innovation of payment method. It can be seen that Internet technology is becoming an important driving force to change national living habits, promotion and consumption upgrade, and social transformation. Third-party mobile payment enterprises have found new markets, and with the continuous development of relevant payment technologies and the introduction of various mobile payment standards, the offline payment market has shown rapid development.

Mobile payment, also known as third-party mobile payment, is an electronic payment method, through the mobile phone as the user's medium, become a tool for payment transactions. Mobile payment is the use of mobile devices to transfer money from payers to recipients through intermediaries or directly (Mallat, 2007). Nowadays, more and more users use mobile payment products, and people's living habits and consumption patterns gradually change with the maturity of mobile payment products. With the continuous progress of mutual network technology and the increasing number of mobile phone users, third-party mobile payment has gradually become an indispensable payment tool in people's life (Yuanyuan Cao, 2008). Mobile payments can be considered as an alternative to cash, credit CARDS, and online banking (Shin, 2010). Therefore, many countries also pay more and more attention to the third-party payment platform, and in order to protect the banking system is also constantly introduced the corresponding new policies. In 2017, China issued three major measures in just one year, which is undoubtedly a new challenge for third-party payment institutions.

#### 1.2 Significance and purpose

This study will focus on the third-party mobile payment market, combining with the results of former scholars and third party development status and trend of mobile payment in the mobile internet environment. The third-party mobile used motive--the influence factors of perceived risk-- and continuing adoption intention through the collection of the questionnaire, which uses the quantitative analysis of

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sample data statistical analysis method to explore consumers' used motivation influence on perceived risk situation, the analysis of consumers' perceived risk for continued use, and the analysis of the influence of different types of consumers in the consumer use of motivation, perceived risk, and continuing adoption intention of whether they have a different analysis. According to the conclusion, this paper provides reasonable suggestions for the development of the third-party mobile payment platform. Through empirical research, the author hopes to explore consumers' motivation, perceived risk, and willingness to continue using third-party mobile payment, and to put forward relevant Suggestions for third-party mobile payment platforms and mobile commerce enterprises, to promote the development of third-party mobile payment as far as possible. Therefore, this study proposes research purposes:

1. To explore the impact of consumers' motivation on perceived risk.
2. Analysis of consumer perceived risk on the impact of willingness to continue adoption.
3. Analysis of different types of countries in consumers' motivation, perceived risk, and the willingness to continue adoption whether there is a difference.

## 2. Hypothesis

Motivation is derived from the ancient Latin *movere*, which originally means to trigger or move, and it is a driving force through which a person or group. Motivation will motivate individuals to achieve certain goals and work processes (Herbert, 1976). Schiffman & Kanuk (2000) proposed four types of use motivation being stimulated.

The purpose of this study was to explore the relationship between promotional discounting motivation, social motivation, information perception, perceived risk, and willingness to continue using services or products. According to the research motivation, research purpose, and literature discussion, the research framework was designed to analyze the influence of promotion and discount motivation, social motivation, information cognition, perceived risk, and willingness to continue to consume any services or products.

### 2.1 perceived risk

Bauer (1960) argued that most consumer purchasing decisions lead to uncertain outcomes. Perceived risk makes consumers change their habits towards new technologies and leads to uncertainty in mobile business transactions (Chong et al., 2012). Therefore, this study believes that perceived risk is the uncertainty or adverse result of consumers' perception in purchasing products or services, and is a subjective expected loss (Chong et al., 2012). Jacoby and Kaplan (1972) pointed out in their study that perceived risk has a multi-dimensional structure.

- H1: discount promotion has a significant positive impact on perceived risk;
- H2: sociability has a significant positive impact on perceived risk;
- H3: information cognition has a significant positive effect on perceived risk.

### 2.2 willingness to continue using

Fishbein and Ajzen (1975) argued that continuous adoption intention is an individual's tendency to take specific behaviors and actions. Oliver (1997) defined continuous adoption intention as a definite possibility to participate in certain behavior.

- H4: perceived risk has a significant positive effect on willingness to continue using;
- H5: perceived risk has a mediating effect on the discount promotion and continuous adoption intention;
- H6: perceived risk mediates between sociability and willingness to continue using;
- H7: perceived risk has a mediating effect on information cognition and intention of continuous adoption;

Therefore, a causal relationship model is proposed as the framework of this study, and the hypothesis is verified by this framework. As shown in figure 1:

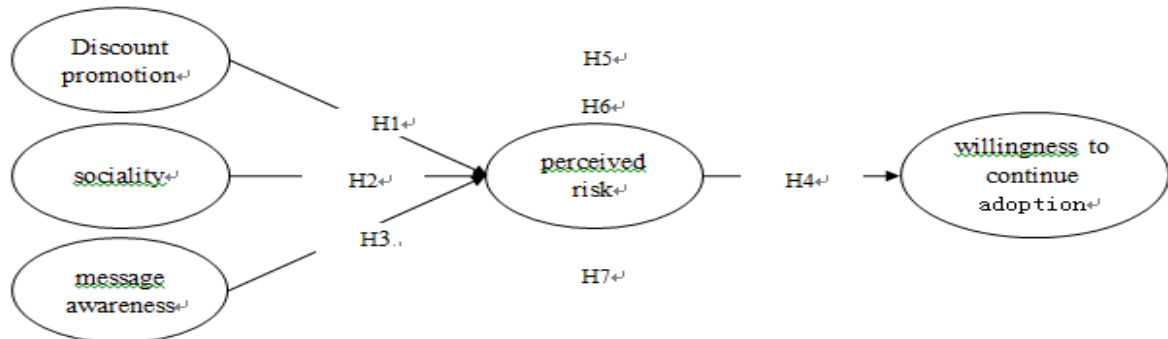


Figure 1 Research Framework

### 3. Research Methods

#### 3.1 Research objectives and data collection

In order to understand the relationship model of promotion and discount motivation, social motivation, information cognition, perceived risk, and continuous willingness to adopt, this study took consumers in Shanghai, China, and Bangkok, Thailand, as the research objects, and answered the questions. Due to the characteristics of large human flow and convenient sample collection, it was representative to some extent. Quota sampling method, which means that the matrix is selected according to a certain control index or a specific classification, and the recipient is selected according to convenient sampling or judgment sampling (Dunphy, 1997).

In this study, structural equation modeling (SEM) was used to verify the relationship between variables. Generally speaking, when the sample size is less than 100, almost all SEM analysis is unstable. Only samples greater than 200 can be considered as a medium sample. In order to pursue stable SEM analysis results, samples less than 100 are not encouraged. Hair, Black, Babin, Anderson, and Tatham (1998) proposed that the sampling for factor analysis should not be less than 50 observations, and the proportion of questions to observations should be 1:10. Besides, Chan and Bentler (1993) also suggested that the sample size should be at least five to ten times the estimated parameters of the model.

Therefore, this study uses a quota sampling method. The paper version of the questionnaire was distributed on the spot. In order to maintain a high difference in the selection of questionnaire samples, the single variable sample was selected and deleted in the sample screening. Consumers in different countries and regions were given the same number of samples, and every survey object had the chance to be selected as the research object, which fully guaranteed the authenticity of the sample. The official questionnaire was issued in January 2020 with 520 samples.

#### 3.2 Research analysis method

The main research method of this study is a questionnaire survey. Through papers, journals, magazines, books, and other relevant literature, this study analyzed the influence of promotional discount motivation, social motivation, information perception, perceived risk, and willingness to continue to use. In this paper, the software is used as the research tool to analyze the results in-depth and verify the content of this study by combining with the previous literature research to achieve the expected goal.

The Analysis methods used in this study include Descriptive Statistics, Reliability Analysis, Validity Analysis, Analysis of Variance (ANOVA), and Multiple Regression Model Analysis.

### 4. Results of Research

#### 4.1 Narrative statistical analysis

In this study, the basic information of the survey objects was summarized in the form of narrative statistics. The contents are as follows: gender, age, education level, marital status, and nationality.



A total of 520 questionnaires were issued, and 520 were recovered, of which 480 were valid, accounting for 92%. In this survey, women are the majority, accounting for 62.2% of the total population. Most of them are under the age of 20, accounting for 66.5% of the total. In terms of education, a bachelor's degree is the most, at 59.8%. In terms of marital status, the largest number were unmarried, at 60.8%. In terms of nationality, Chinese and Thai share the same proportion, as shown in Table 1.

**Table 1** Descriptive statistics of demographic variables

| variable                | category             | frequency | Frequency (%) |
|-------------------------|----------------------|-----------|---------------|
| gender                  | male                 | 166       | 32.9          |
|                         | female               | 314       | 62.2          |
| age                     | 29 (including below) | 336       | 66.5          |
|                         | 30-39                | 65        | 12.9          |
|                         | 40-49                | 40        | 7.9           |
|                         | 50 (including above) | 39        | 7.7           |
| The degree of education | specialized subject  | 34        | 6.7           |
|                         | undergraduate        | 302       | 59.8          |
|                         | master               | 136       | 26.9          |
| Marital status          | doctor               | 8         | 1.6           |
|                         | married              | 173       | 34.3          |
|                         | unmarried            | 307       | 60.8          |
| nationality             | chinese              | 261       | 54.4          |
|                         | thai                 | 219       | 45.6          |

#### 4.2 Reliability and validity test analysis

Reliability analysis is an analytical tool used to measure the stability and reliability of questionnaires. Generally, we use the Cronbach model for reliability analysis, which is simply to observe whether there is a high internal consistency between items, mainly by observing Cronbach's alpha value. Generally, this value remains between 0 and 1, by which the value of greater than 0.8 indicates that the scale has good reliability. When this value is between 0.7 and 0.8, the scale is acceptable. However, if it is between 0.6 and 0.7, it means that the scale is acceptable, but needs some improvement. Validity analysis is usually an effective tool to measure whether the questionnaire has validity and correctness, that is, whether the questionnaire can measure the degree of characteristics of the predicted scale.

The validity result analysis was mainly observed by the KMO value and Bartlett sphere test. Kaiser gave the standard of commonly used KMO measurement, that is, when the value is greater than or equal to 0.9, the scale is very suitable. When the value is between 0.9 and 0.8, it is suitable. When the value is between 0.8 and 0.7, the scale is average. Nevertheless, if this value is below 0.6, the scale is inappropriate. The Bartlett spherical test is mainly used to observe the p-value. When the probability corresponding to this value is greater than the significance level, the null hypothesis is rejected; otherwise, it is considered suitable for factor analysis.

This study used Cronbach's  $\alpha$  coefficient as the reliability criterion. Each variable  $\alpha$  value is higher than 0.60, KMO value is greater than 0.7, the cumulative variance contribution rate of the minimum value is 48.73%, and the minimum load factor is 0.45, higher than the acceptable threshold, as shown in Table 2.

**Table 2** Factor analysis

| variable                         | Minimum factor load | Cronbach's $\alpha$ | KMO  | Total variance explained |
|----------------------------------|---------------------|---------------------|------|--------------------------|
| Discount sales promotion         | 0.97                | 0.86                | 0.73 | 78.98%                   |
| Sociability                      | 0.82                | 0.91                | 0.81 | 77.92%                   |
| Message awareness                | 0.70                | 0.84                | 0.81 | 61.30%                   |
| Perceived risk                   | 0.69                | 0.94                | 0.90 | 62.15%                   |
| Willingness to continue adoption | 0.89                | 0.94                | 0.91 | 81.22%                   |

Remarks: This study is self-collected.

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#### 4.3 Difference analysis

This section mainly discusses different backgrounds (gender, age, education level, marital status, and nationality) to analyze discount promotion, sociability, information cognition, perceived risk, and continuous purchase intention. This research adopts the independent sample T-test (1) to consider whether the mean of the two independent samples has a difference in the statistics, one-way ANOVA, and independent sample (one - way ANOVA) and (2) to test whether the mean of the groups of three or more independent samples has a difference in the social sciences scenario. This analysis method can reflect social reality.

In this study, gender, age, education level, marital status, and nationality were used as independent variables to conduct a differentiation test on the influence of the dependent variables on discount promotion, sociability, information perception, perceived risk, and continuous purchase intention. The gender level was tested by the independent sample t-test, while gender, age, education level, marital status, and nationality were tested by one-way ANOVA.

##### 4.3.1 Gender

In this section, gender is taken as the independent variable, and discount promotion, sociability, information cognition, perceived risk, and willingness to continue purchasing are taken as the variables to conduct t-test analysis of independent samples to understand the differences between different genders. As shown in table 3:

**Table 3** Gender difference analysis of the study variables

|                                  | male        | female      | t     |
|----------------------------------|-------------|-------------|-------|
|                                  | M ± SD      | M ± SD      |       |
| Discount sales promotion         | 4.08 ± 1.04 | 4.27 ± 0.86 | -1.94 |
| Sociability                      | 4.15 ± 0.98 | 4.19 ± 0.90 | -0.44 |
| Message awareness                | 4.41 ± 0.75 | 4.48 ± 0.61 | -1.10 |
| Perceived risk                   | 4.31 ± 0.79 | 4.37 ± 0.68 | -0.97 |
| Willingness to continue adoption | 4.30 ± 0.87 | 4.44 ± 0.71 | -1.70 |

Remarks: This study is self-collected.

As can be seen from Table 3, there were no significant gender differences in discount promotion, sociability, information cognition, perceived risk, and willingness to continue adoption ( $p > 0.05$ ).

##### 4.3.2 Age

In this section, age was taken as an independent variable, and discount promotion, sociability, information cognition, perceived risk, and willingness to continue adoption were taken as variables to conduct t-test analysis of independent samples to understand the differences at the level of different genders. As shown in table 4:

**Table 4** Age difference analysis of the study variables

| years old                        | ≤29         | 30 - 39     | 40 - 49     | ≥50         | t        |
|----------------------------------|-------------|-------------|-------------|-------------|----------|
|                                  | M ± SD      | M ± SD      | M ± SD      | M ± SD      |          |
| Discount sales Promotion         | 4.02 ± 0.98 | 4.46 ± 0.75 | 4.78 ± 0.38 | 4.74 ± 0.46 | 16.75*** |
| Sociability                      | 4.00 ± 0.96 | 4.50 ± 0.87 | 4.66 ± 0.51 | 4.65 ± 0.47 | 15.06*** |
| Message awareness                | 4.34 ± 0.71 | 4.69 ± 0.47 | 4.77 ± 0.35 | 4.69 ± 0.46 | 11.38*** |
| Perceived risk                   | 4.20 ± 0.76 | 4.64 ± 0.48 | 4.75 ± 0.44 | 4.76 ± 0.33 | 18.64*** |
| Willingness to Continue adoption | 4.25 ± 0.81 | 4.70 ± 0.53 | 4.73 ± 0.54 | 4.77 ± 0.61 | 14.21*** |

Remarks: This study is self-collected. \*\*\*:  $p < 0.001$ ; \*\*:  $p < 0.01$ ; \*:  $p < 0.05$

Table 4 showed significant differences in age in discount promotion, sociability, information perception, perceived risk, and willingness to continue using ( $p < 0.001$ ). Among them, in terms of discount

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promotion, 29 years old (including below) were less sensitive than 30 years old ( $p < 0.001$ ). There was a significant difference in discount promotion among the three age groups of 30-39, 40-49, and 50 (including above) ( $p < 0.05$ ).

In terms of sociability, those aged 29 and under were significantly less social than those aged 30 and above ( $p < 0.001$ ). There was a significant difference in sociability among the three age groups of 30-39, 40-49, and 50 (including above) ( $p < 0.05$ ).

In terms of information cognition, the level of information cognition of 29 years old (including below) was significantly lower than that of 30 years old ( $p < 0.001$ ). There was a significant difference in information cognition among the three age groups of 30-39, 40-49, and 50 (including above) ( $p < 0.05$ ).

In terms of perceived risk, the level of perceived risk was significantly lower at age 29 (with less than 30) than at age 30 ( $p < 0.001$ ). There was a significant difference in perceived risk between the three age groups of 30-39, 40-49, and 50 (above) ( $p < 0.05$ ).

In terms of willingness to continue using, the level of willingness to continue using was significantly lower at the age of 29 (including below) than at the age of 30 ( $p < 0.01$ ). There was a significant difference in the willingness to continue using in the three age groups of 30-39, 40-49, and 50 (including above) ( $p > 0.05$ ).

#### 4.3.3 Education level

In this section, education level is taken as the independent variable, and discount promotion, sociability, information cognition, perceived risk, and willingness to purchase are taken as the variables to conduct t-test analysis of independent samples to understand the differences between different genders, as shown in Table 5.

**Table 5** Analysis of the differences in the study variables in education level

|                                  | Specialized subject | Undergraduate course | Master      | Doctor      | t      |
|----------------------------------|---------------------|----------------------|-------------|-------------|--------|
|                                  | M ± SD              | M ± SD               | M ± SD      | M ± SD      |        |
| Discount sales promotion         | 4.70 ± 0.51         | 4.16 ± 0.98          | 4.15 ± 0.88 | 4.79 ± 0.31 | 4.80** |
| Sociability                      | 4.66 ± 0.53         | 4.09 ± 0.94          | 4.23 ± 0.95 | 4.59 ± 0.46 | 4.87** |
| Message awareness                | 4.76 ± 0.46         | 4.40 ± 0.70          | 4.50 ± 0.61 | 4.58 ± 0.47 | 3.61*  |
| Perceived risk                   | 4.72 ± 0.46         | 4.29 ± 0.76          | 4.39 ± 0.65 | 4.46 ± 0.71 | 4.08** |
| Willingness to continue adoption | 4.66 ± 0.54         | 4.32 ± 0.81          | 4.47 ± 0.71 | 4.35 ± 0.93 | 2.73*  |

Remarks: This study is self-collected. \*\*\*:  $p < 0.001$ ; \*\*:  $p < 0.01$ ; \*:  $p < 0.05$

Table 5 showed significant differences in educational level among discount promotion, sociability, information cognition, perceived risk, and willingness to continue using ( $p < 0.05$ ). In terms of discount promotion, junior college students are more sensitive than undergraduate and graduate students ( $p < 0.001$ ). Doctoral students were more sensitive to discount promotion than undergraduate and graduate students ( $p < 0.001$ ). There was no significant difference in discount promotion between undergraduate and graduate students and between doctoral students and junior college students ( $p > 0.05$ ).

In terms of sociability, college students had a higher level of sociability than undergraduate and graduate students ( $p < 0.001$ ). There was no significant difference between doctoral students and other groups ( $p > 0.05$ ), and no significant difference between undergraduate students and graduate students ( $p > 0.05$ ).

In terms of information cognition, junior college students had a higher level of information cognition than undergraduate and graduate students ( $p < 0.05$ ). There was no significant difference between doctoral students and other groups ( $p > 0.05$ ), and no significant difference between undergraduate students and graduate students ( $p > 0.05$ ).

In terms of perceived risk, the level of perceived risk was higher in junior college than in undergraduate and graduate students ( $p < 0.05$ ). There was no significant difference between doctoral



students and other groups ( $p>0.05$ ), and no significant difference between undergraduate students and graduate students ( $p>0.05$ ).

In terms of the willingness to continue to use, the college students had a higher level of willingness to continue to use than the undergraduate students ( $p<0.05$ ). There was no significant difference between doctoral students and other groups ( $p>0.05$ ), and no significant difference between graduate students and other groups ( $p>0.05$ ).

#### 4.3.4 Marriage

In this section, marriage is taken as the independent variable, and discount promotion, sociability, information cognition, perceived risk, and continuous purchase intention are taken as the variables to conduct t-test analysis of independent samples to understand the differences between different genders, as shown in Table 6.

**Table 6** Analysis of differences in the study variables in marital status

|                                  | Married     | Unmarried   | t       |
|----------------------------------|-------------|-------------|---------|
|                                  | M ± SD      | M ± SD      |         |
| Discount sales promotion         | 4.43 ± 0.87 | 4.07 ± 0.94 | 4.15*** |
| Sociability                      | 4.38 ± 0.89 | 4.06 ± 0.93 | 3.60*** |
| Message awareness                | 4.58 ± 0.60 | 4.38 ± 0.68 | 3.37**  |
| Perceived risk                   | 4.54 ± 0.62 | 4.24 ± 0.74 | 4.79*** |
| Willingness to continue adoption | 4.56 ± 0.73 | 4.30 ± 0.78 | 3.76*** |

Remarks: This study is self-collected. \*\*\*:  $p<0.001$ ; \*\*:  $p<0.01$ ; \*:  $p<0.05$

From Table 6, there were significant differences in marital status in discount promotion, sociability, information perception, perceived risk and willingness to continue using ( $p<0.05$ ), and married people had higher levels in discount promotion, sociability, information perception, perceived risk and willingness to continue using than unmarried people.

#### 4.3.5 Analysis of differences of study variables in nationality

In this section, nationality is taken as the independent variable, and discount promotion, sociability, information cognition, perceived risk, and willingness to continue purchasing are taken as the variables to conduct the t-test analysis of independent samples to understand the differences at the level of different genders. As shown in table 7:

**Table 7** Analysis of differences in the nationality of the study variables

|                                  | China       | Thailand    | t        |
|----------------------------------|-------------|-------------|----------|
|                                  | M ± SD      | M ± SD      |          |
| Discount sales promotion         | 4.39 ± 0.74 | 4.03 ± 1.04 | -4.43*** |
| Sociability                      | 4.32 ± 0.75 | 4.05 ± 1.04 | -3.33**  |
| Message awareness                | 4.57 ± 0.52 | 4.35 ± 0.75 | -3.60*** |
| Perceived risk                   | 4.50 ± 0.57 | 4.22 ± 0.81 | -4.46*** |
| Willingness to continue adoption | 4.46 ± 0.71 | 4.33 ± 0.82 | --1.99*  |

Remarks: This study is self-collected. \*\*\*:  $p<0.001$ ; \*\*:  $p<0.01$ ; \*:  $p<0.05$

It can be seen from Table 7 that there are significant differences in the nationality of discount promotion, sociability, information cognition, perceived risk and willingness to continue adoption ( $p<0.05$ ), and the level of Chinese in discount promotion, sociability, information cognition, perceived risk and willingness to continue adoption is higher than that of Thailand.



#### 4.4 Regression analysis

4.4.1 Mediating effect analysis of perceived risk between discount promotion and willingness to continue the adoption.

In order to further verify the perceived risk in discount promotions and willingness to continue adoption intention plays an intermediary role, this research adopts the three-step regression method for validation, the first step to verify the discount promotion and continuing adoption intention, the relationship between the second validation discount promotion and the relationship between the perceived risk, the third step validation of perceived risk and discount promotion impact on continuing adoption intention at the same time. The specific results are shown in Table 8.

**Table 8** Mediation Regression analysis: between discount promotion and willingness to continue the adoption

| The independent variables | The first step<br>Dependent variable:<br>willingness to continue the<br>adoption |          | The second step<br>Dependent variable:<br>perceived risk |          | The third step<br>Dependent variable:<br>willingness to continue the<br>adoption |          |
|---------------------------|--|----------|--|----------|--|----------|
|                           | $\beta$  | t        | $\beta$  | t        | $\beta$  | t        |
| Discount sales promotion  | 0.55   | 14.20*** | 0.76   | 25.42*** | -0.14  | -3.22**  |
| Perceived risk            |  |          |  |          | 0.90   | 21.29*** |
| R2                        | 0.30   |          | 0.58   |          | 0.64   |          |
| F                         | 201.66***  |          | 646.13***  |          | 422.95***  |          |

Remarks: This study is self-collected. \*\*\*:  $p < 0.001$ ; \*\*:  $p < 0.01$ ; \*:  $p < 0.05$

As can be seen from Table 9, in the first step, discount promotion can significantly positively predict the level of continuous adoption intention ( $\beta = 0.55$ ,  $t = 14.20$ ,  $p < 0.001$ ); In the second step, discount promotion can significantly positively predict the level of perceived risk ( $\beta = 0.76$ ,  $t = 25.42$ ,  $p < 0.001$ ), that is, hypothesis H1 is confirmed. In the third step, discount promotion can still significantly positively predict the level of continuous adoption intention ( $\beta = -0.14$ ,  $t = -3.22$ ,  $p < 0.05$ ). The perceived risk significantly positively predicted the level of willingness to continue adoption ( $\beta = 0.90$ ,  $t = 21.29$ ,  $p < 0.001$ ), confirming the validity of hypothesis H4. To sum up, perceived risk plays a mediating role between discount promotion and willingness to continue adoption, and its mediating effect size is 0.68, which proves the validity of hypothesis H5.

4.4.2 Mediating effect analysis of perceived risk between sociability and willingness to continue the adoption

In order to further verify the perceived risk between sociability and willingness to continue adoption intention plays an intermediary role, this research adopts the three-step regression method for validation, the first step to verify the sociability and continuing adoption intention, the relationship between the second validation sociability and the relationship between the perceived risk, the third step validation of perceived risk and sociability impact on continuing adoption intention at the same time. The specific results are shown in Table 9 as follows.

**Table 9** Mediation Regression analysis: between sociability and willingness to continue the adoption

| The independent variables | The first step<br>Dependent variable:<br>willingness to continue the<br>adoption |          | The second step<br>Dependent variable:<br>perceived risk |          | The third step<br>Dependent variable:<br>willingness to continue the<br>adoption |          |
|---------------------------|--|----------|--|----------|--|----------|
|                           | $\beta$  | t        | $\beta$  | t        | $\beta$  | t        |
| Sociability               | 0.57   | 15.07*** | 0.74   | 23.83*** | -0.04  | -0.96    |
| Perceived risk            |  |          |  |          | 0.82   | 20.06*** |
| R2                        | 0.32   |          | 0.54   |          | 0.63   |          |
| F                         | 227.07***  |          | 567.70***  |          | 410.10***  |          |

Remarks: This study is self-collected. \*\*\*:  $p < 0.001$ ; \*\*:  $p < 0.01$ ; \*:  $p < 0.05$

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From Table 9, in the first step, sociability can significantly positively predict the level of continuous adoption intention ( $\beta = 0.57$ ,  $t = 15.07$ ,  $p < 0.001$ ); In the second step, discount sociability can significantly positively predict the level of perceived risk ( $\beta = 0.74$ ,  $t = 23.83$ ,  $p < 0.001$ ), that is, hypothesis H2 is confirmed. In the third step, sociability could not still significantly positively predict the level of continuous adoption intention ( $\beta = -0.04$ ,  $t = -0.96$ ,  $p > 0.05$ ). The perceived risk significantly positively predicted the level of willingness to continue adoption ( $\beta = 0.82$ ,  $t = 20.06$ ,  $p < 0.001$ ), confirming the validity of hypothesis H4. To sum up, perceived risk plays a mediating role between sociability and willingness to continue adoption, and its mediating effect size is 0.61, which proves the validity of hypothesis H6.

4.4.3 Mediating effect analysis of perceived risk between message awareness and willingness to continue the adoption

In order to further verify the perceived risk in the information cognition and continuing adoption intention plays an intermediary role, and validated by the three-step regression method, this study first step in the validation information cognition and the relationship between the continuing adoption intention, the second validation information cognition and the relationship between the perceived risk, the third step validation of perceived risk and information cognition to continue at the same time by the will of the impact. The specific results are shown in Table 10.

**Table 10** Mediation Regression analysis: between message awareness and willingness to continue the adoption

|                           | The first step   |          | The second step                    |          | The third step   |          |
|---------------------------|--|----------|------------------------------------|----------|--|----------|
|                           | Dependent variable: willingness to continue the adoption |          | Dependent variable: perceived risk |          | Dependent variable: willingness to continue the adoption |          |
| The independent variables | $\beta$  | t        | $\beta$                            | t        | $\beta$  | t        |
| Message awareness         | 0.64   | 18.31*** | 0.83                               | 32.53*** | -0.06  | -1.13    |
| Perceived risk            |  |          |                                    |          | 0.84   | 16.91*** |
| R2                        | 0.41   |          | 0.69                               |          | 0.63   |          |
| F                         | 335.24***  |          | 1058.28***                         |          | 410.59***  |          |

Remarks: This study is self-collected. \*\*\*:  $p < 0.001$ ; \*\*:  $p < 0.01$ ; \*:  $p < 0.05$

According to table 10, in the first step, message awareness can significantly positively predict the level of willingness to continue using ( $\beta = 0.64$ ,  $t = 18.31$ ,  $p < 0.001$ ). In the second step, information cognition can significantly positively predict the level of perceived risk ( $\beta = 0.83$ ,  $t = 32.53$ ,  $p < 0.001$ ), that is, confirming the validity of hypothesis H3. In the third step, information cognition could not significantly positively predict the level of willingness to continue using ( $\beta = -0.06$ ,  $t = -1.13$ ,  $p > 0.05$ ). The perceived risk significantly positively predicted the level of willingness to continue using ( $\beta = 0.84$ ,  $t = 16.91$ ,  $p < 0.001$ ), confirming the validity of hypothesis H4. To sum up, perceived risk plays a mediating role between message awareness and willingness to continue adoption, and its mediating effect size is 0.70, which proves the validity of hypothesis H7.

## 5. Conclusion and Discussion

Through differential analysis, this study found that gender had no significant influence on discount promotion, sociability, information cognition, perceived risk, and willingness to continue adoption, while age, education level, marriage, and nationality were above the average level. Through regression analysis and mediation effect, the theory is further verified that the willingness to adopt mobile payment will be affected by perceived risk. Also, the proportion of third-party payment increases with the improvement of education level, indicating that individual differences of consumers do have an impact on the use of third-party payment.



Through relevant studies, it was found that discount promotion, sociability, and information cognition were significantly positively correlated with perceived risk, and significantly positively correlated with willingness to continue adoption, which indicates that the higher the willingness of mobile payment, the higher the consumption sensitivity and the stronger the responsiveness. The clearer the future payments and purchases, the greater the risk perception. The results of empirical research show that among the groups of potential users (Chinese and Thai), the willingness to make a payment on mobile is higher than that of Thais. The reason is that for customers who have used the service less, the lack of experience makes it difficult for them to imagine their satisfaction after using the service, and it is difficult to connect satisfaction with behavior intention. What is most easily and directly associated is the function of mobile payment. When the mobile payment service has been used, users pay more attention to the overall evaluation of the experience service, rather than just the risk, so the intention of use is affected by the perceived risk (for the first time). The improvement of perceived risk has a greater impact on the promotion of continuous use intention. This study holds that the significant influence of perceived risk in the research of third-party mobile payment is in line with the development of this mode of payment, which is different from our usual product consumption. Product consumption is group, time, and regional. With the development of the mainstream, these will be replaced by more advanced ways in the future.

In order to enhance consumers' willingness to continue adopting mobile payment and achieve the operational goals of enterprises, this study puts forward some opinions and suggestions according to the research results: Firstly, operators should take into account the usefulness of the system to consumers and reduce risks when developing third-party mobile payment platforms. Secondly, starting from the needs and habits of users, constantly improve and update to improve the efficiency of payment. Lastly, enhance user experience and improve user satisfaction.

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