



## DETERMINANTS OF USERS' WILLINGNESS TO USE MOBILE PAYMENT: AN EMPIRICAL STUDY IN TONGREN UNIVERSITY, CHINA

Feng Ziwei<sup>i</sup>,

Jacqueline Tham,

S. M. Ferdous Azam

Postgraduate Centre (PGC),

Management and Science University,

University Drive, Off Persiaran Olahraga,

40100 Shah Alam, Selangor,

Malaysia

### Abstract:

The purpose of this paper is to establish and assess the determinants of users' willingness to use mobile payment: an empirical study in Tongren University, China. After conducting a rigorous literature review with theoretical underpinning, this research has come up with the proper methodology to move forward. According to the comprehensive guideline, the total number of Tongren College and Tongren Vocational College is more than 38,000, so the minimum sample is finally determined to be 380. Besides, after conducting Exploratory Factor Analysis (EFA), the measuring modelling was done by taking into account all the variables concurrently in order to verify the appropriateness of the overall model. All the hypotheses of this study have been tested through the application of SEM. For the overall model as a whole, the statistical result indicates a good fit. From the model, it can be seen that all the variables uphold a positive value. Findings revealed that perceived performance risk perceived financial risk and perceived privacy risk have substantial positive impacts on acceptance intention of mobile payment. Therefore, since a myriad of factors decides the attitude toward mobile payment use, further studies can also be developed by adding more constructs in the theoretical model in this paper.

**Keywords:** determinants, perceived usefulness, perceived risk, perceived ease of use, perceived interest, social influence, user's willingness to use, China

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<sup>i</sup> Correspondence: email [574073615@qq.com](mailto:574073615@qq.com)

## 1. Introduction

Mobile payment is a contemporary term which is usually understood as money paid for service or product through mobile phones, smart terminals and other portable devices through mobile communication network or information exchange technology between smart terminals and payment acceptance terminals (Francisco, Francisco & Juan, 2015). With the popularity of smartphones, mobile payment has become an analytical payment method in the technology age. A transaction using mobile devices has become a trend among millennial (Azam and Moha Asri, 2015; Tham et al., 2017; Zhang, 2018; Udriyah et al., 2019; Al Shehhi and Azam, 2019a; Tao et al., 2019). China's mobile payment industry has formed a relatively complete industrial chain. The active participation of many commercial banks, telecommunication operators and third-party payment companies has contributed significantly to the development of this new payment channel (Chen & Li, 2017). The payment scope covers transfer remittances, online shopping, self-payment, mobile phone charges, public transport and payment to individuals (Chou, Chen & Lin, 2015).

Several factors are restricting mobile payment acceptance, and this has a significant effect on the user's willingness to use mobile payment (Gao, Waechter, and Bai, 2015). This study refers to the Technology Acceptance Model (TAM) as the main framework and integrates the theory of perceived risk into the theoretical model, and further determines the theoretical model with perceived usefulness, perceived ease of use, perceived interest as well as perceived risk as the direct factors. The outcome of this study intends to understand the factors which determine users' intention for using mobile payment (Gao, Waechter, and Bai, 2015; Haque et al., 2014; Rachmawati et al., 2019; Tarofder et al., 2019; Al Shehhi and Azam, 2019b). This study further explores the fundamental factors influencing user usage behaviour from different perspectives to improve a user's willingness to use mobile payment services.

As a new means of payment in recent years, mobile payment has an increasingly large user group. The theoretical basis of existing research is the TAM model or the UTAUT model. TAM model is one of the most cited models by scholars over the years having strong applicability in various fields of consumer's willingness to use new technology. However, in the previous study only perceived ease of use and perceived usefulness were used (Oliveira et al., 2016; Azam et al., 2014; Haur et al., 2017; Tarofder et al., 2017; Katukurunda et al., 2019; Chong et al., 2019). As a result, the application of the TAM model or UTAUT model alone in the field of mobile payment has not been well explained. Thus, the primary purpose of this paper is to study the influencing factors to use mobile payment. Exploring the influencing factors of consumers' choice of mobile payment platform will be helpful for mobile payment provider to have a clearer understanding of the advantages and disadvantages of its products (Oliveira et al., 2016).

## 2. Literature Review

Dahl Berg (2008) reviewed past research, which showed that mobile payment users value the security of information technology the most, and security performance and social culture will directly determine whether users adopt mobile payment (Dahl Berg, 2008). Teo (2015) uses partial least squares structural equation modelling to study the willingness to accept mobile payment. The results show that effort expectation (EE) and performance expectation (PE) are the key influencing factors, trust (TR) also has a positive impact on willingness to use, the anticipated cost has no effect, and experience plays a role in adjusting variables between expectation and attitude to use. Mcknight and Chervany (2001), studied the willingness of users to accept the QR payment system. The author surveyed Internet users nationwide through an online survey. The results show that attitude, innovation and subjective norms positively affect users' use of this technology in the future, and compatibility, safety and personal innovation also positively affect users' use (Liébanacabanillas, 2016; De Silva et al., 2017; Kuruwitaarachchi et al., 2019; Pambreni et al., 2019; Fernando et al., 2019).

Qasim and Abu-Shanab (2016) analysed the impact of risk, performance and innovation on consumers' attitudes toward using catering payment system. It was found that consumers' innovation and perceived performance would have a positive impact on acceptance attitudes. Risk had a moderating effect between innovation and use attitudes. Slade, Dwivedi, Piercy and Williams (2015) developed and tested a model to study the role of expectation in the value of near-field mobile payment services. The results show that expectation positively affects perceived availability and user's emotional experience, and then improves the user's subsequent willingness to use it and prompts users to recommend near-field payment services to others. Through 165 years of longitudinal research, the author studied three-time points of users in the field of near-field mobile payment: before use, three weeks after use and six weeks after use. The results confirm that the three-cycle expectation after use has a positive impact on perceived performance; after six weeks, the accumulation of users' mobile payment service experience will affect the evaluation of services, and users' expectations will be reduced (Lee, Lee, and Hwang, 2014). According to Chen and Li (2017), the introduction of perceived risk and perceived cost into UTAUT model revealed that social impact is the most important factor, users herd mentality and willingness to use mobile payment will be greatly influenced by friends, relatives and friends around them. However, contrary to the expected results, the anticipated cost has nothing to do with willingness to use. The popularity of smart terminals and the low price of network communication make the cost of mobile payment lower. Thus, this does not affect the willingness to use mobile payment Chou, Chen and Lin, (2015). Farivar, Turel and Yuan, (2017) used the UTAUT model to analyse and reveal consumer willingness to use mobile payment by using the Theory of Planned Behavior and rational behaviour as the research basis. Research shows that users' perception of the usability and usefulness of mobile payment, evaluation, normative beliefs and risks has a positive impact on consumers' willingness to use. The degree of

risk perceived by users is not directly related to their usage behaviour, but perceived risk affects users' attitudes positively, and then indirectly affects users' usage attitudes. Use of behaviour has a positive impact (Fang, Chiu and Wang, 2011). Gao, Waechter and Bai, (2015) regards perceived benefits and risks as new variables of the model and combines behaviourism exchange theory. It is found that perceived benefits and risks together determine whether users will eventually adopt mobile payment system, that is, users will weigh the size of both to make final decisions. Among them, perceived benefits are subject to users' knowledge. The structure, cognitive level, rationality of system design and user-perceived security will influence the perceived risk of users, while the perceived risk of users will be affected by the user's perceived entertainment and individual innovative factors of users themselves. However, among the factors restricting the development of mobile payment, the critical factor is consumers' willingness to use third-party mobile payment. The third-party mobile system has characteristics that other payment methods do not have because of the particularity of its payment platform and payment tools. This study found that this new payment method has not yet been accepted and approved by most consumers Chong, Chan and Ooi (2012).

## 2.1 Technology Acceptance Model

Technology Acceptance Model (TAM) was first proposed by Davis (1989) when he studied users' willingness to use Internet technology and products. It has undergone the evolution of the second generation technology acceptance model (TAM2) and the integrated technology acceptance and use model (UTAUT).

Davis proposed a technology acceptance model (TAM) when he studied users' willingness to use Internet technologies and products. According to this theory, users' acceptance of information systems is mainly influenced by perceived ease of use and perceived usefulness. Perceived usefulness mainly refers to whether users feel that using the technology or product can improve efficiency; Perceived ease of use mainly refers to whether the technology or product is easy to operate. The theoretical model of technology acceptance is shown in Figure 1

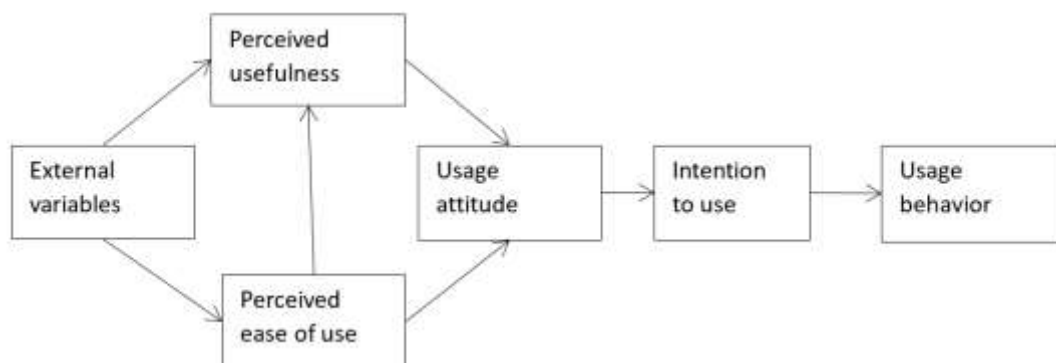


Figure 1: Technology Acceptance Model, Davis (1989)

## 2.2 Second Generation Technology Acceptance Model (TAM2)

Venkatesh and Davis (2000) perfected the first-generation Technology Acceptance Model in subsequent research and proposed the second-generation technology acceptance model (TAM2). The improved model can be understood as that perceived usefulness is composed of supervisory norms, image, service relevance, product quality and result clarity, and there are adjustment variables such as user experience and willingness (16).

The second generation technology acceptance model is shown in Figure 2.

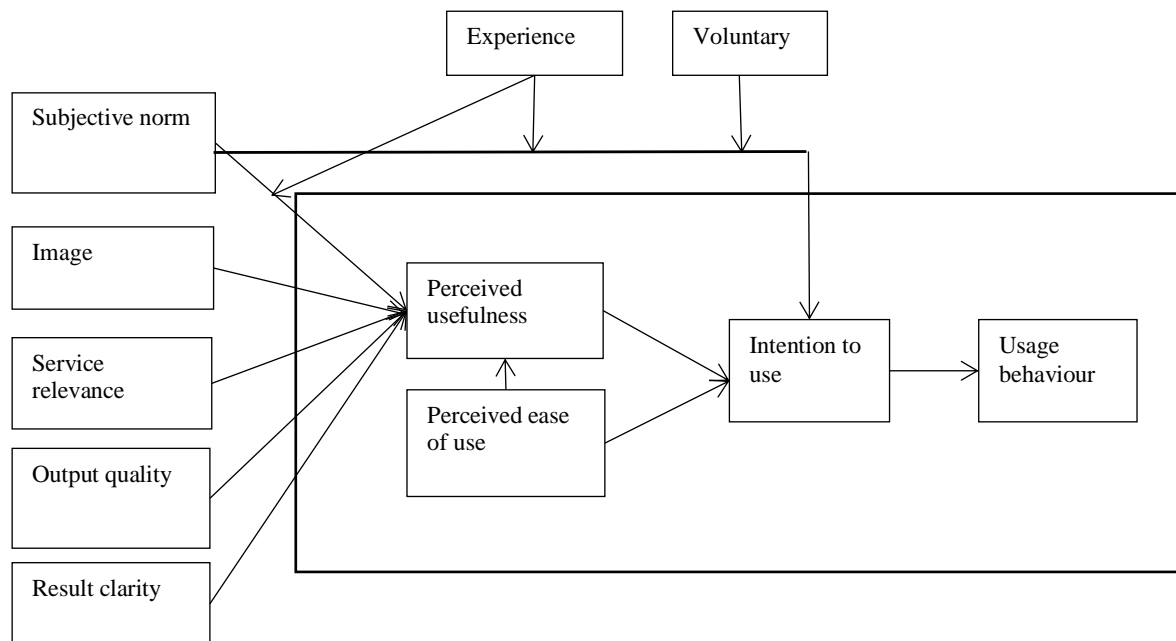


Figure 2: Technology Acceptance Model 2, Davie 1980

## 2.3 Integrated Technology Acceptance and Use Model (UTAUT)

Venkatesh, Morris and others put forward an integrated technology acceptance and use model (UTAUT) based on the integration of TRA and TAM models. The model considers that expected utility, effort expectation, social impact and convenience are the main factors affecting users' willingness to use. The integrated technology acceptance and use model is shown in Figure 3.

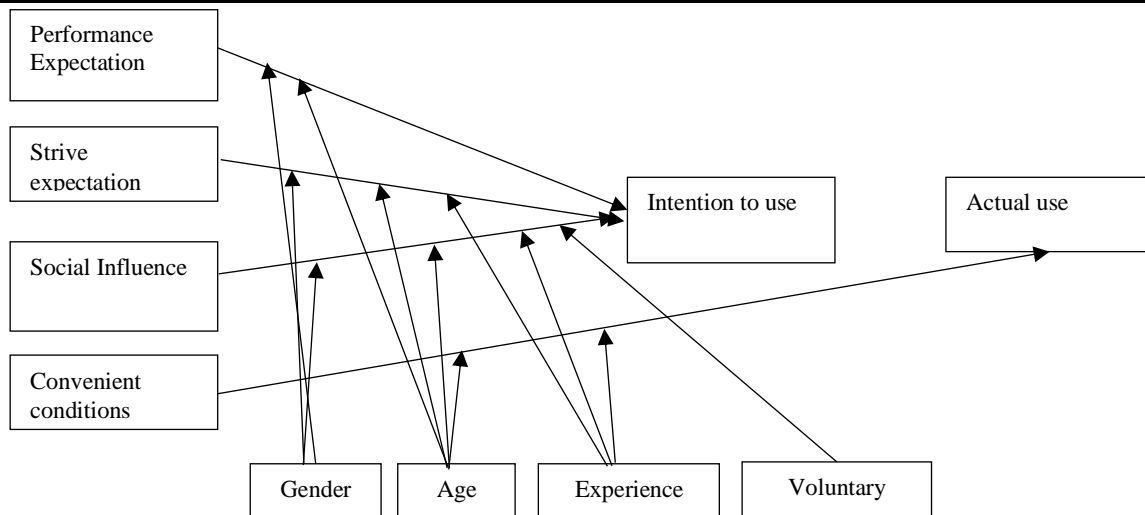


Figure 3: UTAUT Model, Venkatesh 2012)

## 2.4 Perceived Risk Theory

Perceived risk is a concept in the field of psychology. According to Bauer (1960), consumers could not accurately anticipate the results of product use in the process of purchasing behaviour, and some of the results would make him feel unhappy and thus effects customer's intention to purchase a product or service. Behaviour can be regarded as a risk-taking behaviour. When consumers buy a product or brand, they need to bear the possible positive consequences of the product or brand, and the subjective perception of the positive consequences is perceived risk (Jayasuriya and Azam, 2017; Dewi et al., 2019; Nguyen et al., 2019; Kanapathipillai and Azam, 2019; Gunasinghe et al., 2019). Perceived risk emphasises consumers' subjective feelings rather than the real risks in the real world. However high the objective risk is, as long as consumers do not perceive it, the risk will not have any impact on consumers' purchasing behaviour. The definition includes two critical aspects: uncertainty of decision results and the consequence of the wrong decision.

## 2.5 Perceived Interest Theory (PE)

Lieberman (1977) put forward the theory of perceived interest, pointing out that perceived interest can significantly promote human-computer interaction. The theory of perceptual interestingness has been introduced into the research of the information system and other related fields by many scholars. Webster (1992) defines perceived interest as the degree of pleasure in human-computer interaction. Davis (1992) introduced perceived interest as an influencing factor into TAM model and confirmed that perceived interest has a positive impact on consumers' willingness to use. Vallerand (1997) divides perceived interestingness into the intrinsic interestingness of the product and the user-perceived interestingness, in which the user-perceived interestingness is related to the pleasure and satisfaction of performing certain actions. Venkatesh research shows that perceived interest is the central driving force of acceptance intention. Tam

and Oliveira, (2017), found that interestingness has a significant impact on users' attitudes towards using e-books. Many scholars' research has fully confirmed that in the study of new information technology acceptance of Ian, adding perceived interest to the model will make the model have stronger explanatory power. When users use mobile payment, they can not only satisfy their functional needs, but also the subsidiary entertainment functions of mobile payment can satisfy their entertainment needs. Therefore, this paper argues that the interesting factors can positively affect users' willingness to use mobile payment. Therefore, this study considers introducing the perceived interesting factors in the construction of the research model. Following Webster's definition of perceived interestingness, this paper defines perceived interestingness as the degree of user's interestingness in the use of mobile payment.

## **2.6 Review of relevant domestic documents**

Sun, Shen and Wang, (2013), found that security risk, economic risk and time risk have significant positive effects on users' willingness to use in the study of Yu 'e Bao's perceived risk. Zhao (2015) put forward the hypothesis that perceived risk has a positive impact on users' willingness to use online storage services when studying the study on users' willingness to use online storage services Gwebu, Wang, and Guo, (2014), found that security risk, economic risk and time risk have significant positive effects on users' willingness to use in the study of Yu 'e Bao's perceived risk.

Yu (2014) and others took attitude as an intermediary dimension in the research on influencing factors of mobile phone users' willingness to use two-dimensional codes, and found that social norms, perceived ease of use, perceived usefulness and perceived risk attitude indirectly affected their willingness to use, and verified that the willingness to use was significantly positively affected by attitude.

Jiao (2014) pointed out that mobile payment is mobile phone system payment, which refers to information exchange through mobile terminal system ( mobile phone system ) under the condition of Internet or short-distance communication technology to transfer funds between the two sides, including SMS, WAP, DFC, Bluetooth, infrared ray, QR code. Zhu et al. (2014) found that consumers' perceived risk has a significant positive impact on their willingness to use in mobile commerce. Lei and Li (2014) added compatibility, perceived risk, subjective norms and personal innovation to the TAM model proposed by Davis. An empirical study was conducted on the intention of users to use mobile payment. It was concluded that besides subjective norms, which can directly affect users' attitudes towards using mobile payment, other external variables indirectly affect users' use behaviour through perceived ease of use and perceived usefulness. Most of the research results confirm that perceived usefulness and perceived ease of use in TAM have an impact on user behaviour. Zhang (2016) and others (Maghfuriyah et al., 2019; Pushpakumara et al., 2019; Al Shehhi and Azam, 2019c) revised the variables based on empirical study on various things. The results can be connected with the college students' consumers are mainly affected by perceived ease of use and perceived risk when making shopping decisions. Li (2016) used the TAM model to study

the acceptance of Wechat shopping platform. The results showed that perceived usefulness was positively correlated with attitude and intention to use, and attitude was positively correlated to use mobile payment. Based on the TAM model, Yu et al. (2016) found that perceived ease of use significantly affected perceived usefulness and perceived risk significantly affected perceived usefulness and attitude among new technology users. Tao (2016) divides perceived risk into four dimensions when he studies the adoption of cloud service model: perceived security risk, perceived time risk, perceived financial risk and perceived performance risk. The results show that perceived risk has no significant impact on performance expectation, but to some extent, it inhibits users' willingness to use. Wen (2014) and other studies have shown that risk factors have a positive impact on users' adoption and use of the WeChat platform. The research on user information adoption behaviour in public crisis by Shibo et al. shows that perceived risk is positively correlated with the user's intention to adopt information. Liu (2016) found that perceived risk indirectly affected the behavioural intention of Internet financial products by using attitudes and significantly positively affected the attitude of users of Internet financial products. Martins et al. (2014) combined the UTAUT model and perceived risk theory to study the influencing factors of Portuguese people's willingness to use and behaviour of online banking. The results show that performance expectations have the most significant impact on them, followed by effort expectations and social influences, convenience has no significant impact on them, and perceived risk has a significant positive impact on mobile payment customers. Ho, (2012), studied the TAM and Diffusion of Innovation Theory and found through empirical research that ease of use, perceived risk, trust, age, income and payment habits all affect the willingness to pay through mobile payments. Koenig and Lewis (2015), based on Technology Acceptance Model and unified theory, combined perceived pleasure, environment, experience and perceived risk to construct a model, proposed that perceived pleasure has no significant impact on willingness to use, but it has a significant positive impact on ease of use and perceived usefulness, and positively affects perceived risk.

Davis (1989) proposed two key factors that affect users' use of new systems or applications, namely perceived usefulness and perceived ease of use. These two factors will ultimately determine whether users use the system or model. Perceived usefulness refers to whether users expect to adopt a certain technology to improve their work performance or learning efficiency. Perceived ease of use refers to users' efforts to evaluate individuals' efforts to learn and master a certain technology (Seu, 2016) Chien (2015) found that interest has a significant impact on users' attitude to using e-books in the study of the technical and psychological factors that affect the continued use of e-books. Many scholars fully confirmed that adding perceived interest to the model will make the model more explanatory in the study of accepting new technology. Mobile payment will meet not only customers' functional needs but also the ancillary entertainment functions of mobile payment. Therefore, this study considers introducing the perceived interest factors in the construction of the research model.

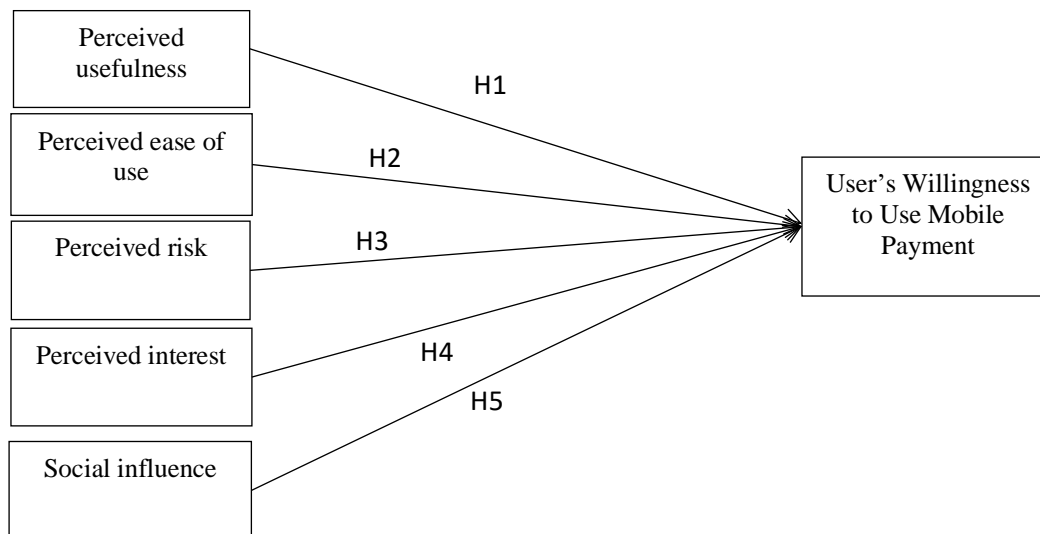


### 3. Research Methodology

According to the research on the existing literature, the Technology Acceptance Model Theory (TAM) is widely used in the field of information technology. The two core structural factors of the Technology Acceptance Model (TAM) are perceived usefulness and perceived ease of use, which conceptually analyses Internet technology acceptance. Xu (2006) further confirmed the Technology Acceptance Model's explanation of consumer attitude and willingness to use mobile payment through a comparative analysis of empirical studies in the Technology Acceptance Model. Based on this, combined with the Technology Acceptance Model Theory, this study takes perceived ease of use and perceived usefulness as two factors that affect the willingness of using mobile payment.

Mobile payment involves financial transactions, and security factors remain a concern when using this payment platform. Therefore, mobile payment risk factors must be considered. Thus, this study incorporates perceived risk into the willingness to use mobile payment.

Based on the TAM model, this paper will bring the theory of perceived risk and perceived taste into the framework and propose the following model as Figure 4:



**Figure 4:** Conceptual Framework

Based on the literature review, the following hypotheses are to be tested in this study.

**Hypothesis H1:** Perceived usefulness has a positive correlation with users' willingness to use mobile payment.

**Hypothesis H2:** Perceived ease of use has a positive correlation with users' willingness to use mobile payment.

**Hypothesis H3:** Perceived security has a positive correlation with users' willingness to use mobile payment.

**Hypothesis H4:** Perceived interestingness has a positive correlation with users' willingness to use mobile payment.

**Hypothesis H5:** Social impact has a positive correlation with users' willingness to use mobile payment.

Questionnaires were used in this study to understand the usage intention of influencing mobile payment users. At the same time, in order to further test the feasibility of the research model and the validity of the hypothesis theory. The reliability and validity of the questionnaire were then tested to ensure all construct has a Cronbach alpha of at least 0.7. There are three public universities in Tongren, namely Tongren Technical College, Tongren College and Tongren Children's Teachers' College. There are 23 730 full-time students in Tongren Vocational and Technical College ([www.trzy.edu.cn](http://www.trzy.edu.cn)). There are 9525 full-time undergraduates in Tongren College, 871 specialists, 525 preparatory students, 405 overseas students ([www.trxy.edu.cn](http://www.trxy.edu.cn)), and Tongren Children's College. There are more than 13,000 students in teachers' colleges. According to the comprehensive guideline (Sekaran & Bougie, 2016), the total number of Tongren College and Tongren Vocational College is more than 38,000, so the minimum sample is finally determined to be 380.

#### 4. Data Analysis

In this study, data analysis will be done in four stages. In the first stage, the collected data will be coded and entered into SPSS worksheet. Stage two involves testing validity, Perceived Ease of Use and exploratory factor analysis (EFA) using SPSS. In stage three, further statistical tests will be conducted; such as confirmatory factor analysis (CFA), Perceived Ease of Use, and validity using Amos. The last stage will employ SEM for the model and hypotheses testing. A series of goodness-of-fit indexes that reflect the fitness of the model will be used in this study. However, there is no universal agreement among the researchers regarding which fitness indexes should be used.

After conducting Exploratory Factor Analysis (EFA), the measuring modelling was done by taking into account all the variables concurrently in order to verify the appropriateness of the overall model. Under this model, the covariance structure of all the concerned latent variables was studied at the same time. Thus, the overall measurement model was tested by combining all the latent variables. Initially, all the items derived from EFA were included in the measurement model.

Finding shows that the fitness level for the measurement model for this study is achieved [Incremental fit (CFI) = .960, (GFI) = .942; Parsimonious fit (CMINDF) = 2.873; and Absolute fit (RMSEA) = .041]. Hence, this study assumes that the unidimensionality for the measurement model has been achieved (Kline, 2011; Zainudin, 2012). No further modification was needed for this model.

After the fitness of the measurement model has been attained it is essential to report the parameter estimates. According to Zainudin (2012), every researcher must observe the unidimensionality, validity and reliability. Hence, to achieve the

discriminant validity, measurement modelling for the constructs are combined to check inters variable correlation value. If the path value between two constructs is higher than 0.85, this proves that the discriminant validity has failed to achieve the required value (Byrne, 2010). Thus, the model is wrong. However, finding shows the correlation among the study constructs and none of the path value is higher than 0.85. As a result, this certifies the discriminant validity of the measurement model.

Moreover, the CFA results are presented below. It is important to mention that the AVE and CR were calculated manually as AMOS cannot calculate it. Table 1 shows the entire CFA results.

**Table 1: The CFA Results**

Construct	Item	Loadings	CR	AVE
Perceived Usefulness	PU1	.787	.834	.557
	PU2	.775		
	PU3	.817		
	PU4	.770		
Perceived Risk	PR1	.786	.851	.552
	PR2	.772		
	PR3	.807		
	PR4	.815		
Perceived Ease of Use	PEU1	.876	.841	.536
	PEU2	.918		
	PEU3	.859		
	PEU4	.745		
Perceived Interest	PI1	.747	.892	.579
	PI2	.842		
	PI3	.797		
	PI4	.815		
Social Influence	SI1	.811	.791	.586
	SI2	.803		
	SI3	.824		
	SI4	.841		
	SI5	.688		
User's Willingness to Use	UWU1	.815	.721	.564
	UWU2	.757		
	UWU3	.728		
	UWU4	.685		
	UWU5	.828		
	UWU6	.776		

Therefore, this study concludes that all the CFA results conducted passed the unidimensionality, validity as well as Perceived Ease of Use for further analysis. Table 1 summarises the findings of the CFA results.

All the hypotheses of this study have been tested through the application of SEM. For the overall model as a whole, the statistical result indicates a good fit. From the model, it can be seen that all the variables uphold a positive value.

**Table 2: Hypothesis Testing**

			Estimate	S.E.	C.R.	P
Perceived Usefulness	<---	User's Willingness to Use	0.312	0.310	1.006	***
Perceived Ease of Use	<---	User's Willingness to Use	0.234	0.234	1.000	***
Perceived Risk	<---	User's Willingness to Use	0.250	0.252	0.992	***
Perceived Interest	<---	User's Willingness to Use	0.445	0.453	0.982	***
Social Influence	<---	User's Willingness to Use	0.591	0.592	0.998	***

After this, by looking at the values presented in Table 2, the summary of the main findings of the study can be presented in Table 3.

**Table 3: Summary of the Main Findings of the Study**

H(x)	Hypothesis	Finding
H1a	Perceived usefulness has a positive correlation with users' willingness to use mobile payment.	Accepted
H1b	Perceived ease of use has a positive correlation with users' willingness to use mobile payment.	Accepted
H1c	Perceived security has a positive correlation with users' willingness to use mobile payment.	Accepted
H1d	Perceived interestingness has a positive correlation with users' willingness to use mobile payment.	Accepted
H1e	Social impact has a positive correlation with users' willingness to use mobile payment.	Accepted

## 5. Discussion

In this paper, we attempted to see how the antecedents of TAM, UTAUT, Perceived Risk Theory, Perceived Interest Theory, affect users' attitude toward mobile payment users in China. Literature findings perceived usefulness, perceived ease of use, perceived interest, perceived risk and social influence can positively or positively affect users' attitude toward mobile payment, suggesting that when people have higher perception of usefulness, ease of use, interest on a said technology, they are more likely to hold positive attitude toward mobile payment. This is supported by the findings in prior studies (Schierz et al., 2010; Amoroso and Magnier-Watanabe, 2012; Liébana-Cabanillas et al., 2015; Phonthanakitithaworn et al., 2015; Raul et al., 2017; Bailey et al., 2017). For example, the empirical results in Thailand indicated that consumer adoption of mobile payment is determined by the trust (Phonthanakitithaworn et al., 2015).

Moreover, the hypotheses in this study can affect customers' perception positively or positively is also supported indicating that when people have a higher perception of mobile payment, they are more likely to adopt mobile payment. These findings are consistent with prior studies (Schierz et al., 2010; Amoroso and Magnier-Watanabe, 2012). For example, empirical results in Japan showed that the increase in perceived ease of use could enhance people's trust in the mobile wallet (Amoroso and Magnier-Watanabe, 2012). Chinese tend to believe that this technology is trustworthy because of their higher

tendency of herb effect (Hirshleifer and Hong Teoh, 2003). This is highly consistent with previous literature.

## **6. Conclusion and Managerial Contributions**

This paper established a modified model of users' attitude toward mobile payment use. Based on the traditional behavioural intention model of mobile payment, such as TAM and UTAUT (Amoroso and Magnier-Watanabe, 2012; Phonthanukitithaworn et al., 2015, 2016; Bailey et al., 2017; Raul et al., 2017). Unlike models in previous studies that are only applied to certain countries, such as China, Japan, the USA and Thailand (Amoroso and Magnier-Watanabe, 2012; Bailey et al., 2017; Raul et al., 2017), this modified model is a cross-cultural model that can be applied in developed countries (taking the USA as an example) and developing countries (taking China as an example).

Considering the characteristics of mobile payment, this paper focused on two antecedents of TAM, UTAUT models that reflect the customer's perception of accepting and to use mobile payment in and perceived risk measures show the security measures of mobile payment service providers and other organisation participants. Since previous studies mainly shed light on the impacts of perceived ease of use and perceived usefulness of users' attitude toward mobile payment use (Schierz et al., 2010; Amoroso and Magnier-Watanabe, 2012; Phonthanukitithaworn et al., 2015, 2016; Bailey et al., 2017) but seldom investigated their antecedents (Vance et al., 2008; Raul et al., 2017); therefore, this paper fills this gap.

Findings in this paper will help mobile payment service providers to know the determinants of their users' behaviour intention and to take measures to improve these determinants. For example, since understanding customer perception towards mobile payment would be an effective measure for Chinese mobile payment service providers to increase their offerings and coverage. Therefore, people's positive perception towards mobile payment can be built upon and would increase and thus their attitude toward mobile payment use will increase. Findings in this paper can also provide mobile payment service providers with insights into the differences in mobile payment use between China and other countries where suggestions of measures that they can take to increase users' attitude toward mobile payment use.

### **6.1 Research Limitation and Future Research**

Since young, educated populations were the primary users of mobile payment in 2015, respondents of this study are selected from them (Liébana-Cabanillas et al., 2015). However, recently with the increasing penetration of mobile payment, primary mobile payment users are not only limited to young, educated population, and thus there may be new findings after extending the range of respondents' age. Besides, we could also expect that demographic variables, such as age, education and gender, would have a moderating effect on the relationship between PS and attitude or the relationship between trust and attitude (José Liébana-Cabanillas et al., 2014; Liébana-Cabanillas et al.,

2015). For example, middle-aged and older adults need more time and effort to trust, accept and adopt new technology, especially those related to financial transactions, than the younger need (EUROSTAT, 2011; National Statistics Institute, 2012). For one respect, since the research subjects in this study are the mobile payment of China, we could also expect different findings when the research subjects are extended or changed to other countries because of different mobile payment cultures across countries (Kim et al., 1998). For the other respect, findings showed that effort expectancy and facilitating conditions have a significant influence on behavioural intention in the mobile payment context (Teo et al., 2015). It was found that perceived performance risk, perceived financial risk and perceived privacy risk have substantial positive impacts on acceptance intention of mobile payment (Yang et al., 2015). Therefore, since a myriad of factors decides the attitude toward mobile payment use, further studies can also be developed by adding more constructs in the theoretical model in this paper.

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