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WHAT PROMOTES CUSTOMERS' TRUST IN THE MOBILE PAYMENT PLATFORM: AN EMPIRICAL STUDY OF ALIPAY IN CHINA

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Abstract:

Trust was recognized as a significant factor in facilitating customers' continuance intention of mobile payment. Drawing upon innovation diffusion and trust theory, this study developed a research model to examine five critical antecedents that promote customers' trust in the mobile payment platform. An empirical survey was conducted in China and structural equation modelling method was used to examine the research model. 394 questionnaires were collected from users of Alipay, which is one of the largest mobile payment platforms in China. The analysis results suggest that security is the most significant antecedent of trust, followed by platform reputation. In addition, mobility and customization characteristics are also beneficial to promote customers' trust in the mobile payment platform. While compatibility is directly associated with customers' continuance intention without mediated by trust. Conclusions and future research directions are discussed in the final section.

Keywords:

Mobile Payment; Trust; Continuance Intention; Innovation Diffusion

1. Introduction

With the development and popularity of mobile-commerce, mobile payment has emerged as a new payment style in daily life in China. Mobile payment is defined as a combination of mobile technology and a payment system that enables the consumer to pay for goods and services through mobile devices (such as a mobile phone or personal digital assistant) by taking advantage of wireless and other information communication technologies (Chandra et al., 2010). Compared with traditional offline and online payment, mobile payment can help consumers to complete the transaction process at any time anywhere, and can satisfy consumers' requirements in various scenarios, such as payment for parking fees, for transportation tickets, for online shopping and for physical goods in the supermarkets (Qasim & Abu-Shanab, 2015; Liébana-Cabanillas et al., 2017).

According to the statistics of iResearch report in 2017, the Gross Merchandise Volume (GMV) of third-party mobile payment in China has increased to 58,800 billion RMB in 2016, with an increase of 381.9% over the last year. China has become one of the largest mobile payment markets all over the world. Alipay is recognized as the most famous third-party payment platform in China, and has occupied 61.5% market share of mobile payment based on rich user group and payment scenarios (iResearch report, 2017). However, despite the rapid growth of mobile payment in China, there is still a large number of customers who are not willing to switch from the traditional offline payment to mobile payment because of the potential high risks and distrust of mobile payment (Zhang et al., 2016).

In the past few years, IS researchers have examined the critical factors that drive the acceptance and continuance usage of mobile payment, and trust was identified as a significant determinant (Liébana-Cabanillas et al., 2014; Oliveira et al., 2016). Empirical studies found that customers' trust in the mobile payment is beneficial to decrease customers' perceived risk, and also, increase their acceptance and usage of mobile payment (Lu et al., 2011; Qasim & Abu-Shanab,

2015). However, despite trust in the mobile payment platform has aroused the attention of scholars, what has been missed in the extant literatures is a systematic analysis of technology innovation characteristics that drive customers’ trust formulation. Given the rapid development of mobile payment technology in China and the high potential risks existed, it is important to conduct a theory-driven empirical study to examine what are the significant antecedents that build customers’ trust in the new research context.

2. Research Model and Hypotheses

Drawing upon trust building model and innovation diffusion theory, this study aims to explore the influence of third-party platform characteristics, specifically mobility, customization and compatibility, combined with security and reputation of the platform, on customers’ trust formation, perceived risk and continuance intention in the context of mobile payment. Individual characteristics regarding gender, age, education, occupation and use time are added as control variables because of their potential impact on customers’ behavioral intention. The research model is illustrated in Figure 1.

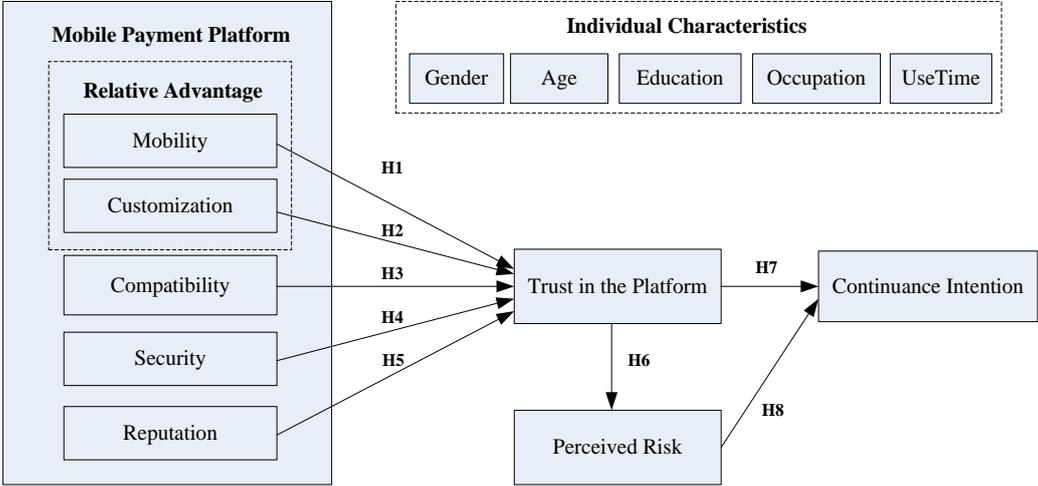


Figure 1: Research Model

2.1. Relative advantage characteristics and trust

Rogers (1995) proposed that individuals’ adoption of a new information technology is determined by a set of innovation attributes, and relative advantage was identified as a salient factor in explaining individuals’ adoption and continuance usage of information technology (Teo & Pok, 2003; Tornatzky & Klein, 1982; Wu & Wang, 2005).

Relative advantage refers to the innovation technology shaking off the yoke of time and space (Rogers, 1995). In the context of mobile payment, two attributes of relative advantage regarding mobility and customization were introduced in the research model. Mobility is defined as the relative advantage of using mobile payment anytime or anywhere in the consumers-perceived platform. Chinese third-party mobile payment platform like Alipay really offers an approach to form a virtual online life with no difference from the real life, then establish well “connection” between the realistic scenes and mobile payment behaviors (Lu et al., 2011). When customers perceive that the platform is an unique tool satisfying any network or off-line coverage places with fast charge and enough payment services, they will trust it and prefer to use it while travelling outside compared to other types of payments (Zmijewska et al., 2004). Kim et al. (2010) indicated that mobility provides consumers freedom and allows them to conduct transactions regardless of time and place. This is beneficial to enhance customers’ trust in the mobile platform (Zhou, 2011) Therefore, we propose the following hypothesis:

H1. Mobility is positively related to trust in the third-party mobile payment platform.

In the context of mobile payment, customization is another significant attribute that can explicitly reflect the relative advantage of Chinese third-party mobile payment platform (Huang, 2017). Customization is defined as the ability for customers to customize the information function, payment methods and security settings based on their favorite and accustomed behavior (Huang et al., 2014). In Alipay, customers can edit the home page to customize favorite or commonly used software, and select from the five payment methods and three security settings to fit their own requirements of quick-payment. This is beneficial to increase customers' trust in the platform since it provides them adequate flexibility to complete their transactions according to their expected approach (Huang et al., 2014). Empirical studies found that customization is one of the most significant predictors of trust in the online marketplace (Huang et al., 2014). Therefore, we propose the following hypothesis.

H2. Customization is positively related with trust in the third-party mobile payment platform.

2.2. Compatibility and trust

Compatibility is defined as the degree to which a technology innovation is perceived as being consistent with existing values, needs and experiences of potential users (Moore & Benbasat, 1991; Rogers, 1995). In the context of mobile payment, compatibility refers to the degree to which the functions and service provided in the mobile payment platform can satisfy customers' personal habits and lifestyles (Lu et al., 2011). Previous studies have identified compatibility as a critical factor of individuals' attitudes and behavioral intention (Li et al., 2014; Schierz et al., 2010; Yang et al., 2012). Schierz et al. (2010) posited that perceived compatibility is positively associated with customers' use of mobile payment services by influencing their attitudes. Therefore, we propose the following hypothesis.

H3. Compatibility is positively related with trust in the third-party mobile payment platform.

2.3. Security and trust

In the context of mobile payment, security is defined as customers' perception of safety and reliability of the institutional structures such as the guarantees, regulations and promises of the transactions in the mobile payment environment (Zhou, 2011). Security was considered as a significant factor in protecting customers from transaction uncertainties and risks, which is beneficial to promote customers' trust in the mobile platform (Xin et al., 2015). Customers are more likely to trust the mobile platform if secure and reliable structural assurance is provided on the platform (McKnight et al., 2002). Kim et al. (2010) posited that there exists a positive relationship between multiple security guarantees and customers' trust in the use of electronic payment systems. In the mobile payment environment, Linck et al. (2006) stated that customers' trust will be eroded if they feel insecure. Therefore, we propose the following hypothesis.

H4. Security is positively related with trust in the third-party mobile payment platform.

2.4. Reputation and trust

Reputation is defined as the extent to which customers believe that a firm has good impression in ability, benevolence and integrity (Kim et al., 2009). Customers prefer to rely on the reputation of a firm to assess its trustworthiness if they do not possess previous experience with the firm (McKnight et al., 1998). Reputable platform providers are more likely to attract more transactions from the customers (Grazioli & Jarvenpaa, 2000; Teo & Liu, 2007), while providers with a bad reputation usually discourage the customers from conducting online transactions (Ba, 2001). In the context of mobile payment, the reputation of a platform also plays a significant role in fostering customers' trust. Dahlberg et al. (2003) suggested that the credence of mobile commerce seems more difficult to grasp for consumers, therefore more emphasis should be focused on the reputation of mobile payment firms. The above analysis

leads to the following hypothesis.

H5. Reputation is positively related with trust in the third-party mobile payment platform.

2.5. Trust, perceived risk and continuance intention

Trust and perceived risk are identified as two significant antecedents of customers' behavioral intention in the extant literatures of e-commerce and mobile-commerce (McKnight et al., 2002; Pavlou & Gefen, 2004; Teo & Liu, 2007; Mallat, 2007; Lin et al., 2014; Lu et al., 2011). In the context of mobile payment, perceived risk is defined as the hazard-perception perceived by customers from the leakage of personal information and loss of funds (McKnight et al., 2002). Because of customers' trepidation of financial and privacy risk when using mobile payment, perceived risk was identified as a salient adverse factor affecting the continuance intention (Yang et al., 2015). Previous studies showed that trust can affect the intention of using mobile payment directly and indirectly by perceived risk across different countries (Teo & Liu, 2007). When customers perceive that the platform provides a trustworthy system for mobile payment, their perceived risk will be reduced and continuance intention toward using the platform will be enhanced accordingly (McKnight et al., 2002). The above analysis leads to the following hypothesis.

H6. Trust is negatively related with perceived risk.

H7. Trust is positively related with continuance intention of the mobile payment.

H8. Perceived risk is negatively related with continuance intention of the mobile payment.

3. Research Methodology

3.1. Research setting and data collection

Data was collected through a leading Chinese mobile payment platform, alipay.com. An online questionnaire survey was conducted via the electronic questionnaire website (www.sojump.com). Founded in 2003, Alibaba has been recognized as one of the most popular mobile platforms in China and has more than 40 million users in the year of 2017. Individuals who have payment experience in alipay.com were selected as the respondents, in order to guarantee the accuracy of the data analysis. A total of 394 questionnaires were collected from March to April in 2017. We deleted the questionnaires with incomplete or missing data, and finally got 364 valid questionnaires for data analysis.

3.2. Instruments

The instrument was adapted from previous literatures, and each construct was measured with three or four items. Seven-point Likert scales ranging from 1 (strongly disagree) to 7 (strongly agree) was used to design the instrument (Likert, 1932). The English questionnaire was then translated into Chinese by a Ph.D student. Several items were adjusted based on the mobile payment environment in China to guarantee the expression accuracy. A pilot test was conducted in our university to examine the content and construct validity of the instrument. We invited 99 students and professors who have used Alipay to complete the questionnaires. Based on the feedbacks from the respondents and the factor analysis, we adjusted an item of perceived risk and deleted an item for security and trust respectively to better reflect the measured constructs.

3.3. Structural equation modeling analysis

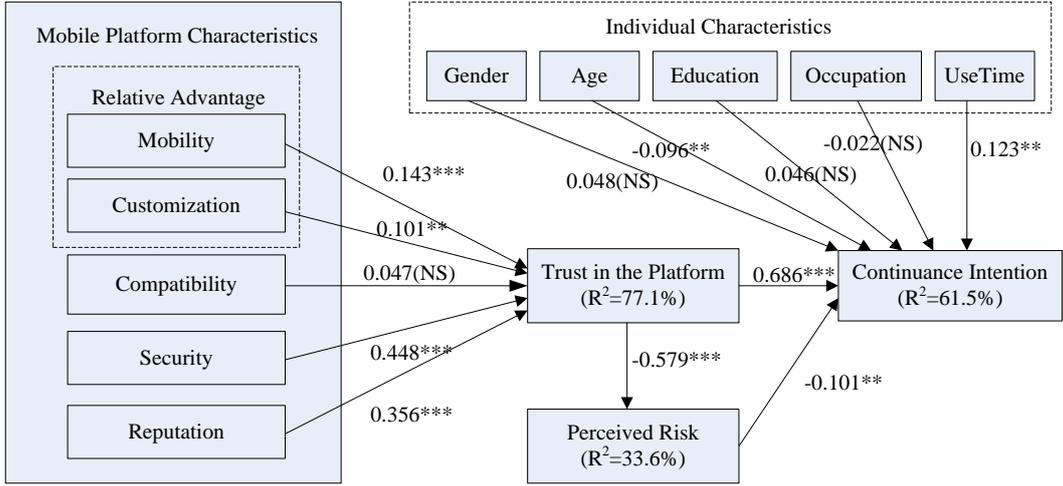
Structural equation modeling technique was used to analyze the research model. Followed by a two-step analysis procedure (Anderson & Gerbing, 1988), we first examined the measurement model and then examined the structural model in SmartPLS 3.0.

3.3.1 Measurement model analysis

The measurement model analysis results suggest that all the factor loadings have exceeded 0.85, the AVE for each construct has exceeded 0.7, and the composite reliability of all the constructs are highly above the 0.70 threshold, showing a good reliability and convergent validity of the constructs (Lin et al., 2017). In addition, discriminant validity is evaluated by testing if the square root of AVE of each construct is greater than its correlation with other constructs (Lin et al., 2017). The results suggest that the diagonal values is highly above other values in each independent column, demonstrating a good discriminant validity of the constructs (Because of page limit, we omit the measurement analysis results).

3.3.2 Structural model analysis

SmartPLS 3.0 was used to analyze the structural model and test the hypothesis. Fig. 2 shows that mobility, customization, compatibility and security are positively associated with trust. While compatibility is directly associated with continuance intention without mediated by trust. Moreover, trust in the third-party mobile payment platform is negatively related with perceived risk and positively associated with continuance intention. Therefore, most of our hypotheses are supported. The R² suggests that the research model explains 77.1% of variance in trust, 33.6% of variance in perceived risk, and 61.5% of variance in continuance intention, indicating a good explanatory power of the research model.



Note: path coefficient and T test are significant at: **P < 0.05, ***P < 0.01, NS represents Not Significant.

Figure 2: Structural model analysis

Regarding the impact of the control variables, we can see from Fig. 2 that age is negatively associated with continuance intention, indicating that youngers are more likely to use the new style of mobile payment compared with elders. Use-time is positively associated with continuance intention, suggesting that experienced users are more likely to keep using mobile payment in their daily life. The result is consistent with previous research findings. While sex, education and occupation have no significant influences on continuance intention.

4. Conclusions and Future Research Directions

Drawing upon innovation diffusion theory and trust building framework, this study develops a theoretical model to examine the significant antecedents that are beneficial to promote customers’ trust and continuance intention in the third-party mobile payment in China. Data was collected from Alipay users and structural equation modelling method was used to examine the research model. The empirical results show that security and reputation of the mobile platform are the most significant characteristics that promote customers’ trust and continuance intention. The relative advantage of the platform, regarding mobility and customization characteristics, are also beneficial to build customers’ trust. While compatibility has direct

influence on customers' continuance intention without mediated by trust. Although this study provides several theoretical and practical contributions, there are still some limitations that leave open future research directions. Firstly, the survey data of this study is based on Alipay users, future research can be conducted in other mobile payment platforms, such as WeChat platform, to further examine the generalization of the research model. Secondly, future research can conduct a longitudinal study and collect data at different time points, to better observe users' behavioral change across time. Thirdly, subsequent research can also incorporate customers' gender, age, experience and cultural values as moderators in the research model, in order to examine if there exists behavioral differences in different user groups.

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